

REPORT CARD COMMITTEE

The Florida Section of the American Society of Civil Engineers represents over 14,800 civil engineers who go to work every day solving problems, designing, and building Florida's infrastructure. The Report Card was updated by a committee of civil engineers who are infrastructure experts to share the current condition of Florida's infrastructure and solutions that can raise our grades. We want our legislators, agencies, and our friends and neighbors to understand what's happening with the infrastructure they use every day.



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2016 REPORT CARD for Florida's Infrastructure



IMPACT OF INFRASTRUCTURE

Infrastructure is the backbone of Florida's economy and a necessary part of every Floridian's day. Poor infrastructure affects us all—businesses and people are simply less productive when the power goes off or when deliveries are delayed. In places like Miami and Orlando, commuters know the cost of congestion far too well because it now exceeds \$1,000 per driver each year. Even when one necessary part of the infrastructure system fails, the impact can ripple throughout the system costing us time, energy and dollars. A new economic study called **Failure to Act** calculated how much poor infrastructure costs every American household, and it's taking \$9 out of our of families' pockets every day to deal with the inefficiencies and inconveniences.

The good news is that investment to stem the backlog of mediocre infrastructure conditions can help turn the tide for Florida's economy and our workers. In this Report Card, there are some rising grades that have come from focused

RAISE THE GRADES

- Florida is growing, and our infrastructure needs a growth spurt of its own to keep up. Some cities and counties are stepping up their efforts, but more needs to be done across the state by every infrastructure owner.
- Implementing smart technology can help reduce congestion, lengthen the life of assets, expand water supplies, and optimize power use. Florida can lead in infrastructure by prioritizing every dollar to make the most impact and by investing in technology and right-on-time maintenance.
- Florida must continue to make our infrastructure resilient to all risks. We must be ready for every storm and for changing conditions that will impact our coast and our economy.

Report Card Committee investment in areas like bridges or where local owners are pushing smart investment solutions such as with ports and airports. Recently Florida's population has grown at a rate of about 1% per year, adding about 1 million people, which is the equivalent of adding a city the size of Jacksonville every 5 years. Investing in infrastructure must be Florida's top priority so we can continue to be the place people want to live and work and attract visitors from around the country and the world.



2016 REPORT CARD

for Florida's Infrastructure

Grade Point Average: *C*

AVIATION **B-**

As a top destination, more than 50% of Florida's commercial airports will experience demand levels that will totally saturate their operational capacity over the next 15 years, according to the Florida Aviation System Plan. Currently, Florida's airports fly 139 million passengers into and out of the state each year—that's equal to 7 flights for each permanent resident. Florida's airports also transport over 2.7 million tons of cargo annually, worth about \$46 billion. Generally, the airports have utilized their resources to maintain their infrastructure needs well, but forecasted capacity needs over the next 5 years (new runways, terminal and baggage system expansions) will require long term commitments from a healthy funding stream. Many airports will also need road access improvements, improved multi-modal connections, and commitments to maintain the general aviation airports. To keep pace and improve technology, Florida airports' funding requests over the next 5 years total \$1.1 billion, which exceeds available State funds by almost 70%.

BRIDGES **B**

Florida Department of Transportation (FDOT) has 12,046 structures in its bridge management system; these include conventional bridges and also culverts (spanning over 20 feet). About 15% of Florida's bridges are at least 50 years old. The FDOT is responsible for the maintenance of 6,753 (56%) of the bridges; County governments maintain 3,860 (32%); and cities and towns maintain 1,221 bridges (10%), while others (railroad, parks, etc.) maintain the remaining 212 bridges. FDOT has the responsibility of inspecting and rating most of the bridges in Florida. Currently, Florida has 202 structurally deficient bridges (1.7%), over half of which the counties have ownership and maintenance responsibility. Also, about 8.5% of Florida bridges were either weight posted or closed as of January 2015.

COASTAL AREAS **D+**

Florida's economy relies heavily on its 825 miles of sandy beaches, the state's "invisible" coastal infrastructure that protects Florida's communities from storm damage. Florida beaches are also significant to the economy as the number of beachgoers yearly is more than double the number of visitors to all U.S. parks combined. Unfortunately, nearly 61% of Florida's sandy beaches (503.8 miles) are eroding. Beaches and inlets require ongoing maintenance to fight erosion. Developing and applying local and regional beach management strategies has proven essential to decreasing the risk exposure in coastal areas and providing storm damage reduction benefits, such as protection of power plants adjacent to the coast. However, over the last 10 years, the average difference between requested and state appropriated funds exceeded \$40 million per year.

DRINKING WATER **C+**

The Florida Department of Environmental Protection (FDEP) currently regulates the operation of 5,275 active public and private drinking water treatment systems in Florida, which provide potable water for the state's 20.2 million people. Florida's average daily freshwater demand (which includes drinking water) was estimated by FDEP to be 6.4 billion gallons per day in 2010. It is projected that this daily water demand could increase by about 20% to 7.7 billion gallons per day by 2030. According to the U.S. Environmental Protection Agency's latest report, Florida will need to spend about \$16.5 billion in drinking water infrastructure improvements over the next 20 years to ensure that drinking water systems in Florida continue to provide safe and reliable drinking water to the public. High population growth, aging infrastructure, and sensitive ecological environments such as Florida's Everglades are increasing the need and urgency to invest in Florida's water infrastructure.

