ALABAMA'S GRADES SUMMARY

Aviation	Bridges	Dams	Drinking Water
C	C+	?	C-

Energy	Inland Waterways	Ports	Rail
B	D	B	B

Roads	Stormwater	Transit	Wastewater
C-	D+	C-	D

G.P.A. 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** – Exceptional, Fit for the Future
- **B** – Good, Adequate for Now
- **C** – Mediocre, Requires Attention
- **D** – Poor, At Risk
- **F** – Failing/Critical, Unfit for Purpose
- **?** – Incomplete, Data is Insufficient to Provide a Grade

TO RAISE THE GRADE

1. State lawmakers and their Rebuild Alabama program have improved surface transportation sectors. This progress should guide decision makers at every level of government to improve infrastructure funding.
2. Prioritize project planning and management techniques such as asset management, design-build project delivery, and life cycle costing to wisely implement projects and utilize funds throughout all infrastructure sectors.
3. Improve the resilience and sustainability of infrastructure and the safety and security of communities to prepare for the future.
4. Establish a dam safety program to inspect the condition of the state's dams and create a revolving grant or loan program to rehabilitate and repair dams in need.

About ASCE - Alabama Section

Founded in 1931, the Alabama Section of ASCE represents over 1,600 practicing civil engineers and civil engineering students in Alabama. The Section is comprised of six branches, three younger member groups, various committees, and six student chapters, serving the entire state by providing professional and technical opportunities to its members, the local community, and non-technical audiences.

The Alabama Section of ASCE is committed to monitoring and coordinating programs best handled at a statewide level, all while promoting and protecting the civil engineering profession and serving the public good by bringing attention to infrastructure needs and opportunities for civil engineering students.

Civil engineers inherently understand the importance of infrastructure to the health of a state's economy and its citizens. Our hope is to impress that same importance upon you.

How You Can Get Involved

1. **Get the full story behind this Report Card at www.infrastructurereportcard.org/Alabama**
2. **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.**

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

2022 REPORT CARD FOR ALABAMA'S INFRASTRUCTURE

INFRASTRUCTURE MATTERS

We all use infrastructure every day, but we rarely think about it. Whether you're taking a shower or charging your cell phone, infrastructure affects everyone in Alabama. Infrastructure also supports our businesses and helps power our economy, moving freight and transporting workers. The bad news is that Alabama's infrastructure systems have challenges. Infrastructure deteriorates every single day as it ages, and many of these critical systems are reaching the end of or are beyond their useful life. The effects of worsening weather events, daily wear-and-tear, and a growing population all take their toll on our infrastructure. The good news is that Alabama's infrastructure is on the cusp of transition with the recent success from the Rebuild Alabama Act and the influx of funding expected from the Infrastructure Investment and Jobs Act. However, it's crucial that we understand our infrastructure's current problems and future needs, so that regular maintenance along with replacement plans can extend how long these systems serve us while preventing harm to the general public.

While you may not think about infrastructure every day, Alabama's civil engineers do because we've pledged to keep the public safe. With that commitment in mind, engineers with the Alabama Section of ASCE evaluated 12 different categories of infrastructure within the state. This Report Card for Alabama's Infrastructure was produced so every citizen and decision maker can understand how Alabama's infrastructure is doing and where we can collectively work to improve it. If you drive, if you fly, if you own a business, if you work in a building, if you drink a cup of water, if you turn on the lights – this Report Card is for you.

CONTACT US

800-548-ASCE (2723)

reportcard@asce.org

www.infrastructurereportcard.org/Alabama

2022 REPORT CARD FOR ALABAMA'S INFRASTRUCTURE

The 2022 Report Card on the Alabama's Infrastructure gave the state an overall G.P.A. of C-. Alabama's civil engineers studied twelve infrastructure categories. Of those twelve, one infrastructure category was not assessed with a grade due to incomplete data, three categories were in good condition, five categories are in mediocre condition, and three categories are in poor condition.

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

AVIATION

C

Alabama's 80 publicly-owned airports have excess capacity for connecting people and goods to other local, national, and global areas. In today's global economy, this connectivity is critical for Alabama's economic future. According to a 2020 condition inspection report, less than half of Alabama's airports require multiple types of minor maintenance while only 17% have other condition-related needs such as lighting, marking, and/or pavement distresses. The 2020 Alabama Statewide Airport System Plan (AL SASP), completed by the Alabama Department of Transportation, showed a system-wide, 10-year development need of $1.34 billion. However, at current funding levels, an annual funding deficit of $67.6 million exists. In order to maintain the state's 145 million square feet of pavement, promote economic impact, maintain public safety, and implement the recommendations from the AL SASP, the airport system needs appropriate funding to ensure conditions do not deteriorate.

