

What's the story behind the grades?

- **New York has a vast network of intertwined infrastructure that serves New York's citizens and economy.**

New York's infrastructure includes many significant assets which are aging. Keeping up with maintenance and modernizing them for the future is an ongoing challenge.

- **Our infrastructure can't just be ignored—it needs to be maintained and upgraded as needed so it will work tomorrow and in the future.**

Properly maintaining infrastructure today is a great way to save on replacing infrastructure in the future.

- **New York's not going to take another Sandy without a fight.**

While we're fixing our infrastructure, we also need to make it resilient so that we're prepared for the next Super Storm Sandy. While we're rebuilding, we should be reinforcing and preparing our infrastructure to rebound.

2015

REPORT CARD FOR NEW YORK'S INFRASTRUCTURE

Aviation	C
Bridges	D+
Dams	C-
Drinking Water	C
Parks	B-
Roads	D-
Solid Waste	B-
Transit	C-
Wastewater	D

New York's
Infrastructure
GPA

C-

What is infrastructure and why is it so important?

Infrastructure makes up our roads and transit systems, water pipes and water treatment, as well as our parks and waste facilities, to name just a few. Most people don't typically think about infrastructure unless, of course, it's not working.

New York's infrastructure was built to help both citizens and our state's economy. Our grandparents and their grandparents spent generations building infrastructure that today is essentially seamless, but older infrastructure can't be expected to perform without maintenance and investment to keep it working for a growing population who rely on these systems.

Why an Infrastructure Report Card?

Infrastructure supports daily life and the state's economy. With thousands of entities and officials in charge of the state's network of infrastructure, rarely is information about the state's infrastructure gathered in one place and looked at as a whole. ASCE's New York State Council created this *Report Card for New York's Infrastructure* to report on the condition of the infrastructure and provide solutions to improve it. As civil engineers charged with managing the care of many of the key pieces of New York State's infrastructure, we understand the challenges it faces and have used our expertise to condense complex data into an easy-to-understand analysis. When you're sick, you ask a doctor to diagnose the problem; civil engineers are the doctors of infrastructure so the Report Card is our diagnosis and prescription to treating New York's infrastructure.

How We Can Raise New York's Infrastructure Grades

1 Modernizing New York's Infrastructure Should Be a Top Priority

Safe and reliable infrastructure comes from making good decisions about maintenance and investment. Elected officials need to lead the efforts to improve New York's infrastructure for today and in the future.

2 Let's Rebuild Better—Make New York's Infrastructure Resilient and Sustainable

Infrastructure improvements must be durable and designed to work in a dynamic environment. Change is constant, and infrastructure has to stand up to this test.

3 Expedite Project Delivery

Time is money. New York needs to build on current common sense reforms and streamline approvals by eliminating and combining steps to make projects a reality sooner.

4 Innovate Today

Innovation needs to be part of the solution to address New York's infrastructure needs. Using new ideas, materials, methods and tools is part of the solution to the infrastructure problem.

5 Be Part of the Solution—It's Your Infrastructure

You live here and use the infrastructure so consider asking a few questions about it. How is it being maintained? Are there new plans for your area? Go ahead—you might be surprised what you find out.

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Aviation

C

New York State's aviation system includes 18 large commercial airports, like LaGuardia and Buffalo, as well as 67 smaller public airports. Airport passenger traffic is projected to increase to 150 million passengers by 2030, and airports across the state will exceed capacity—JFK (130%), Westchester (112%), Buffalo (106%), and LaGuardia (103%). The three New York City region airports already are a major contributor to airplane delays across the country and will require 188 projects worth \$4.7 billion over the next decade. 75% of these will be for state of good repair work. Federal, state and local funding of airport capital investments amounts to less than 2% of the \$50 billion each year in economic gains created by New York's airports.

Bridges

D+

New York has 17,456 bridges—essentially one bridge for every seven miles of roadways in the state, and enough bridges to stretch from Albany to Miami. More than 50% of New York's bridges are 75 years old, and over 400 of New York's bridges are 100 years old. New York also has 2,012 structurally deficient bridges that require consistent maintenance or improvements to safely operate for freight and commuters. Overall, New York's local bridges are often in worse condition than the State bridges. For example, recently only 385 state and local bridges were scheduled for repair over two years, which is less than 10% of the bridges that were in need of repair. Approximately 100 bridges in New York State are currently closed because of serious deficiencies.

Dams

C-

New York state has over 7,000 dams that provide for drinking water, irrigation, flood control, fire protection, recreation, and hydropower. The average age of New York's dams is 69 years, and 400 of those structures are classified as High Hazard dam structures. Of the state's high hazard dams, 392 now have Emergency Action Plans in place for public safety. Since New York State's Dam Safety Regulations were updated in 2009, work on 58 dams commenced improving safety. However, challenges remain as \$152 million is needed to repair the deficient High Hazard and Intermediate Hazard dams in New York.

How's New York's infrastructure doing?

