NEW JERSEY GRADE SUMMARY

Bridges D+	Dams D	Drinking Water C
Energy C+	Hazardous Waste C	Levees D-
Parks D+	Ports C	Rail C
Roads D+	Solid Waste B-	Transit D-
Waste Water D		

G.P.A.: 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	90-100%	Exceptional
B	80-89%	Good
C	70-79%	Mediocre
D	51-69%	Poor
F	50% or Lower	Deteriorating

Cover photos clockwise courtesy of Flickr users: George Pankewytch, Jazz Guy, Hudconja, Ken, The Castle Group

3 STEPS TO START RAISING THE GRADES

1 FIX THE NEW JERSEY TRANSPORTATION TRUST FUND

Bridges, roads and transit in our state all get the majority of their funding from the Transportation Trust Fund (TTF), and beginning in July 2016, it will no longer be able to fund new projects and all remaining revenue will be used to pay off existing bills. New Jersey's economy relies on transportation systems – from roads to rails – and after 25 years of not changing how we fund it, it's time to decide on a long-term funding fix for transportation in New Jersey.

2 KEEP REBUILDING RESILIENT INFRASTRUCTURE

Superstorm Sandy impacted every type of infrastructure in New Jersey, and as we've rebuilt, we're not just doing it the same way – we're building more resilient infrastructure. Whenever 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, and every time we start a project we should see it as an investment in building a stronger core infrastructure for the future.

3 BETTER INFRASTRUCTURE STARTS WITH BETTER CHOICES

With mounting needs from age and delayed maintenance, serious attention needs to be given to assets that are ready to retire. Also, until they do reach their life expectancy, every dollar is going to need to be used to get the best possible performing overall system. NJDOT and others are already trying to do this by using prioritization and monitoring to strategically determine where to spend constrained resources. With evolving technology approaches and a right-on-time maintenance strategy, New Jersey's infrastructure can go from system-critical to system-driven.

ABOUT ASCE-NEW JERSEY

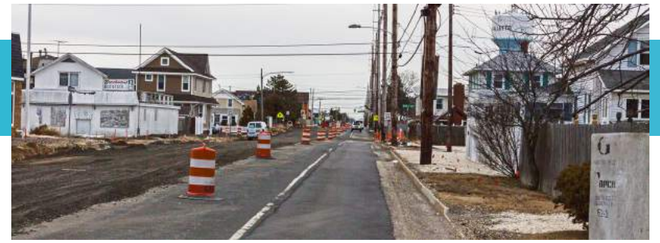
The New Jersey Section of ASCE represents over 4,000 current and future civil engineering professionals who live and work in our state. Engineers go to work every day ready to solve problems and design and build the infrastructure that we all depend on. The Report Card for New Jersey's Infrastructure was created as a public service to you, our neighbors and leaders, to condense the data and what we know about our infrastructure into an easy-to-understand snapshot to help you make informed decisions about infrastructure for the future.

CONTACT US

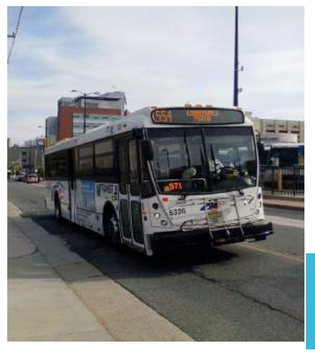
800-548-ASCE (2723)

REPORTCARD@ASCE.ORG

WWW.INFRASTRUCTUREREPORTCARD.ORG/NJ



REPORT CARD FOR NEW JERSEY'S INFRASTRUCTURE 2016



ASCE AMERICAN SOCIETY OF CIVIL ENGINEERS

INFRASTRUCTURE MATTERS

We all use infrastructure every day, but we rarely think about it. New Jersey's infrastructure includes many of our state's most iconic and recognizable features. Think about the New Jersey Turnpike, our world famous beaches, and the bridges and tunnels that connect us to our neighbors. These are not only assets that enable our economy and sustain our way of life, but they are iconic symbols of our state and what we have achieved.

However, today New Jersey's infrastructure is in poor condition by many measures. This Report Card shows there is much work to be done and many changes need to be made in order to get our infrastructure to where it needs to be. Waiting only costs us more in wasted time and creeping costs to do business in New Jersey. Our state's economic well-being and our lifestyles will be in jeopardy if we do not meet these big challenges head on and with a realistic and well-informed vision of our infrastructure's future.

