

PAYING THE PRICE

How deteriorating infrastructure
affects America's economic future

BY ETHEL NAVALES

Let's face it, America's infrastructure is crumbling at our feet. Truthfully, most of us haven't fully grasped the full extent of damage that such an issue has on our country. Even worse, many have simply grown accustomed to hearing about our collapsing infrastructure and have turned a blind eye to the crisis altogether.

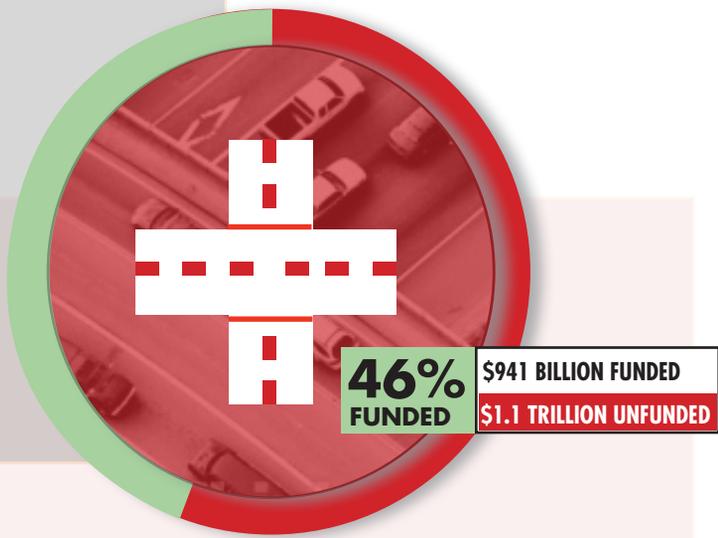
But keeping up this mentality will ultimately lead to our detriment. We can no longer ignore the impact that our deteriorating infrastructure has on our nation's economy, business and industry productivity, gross domestic product (GDP), international competitiveness, employment, personal income and costs to households. For years, our failure to act has widened the investment gap, and further losses will continue to accumulate if we don't take action and address the needed maintenance and improvements.

To monitor our progress, the American Society of Civil Engineers (ASCE) came up with *The Report Card for America's Infrastructure*. This report, which is published every four years, grades national infrastructure categories on a familiar "A" through "F" scale. Unfortunately, we have held "D" averages since 1998.

Most recently, the ASCE released *Failure to Act: Closing the Infrastructure Investment Gap for America's Economic Future*, which updates previous *Failure to Act* reports from 2011 and 2012. The series outlines the impact of infrastructure investment on America's economic future and takes a closer look at each sector, giving a more precise idea of the effects that each system has on businesses, households and the overall economy. More specifically, *Failure to Act* details how severely our country will be hurt by 2025 if we continue to ignore the infrastructure investment gap within each system.







SURFACE TRANSPORTATION

Surface transportation infrastructure includes highways, bridges, commuter rails and all other transit systems. Over the years, there have been a number of funding efforts, such as the Fixing America's Surface Transportation Act, which utilizes \$56.2 billion per year of federal funds for highway and transit programs. Unfortunately, these efforts have only kept the problem at bay. While we have been able to avoid immediate failure of key facilities and stabilize the downward trend in highway investment, it is not enough for effective functioning of the national highway system. In other words, the deterioration is still continuing and leaving a mounting burden on the U.S. economy.

In fact, it seems that every effort we make for improvement has its consequences. While maintenance on roads and highways has improved, delays caused by highway congestion have grown by 36 percent. Funds received for public bus and rail transportation end up being used for maintenance of the aging vehicles and fixing damages caused by poor roadway surfaces. Our funds are diverted to the difficult task of damage control instead of prevention.

