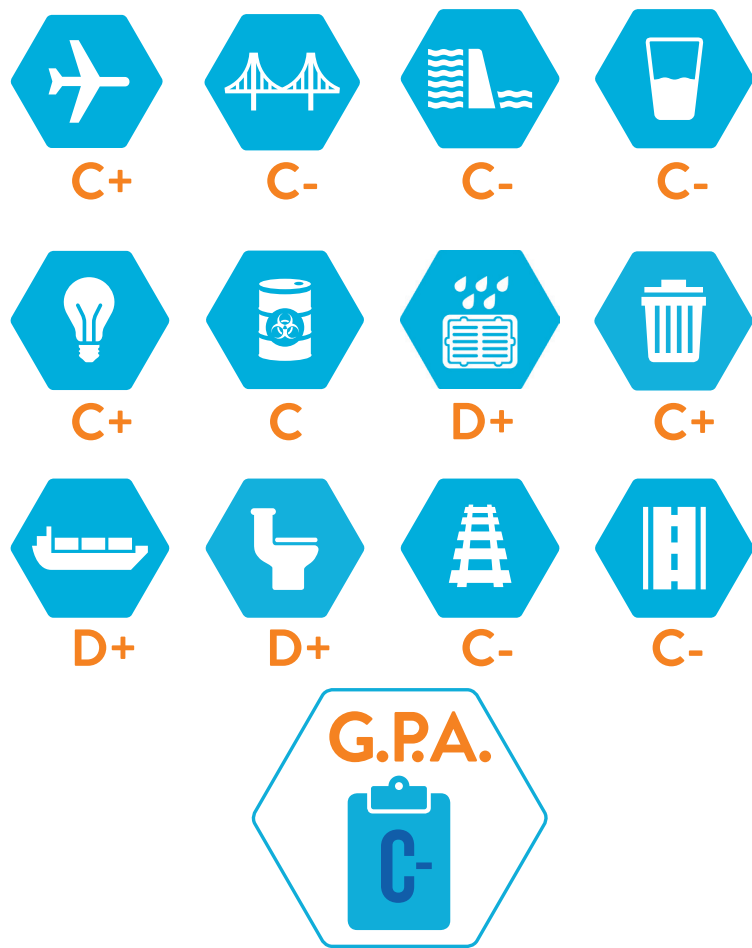


# NEW HAMPSHIRE GRADES



## 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:



# SOLUTIONS TO RAISE THE GRADE

If New Hampshire is ready to improve our infrastructure, ASCE-NH has some suggestions to start raising the grade.

- 1 BE INFORMED AND VOCAL:**  
Learn about your community's infrastructure needs. Go to town halls or legislative events, and get to know your elected officials and discuss your concerns with them.
- 2 SUPPORT CONSISTENT POLICIES AND FUNDING SOURCES:**  
ASCE-NH recognizes that comprehensive planning and long-term funding are keys to sound decision making. Inconsistent policy and unsustainable funding sources undermine the ability to plan for the future. Funding needs to incorporate the cost of a project over its entire lifespan – including designing, building, operating, and maintaining the infrastructure.
- 3 LOCALLY SOURCED FUNDING**  
While NH depends heavily on federal funding and federal financing to supplement our state budget, we need to start thinking about how we can help ourselves and put policies in place to incorporate long-term, sustainable funding on a state and local level, that will address our needs.
- 4 KNOW WHAT YOU DON'T KNOW**  
NH has a reputation of creating policy based on data. This is good news, but we want to recognize that acquisition of data is a continuous effort and an important one to shape appropriate policies. Furthermore, while there is a need to act, an emphasis on proper planning and design is essential for the best return on investment.  
Specifically related to this solution, ASCE-NH attempted to, but was not able to incorporate our schools section into the report card this year because of the lack of recent condition data. We recommend immediate and sustained collection of such data on a statewide basis, which improves our ability to assess the challenges facing our school infrastructure and allows us to strategically invest in our facilities for future generations.

## About ASCE-NEW HAMPSHIRE

Established in 1958, the New Hampshire Section is a local section of ASCE. The local sections provide an opportunity for members to address issues and be involved in activities which are of a more local or regional nature.

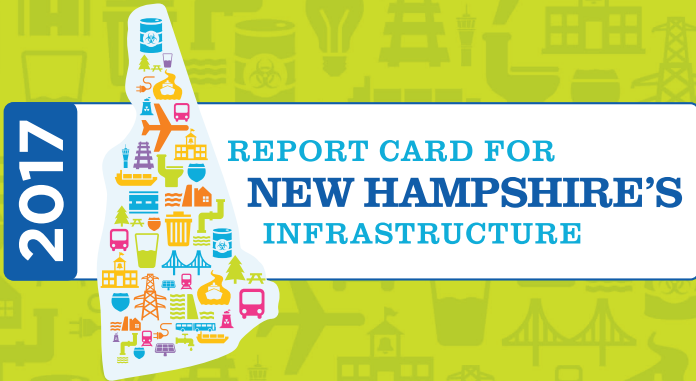
The New Hampshire Section of ASCE has the mission to uphold and enhance the integrity and ethics of the civil engineering profession; to serve the community of engineers and the community as a whole; to improve interaction with and education of the public and legislators; to foster professional and technical interaction among students, younger members, and experienced professionals; and to instill enthusiasm in the profession and Section membership.

