**KENTUCKY GRADES**

- **Aviation**: C+
- **Bridges**: C-
- **Dams**: D+
- **Drinking Water**: C+
- **Energy**: B-
- **Haz Waste**: D
- **Levees**: D+
- **Roads**: D+
- **Solid Waste**: B-
- **Wastewater**: C-

**ABOUT THE GRADES**

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

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

**SOLUTIONS TO RAISE THE GRADE**

1. **WE NEED A BIG PICTURE APPROACH TO INFRASTRUCTURE INVESTMENT, ONE THAT ANTICIPATES THE CHALLENGES OF TOMORROW WHILE ADDRESSING THE PROBLEMS OF TODAY.** As we determine where limited funding should be spent, it’s important to approach investment knowing our networks are interconnected. It does less good to pave a road if the pipeline underground is in need of replacement. Providing fixed protection by building levees in one neighborhood but leaving the adjacent neighborhood unprotected will ultimately cause harm during the next major rain event. Investing in our infrastructure requires proper planning, forward thinking, and most importantly, adequate investment for all our systems.

2. **WE MUST INVEST IN KENTUCKY’S MULTIMODAL FREIGHT NETWORK TO PREPARE FOR THE FUTURE.** Louisville and Northern Kentucky are global logistics hubs for major companies, including Amazon, UPS, FedEx, and DHL. However, the significance of the role that has been the industry is not guaranteed. We need to proactively invest in our multimodal transportation network to retain our competitive advantage in the years ahead. Such investment includes providing adequate funding for our roadways, rail, and inland waterways, as well as providing robust investment for intermodal connections and bottlenecks in the network.

3. **RURAL COMMUNITIES REQUIRE SIGNIFICANT FUNDING TO ADDRESS DILAPIDATED INFRASTRUCTURE SYSTEMS.** Much like residents of cities, our rural population relies on infrastructure systems that were built 50 to 100 years ago. However, unlike our larger metropolitan communities, rural towns lack the population density to pay into the cost of repairing and replacing systems. Rural communities are frequently plagued by unsafe drinking water, pathologically road, and live near unsafe hazardous waste sites. Funding to repair and replace these systems will be instrumental in providing our rural citizens with access to jobs and healthcare.

**ABOUT ASCE-KENTUCKY**

Established in 1936, the ASCE Kentucky Section has five active branches covering all of the Commonwealth of Kentucky. Civil Engineers in Kentucky join ASCE to develop leadership skills, enhance their knowledge of the latest technology and engineering practices, and network with other civil engineering professionals. The ASCE Kentucky Section promotes the profession by offering annual scholarships to deserving students pursuing a career in Civil Engineering. The Section also hosts an annual Civil Engineering Conference to advance the knowledge of its members and to honor outstanding individuals and projects. ASCE Members advocate for infrastructure and environmental stewardship which will lead to a better quality of life for all Kentuckians.

**INFRARED STRUCTURE MATTERS**

We use Kentucky’s infrastructure every day. The interconnected system of roads and bridges, drinking water, sewer systems, dams and levees, aviation, solid waste, and energy are all critical to our success. Infrastructure deteriorates as it ages, and it must be repaired or replaced when it exceeds its useful life. The effects of time, weather, and increased use from a growing population are impacting the quality of the infrastructure in our state.

Looking ahead, there are opportunities for Kentucky to invest not only in the infrastructure in need of repair and replacement, but also to plan strategically for the future. Adequate investment and proper planning will provide safe and healthy environments for our children, neighbors, and communities.

The Kentucky Section of the American Society of Civil Engineers has created this simple tool to give residence, businesses, and policy-makers a snapshot at the current condition of our state’s infrastructure systems. In addition, this report provides recommendations on things our Commonwealth can do to make sure our infrastructure is there for us in the days, weeks, and years ahead. We hope this report provides the information needed to make every Kentucky citizen an informed Kentucky citizen.

**HOW YOU CAN GET INVOLVED**

1. Get the full story behind this Report Card at www.infrastructurereportcard.org/Kentucky
2. Find out the condition of the infrastructure near you on the Save America’s Infrastructure app available on iTunes and Google Play.
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.

**CONTACT US AT:**

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Kentucky’s Infrastructure Report Card 2019

KENTUCKY’S INFRASTRUCTURE REPORT CARD

The 2019 Report Card on Kentucky’s C-Infrastructure

Kentucky’s infrastructure is everywhere around you and you use it every day. The interconnects of a full network of roads and bridges, drinking water, sewer systems, dams and levees, aviation, solid waste, and energy are all critical to our success. We have become accustomed to these systems quietly supporting our ability to work and play. However, in 2020, these interconnecting networks are aging and struggling to perform as necessary.