According to *Failure to Act*, the average annual investment gap for surface transportation through 2025 is expected to increase to \$110 billion, and the deficiencies are projected to cost the national economy almost \$1 trillion in GDP by 2025. What does this mean for American citizens? Travel time will increase due to poor roadway conditions and out-of-service transit. Increased travel time for service providers will lead to increased cost of services and products. This will ultimately impact sales, which makes U.S. products less competitive with foreign imports. Overall business income and wages will be suppressed and the U.S. economy will move away from research, knowledge-based and technology-related sectors.

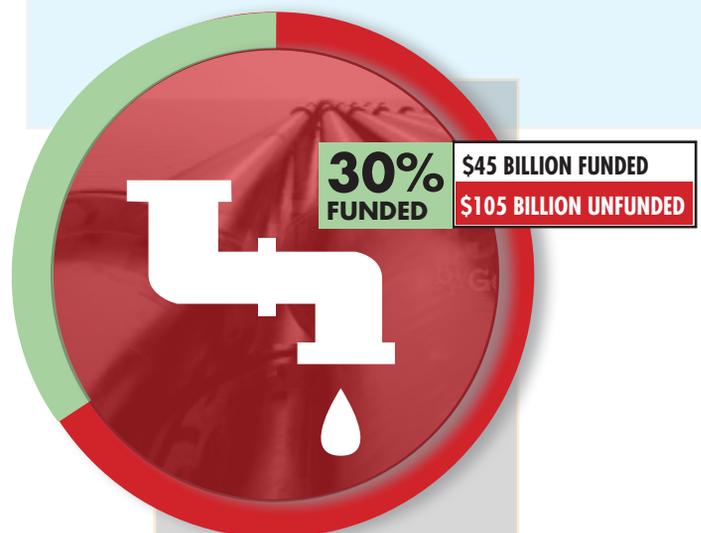
WATER AND WASTEWATER

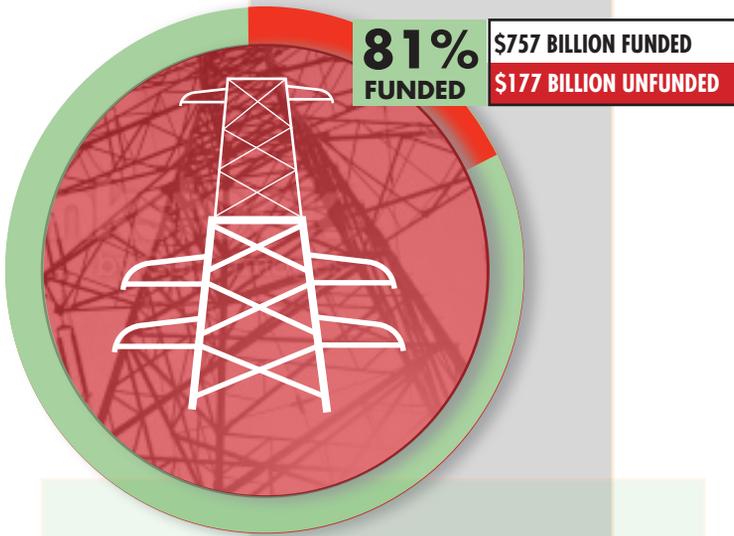
It's no surprise that out of all the infrastructure types, water is the most fundamental. Water systems collect water from rivers and lakes, remove pollutants and distribute the safe water. Similarly, wastewater systems collect sewage and used water, remove contaminants, and release the clean water back into the lakes and rivers. Obviously, both systems are incredibly essential.

Despite our heavy reliance on water and wastewater systems, the conditions of these systems remain extremely poor. Aging pipes and inadequate capacity leads to the estimated discharge of nearly 900 billion gallons of untreated sewage each year. These kinds of failures can lead to a variety of disruptions and even damage to other types of essential infrastructure.

Clearly, the public will not overlook the water and wastewater systems. In fact, current standards for public health and environmental safety require a significant number of water and wastewater infrastructures to be built. For instance, some have called for more than 7.3 million lead service pipelines around the country to be replaced. However, investments are simply unable to keep up.

