

Deferred Maintenance and Its Impact on Communities



GORDIAN®

The Trouble with Time



A door closer is out of adjustment. Now, the door slams every time it closes. This damages other components, such as the latch, door jamb, door stop and weather stripping. With the prolonged and repeated door slamming, the door frame becomes damaged and the latch no longer works. Now the entire door and frame need replaced. All this could have been prevented if the adjustment to the door closer had been made in a timely manner.



This example of deferred maintenance comes from Allegion's whitepaper, Rising Trend of Deferred Maintenance in Facility Management¹.

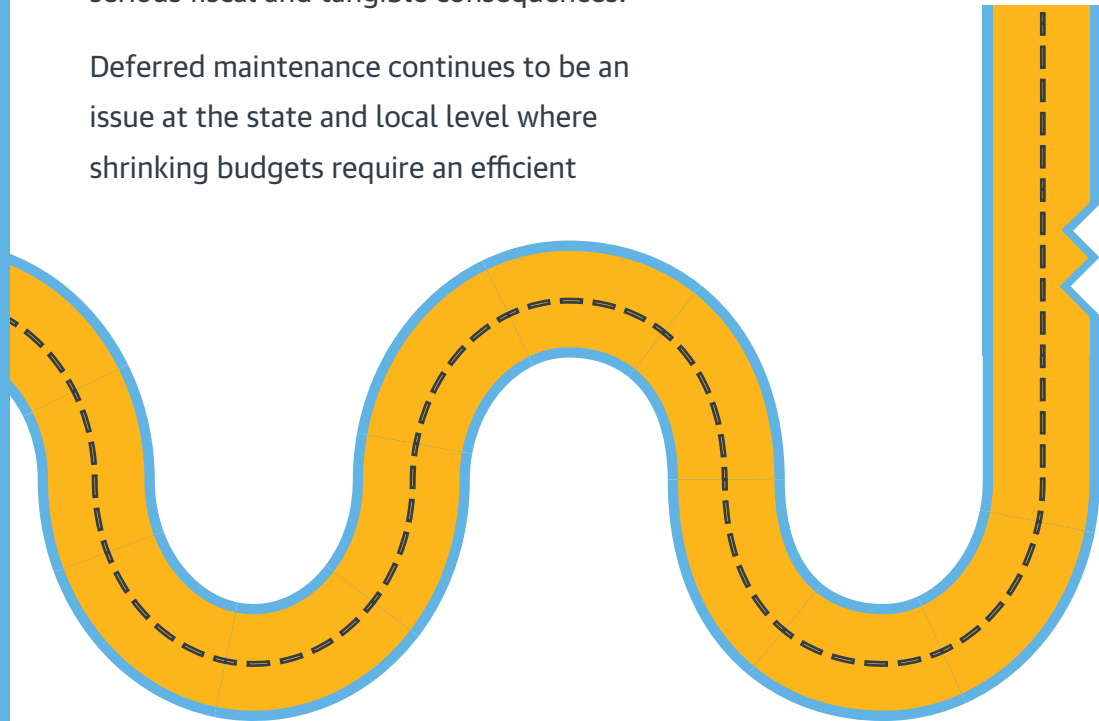


Putting it Off

Deferred maintenance issues do not pop up overnight – they typically bubble underneath the surface of public infrastructures and budgets for years. The cost of deferring repairs on a day-to-day scale is small. However, as the minor expenses compound, the cost grows into a substantial expenditure. One problem turns into multiple major problems, in turn decaying equipment or buildings to the point of serious fiscal and tangible consequences.

Deferred maintenance continues to be an issue at the state and local level where shrinking budgets require an efficient

procurement strategy. Many roads, highways and bridges built decades ago were designed to carry 10 times less traffic than what they currently endure and, as a result, constantly require emergency repairs. Rick Grant, an owner of a Maryland structural engineering firm states, "Some of this infrastructure is more than 100 years old...but it wasn't designed with more than a 50-year life span in mind²."



Trouble on the Road

In 2017, the American Society of Civil Engineers (ASCE) released a report card on America's Infrastructure. Our nation's GPA was a D+, representing an almost failing grade for the physical condition of our infrastructure³. Specifically, the average age of U.S. bridges is 43 years and 9.1% are structurally deficient, resulting in a grade of C+⁴. Meanwhile, one out of every five miles of U.S. highway pavement is in poor condition, costing motorists \$121 billion per year in extra vehicle repairs and operating costs. The U.S. has underfunded its highway system for years. This has resulted in an \$836 billion backlog of highway and bridge capital needs, the

majority of which (\$420 billion) is required for repairing existing highways⁵.

Deferred maintenance on infrastructure can be both a "monetary saving grace and a budgetary nightmare."⁶

However, the "monetary saving grace" deferring maintenance can provide has the potential to cause many negative effects such as potholes, cracks, large traffic jams and closed roads; all impacting public safety. Due to an increase of passenger miles on public transit, deferring maintenance on infrastructure can even lead to the possibility

of major disasters. In 2007 a bridge in Minneapolis collapsed 50 feet during rush hour resulting in 13 deaths, 145 injuries and \$234 million in repairs². At the time of this disaster, repairs were being made to the structure following a 2001 University of Minnesota Civil Engineering Department evaluation that reported preliminary signs of fatigue on the steel truss section. Although the transportation department was informed that there was no need to replace the bridge, [this report highlights the importance of being vigilant to avoid large scale disasters⁷](#).