### CONTACT US

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## Infrastructure Matters

Infrastructure is the backbone of our community. While we don't always acknowledge it, the condition of our infrastructure has a very real impact on our lives. We all depend on roads and bridges to get us where we are going, water infrastructure that delivers clean on-demand water, electricity to light our home and office, and schools that will facilitate a learning environment. Fifty years ago, large investments were made in our infrastructure, but since that time, there has been a trend of underinvestment. Many of our infrastructure systems are struggling to stay in adequate condition, and as these systems continue to surpass their intended lifecycles, New Hampshire residents and policymakers must decide if we value the personal and economic advantages that come from a robust infrastructure network, and if we do, to make it a priority moving forward.

The Report Card was created to help New Hampshire understand the state of our infrastructure. As civil engineers, our job is to plan, design, construct, and maintain our infrastructure networks and this document allows us the opportunity to share that information with the public. It provides a snapshot for residents and policymakers to engage in conversation about where we are and where we want to be. We hope that this information provides the insight needed to start that conversation.

## How You Can Get Involved

- 1 Get the full story behind this Report Card at [www.infrastructurereportcard.org/new-hampshire](http://www.infrastructurereportcard.org/new-hampshire).**
- 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](http://www.infrastructurereportcard.org/take-action).**





# 2017 NEW HAMPSHIRE'S INFRASTRUCTURE REPORT CARD

The 2017 Report Card on New Hampshire's Infrastructure gave the state an overall G.P.A. of C-. New Hampshire's civil engineers studied 12 infrastructure categories. Of those 12, nine infrastructure categories are in mediocre condition and three are in poor condition.

The good news is there are solutions to all these challenges, and we can raise New Hampshire'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

The New Hampshire airport system has undergone notable safety, operations, and maintenance improvements over the last five years. There are currently a total of 107 registered airports, heliports, and seaplane bases in New Hampshire, of which 25 are open to the public and 12 are "system airports" that are eligible for federal funding on an annual basis. Future improvements are planned with an emphasis on continued safety improvements, improved flying facilities and airport accessibility, and a focus on economic return on investment. Unfortunately, infrastructure capital investment needs for the next 20 years exceed the available funding by \$100 million to \$200 million.

## BRIDGES

There are 3,848 bridges in the New Hampshire Department of Transportation (NHDOT) bridge inventory, with an approximate replacement value of \$8 billion. Nearly 80% of all state-owned bridges were built prior to 1980. Over 650 of those bridges are older than 75 years of age, and between 2010 and 2015 the average age of state-owned bridges increased from 52 to 56 years. A typical bridge design life is 50 years, and therefore, the average bridge in New Hampshire now has reached or exceeded its planned functional life. As of December 2015, 12.8% of the bridges in state were considered structurally deficient, corresponding to 9.2% of the total bridge deck area. Due to the increasing average age of the bridge structures, it is anticipated there will be an upward trend in the number of "Red List" bridges. "Red List" bridges require more frequent inspections due to poor condition, weight restrictions or construction type, and also require more funds to maintain.

## DAMS

Dams are an important feature of the New Hampshire environment, creating some of the best water-based recreational areas in the state, providing water supply and hydropower, and, in a few cases, flood control. Dams that are not maintained in good operational order can fail and cause loss of life and economic damage. 146 of the 2,624 dams in the state have high-hazard potential because their failure would inundate houses or other occupied structures and likely cause loss of life. Of those high-hazard potential dams 95% have Emergency Action plans. The risks associated with many dams are increasing because of the age of the inventory of dams in the state; the average age of the dams in New Hampshire is 87 years. Over 60% of the dams were built before 1960, which was before modern dam safety engineering standards were developed. Businesses and homes built downstream from dams in areas would be flooded if the dams were to fail, and extreme rainfall events are becoming increasingly common.

## DRINKING WATER

Drinking water infrastructure supports and is vital to a healthy community, environment, and economy. In New Hampshire, almost 700 public water systems serve over 868,000 people. Much of the current infrastructure, including distribution systems, source of supply infrastructure, water treatment facilities, and pumping facilities, is in need of upgrades or replacement with a 10-year investment need of approximately \$857 million. Today, much of the operation and maintenance costs are pushed onto rate-payers. The state benefits from reliable water infrastructure and the cost for a substantial infrastructure improvement plan requires additional investment on the state level.