THE 2016 REPORT CARD FOR NEW JERSEY'S INFRASTRUCTURE GAVE THE STATE AN OVERALL G.P.A. OF D+. USING A STRAIGHTFORWARD A TO F SCHOOL REPORT CARD SYSTEM, THE 2016 NEW JERSEY INFRASTRUCTURE REPORT CARD IS A SNAPSHOT OF OUR CURRENT INFRASTRUCTURE CONDITIONS AND NEEDS AS WELL AS A VISION FOR THE FUTURE AND THE ACTIONS NEEDED TO GET THERE. THE REPORT CARD ASSIGNS GRADES BASED ON: CONDITION, CAPACITY, FUNDING, FUTURE NEED, OPERATION AND MAINTENANCE, PUBLIC SAFETY, RESILIENCE, AND INNOVATION.

HOW YOU CAN GET INVOLVED

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

2016 REPORT CARD FOR NEW JERSEY'S INFRASTRUCTURE

Bridges — D+

NEW JERSEY'S 6,657 BRIDGES ARE CRITICAL FOR CROSSING RIVERS, ROADS, AND RAILROADS THAT OTHERWISE WOULD CRIPPLE OR SIGNIFICANTLY DELAY TRAVEL, AS NEW JERSEY RESIDENTS SAW WITH RECENT POSTED AND CLOSED BRIDGES.

The average age of New Jersey's bridges is 51 years, and 1 in 11 are classified as structurally deficient. Also, 1 in 15 are classified as scour critical. These bridges are at risk due to material deterioration or severe storm events. More than 40% of the state's bridges are expected to need improvements or complete replacement in the near future. However, current funding levels are inadequate to address the maintenance, rehabilitation, and replacement of the State's bridges. Currently, the State invests $1.6B per year, supplemented with federal funds. However, the Transportation Trust Fund that funds bridges is troubled and can only cover identified projects through July 2016. The TTF issue is critical for New Jersey to address to avoid jeopardizing matching federal funds.

Dams — D

OVER HALF OF NEW JERSEY'S DAMS ARE PRIVATELY OWNED AND MAINTAINTED.

Of the 1,702 New Jersey dams regulated by the Bureau of Dam Safety, 558 dams are high and significant hazard potential dams, meaning nearly 1 in every 3 dams in New Jersey carries potential risk. The poor condition of the dams combined with increasing downstream development and frequent severe weather events make potential dam failure a public safety risk as well as an economic liability. Only 20% of the high hazard potential dams exercised their emergency action plans in the last 5 years, in spite of severe weather events that warranted putting them in action. In the last 5 years, the Bureau also reported 13 dam failures as well as several overtopping events, where the water pool exceeds the height of the dam. Sussex and Morris counties have the most high and significant hazard potential dams in poor condition. Estimates reach $320M to repair 213 high and significant hazard dams that are in poor or unsatisfactory conditions.

Drinking Water — C

MOST DRINKING WATER SYSTEMS IN NEW JERSEY ARE SMALL: 55% HAVE A CAPACITY OF LESS THAN 1M GALLONS PER DAY.

New Jersey's water supply systems were constructed largely during a peak growth period (1890 to 1930) and to provide clean water statewide (1950-1970), but the ability of these systems to provide adequate services is threatened by age, lack of reinvestment, and a short-term focus. Due to the concentration of times when much of the water infrastructure was placed in service, New Jersey will need to overhaul a lot of its existing drinking water infrastructure in the next two to three decades.
New Jersey drinking water systems are split between investor-owned utilities, which serve roughly 40% of all customers, as well as municipal utilities and utility authorities. There is no comprehensive system or report for understanding New Jersey's current status and drinking water utility plans to address their infrastructure needs. With the age of the supply systems today, a comprehensive review would help to plan future investments and prioritize critical projects.

Energy — C+

NEW JERSEY MOSTLY DEPENDS ON NUCLEAR POWER AND NATURAL GAS FOR IN-STATE ELECTRICITY GENERATION.

The Oyster Creek nuclear reactor is the oldest operating nuclear power plant in the U.S. and is scheduled to shut down in 2019; this lost capacity will need to be made up. New Jersey is reducing its reliance on coal-based electricity generation by planning to add 2,300 megawatts of natural gas-powered generation. Already about 3 of every 4 New Jersey households use natural gas for home heating. In terms of cost, New Jersey has one of the highest energy costs per kilowatt hour in the U.S. After Superstorm Sandy, New Jersey updated its Energy Master Plan in 2015 to address emerging issues and energy shortage problems felt by 2.8M New Jersey customers. The State has approved $938.7M for gas utility upgrades and mitigation projects and an additional $280M is pending.

