SOUTH CAROLINA'S GRADES SUMMARY

Aviation	Bridges	Dams
D+	C	D

Drinking Water	Ports	Roads
D+	B	D

Transit	Wastewater	G.P.A.
D+	D	D+

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

TO RAISE THE GRADE

1. The federal government should fully fund authorized infrastructure programs to invest in South Carolina's aging infrastructure to support the growing population.
2. Continue the momentum where state agencies, local governments, and utilities have utilized traditional investment options and initiated new revenue channels to maintain and improve infrastructure.
3. Design, operate, maintain, and expand infrastructure using consensus-based codes and standards, focusing on resilience and life cycle cost as the best measures of infrastructure performance and best use of taxpayer dollars.
4. Develop a comprehensive education campaign on the true costs and savings associated with investment in critical infrastructure and disseminate it statewide through publicly accessible channels.
5. Establish funding and grants to assist programs that enhance the quality of public service in the areas such as drinking water, wastewater, regional transit and aviation. These programs would consist of utility consolidation where appropriate, resilience improvements, capacity-related infrastructure upgrades, and technical career training that retains South Carolina's talent.
6. Ensure that infrastructure investment is strategically focused on efforts that maximize good-paying jobs, promote South Carolina's economic competitiveness, and enhance usability for the state's residents and visitors.

About ASCE - South Carolina Section

The South Carolina Section of ASCE has been serving the profession and the community since 1934. The section currently serves the entire state of South Carolina as well as Richmond, Columbia and Lincoln counties in Georgia through six branches, several younger member groups and three active student chapters (Clemson, University of South Carolina and The Citadel).

The section, branches, younger member groups and student chapters provide professional development to members, assist members throughout their career and help them to serve the community.

With our commitment to serve and protect the public in mind, the Report Card released by the ASCE South Carolina Section is a public, voluntary service to citizens and policymakers to inform them of infrastructure needs in their communities.

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ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

REPORT CARD FOR
SOUTH CAROLINA'S INFRASTRUCTURE

2021

PHOTO: CELESSTITUS/S&ME

INFRASTRUCTURE MATTERS

We all use infrastructure every day, but we rarely think about it. Whether you are driving to work on roads and bridges, fishing beside a dam or getting a glass of water on a hot summer's day, infrastructure affects everyone in South Carolina. It also impacts the industries that power our economy bringing goods across our state and taking workers to their jobs.

Although South Carolina has made recent efforts to improve our aging infrastructure, there are some challenges you should be aware of. Infrastructure deteriorates every single day as it ages and many of these critical systems need improvement, repair, or replacement. Furthermore, our rapidly growing population is straining the capacity of our systems.

Fortunately, civil engineers focus on infrastructure every single day. The South Carolina Section of the American Society of Civil Engineers (ASCE) has prepared our first Report Card so every resident and decision maker can understand the current condition of our state infrastructure. If you live, work, or play in South Carolina, this Report Card is for you.

How You Can Get Involved

1. **Get the full story behind this Report Card at www.infrastructurereportcard.org/south-carolina**
2. **Find out about 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 keep up with your neighborhood's infrastructure. Use your zip code to get your list of elected officials' at www.infrastructurereportcard.org/take-action.**

2021 REPORT CARD FOR SOUTH CAROLINA'S INFRASTRUCTURE

The 2021 Report Card on the South Carolina's Infrastructure gave the state an overall g.p.a. of D+. South Carolina's civil engineers studied eight infrastructure categories. Of those eight, one infrastructure category is in good condition, one category is in mediocre condition, and six categories are in to poor condition.

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

AVIATION

D+

Aviation is a key component to South Carolina's economic growth. A 2018 study of the state's aviation sector showed that 7% of the workforce and $16.3 billion of economic impact were attributed to South Carolina's 57 airports. Within five years, the state's demand for flights is projected to increase by nearly 15% while the air cargo sector is also growing. This growth is contributing to congested airspace, delays, and capacity challenges. Furthermore, only five of the six commercial service airports are reporting a pavement condition index above the expected threshold. To maintain and expand runways and terminals, update technology, and ensure the public has easy access to safe airports, calculations show that South Carolina has an annual investment need of nearly $154 million through 2023. However, experts predict the state's funding could fall short by as much as 75%. Although there is significant future need, the aviation sector shows areas of progress including the new, annual benchmark set for inspecting airport pavement and prioritizing the recovery of aviation infrastructure in the wake of natural or manmade disasters.

