ALABAMA GRADE SUMMARY

Aviation	Bridges	Dams
B-	C-	?
Drinking Water	Energy	Inland Waterways
C+	B	D+
Ports	Rail	Roads
B-	B-	D+
Transit	Waste & Storm Water	
D	C-	

5 STEPS WE CAN TAKE NOW

1. **KNOW OUR DAM SAFETY RISKS.** You have to inspect infrastructure to know the condition of it, and when it comes to dams, we're not doing a good job. In fact, we don't even know where all the high hazard dams in the state are. Let's find and inspect our dams before something happens.

2. **IF WE DO THE MAINTENANCE, WE CAN AVOID STINKY BREAKS AND GETTING LOST IN POTHOLES.** Many of Alabama's homes have septic systems to treat their wastewater, but without being properly maintained they can ruin water supplies for a community. Not keeping up with road maintenance also has a cost. Those annoying potholes are costing every driver in Alabama $300 or more each year to drive on rough roads!

3. **BE SELF-SUFFICIENT AND INVEST IN ALABAMA'S FUTURE.** When it comes to rebuilding the oldest and most deficient infrastructure, our state shouldn't wait on anyone, especially Washington. Alabama has many infrastructure assets that are simply reaching the end of their life or stand in the way of keeping the economy growing. Let's leverage state funds to make investments that improve how we work and live.

4. **WHEN WE DO WORK, LET'S PREPARE FOR THE FUTURE.** Damage from storms, floods, and other disasters can be minimized if our critical infrastructure is made more resilient. If we review and update the engineering requirements and then implement them over time, we can rebound quicker in a disaster and save hassle and costs in the future. Let's follow the scout model: be prepared.

5. **KEEP UP WITH NEW TECHNOLOGY AND METHODS FOR INFRASTRUCTURE.** From sensors on infrastructure that alert engineers to issues to delivery models like rapid bridge replacement, innovations are happening with infrastructure. As a hub of construction and engineering firms and a nationally recognized workforce training program, Alabama can continue to collaborate and build cost effective, sustainable infrastructure using these tools.

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	90-100%	Exceptional
B	80-89%	Good
C	70-79%	Mediocre
D	51-69%	Poor
F	50% or Lower	Deteriorating
?	Data available is insufficient to provide a grade.	Incomplete

ABOUT ASCE-ALABAMA

As civil engineers, we are committed to improving Alabama's infrastructure. Founded in 1931, the Alabama Section of the American Society of Civil Engineers (ASCE) represents 1,600 civil engineers in Alabama. We understand that infrastructure is vital to our economy, health, and natural environment. With our commitment to serve and protect the public in mind, civil engineers from ASCE throughout the State graded each infrastructure category according to the following eight criteria: capacity, condition, funding, future need, operation and maintenance, public safety, resilience, and innovation.

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REPORT CARD FOR ALABAMA'S INFRASTRUCTURE

2015

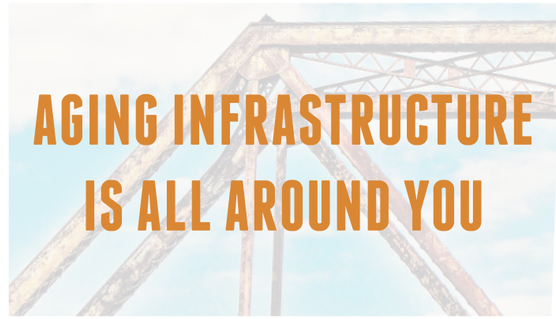
ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

INFRASTRUCTURE MATTERS

We all use infrastructure every day, but we rarely think about it. Whether you're driving across roads and bridges, taking a shower, or charging your cell phone, infrastructure affects everyone in Alabama. Infrastructure also impacts our businesses and helps move our economy, taking freight from ports to store shelves and taking workers to their jobs.

The bad news is that Alabama's infrastructure has some challenges that you should know about before it's too late to keep these systems from breaking down. Infrastructure deteriorates every single day as it ages, just as our bodies do, and many of these critical systems are reaching the end of their useful life. The effects of weather, wear-and-tear, and increased use from a growing population all take their toll on our infrastructure. Regular maintenance helps extend how long they can serve us, but without regular checkups the condition of our infrastructure is unknown, potentially placing thousands in harm's way.