Hazardous Waste — C

HAZARDOUS WASTE HAS VERY SPECIFIC PHYSICAL CHARACTERISTICS AND CHEMICAL COMPONENTS, WHICH THEN REQUIRES SPECIAL TRANSPORTATION, HANDLING, TREATMENT, STORAGE AND DISPOSAL PROCEDURES.

New Jersey ranks 17th in the U.S. in hazardous waste generation and ranks 1st nationally with 113 National Priority List sites. However, New Jersey has shown its commitment to improving the environment and helping residents and business owners to deal with the complexities of this waste through several innovative programs, marking a 45% decrease in tonnage since 1999. However, over a decade, the New Jersey budget for handling this waste has decreased 43% and federal funds have decreased 67% leaving much left undone.

Levees — D-

NEW JERSEY HAS APPROXIMATELY 126 MILES OF LEVEES ACCORDING TO THE FEMA LEVEE INVENTORY.

However, in New Jersey no single agency oversees the operation and maintenance of levees nor has specific regulatory authority or responsibility over the safety of existing levees. The 10 levees that the USACE inspects regularly have not scored well in terms of overall stability/integrity of the levees. Out of the 10 levees, 5 levees are rated minimally acceptable, and 4 levees are rated unacceptable. Additionally, many levees assessed as part of the South Jersey Levee Inventory did not fare well either. The study found that 24% had erosion issues, 35% had significant settlement, 29% had significant depressions, 25% showed signs of cracking, and nearly 30% showed signs of burrowing animals which can lead to reduced capacity of the levee system. Overall, the performance of levees is poor. An unexpected levee breach or failure can be catastrophic, with the flooding causing loss of life, emergency evacuations, and property damage.

INFRASTRUCTUREREPORTCARD.ORG/NJ

Parks — D+

NEW JERSEY'S STATE-OWNED PARKS ARE FACING SHORTFALLS IN MEETING MAINTENANCE NEEDS AND DEMANDS FOR ACCESS, SECURITY AND GENERAL OPERATIONS, EVEN AS THE POPULATION AND TOTAL ACREAGE OF PARKS, FORESTS AND RECREATIONAL AREAS CREEPS UPWARD.

New Jersey currently preserves and protects 450,000 acres including 39 parks, 11 forests, and 3 recreational areas, and other facilities. Since 1998, the Garden State Preservation Trust has overseen the expenditure of some $2.7B to keep 390,000 acres of open green space and farmland, bolster parkland, and keep historic sites from crumbling. Approximately 75% of New Jersey's park facilities sustained damage from Sandy, including serious damage to 2 of the most visited parks. Under the Blue Acres Program, $330M in post-Sandy relief is being used to acquire and remove flood prone properties thus creating new open space to mitigate the impacts from future storm events.

Ports — C

NEW JERSEY HAS MAJOR SEAPORTS AND MARINE TERMINALS ALONG WITH INLAND WATERWAYS IN THE NORTHERN AND THE SOUTHERN REGIONS, BRINGING IN $1.6 BILLION IN REVENUE TO NEW JERSEY.

Investments and expansion of New Jersey's seaports and waterways infrastructure are necessary to keep pace with projected freight growth. Container terminals and on-dock rail capabilities should be sufficient unless growth in container volumes increase more rapidly than forecasted. For example, North Jersey's marine terminals generate nearly 22,000 truck movements each day, but projections show growth up to 62,000 by 2026. In the last 8 years, significant capital investments were made with additional funding coming from Sandy recovery funding to make facilities more resilient.

Rail — C

NEW JERSEY'S 1,000 MILES OF FREIGHT RAIL LINES MOVE NEARLY 38M TONS OF GOODS EACH YEAR IN AND OUT OF LOCAL PORTS.

While there are 18 railroads, the large Class I and Canadian railroads account for over 67% of the rail miles operated. As rail freight volumes are expected to double by 2035, the need for additional capacity is imminent, but there are limited resources to build; therefore, it's extremely important to manage the logistics and condition of the existing infrastructure. Nearly $1.5B of public and private investment is needed for freight rail infrastructure today, but New Jersey does not have a permanent, guaranteed tax revenue source for freight rail initiatives. The only state funding comes from the annual $10M New Jersey Rail Freight Assistance Program, which draws funds from the State's Transportation Trust Fund that is facing insolvency.