Using a simple "A" to "F" school report card format, this *Report Card for New York's Infrastructure* provides a comprehensive look at New York's current infrastructure conditions and needs, assigning grades to indicate how it's doing overall and making recommendations to raise those grades. The Report Card has an overall Infrastructure G.P.A. of C- based on eight critical criteria: capacity, condition, funding, future need, operation and maintenance, public safety, resilience, and innovation.

Drinking Water

C

In New York State, 10,147 regulated water systems provide clean water to 20 million of New York's citizens. Nearly 95% of New York's population receives water from the state's public water supply systems. Unfortunately, 95% of the submitted improvement projects to the Drinking Water State Revolving Fund program remain unfunded due to the overwhelming demand. The latest estimate of repairing, replacing, and updating New York State's drinking water infrastructure is \$38.7 billion over 20 years. With almost half of New York City's pipes put in place prior to 1941, it would take 100 years or more to upgrade its aging pipes at current replacement rates. From frequent pipe breaks to large system upgrades to rebuilding from storm damages, New York State's aging drinking water network has no shortage of challenges.

Parks

B-

New York is home to the first state park in the nation, Niagara Falls State Park, and the largest public park in the U.S., Adirondack Park, along with 179 other state parks, 35 state historical sites, and nearly 335,000 acres of land. Hosting 62 million people each year, New York ranks first in the nation for operating facilities and campsites. However, New York's park system has seen hard times. Reaching a crisis in 2010, almost half of the parks were almost closed due to a \$1 billion backlog of projects, almost half because of immediate health and safety needs. New York changed course in 2011, and committed to catch up on infrastructure decay with 279 capital improvement projects at 109 parks and historic sites. By 2020, New York's park system should see a \$900 million investment in state parks using both private philanthropy and public dollars as well as innovative best practices.

Roads

D-

New York State's 240,000 mile road network is critical to the State's economy and everyone's quality of life. However, one-third of New York's major highways are considered to be in poor or fair condition, even as miles driven by New York's citizens are on the rise, creating crippling congestion and climbing operating costs. In fact, New York City-area drivers, accounting for half the state's population, each waste 53 hours per year just sitting in traffic. The combination of rough roads and congestion costs motorists a total of \$6.3 billion statewide—that's \$694 per driver in NYC, \$504 for Albany, and \$477 for Syracuse. Poor roads also cost rural areas where fatalities are three times more likely than on other roads in New York. Both the typical state funding programs and special initiatives, like New York Works, are being used to combat the backlog. By 2030, New York needs to spend about \$40 billion on roads to keep up with road conditions.

Solid Waste

B-

Solid waste includes any discarded or abandoned materials that must be safely disposed of like household trash, commercial waste, and recycling. New Yorkers generated 5.15 pounds of trash per person per day, which is 12% higher than the national average. However, New York's overall waste sent to landfills has been reduced by half over the last 20 years—from 14.6 million tons in 1990 to 7.7 million tons in 2012. Also, the number of landfills has been significantly reduced from 348 in the 80s to only 59 today with the closures of small, local municipal landfills that violated federal and state regulations, but even with a decrease in the number of landfills and combustors, the state has an estimated remaining capacity of 21 to 25 years. New York State has stepped up on managing waste through reduction, reuse and recycling, including composting of organic waste and changing electronic waste practices, but shifting the focus from disposing of waste to decreasing waste will keep up the progress made.

Transit

C-

Transit systems across New York are being forced to stretch beyond capacity—more riders, aging vehicles, capital funding gaps, and structures built over 100 years ago that must be more resilient today than ever before. New York's Metropolitan Transportation Authority extensive subway and bus system serving over 7 million riders daily, and the state's transit network outside of New York City includes over 100 transit systems across New York State providing over 550,000 people with essential service in urban, suburban and rural areas. Upstate and suburban transit systems require \$1 billion over the next five years to maintain infrastructure in a state of good repair and add capacity to address ridership demand. However, the anticipated funding will only cover 43% of transit infrastructure needs, leaving a \$577 million funding gap. New York City's transit system needs \$68 billion in the next twenty years along with new technologies to replace aging system components and improve the quality of transit service. While transit systems continue to find innovative solutions to improve efficiency and attract riders, these innovations will not replace the need for future infrastructure funding.

Wastewater

D

Across New York State, 610 small and large wastewater treatment facilities are dedicated to keeping water clean and safe. However, aging infrastructure has become a critical problem for the state - 1 in every 4 of New York's wastewater facilities are operating beyond their 30-year useful life expectancy, wastewater treatment plant equipment also averages 30+ years old, and 30% of the 22,000 underground miles of sewers are 60+ years old and operating beyond their useful lives. To repair, replace, and update New York's wastewater infrastructure would cost \$36.2 billion over 20 years. New York's wastewater funding program is simply insufficient to drive even half of the reinvestment needed in infrastructure; for every dollar needed only 20 cents is provided to clean New York's water.

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