While you may not think about infrastructure every day, Alabama's civil engineers do think about it because they've pledged to build it, maintain it, and keep the public safe. The Alabama Section of the American Society of Civil Engineers (ASCE) now provides a Report Card on Alabama's Infrastructure so every citizen and decision maker can understand how Alabama's infrastructure is doing. If you drive, if you fly, if you own a business, if you take a shower – this Report Card is for you.



HOW YOU CAN GET INVOLVED

1. GET THE FULL STORY BEHIND THIS REPORT CARD AT WWW.INFRASTRUCTUREREPORTCARD.ORG/ALABAMA.

2. FIND OUT THE CONDITION OF 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 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.

2015 REPORT CARD FOR ALABAMA'S INFRASTRUCTURE

THE 2015 REPORT CARD ON ALABAMA'S INFRASTRUCTURE GAVE THE STATE AN OVERALL G.P.A. OF C-. ALABAMA'S CIVIL ENGINEERS STUDIED 11 INFRASTRUCTURE CATEGORIES. OF THOSE 11, FOUR INFRASTRUCTURE CATEGORIES ARE IN GOOD CONDITION, SIX CATEGORIES RANGE FROM MEDIOCRE TO POOR CONDITION, AND ONE CATEGORY LACKED ENOUGH INFORMATION FOR A GRADE TO BE DETERMINED.

THE GOOD NEWS IS THERE ARE SOLUTIONS TO ALL THESE CHALLENGES, AND WE CAN RAISE ALABAMA'S INFRASTRUCTURE GRADES. BY LEARNING MORE TODAY ABOUT THE CONDITIONS OF THE INFRASTRUCTURE YOU USE EVERY DAY, YOU TOO CAN HELP RAISE THE GRADE.

Aviation

B- ALABAMA HAS 80 PUBLIC USE AIRPORTS SERVING OVER 7,000 ALABAMA PILOTS STATEWIDE, AND 80% OF ALABAMA'S RESIDENTS LIVES WITHIN AN HOUR OF THE STATE'S 6 COMMERCIAL AIRPORTS.

Over the recent history, aggressive steps have been taken to correct safety issues, pavement surface conditions and runway length deficiencies throughout the state. Historically, airports have been well-funded based on the number of flyers enabling a focus on revenue producing facilities, and most of Alabama's aviation facilities boast excellent capacity with average and above facility conditions. However, funding is now slightly dropping so the focus must shift to ensure there is enough revenue to maintain existing facilities as well as to extend their lifespan. Also, about 21% of airports have potential obstructions such as trees, utility poles or terrain in their runway approach surfaces so airports should stay vigilant on these maintenance needs that keep pilots safe. Looking towards the future, Alabama has begun exploration of the management of UAVs and the implementation of new technologies such as NexGen.

Dams

? ONLY AN ESTIMATED 2% OF ALL KNOWN DAMS IN ALABAMA ARE BEING INSPECTED FOR SAFETY, MAINTAINED, AND HAVE EMERGENCY ACTION PLANS IN PLACE FOR USE IN THE CASE OF A FAILURE.

Alabama's known 2,200 dams that were built generations ago continue to age and the size of the population downstream of these dams continues to increase, placing more people and property at a greater risk. Only about 1 in 5 of identified high hazard potential dams receive inspections. Alabama is the only state left in the U.S. lacking a State Dam Safety Program and a full inventory of dams. The risk of not inspecting or monitoring dams leaves the statewide dam safety risk unknown and also blocks the state from fully leveraging federal funding to fix 2015 Report Card for Alabama's Infrastructure identified high hazard dams. Putting emergency action plans for known high hazard dam areas to use in the event of an impending dam failure are common sense safety measures. Alabama should enact a state Dam Safety Program to identify and prioritize repair of aging dams and reduce the risk of dam failure in the future.

Bridges

C- ALABAMA'S 15,986 BRIDGES SPAN MORE THAN 485 MILES, TOGETHER STRETCHING LONGER THAN A TRIP BETWEEN MOBILE AND HUNTSVILLE.