BRIDGES

C+

Alabama is home to nearly 16,000 bridges. Of these, 41.5% are rated in good condition, 54.7% are in fair condition, and 3.8% are in poor condition. The portion of poor rated bridges has seen significant state-level improvement, decreasing from more than 8.6% in 2015 and currently much better than the national average of 7.5%. However, more than 2,200 of Alabama's bridges are restricted to carry loads less than their legal weight limit. That means that 14% of Alabama's bridges cannot allow fully loaded semi-tractor trailers, dump trucks, or concrete trucks to pass over them. This affects the state's freight movement, restricting industry supply chain operations. Making a meaningful impact to these challenges, the Alabama Legislature passed the Rebuild Alabama Act in 2019, which provides an additional 10 cents-per-gallon to the state fuel tax to help close the funding gap for Alabama's roads and bridges. Alabama, however, still faces a 10-year annual funding shortfall of $113 million for addressing the state's future needs and bridge program funding.

DAMS

?

Unfortunately, most dams in Alabama are out of sight and out of mind to the public. As the only state in the U.S. without a Dam Safety Program, Alabama lacks the institutional office that educates the public, leads dam inspections, and houses condition data. Consequently, the potential vulnerability of the public is unknown, and the state disqualifies itself from accessing federal infrastructure funds for inspections, training, improvements, and rehabilitation.

Alabama urgently needs a data-driven, decision-making process for its aging dams. Fortunately, the Alabama Safe Dam Coalition Technical Committee has proposed an advisory pilot study to provide information and guidance to the legislature. However, the pilot study has not yet been approved. The implementation and rollout of an Alabama Dam Safety Program will take a considerable amount of time since it requires a complete understanding of the overall integrity of the state's dam infrastructure and risk to downstream property and human life. Therefore, with years still ahead until completion, the time for legislative action is now to protect Alabama citizens from risk caused by the state's dams.

DRINKING WATER

C-

In Alabama, 576 permitted public water systems provide safe and reliable drinking water. The challenge currently facing Alabama's public water systems is that the infrastructure, including water mains, tanks, plants, and pumps, was built between the 1870s and 1980s. It has aged well beyond its intended life, making near-term repair and replacement of these components crucial to the continued operation of our water systems. Innovative funding sources to address these needs are important and would allow water utilities to invest in asset management systems and smart technologies that facilitate predictive and proactive maintenance rather than reactive maintenance, decrease emergency repairs and unanticipated rate impacts, and limit real water losses.

ENERGY

B

Alabama is home to over 4.8 million people and roughly consumes the same amount of energy as it produces. There are over 6,000 miles of high (above 230kv) and lower (below 230kV) voltage transmission lines, 14,400 miles of natural gas pipeline, and nearly 7,000 miles of oil pipeline across the state. Alabama ranked 14th in the nation in terms of energy expenditures per capita with customers averaging approximately $4,330 per year on household energy costs. As a state accustomed to severe weather, Alabama's energy infrastructure has become more robust and resilient in the face of these conditions. While the state's energy infrastructure is sufficient to meet today's needs, changes occurring across the state and within the national economy are requiring Alabama to evolve even further into more renewable and distributed energy resources and next generation smart grid technologies.

INLAND WATERWAYS

D

Alabama's inland waterways are made navigable with the use of 32 locks and dams across 5 different waterway systems that span several states. Some 16 locks reside within Alabama's boundaries. These structures were built between 1924 and 1994, with 12 structures completed more than 50 years ago. These lock and dam structures are essential for economical and safe shipment of commodities from numerous inland port facilities to the Port of Mobile, but many are operating well beyond their 50-year design service life. Since 2015, two locks have been completely closed to traffic due to their poor condition. Lack of funding, particularly for low use waterways, has led to deferred maintenance, causing these structures to be unavailable for commercial traffic. If this trend continues, Alabama may see more outages or potential closures delaying transportation even on the high use waterways. Alabama's inland waterways could face a miniature Suez Canal incident if any one of the high usage locks fails, blocking barge traffic for days, weeks, or even months while awaiting repair. Proper funding could substantially reduce the risk of these events occurring.

PORTS

B

Alabama's coastline is relatively short, but its single deep-water port at Mobile, on the Gulf of Mexico, is the 11th largest in the United States by volume. The Port of Mobile has a container capacity of 650,000 twenty-foot equivalent units (TEUs) per year. Since 2002, the Alabama State Port Authority has spent $1.4 billion on landside and federal channel improvements. The seaport at Mobile is served by five Class I railroads, four Short Line railroads, U.S. highways and interstates, and inland and intracoastal waterways. Alabama's Harbor Modernizing project to dredge the ship channel has begun. It will deepen the federal channel to 50 ft. and provide a wider channel to increase vessel transit efficiency. Alabama's public seaport and inland port facilities are funded by the Alabama State Port Authority's revenues with occasional support by the State of Alabama including the recent $150 million investment from the Rebuild Alabama Act. The federal channels are funded from the U.S. Army of Corps of Engineers Civil Works Programs as authorized by the Water Resources Development Act (WRDA), as amended, to provide channel maintenance and capital improvement projects. To raise the grade, the Port needs to rehabilitate three existing piers to provide additional cargo capacity.