BRIDGES

C

South Carolina is ranked 26th in the nation in bridge inventory with 9,410 bridges. The state is highly dependent on the large number of bridges for connectivity between communities as well as intrastate and interstate commerce. The South Carolina Department of Transportation (SCDOT) manages approximately 90% of all bridges. The average age for bridges is almost 39 years old, close the 50-year service life. Nearly 11% of South Carolina's bridges are rated as structurally deficient, higher than the national average of 7.5%. Additionally, by Federal Highway Administration standards, more of the state's bridges are rated in fair (47%) than in good condition (45%). This trend of more bridges being downgraded from good to fair condition is similar to the nationwide challenge of prioritizing repair and preservation work, particularly of structurally deficient bridges. Fortunately, SCDOT has created a Targeted Asset Management Plan (TAMP) to clearly layout life-cycle management goals, track progress toward those goals, and provide transparent accountability of funding for state highway assets. The SCDOT is now in the 4th year of the ten-year plan and ahead of schedule for bridge replacements.

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DAMS

D

Since 2015, a series of historic weather events caused dozens of state-regulated dam failures which drove lawmakers' renewed awareness of dams and their risks to public health, safety, and welfare. There are more than 2,200 dams across the state with more than 80% being privately owned. Over the last several years, more than $12 million in one-time and recurring funds have been invested in the South Carolina's Dams Safety and Reservoir Program housed within the Department of Health and Environmental Control (DHEC). DHEC's personnel has increased, and capacity has expanded such that they now offer services including engineering technical support, dam inspections, and inundation mapping to plan for the future. However, there remain limited resources to support dam owners' maintenance and repair activities resulting in an unaddressed backlog of dam safety needs. Though funding has increased, South Carolina's dam safety budget remains well below the national average particularly for spending on high hazard potential dams (HHPDs). About 24% of the state's inventory is HHPDs which, in the event of failure, could cause catastrophic damage to infrastructure and property while also carrying the risk of injury and death to people. Spending on HHPDs increased from $1,500 to $1,900 per dam, but the value falls under the national average of $4,875 per HHPD. Increased funding and expanded technical capacity are applauded, but ongoing efforts need to continue to determine sustainable sources of funding for dam rehabilitation, maintenance, and other safety projects.

DRINKING WATER

D+

Drinking water in South Carolina is typically managed and provided by local public water systems. At the state-level, the South Carolina Department of Health and Environmental Control (DHEC) administers and enforces drinking water quality standards and regulations at these public systems. Overall, the state's water utilities have a very high compliance for drinking water standards and federal lead action levels. However, sustaining this performance will require South Carolina's rate structures to be re-examined and potentially updated to ensure adequate, local funding for the drinking water system. The U.S. Environmental Protection Agency projects that over the next 20 years, it will cost nearly $6 billion to meet all of South Carolina's drinking water system needs. The greatest portion of this need, over $4.5 billion, come from replacing and refurbishing the aging or deteriorating distribution and transmission pipelines. Utilities in urban areas have taken significant actions to improve drinking water infrastructure, but due to the lack of publicly available data, those positive efforts do not reflect a comprehensive picture of the condition of South Carolina's entire public drinking water system.