About 8% of Alabama's bridges are classified as structurally deficient, and the situation is forecasted to worsen as the average age of Alabama's bridges climbs from 44 years now to the age of bridge retirement around 50. Over 2,600 (16%) bridges in Alabama are currently posted for reduced weight limits and many more are closed to all traffic, requiring some drivers to detour 12 miles on average. Roughly one in every six drivers will drive over a structurally deficient or functionally obsolete bridge every single day in Alabama. While about one-third of Alabama's bridges are maintained by the state, two-thirds of Alabama's bridges are actually owned and maintained by local city or county governments. To keep up, Alabama could increase its gas tax while the prices are low to fix more bridges now and prevent getting a larger bill down the road.

Drinking Water

C+ ALABAMA HAS MORE THAN 577 WATER DISTRIBUTION AND SUPPLY SYSTEMS THAT PROVIDE PUBLIC DRINKING WATER TO 90% OF THE STATE'S HOMES.

Alabama's 20-year need to provide safe drinking water using drinking water infrastructure, including pipes and cleaning plants, is estimated to cost almost $8 billion, and the number of systems infringing safety standards is increasing. While the current water quality ranks in the top 10% nationally, the physical infrastructure is aged beyond its expected life. In fact, much of Alabama's drinking water infrastructure was put in place in the 60s, 70s, and 80s meaning that it will reach the end of its useful life at or near the same time. The state's Drinking Water State Revolving Fund provides for improvements and upgrades, but unfortunately, most systems do not have the financial capacity to borrow from the fund. For example, many of Alabama's rural areas have systems that need upgrades, yet a lack of a dense customer base where costs can be reasonably spread out drives up the cost per home. Without a source of funding to rebuild, today's resources are spent mostly on fixing leaks and limiting unbilled water rather than replacing damaged pipelines. A state fund that addresses these challenges could help change this outlook for this basic service.

Energy

B ALABAMA IS HOME TO DIVERSE, RELIABLE AND AFFORDABLE ENERGY RESOURCES AND PRODUCES MORE ELECTRICITY PER PERSON THAN MOST STATES TO POWER HOMES AND BUSINESSES.

Alabama is a heavy manufacturing state with the largest energy consumption sector being industrial users at 44% of total energy use. Today, the primary fuel for electricity generation in Alabama is natural gas, followed by coal and nuclear, then hydroelectric and other renewables. Alabama's extensive network of rivers and forests provide for economical hydroelectric power and biomass. In fact, Alabama ranks highly in the U.S. in renewable energy sources, most of which is generated by hydroelectric dams. Energy providers in Alabama are ready to meet the state's reliability challenges and the future energy needs. In order to continue providing safe, reliable and affordable energy, Alabama must continue to support research to maintain a diverse fuel mix and low energy cost, improve energy transmission and distribution infrastructure, promote development of new energy technologies, and implement cyber security measures for reliability and safety.

Inland Waterways

D+ ALABAMA HAS ONE OF THE LARGEST INLAND WATERWAY SYSTEMS IN THE COUNTRY WITH 16 NAVIGATIONAL LOCKS ON SIX RIVERS ALLOWING FREIGHT TO MOVE IN AND OUT OF THE U.S.

Most of the locks and dams supporting this system were built in the 1950s and 60s and are operating past their design service life of 50 years and have reached, or exceeded, their capacity to efficiently and safely ship goods from inland port facilities to the Port of Mobile and beyond. The Coffeeville Lock and Dam on the Tombigbee River was observed to have a throughput of 10 million tons in 2013, which would take more than 390,000 semi-tractor trailer trucks to move. However, the lock and dam also records vessel delay rates and durations in excess of 90% and 150 hours, respectively. Throughout the system, funding is depleted and a backlog of even high-priority projects is the new normal. Alabama locks and dams play a critical role in the inland waterway and transportation system, and not addressing the current capacity, aging, and funding issues facing them will adversely impact the economics and growth of the region and nation.

Ports

B- ALABAMA'S SINGLE DEEP WATER PORT AT MOBILE, ON THE GULF OF MEXICO IS 12TH LARGEST IN THE U.S. BY VOLUME.

In addition, Alabama also has several non-seaside, inland ports that move critical commodities for industry. The Port of Mobile moves about 55 to 60 million tons of cargo per year through the port. Over the past 15 years, the Alabama State Port Authority has spent $800 million on shoreside improvements. Alabama's most anticipated project is dredging the ship channel to the currently authorized depth and width to fully utilize Port of Mobile's capacity ahead of the Panama Canal expansion. Alabama's ports receive little funding from state investment but instead have a combination of funding from their customers, the U.S. Army Corps of Engineers Civil Works Program, and the federal Water Resources Reform and Development Act providing for construction and maintenance projects.