Roads — D+

OF NEW JERSEY'S 39,000 MILES OF ROADWAYS OWNED BY THE STATE, COUNTIES, MUNICIPALITIES, AND TOLL AUTHORITIES, 42% OF NEW JERSEY'S ROADWAY SYSTEM IS DEFICIENT, MEANING IT IS ROUGH, DISTRESSED OR CRACKED.

New Jersey's roads are costing the average driver $1,951 each year due to their deficient condition. Also, many highways in New Jersey were built in the 1950s, with a maximum life of about 50 years, so many are reaching the end of their useful life. The annual statewide investment target from 2013 through 2022 is recommended at $3.3B, but with the State's Transportation Trust Fund facing insolvency, decisions are needed to curb the added expense of inaction. New Jersey's road system is a vital conduit for the Northeast and beyond, yet it relies on the deteriorating physical condition of the roadway to support it.

Solid Waste — B-

NEW JERSEY'S SOLID WASTE MANAGEMENT POLICIES ARE AHEAD OF MOST, YET NEW JERSEY RESIDENTS GENERATE ALMOST 3X MORE WASTE AS THE NATIONAL AVERAGE, WITH EACH PERSON CREATING ABOUT 12.5 POUNDS PER DAY.

While New Jersey has aggressive recycling programs, waste disposal and recycling costs in New Jersey are among the highest in the nation. The tipping disposal fees are almost 50% higher than the national average. The infrastructure to collect, transport, recycle or properly dispose of waste is adequate and competitive albeit expensive. Recycling rates are among the highest in the nation with approximately 54% of the waste generated diverted to recycling versus a national average of 34.5% in 2012. Also, active landfills are using newer bioreactor landfill technology that recovers more methane and greatly reduces the potential for contamination of underlying aquafers. While New Jersey's recycling rates should continue increasing, lower prices for recycled materials may lead to fewer facilities to accept the materials, and incentives are needed for recycling food waste and technologies to better utilize recycled materials.

Transit — D-

NEW JERSEY SERVED OVER 1.3 MILLION PASSENGER TRIPS ON AN AVERAGE WEEKDAY VIA 21 rail lines operated by NJ Transit (12 rail and 3 light rail lines), Amtrak (Northeast Corridor Line, which is shared with NJ TRANSIT), the PANYNJ (five PATH system rail lines), Delaware River Port Authority (PATCO High Speed Line), 257 NJ TRANSIT bus routes and additional bus routes operated by private carriers, and several ferry services. New Jersey's extensive transit system is used by approximately 11% of commuters traveling to work, second only to New York in the percentage of commuters who ride transit. Over a 10 year period, ridership on the three of the most heavily used transit systems in New Jersey (NJ TRANSIT, PATH and PATCO) increased by over 16% in spite of the recession and Superstorm Sandy service outages in 2012. The increase in ridership has subjected the system to significant strain, with the core system at or near capacity in peak hours and key segments of the system, particularly the trans-Hudson rail and bus infrastructure that carry passengers between New Jersey and New York City, are near capacity and simultaneously in need of major rehabilitation and expansion. The lack of dedicated funding for capital investment and operating and maintenance costs create great uncertainty for the future of the transit system.

Waste Water — D

NEARLY 90% OF NEW JERSEY'S NEARLY 9 MILLION PEOPLE ALONG WITH MOST BUSINESSES AND GOVERNMENT FACILITIES RELY ON 200 PUBLIC WASTEWATER SYSTEMS TO COLLECT AND TREAT THEIR SEWAGE.

Most wastewater treatment plants in New Jersey are relatively small with a capacity of less than 2.5 million gallons per day, yet the few large systems in the state are the ones with remaining capacity to meet growing needs. Much of New Jersey's existing wastewater infrastructure will need to be overhauled in the next two to three decades, along with billions of dollars for control of combined sewer overflows. There is a surprising lack of comprehensive system understanding of wastewater in New Jersey since state and federal regulations primary focus is on water output from the treatment facilities. Now, New Jersey utilities are using federal Sandy Recovery funds, state funds and utilities revenues, along with state guidance and requirements, to increase resilience. To improve, wastewater utility revenue must be used to address utility needs first and rates should be aligned with critical maintenance and capital costs.