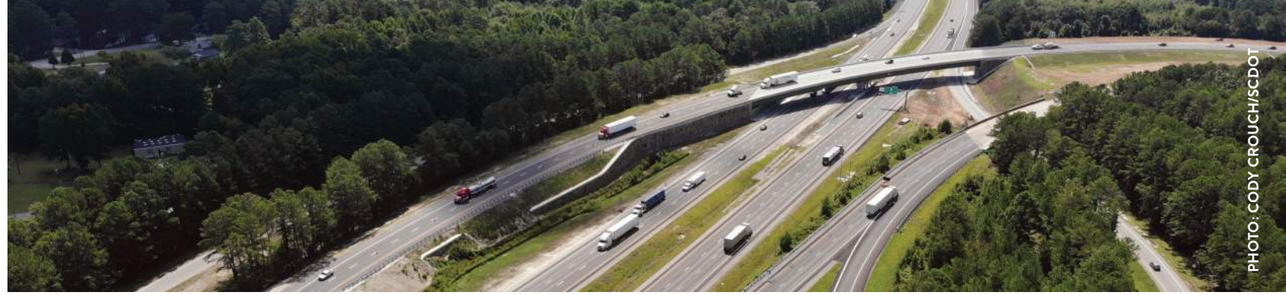

PHOTO: CODY CROUCH/SCDOT

PORTS

B

South Carolina's ports generate $63.4 billion in annual economic impact and $1.1 billion in annual tax revenue for the state. Port operations create 1 in 10 South Carolina jobs, and port-supported jobs pay 32% higher than the state's average annual wage. The South Carolina Ports Authority, the state of South Carolina, federal government and industry partners are continuously investing in the port facilities with $2.6 billion invested through fiscal year 2022. The investment is focused on increasing capacity to accommodate greater volumes to meet global shipping demands. The Port Authority will double container capacity upon final buildout of the new Hugh K. Leatherman Terminal which received its first container vessel on April 9, 2021. The investment also includes harbor deepening to 52 feet to accommodate the largest ships calling on the U.S. East Coast as well as upgrading terminal infrastructure, building a port access road, developing a new marine terminal, and developing two inland rail-served terminals.

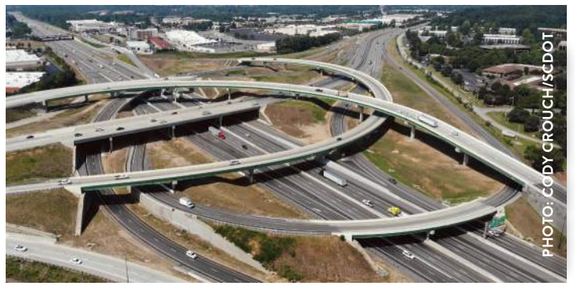

PHOTO: CODY CROUCH/SCDOT

ROADS

D

Most roads in South Carolina are maintained by the South Carolina Department of Transportation (SCDOT). As the population and tourism industry increase, so do Vehicle Miles Traveled (VMT) which contributes to more traffic congestion and pavement wear. South Carolina has undertaken several initiatives to address the major concerns of the transportation infrastructure, but with more than half the roads in poor condition, the highest fatality rate in the U.S., and almost 20% increase in VMT, there is a significant need for additional funding, especially towards addressing capacity and safety. A critical step in addressing this need was taken in 2017 when the South Carolina General Assembly passed Act 40, which increased fees on vehicles and increased the state's gasoline tax by 12 cents per gallon over six years generating $625 million in new annual revenue. Though an important step in the right direction, the funding gap is estimated to be nearly $43 billion over the next two decades.

TRANSIT

D+

The South Carolina Department of Transportation (SCDOT) Office of Public Transit (OPT) is responsible for administering and overseeing federal and state funding to support its multimodal transportation network. Twenty-seven transit providers serve 40 of the state's 46 counties. In 2019, for the 8th year in a row, over 12 million annual unlinked passenger trips were made on commuter trains and buses. Between 2014 and 2018, the state's bus fleet saw substantial improvements as the portion past their useful life decreased from 77% to 32%. Nevertheless, intercity buses have struggled to meet residents' transit needs and ridership has declined by more than 60%. However, better outcomes are recognized in rural areas, some of which are seeing expansions to transit, including the Lowcountry Regional Transportation Authority which provided more than 122,000 unlinked passenger trips in 2016, increasing to nearly 193,000 in 2017. To achieve this progress an SCDOT commission approved $59.5 million in federal and $5.0 million in state funds in 2020. This funding will not meet all the transit needs as a study recently projected the state's transit shortfall as approximately $5.2 billion through 2040. Finally, South Carolina is taking steps in the right direction to move its transit sector towards more sustainable and resilient solutions, in part, by replacing older vehicles with alternative fuel vehicles, using LED lights in facilities, conducting preventative maintenance in a timely manner, and studying the feasibility of new commuter rail, light rail, and Bus Rapid Transit systems.

WASTEWATER

D

The South Carolina Department of Health and Environmental Control (DHEC) administers the state's wastewater management planning, permitting, compliance, and some expansion initiatives. More locally, wastewater infrastructure decision making is typically overseen by a board of county officials or at the household level by a homeowner using a decentralized system (e.g. septic tank). Overall, wastewater infrastructure in South Carolina is aging, and smaller wastewater agencies struggle to upgrade treatment systems to meet effluent permit requirements and minimize sanitary sewer overflows. As the state's population shifts and with approximately 75% of the population living in one of the state's eight major cities, improvements in infrastructure capacity, condition, and service are necessary. Small and rural utilities have limited resources and personnel to obtain federal grant funding to affordably keep pace with infrastructure needs. Therefore, larger utilities are leading by taking a regional, consolidated approach to wastewater treatment. Consolidation expands access to resources for financing capital improvement programs, performing long term planning or rate restructuring studies, and upgrading the aging infrastructure at smaller utilities.