## ENERGY

Significant investments have been made to improve the reliability of New Hampshire's electrical transmission and distribution systems and upgrade existing gas distribution infrastructure. However, retirements of power generators in the region are expected to result in demand outstripping the supply of electricity by 2018, unless new generators are added or efficiency reduces demand. Currently, nuclear and natural gas generation make up 80% of New Hampshire's generation capacity with the remaining 20% made up of coal, hydroelectric and renewables. The reliability of supply, lack of diversity, and age of energy infrastructure increases the state's and customers' risk for future increased energy costs. In 2016, the average price of electricity in the state increased over 2015 prices, and electricity prices are higher in New England than anywhere else in the contiguous US.

## HAZARDOUS WASTE

New Hampshire has a wide range of environmental legacy concerns due to the industrial and manufacturing past of the state. There are currently 1,649 sites that must address petroleum and/or hazardous waste contamination, according to inventories maintained by the New Hampshire Department of Environmental Services (NHDES). In addition, there are 20 Superfund sites and 600+ Brownfields in New Hampshire. Although progress has been made with many sites and the Methyl-tertiary-Butyl Ether (MtBE) Remediation Bureau formed during 2014 to specifically address state-wide MtBE contamination, overall revenues for contaminated site cleanups have been declining. The emergence of new contaminants such as perfluorooctanoic acid (PFOA) in drinking water supplies has further stretched NHDES resources and funding for cleanup efforts.

## PORTS

With only 17 miles of coastline, New Hampshire has a limited number of commercial ports. However, these facilities play a vital role in the economy and recreational activities of the seacoast region. The majority of port commerce occurs on the Piscataqua River separating Portsmouth, New Hampshire and Kittery, ME. The Piscataqua River area includes seven industrial terminal facilities, the New Hampshire State Pier (Market Street Terminal), a commercial fish pier, and several smaller facilities. Smaller harbors and marinas are found throughout the state, and Hampton-Seabrook and Rye Harbors include state owned facilities supporting smaller fleets. Years of inattention, lack of planning follow-up, and deferred maintenance have resulted in substandard conditions that limit the potential of New Hampshire's ports. The reconstruction of the Sara Mildred Long bridge results in the loss of a portion of the state pier.

## RAIL

New Hampshire has a total of 443 route miles of rail trackage as reported in the 2012 State Rail Plan. The state's rail trackage is used primarily for transporting freight, but the network also includes tourist railroads and Amtrak passenger service operating on selected routes. The State of New Hampshire owns approximately 201 miles of active track (45% of the total in-state trackage) that are leased and operated by private carriers. Approximately 242 route miles are owned and operated by private railroads, with one regional railroad (Pan Am Railways) operating 121 miles of the total trackage. There is little state funding available to assist railroads in improving or expanding the rail network.

## ROADS

New Hampshire has seen an increase in vehicle miles traveled (VMT) on the state's roads since 2011. Based on the 2015 assessment, approximately 47% of the road network is in good condition, 24% in fair condition, 22% in poor condition and 7% in very poor condition. New Hampshire passed a 4.2-cent/gallon gas tax increase in 2014, which helps to offset some of the costs from 20 years of deferred investment, however there are still unmet needs. The effectiveness of a gas tax continues to decline as vehicle mileage per gallon and alternative fuel vehicles continue to erode the revenue generated.

## SOLID WASTE

Solid waste in New Hampshire is disposed of in three commercial landfills, three publicly owned landfills and one waste-to-energy facility. The facilities are generally well constructed and properly operated. Adequate capacity is available to expand current landfills for approximately 20 years of statewide needs. New Hampshire's recycling rate is 35% compared to a statewide goal of 40%. Single stream recyclables are hauled to neighboring states due to the lack of a single stream processing facility in New Hampshire. Restaurants and some towns in New Hampshire are beginning to segregate food wastes for composting. New Hampshire should consider adopting regulations to encourage the segregation and processing of food wastes and to facilitate the permitting of appropriate processing facilities.

## STORMWATER

Stormwater is water from rainfall or snowmelt that flows over the land surface and does not soak into the ground. The demands on municipal stormwater management continue to increase with aging stormwater infrastructure handling greater flows than they were originally designed for. Stormwater is recognized by the U.S. EPA and New Hampshire environmental agencies as one of the leading causes of water pollution. Investment strategies to implement modern stormwater management are needed at the local level. While the monetary cost of managing stormwater is high, the potential cost of inaction is even higher. Without significantly changing our approach to managing stormwater, the State will likely experience even more extensive flooding and degradation of water resources that will impact drinking water quality, aquatic habitat, recreational opportunities, and tourism.

## WASTE WATER

New Hampshire's wastewater collection systems date back to the 1870s. The majority of New Hampshire wastewater, about 65%, is treated by private on-site disposal systems generally consisting of a septic tank with a leach field. Approximately 35% of the state's population is served by 91 public and 30 private wastewater collection/treatment systems. Three-quarters of these systems are small by industry standards, conveying and treating less than a million gallons per day. New Hampshire's aging and failing wastewater infrastructure faces several other challenges including, increased regulatory requirements, a lack of sustainable funding for the \$1.7 billion documented in needs, and climate change. Currently, assets are not designed to serve today's population, do not meet new regulatory requirements, and are not replaced at the end of their lifespan, thereby increasing costs and the probability of failure.