Roads

D+ ALABAMA DRIVERS TRAVEL 65 BILLION MILES EVERY YEAR ON 102,200 MILES OF PUBLIC ROADS.

Travel has increased more than 50% since 1990, and recently, the Alabama Department of Transportation (ALDOT) rated almost 50% of the interstate and state highways fair, poor, or very poor showing that maintenance must be a priority. While state-maintained streets and highways only account for 11% of the total roadways, these roads carry 60% of total travel statewide. Congestion costs, accidents, and poor roads now cost Alabama drivers over $3 billion each year taking $300 or more per year out of each driver's wallet depending on where they live. As travel increases over the next 20 years, 17% of the state's roadways are expected to be affected by congestion. The recent $1 billion, three-year Alabama Transportation Rehabilitation and Improvement Program (ATRIP) to improve Alabama's roads was sorely needed to begin to fix the most critical projects. While ATRIP is a good start, an increase in funding would allow for needed improvements and tackle highway conditions that left unchecked will lead to increased costs for drivers and hinder economic development in the state.

Rail

B- ALABAMA'S 3,194 MILES OF RAIL NETWORK TRANSPORT BOTH FREIGHT AND PASSENGERS INTO AND OUT OF THE STATE.

Alabama is ranked 21st in the nation for total rail miles by state. Larger Class I railroads, like BNSF, CSXT, CN/IC and Norfolk Southern, and Amtrak own and operate 72% of Alabama's track mileage, Class II or "regional" railroad (Alabama and Gulf Coast Railway) account for 8%, while the smallest Class III or "short-line" railroads account for the remaining 20%. Alabama ranks in the top 15 states nationally in many freight use categories for commodities carried by rail, with coal being the top commodity. Amtrak's Crescent is the only passenger rail service in Alabama, currently running daily along an east-west corridor, making stops in Anniston, Birmingham and Tuscaloosa, and carrying about 60,000 passengers per year.

Transit

D ALABAMA IS ONE OF THE FEW STATES THAT DOES NOT PROVIDE STATE CAPITAL TO FOSTER PUBLIC TRANSIT OPTIONS, WHICH PUSHES MOST OF THE STATE TO RELY ON PERSONAL TRANSPORTATION, YET ALABAMA DOES HAVE 14 PUBLIC TRANSIT PROVIDERS, INCLUDING 6 KEY TRANSIT SYSTEMS.

For Alabama's transit bus fleet, proper and timely maintenance is key to extending the useful life of bus transit services and to keep ridership up. While most agencies are keeping up with maintenance by using fare revenue, large capital costs like bus replacements can be challenging. In fact, over half of Birmingham's transit vehicles are nearing the end of their useful lives. However, some positive additions are moving forward like the onboarding of 30 new Flyer Excelsior Buses using natural gas to the MAX bus system.While transit access isn't widespread, right-sized transit in certain areas is proving to be useful in Alabama communities, and many Alabama transit systems deserve credit for serving far more riders on their budgets when compared to other transit services nationwide.

Waste & Storm Water

C- ALABAMA'S STORMWATER AND 250 WASTEWATER UTILITY SERVICE PROVIDERS COLLECT, TREAT, REUTILIZE OR DISCHARGE SEWERAGE AND STORMWATER ACROSS THE STATE.

Additionally Alabama has about 850,000 onsite septic wastewater treatment systems. 25% of these are presently failing, which creates water quality concerns like bacteria in ground water. Overall, about 65% of the collection system infrastructure in Alabama has reached the end of its useful life resulting in broken, cracked, clogged, and disjointed pipes. The health of wastewater and stormwater infrastructure is essential to the state's water quality, and it's become clear the existing infrastructure no longer keeps up with the increased development initiatives. Due to lack of adequate personnel and resources, maintenance operations are almost entirely reactionary to breaks and sewer overflows. Estimates for the waiting repair and maintenance known to be required on existing stormwater and wastewater systems across the state is about $6 to $10 billion. A recent survey reports that more than 1 in 3 utility providers statewide have rate structures inadequate to cover their operating expenses, making it impossible to replace aging infrastructure, fund new improvements and develop proactive asset management programs.

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