U.S. Bridges: C+

56,007 (9.1%) are structurally deficient

U.S. Roads: D

1/5 of pavement miles in poor condition

Our Water Problem

ASCE's report card awarded American's drinking water a D grade – its wastewater fared slightly better with a D+. There are over 155,000 drinking water systems across the U.S. comprised of 800,000 miles of public sewage pipes and 500,000 miles of private lateral sewers. Many of the country's water mains and pipes were laid in the early to mid-20th century. The lifespan of these installations tend to fall between 75-100 years. Knowing this, it is understandable that

240,000 water main breaks occur each year⁸.

In 2007, an underground steam pipe, which was installed in 1924, failed in Midtown Manhattan, New York. The result was a geyser of hot steam, mud and debris sent 40 feet into the sky. This catastrophe, which was caused by a failure in the city's underground pipe infrastructure, resulted in one death and 30 injuries, two of which were critical⁹.

It is estimated that from 2016-2025, water and wastewater investment will fall around \$45 billion in funding. However, it is projected that \$150 billion in funding will actually be required – that is a \$105 billion investment gap⁸.



Drinking Water: **D**

Waste-water: **D+**

Public Parks: **D+**

No Walk in the Park

State and localities provide the majority of park and recreational facilities used by seven out of 10 Americans regularly. The U.S. Army Corps of Engineers (USACE) is one of the leading federal providers of outdoor recreation, averaging 370 million visitors annually at 403 lake and river sites throughout 43 states. National forests and

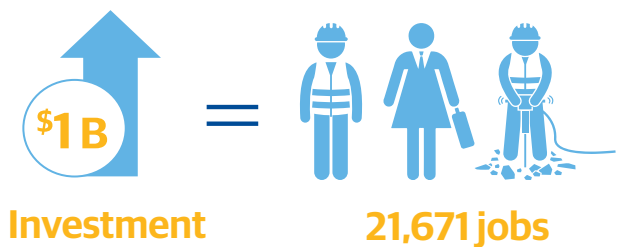
grasslands gather and in turn filter drinking water for 180 million people. A ranging network of infrastructure underlies the over seven billion outdoor recreational outings. Public parks are also an economic boon with visitors of the National Park Service (NPS) spending \$16.9 billion in surrounding communities¹⁰.

Roads, trails, parking areas and many other facilities are needed to support these areas. However, in 2015, NPS found itself reach a record-high of \$11.9 billion in deferred maintenance. Regretfully, budgets are tight due to a recent focus of funds toward wildfire suppression¹⁰.

Community Impact

Aside from the most serious result of failing to maintain public safety, there are many other consequences caused by deferring maintenance. According to a report by Duke University's Center on Globalization, Governance & Competitiveness, 900,000 jobs are lost annually due to the decaying infrastructure costs. The report goes on to state that, "Each \$1 billion invested in transportation infrastructure creates 21,671 jobs...[and] a long term transportation bill of \$114 billion annually would support upwards of 2.48 million American Jobs." The impact of investment not only improves public safety but creates economic opportunities for workers and communities around the country. Every dollar invested in transportation infrastructure returns \$3.54 in positive economic impacts. Building a world

class infrastructure network is critical in maintaining the nation's competitiveness. The U.S. invests an average of \$848 per person annually on transportation infrastructure. In comparison, the European Union (EU) invests \$2,589 per person¹¹.



Economic Impact



It Matters

Governing Magazine's Alex Marshall states that the current state of our infrastructure resembles a third world country¹². While that statement may sound extreme, it highlights the serious nature of this issue. The reality is, maintenance budgets erode quickly, causing issues to compound. Local and state governments have their work cut out for them, but to solidify their deferred maintenance management strategy, decision-makers will need to support their repair and maintenance projects with procurement services that minimize wasted resources and time.

By utilizing an alternative construction procurement service such as Gordian's ezIQC[®] solution, local and state governments can fast track the procurement process for a variety of deferred maintenance projects. ezIQC is available through cooperative purchasing networks. The solution provides access to qualified contractors through a single contract that meets competitive bidding requirements, thus eliminating the time and resources needed to bid each project separately.

About Gordian

Gordian is the world's leading provider of construction cost data, software and services for all phases of the building lifecycle. From planning to design, procurement, construction and operations, Gordian delivers groundbreaking solutions to contractors, architects, engineers, educational institution stakeholders, facility owners and managers in the local, state and federal government, education, healthcare, manufacturing, insurance, legal, retail and other industries. With our proprietary data, along with our RSMeans and Sightlines data, we offer the largest collection of labor, material and equipment data and associated costs in the world with over 275,000 construction tasks with costs for all areas of construction. Gordian also offers the most widely used construction procurement information management software available anywhere and cutting-edge facilities intelligence and life cycle costing software to assess initial installed costs versus long-term facility costs and improve long-term asset performance. For more information, **visit www.gordian.com**.

1. http://us.allegion.com/content/dam/allegion-us-2/web-documents-2/Whitepaper/Rising_Trend_of_Deferred_Maintenance_in_Facility_Management_110499.pdf
2. <http://theweek.com/article/index/266759/inside-americas-crumbling-infrastructure>
3. <http://www.infrastructurereportcard.org/making-the-grade/report-card-history/>
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