



AMERICA'S AGING INFRASTRUCTURE & WHAT IT MEANS FOR MUNICIPALITIES

America's aging infrastructure is facing a crisis, especially when it comes to water. Across the country, deteriorating water and wastewater systems are failing and impacting communities large and small.

The United States scored poorly in several categories of the [2017 Infrastructure Report Card](#) done by the American Society of Civil Engineers (ASCE). Drinking water and wastewater received grades of D and D+, respectively.

Highlighted in the drinking water report was the fact that many pipes currently in use were laid in the early to mid-20th century. Those pipes have an expected lifespan of 75-100 years, meaning they are either past due for replacement or will be soon.

The effects are already being felt. In America, there are an estimated 240,000 water main breaks per year. These breaks result in the waste of 2 trillion gallons of treated drinking water. According to the [American Water Works Association](#), \$1 trillion will be needed to maintain and expand drinking water service to meet demands over the next 25 years.

In the wastewater sector, there are 800,000 miles of public sewers and 500,000 miles of private lateral sewers that connect private property to public sewer lines. These systems are susceptible to problems including failures, blockages and overflows. There are anywhere from 23,000 to 75,000 sanitary sewer overflows each year, according to [EPA](#) estimates.

The strain on municipal utilities will continue to increase. By 2032, it's expected that 56 million more people will connect to centralized treatment plants rather than private septic systems — a 23% increase in demand. This is one of the reasons the EPA estimates that \$271 billion will be needed for wastewater infrastructure in the U.S. over the next 25 years.

WATER & WASTEWATER CONCERNS FOR MUNICIPALITIES

The state of America's water and wastewater infrastructure is a cause for concern for municipalities. The best-case scenario for any city is that its pipes are still in good working order and have many years of useful life remaining. But as the ASCE report card showed, those instances are few and far between.

With that in mind, here are questions municipal decision-makers must ask:

- How do we identify and address infrastructure issues before they become major problems?
- How will improvements be funded?
- What information is available to assist our decision-making process?

This article touches upon each of these questions and provides insight into how to go about answering them. You'll learn about the pipeline rehabilitation options that are available and be presented with some funding options that can be explored. We'll also provide the details of a couple of infrastructure improvement projects that were completed by municipalities so you can educate yourself about the actions others in your situation are taking.



As a high-level overview, this article is not intended to answer every question you may have. Rather, the goal is to provide some thought-starting topics as you turn your attention to the needs of your community.

ADDRESSING WATER & WASTEWATER INFRASTRUCTURE ISSUES

The condition of water and sewer collection systems can be assessed by scoping the lines and other structures. This process involves running a camera through lines and access points to identify potential issues. Once a comprehensive inspection is completed and a list of issues is compiled, the next step is remedying the problems.

Traditional excavation and replacement is one option. This process involves digging trenches to expose the damaged pipeline or other buried structures so that they can be repaired or replaced.

An alternative option is trenchless cured-in-place piping (CIPP) and cast-in-place repairs for vertical access points like manholes. These no-dig solutions involve accessing the damaged pipe or manhole from a single access point and installing a liner inside the existing pipe or manhole. Trenchless technologies have surged in popularity in recent years because they are less disruptive, quicker and more cost-effective.

FUNDING INFRASTRUCTURE IMPROVEMENTS

Water and wastewater infrastructure improvements can be funded at the local and state level, largely from service fees. In addition, several federal sources exist that provide funds.

- EPA, Clean Water State Revolving Fund
- EPA, Drinking Water State Revolving Fund
- Department of Agriculture, Rural Utilities Service, Water and Waste Disposal Program
- Department of Housing and Urban Development, Community Development Block Grant
- Department of Commerce, Economic Development Administration, Public Works and Economic Development Program
- U.S. Army Corps of Engineers
- Department of the Treasury, Internal Revenue Service
- Bureau of Reclamation
- Indian Health Service

For additional information, reference [this document](#) from the U.S. Government Accountability Office.

EXAMPLES OF INFRASTRUCTURE IMPROVEMENT PROJECTS

Here is a quick summary of two infrastructure rehabilitation projects completed by municipalities.

Des Moines, Iowa

The city of Des Moines made it a priority to maintain its approximately 100-year-old brick manholes after years of high groundwater and occasional flooding put pressure on the city's aging sewer system.



They sealed and rehabilitated the failing manholes without contractor assistance using AP/M Permaform's [PermaCast® System](#) and [City Self-Install Program](#).

The rehabbed manholes have held up well for years with no sign of failure. Des Moines section chief Rick Powell said, "I think it saves taxpayers a lot of money in the long haul, and from what we've seen it will greatly extend the useful lifespan of our aging manholes."

To read the full recap, [click here](#).

Genesee County, Michigan

Many of Genesee County's several thousand catch basins are made of brick and date back to the 1920s and 1930s. Basin collapses and roadway sinkage have resulted in road closures and emergency repairs.

To start preventing these failures, the Genesee County Road Commission (GCRC) invested in the [AP/M Permaform Trailer and SpinCaster™](#). GCRC Director of Equipment and Facilities Randall Dellaposta said after getting the trailer in June 2016, "... we were able to rehabilitate 86 catch basins, with just 188 hours of time logged on the trailer. So I'm confident we're seeing substantial return on our investment."

To read the full recap, [click here](#).

DON'T IGNORE... ACT!

If your municipality is facing problems with aging underground infrastructure, you're not alone. Explore your options and act before your community is impacted by major and costly pipe failures.