Infrastructure deteriorates as it ages, and it must be repaired or replaced when it exceeds its useful life. The effects of time, weather, and increased use from a growing population are impacting the quality of the infrastructure in our state. Looking ahead, there are opportunities for Kentucky to invest not only in the infrastructure in need of repair and replacement, but also to plan strategically for the future. Through smart investment and collaborative coordination, Kentucky has the opportunity meaningfully improve critical infrastructure, including water, roads, rail, airports and freeways, to ensure both local and state-wide economies can grow. Strategic investments and proper planning will also provide safe and healthy environments for our children, neighbors and communities.

The good news is that Kentucky’s civil engineers, government agencies, private industry groups, and the public are committed to building and maintaining Kentucky’s infrastructure to keep our residents and visitors safe, the environment healthy, and to help support our economy. The Kentucky Section of the American Society of Civil Engineers has created this simple tool to give residences, businesses, and policymakers a snapshot of the current condition of our state’s infrastructure systems—both the good and the not-so-good. In November 2019, we published our recommendations on things our Commonwealth can do to make sure our infrastructure is there for us in the days, weeks, and years ahead. Working together, we can create a sustainable and collaborative approach to infrastructure planning and funding that will support smart investments to avoid costly, catastrophic failures.

We hope this report provides the information needed to make every Kentucky citizen an informed Kentucky voter.

AVIATION

Kentucky airports have a total economic impact of nearly $15 billion annually. When airports are kept in working order, aviation has a positive impact on a broad array of industries within our Commonwealth, including transportation and distribution of goods and services, just to name a few. There are funding sources in place to support infrastructure facilities within the state, however, significant areas exist, including a consolidated rental car facility at CVG, the final portion of a five-phase taxiway project at LEX, and continued modernization of airport elements at SDF. While the state has made recent airfield infrastructure investments, we cannot continue to support both aging facilities and new infrastructure needs. We are confronted with aging facilities and cannot fully realize new economic opportunities without needed infrastructure improvements.

BRIDGES

The overall condition of Kentucky’s bridges has steadily improved in recent years, in part thanks to the prioritization of investments in transportation infrastructure by the Kentucky Transportation Cabinet (KYTC) through the Strategic Highway Investment Formula For Tomorrow evaluation and scoring system. In 2011, nearly 92 percent of all bridges in Kentucky were structurally deficient; by 2017, 77 percent were structurally deficient, a reduction of 160 bridges. However, looking ahead, 2,857 bridges have been identified as needing repair, which the state estimates will require $31 billion to replace and repairs and additional capital needed on the I-79 bridge between Kentucky and Ohio, as does it include a new I-69 bridge over the Ohio River between Kentucky and Indiana.

DAMS

Dams are a critical part of Kentucky’s infrastructure, and many citizens of the Commonwealth use them every day, including for drinking water, roads, rail, airports and freeways, and for their ability to support local and state economies. However, the state has seen an increase in the number of high-hazard dams, meaning those that could cause immense property loss or loss of life if they should fail. This is due to areas downstream of these dams being developed, creating population at risk that did not previously exist. In addition, a majority of these dams were built before setbacks and environmental design standards were enacted. Fortunately, whereas in 2010 less than 5 percent of high-hazard dams had Emergency Action Plans (EAPs), approximately 75 percent have at least a temporary EAP in place. Moving forward, dam owners should implement other safety programs, assistance for private dam owners, and direct funding for state-owned and operated dams for rehabilitation of aging dams and dams that do not have the capacity to protect against other emergencies.

DRINKING WATER

Kentucky enacted legislation in 2010 to promote regional cooperation and water system consolidation throughout the Commonwealth. After 18 years, Kentucky has made significant progress in extending public water service to more than 97 percent of the state’s population. Kentucky has deployed a robust, online Water Resource Information System and has continued to consolidate and replace small systems and public water systems in order to serve more citizens and gain efficiencies. Kentucky has also established a Drinking Water Advisory Council, to provide input on drinking water regulations and best practices in an age of new regulations, treatment, and distribution. While Kentucky has made significant progress in consolidation of water systems and service levels, several challenges have been identified, including compliance with the Safe Drinking Water Act (SDWA) Disinfective Byproducts Rule (DBPR) in some small systems; reduced state funding to the 2020 Water Program; water loss that sicknesses currently represent on an annual basis; and drinking water for communities that have increased 33 percent from 2013 to 2017, with a current estimate of $2.8 billion over 20 years.