RAIL

B

Alabama has both freight and passenger rail. There are currently 31 freight railroads – Class I, Class II, and Class III/Shortline – consisting of 3,720 track miles, all privately owned and maintained. Amtrak operates one passenger rail line through Alabama – the Crescent – which consists of 1,300 track miles, all of which are owned by Norfolk Southern Railway. Freight continues to maintain a strong, well-funded network while the passenger rail network remains dependent upon federal funding. In recent years, however, federal funding has increased, growing from $2 million in 2020 to $4.7 million in 2022. Specific utilization of this funding includes 45 rail/highway safety crossing projects which were authorized in 2021. Locally supplementing the federal funds, multiple grants and P3 investments have contributed to improvements at the Port of Mobile which recently saw major rail projects completed and intermodal facilities expanded. Finally, in November 2021, the Infrastructure Investment and Jobs Act (IIJA) was signed into law, which will inject an unprecedented amount of federal funds into freight and passenger rail infrastructure to improve and expand the safety, operations, and maintenance programs throughout the nation. Currently, however, the IIJA budgets for Alabama are undetermined.

ROADS

C-

Roadways form the backbone of Alabama's economy by getting people to work, transferring goods and services to market, and connecting residents and visitors to recreational and tourist destinations. Alabama has 102,200 miles of public roads, ranging from multi-lane highways to neighborhood streets. Vehicle travel in the state has increased by 14% from 2009 to 2018, with nearly 60% of this travel occurring on 11,000 miles of federal and state highways, which are maintained by the Alabama Department of Transportation. Of these miles, only about 9% have pavements that are in unacceptable and deficient conditions. However, congestion is a growing issue and is expected to affect 17% of Alabama roads by 2035. To tackle these challenges, initial findings show that two programs – Rebuild Alabama and the Alabama Transportation Rehabilitation Improvement Program – have moved the needle. By topping up locally-sourced funding, these programs have implemented more than 140 roadway improvement projects across the state since 2020.

WWW.INFRASTRUCTUREREPORTCARD.ORG/ALABAMA

STORMWATER

D+

Alabama's stormwater systems consist of both built and natural infrastructure. Built infrastructure is largely constructed of pipe and ditch systems. Natural infrastructure includes wetlands, streams, vegetation, and other elements that help to manage stormwater quality and quantity using natural materials and processes. The preservation and maintenance of both built and natural systems is essential for ensuring Alabama's social, environmental, and economic interests are addressed. Deficiencies in capacity and condition contribute to increased funding needs and public health and safety risks. Complicating matters is the fact that Alabama communities lack stormwater system inventory and condition assessment data. This absence of data leads to uncertainty in funding needs and prioritization of repair, maintenance, and capital investments. Though the sector is data scarce, it is broadly known that Alabama's stormwater infrastructure has significantly exceeded its design life. Many systems were implemented without uniform community standards, little accounting for upstream development or impacts to infrastructure downstream, and no consideration of the effects of climate change. Finally, dedicated and adequate funding for stormwater infrastructure and management is largely nonexistent in most communities across the state. Therefore, overcoming the current challenges related to stormwater management in Alabama may require a combination of enhancements to state law and regulatory requirements along with development of local technical and revenue-related ordinances.

TRANSIT

C-

Alabama's public transit systems serve a vital role in connecting the state's residents to jobs, health care, and other critical services. In 2019, public transit provided approximately 6.8 million trips, of which an estimated 86% were made in urban areas, consistent with the distribution of the state's population. Currently, more than 75% of Alabama's counties are served by a transit system translating into access for more than 4.1 million people, or over 80% of the state's total population. The 2019 ridership numbers illustrate a growing demand for transit services in rural communities. However, systems across the state face funding shortfalls that do not adequately provide for services to meet the demands. While it is estimated that Alabama could receive $400 million in federal transit funding over five years from the Infrastructure Investment and Jobs Act, state support is also needed to ensure seamless travel by transit across the rural/urban divide. Despite the funding shortfalls, Alabama's transit system operators continue to do a commendable job of managing their assets. The condition of the overall system is improving as indicated by the geographic availability of transit services, traditional transit providers' innovative delivery of services, and the application of technology that improve customer communication, access, and service efficiency.

WASTEWATER

D

Alabama needs nearly $3.1 billion over the next 15 years for their wastewater collection systems (60%) and secondary and advanced treatment systems (40%). Increasing population, industrial, and manufacturing growth exacerbate these needs and put pressure on systems' capacities with at least 50% needing expansion to reliably treat and convey wastewater. Additionally, one quarter of the more than 800,000 septic tanks are estimated to be failing, contributing to potential human health challenges. Utility billing rates are only two-thirds of the national average, have remained stagnant, and have proven inadequate to sufficiently operate, maintain, and improve the state's wastewater systems. Further complicating the simple solution of raising wastewater rates are affordability concerns, particularly in a state with 15.5% of households at or below the poverty level. Attempting to fill the gap is the increasingly utilized federal funding that has risen 4-fold over the last three years including the passage of the Infrastructure Investment and Jobs Act. While Alabama has improved the sector's resilience with new approaches to system management, it still needs to strengthen physical infrastructure from potential extreme weather events or cyberattacks. In preparation for the future, the sector is focusing on workforce development, sanitary sewer overflows, and rural wastewater challenges, while noting proactive planning, operation, and maintenance activities leading to downward trends in violations and non-compliance issues.