ENERGY **C-**

Florida ranks nationally in the top 5 in total energy consumption, primarily due to the hot and humid climate and large tourism industry. Florida has been making significant improvements in conservation and energy incentives, which has slowed the demand growth rate since 2008. Florida's energy production is far less than its energy demand, requiring production to be supplemented with out-of-state energy, but there has been some improvement in production capabilities. Currently, the electricity production is dominated by natural gas followed by coal, nuclear and other renewable fuels. Floridians pay more than the national average for natural gas; however, they pay less than the national average for electricity. Florida has significantly increased its energy incentive programs five-fold since 2012.

PORTS **B-**

Florida has invested \$850M over the past 5 years in its 15 seaports—Port Canaveral, Citrus, Everglades, Fernandina, Fort Pierce, Jacksonville, Key West, Manatee, Miami, Palm Beach, Panama, Pensacola, St. Joe, St. Petersburg, and Tampa. Seven of Florida's ports are now in the top 50 grossing NAFTA container traffic ports. Florida maritime activities account for approximately 13% of Florida's GDP while contributing \$2.4 billion in state and local taxes. Florida is investing in its port capacity and operational infrastructure in order to become a global hub, capturing an even larger share of international trade and related commercial activities. While more capacity and operational improvements are needed, Florida's overall seaport competitiveness has improved in anticipation of the Panama Canal Expansion, which recently opened.

ROADS **C**

The Florida Department of Transportation (FDOT) maintains more than 12,000 miles of the state highway system, split between rural areas and cities. Although the highway system consists of only 10% of the road miles in Florida, it carries more than half of Florida's total traffic. The remaining 90% of roadways are maintained by either expressway authorities, counties or cities. Since 1984, the number of highway system miles has increased by 25%, while the daily vehicle miles traveled increased by 84%. In terms of keeping up with the demand, FDOT has fallen behind the curve, and the counties and cities have generally not kept up, either. Some smaller rural counties have only been spending about 10% of what would be required for a good pavement maintenance program, and even the larger urban counties have been under-funding their resurfacing programs.

SCHOOLS **D+**

Florida's 67 school districts have 2,999 schools with over 3.2 million students. The average age of Florida's schools is 29 years, which is 3 years older than reported in the 2012 Report Card. The average annual growth rate of Florida's student population over the last 25 years has been 3.91%, but that growth is not uniform across the counties meaning there may not be seats for students in the fastest growing areas like Central Florida's Lake and Orange Counties. In 1997, the SMART Schools Act established a 20-year capital outlay funding program using \$2 billion in lottery funds for the construction of permanent classrooms, but this funding has since lapsed and other funds have been curtailed. Uncertainties remain as to the effect lowered county impact fees, total new construction allocations and deferred maintenance costs will have on Florida's K-12 schools. Of note, only 42% of the state's schools are designated hurricane shelters, indicating many schools do not meet the structural requirements.

STORMWATER **D**

Florida's stormwater systems primarily capture excess rain water and transport it for cleaning or release. About 1 in every 3 localities have established dedicated stormwater programs. These 165 local stormwater systems consist of drainage pipes, stormwater ponds and runoff treatment devices and serve about 116,665 people per system. To maintain the systems, generally two types of user fees are collected - stormwater utility fees and stormwater fees. The current monthly stormwater utility rate averages \$5.68, which is slightly less than the cost of a Big Mac meal at McDonalds.® Florida's capital improvement needs for stormwater management are estimated to be \$1.1 billion through 2019, yet utility fees to upkeep the systems have declined since 2011 while needs will double over the decade. More than half of Florida's stormwater entities revealed an inability to address all capital improvement needs, and only 1 in 4 stormwater utilities stated that today's operation and maintenance capabilities were adequate only to meet the most urgent needs.

TRANSIT **C**

Transit is a critical component of Florida's transportation infrastructure and one that will need increasing focus as the population continues to grow. New developments in ridesharing, carsharing, and smartphone mapping applications are making transit use and living without a car much more convenient. However only 2% of Florida commutes to work were made by public transit, indicating a lack of opportunity and quality. The condition of Florida transit, based on average transit vehicle age as an indicator, ranked 19th nationally at 5.6 years, slightly behind Georgia and Rhode Island. Florida transit funding ranked 22nd out of 53 leaving much opportunity to improve. To raise the Transit grade, Florida needs to develop and connect its transit networks with an additional \$1.3 billion investment.

WASTEWATER **C**

While there are over 3,700 wastewater treatment facilities in Florida, one-third of the population is still served by onsite sewage treatment and disposal systems (septic tanks) that rely on individuals to maintain and operate. Florida's wastewater system is increasing in age and the condition of installed treatment and conveyance systems is declining. As existing infrastructure ages, Florida utilities are increasing their emphasis on asset management systems to maintain service to customers. There are also over 1,900 impaired water body segments throughout the state that will require higher standards to be met. While Florida is a national leader in reclaimed water use, which helped offset the State's potable water needs and is a vital component of water resource and ecosystem management, population growth, aging infrastructure, and sensitive ecological environments are increasing the need to invest in Florida's wastewater infrastructure.