The Commonwealth of Kentucky, with two major coal fields located within the state, has historically benefited the enjoyment of low cost electricity. The close proximity of the coal fields has kept transportation costs low, which has benefitted the industry and consumers alike. The Commonwealth Energy Policy, reported by the Kentucky Office of Energy Policy is 8.26 cents per kWh, which is the sixth lowest in the United States. The industry's competitive advantage has been Kentucky's ability to attract manufacturing and other key industrial and commercial enterprises, which is an important part of the state's economy. Similar to industries across the country, in order to remain competitive and continue to attract new businesses, Kentucky's economic competitiveness depends on the ability of manufacturers and other industries to keep manufacturing operations closed or leaving the state. Total energy demand in Kentucky has not still rehoused to pre-recession levels—electricity generation dropped by one-fifth, from 2007 to 2008. This reduction in electricity load has alleviated previous transmission capacity issues; however, the sharp decrease in demand for energy also presents a challenge with a subsequent decrease in funding for the infrastructure system needed to deliver energy across the state. To continue to meet the Commonwealth's energy demands and maintain low energy costs, Kentucky must continue to attract new or maintain its current diverse energy profile that includes coal, natural gas, and additional sustainable resources. Kentucky must also answer the challenge of how to fund improvements to the transmission and distribution infrastructure.

LEVEES

Levee systems are an important part of Kentucky’s landscape, because the rivers and streams that cross our state are not only a part of our environment but also a history of devastating floods. The Commonwealth learned the importance of building flood protection after the historic flood of 1937. Since that time, Kentucky has built a network of levees across the state, now protecting over $36 billion worth of lives and $46.6 billion in property. However, nearly half of the state’s inventory of levees are 50 years old or more, which is beyond their expected design life. Many mechanics and electrical components are at risk of failure in the 1940s and 1950s, and as such, many levee systems are deteriorating, and an increase in overall maintenance is required. In addition, two levee systems are classified as a level two or “High Risk,” which means that flood control by breach and/or system failure would very likely result in loss of life, large economic losses, and/or devastating environmental damage. Prevention is necessary to keep these levees in place. Remediation of these systems will need funding, and the cost of inaction is a large threat to public safety.

SOLID WASTE

In 2017, Kentucky residents generated 7.2 million tons of municipal solid waste (MSW), which is an average of 5.5 pounds of waste per person per day. This is an 8.1 percent increase from 2010. The state estimates that only 38 percent is recycled; Kentucky is doing better than the national average in this area. For the remaining waste that is not recycled, Kentucky has 50 permitted landfills. However, only 8,700 of the waste generated in 2017. Since the time of the last Kentucky Infrastructure Report Card in 2011, the Commonwealth has increased its number of solid waste facilities. In 2011, there were 25, which included included construction and demolition debris landfills together as one facility, and there were no residual landfills, which accept waste from the recycling process, which is needed to meet our national and local needs. Recent emphasis on recycling, including 29 contained landfills, eight sites that are greater than one acre for construction/demolition debris, and 13 residual facilities. This has increased the available capacity in the Commonwealth’s landfills. However, as the total population has increased, so has Kentucky’s waste generation, and more work is needed to maintain or improve capacity to meet future needs. Underfunding of programs as Division of Waste Management is a major impediment to further progress in Kentucky.

WASTEWATER

Nearly 20 years ago, the governor of Kentucky issued an Executive Order to provide water and wastewater service to every Kentuckian by the year 2020. In response, a strategic plan for wastewater was developed in early 2000, which provided recommendations to be carried out over the next 20 years. Many of the original recommendations have already been implemented, and it is important to recognize the improvements that have been made over the past two decades. However, the Commonwealth of Kentucky is faced with treatment facilities that are not working, septic systems that are not working, and failing to meet the treatment standards. Some of these pipes are more than 70 years old, and many of these challenges have not been overhauled, including compliance with the Safe Drinking Water Act (SDWA) Disinfective Byproducts Rule (DBPR) in some small systems; reduced state funding to the 2020 Water Program; water loss that sicknesses currently represent on an annual basis; and drinking water for communities that have increased 33 percent from 2013 to 2017, with a current estimate of $2.8 billion over 20 years.