According to *Failure to Act*, the annual investment gap for water and wastewater through 2025 is expected to decrease from \$11.2 billion to \$10.5 billion thanks to projects funded by the American Recovery and Reinvestment Act. However, the nation will still have lost over \$508 billion in GDP.





ELECTRICITY

Electricity relies on generation facilities and high-voltage transmission lines that connect it to major populations. These generation, transmission and distribution facilities were built over the course of a century. As such, they all have varying ages, conditions and capacities – and many of these facilities are in dire need of an upgrade.

Unfortunately, complicated and inefficient regulations make decisions more complex. *Failure to Act* points out that more investments must be put toward maintaining and replacing aging infrastructure before making expensive, new generation investments.

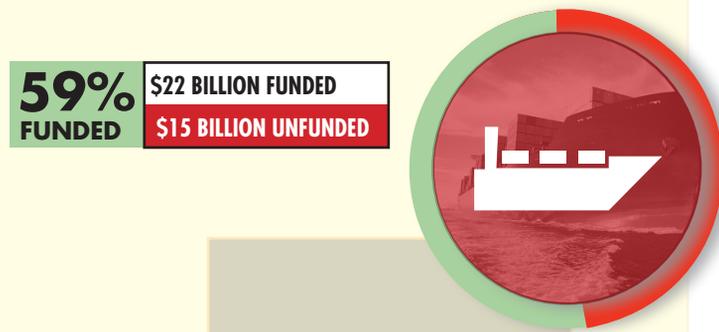
If aging equipment and increased demands are not addressed, we can expect greater electricity interruptions. For instance, every power interruption costs an average of \$2,600 - \$6,600 for industrial firms and an average of \$900 - \$1,700 for commercial firms. These power outages result in higher production costs, which again affects the competitiveness of American industries.

AIRPORTS, INLAND WATERWAYS AND MARINE PORTS

Although the U.S. has well over 3,000 airports, only 30 “core” airports serve nearly 70 percent of commercial passengers and 79 percent of all domestic and international airfreight. And with the need for airport spending growing everyday, we become even more at risk for air and ground congestion at these major airports. The Federal Aviation Administration estimates that construction needs and congestion relief will require \$19.9 billion in investment through 2025.

The inland waterway system and marine ports are in no better shape. Domestically, 20 percent of all crude petroleum, 6 percent of all coal and 14 percent of other fuel oils are transported over water. This alone affects all of the nation’s economic sectors that rely on energy. Additionally, 63 percent of U.S. imports and 73 percent of our exports are transported by water. Despite this heavy reliance on water transportation, difficult economic conditions have led to unmet port and transportation system needs. As a result, *Failure to Act* estimates losing nearly \$800 billion in GDP by 2025.

Historically, the U.S. has had a competitive advantage by having relatively inexpensive transportation costs. However, if airport and water port infrastructure continue to age and deteriorate, the cost to move goods will rise significantly. Deficiencies in airports and marine ports will directly harm our national competitiveness.





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IT’S TIME TO ACT

Infrastructure is critical to every nation’s prosperity, public health and welfare. Despite this, we have only been paying roughly half of America’s infrastructure bill, leaving a giant funding gap that hurts the economy, businesses, workers and families. All of the *Failure to Act* reports conclude that business costs and prices will increase if surface transportation worsens, if airports and waterways become too congested and outdated, or if water and electricity systems deteriorate.

In fact, if none of the infrastructure gaps are addressed, the nation is expected to lose 2.5 million jobs, \$4 trillion in GDP, \$34,000 in disposable income per household and \$7 trillion

in lost business sales by 2025. This is largely because the weakening of even one of the infrastructure systems has an effect on the others. For example, if airports become too congested, passengers may turn to surface transportation. But what happens if surface transportation infrastructure is too deteriorated to take on the extra strain? And what happens when power plants that provide electricity do not have a reliable source of clean water? Ultimately, these infrastructure systems depend on one another and the deterioration of just one will have a cascading impact on the other systems.

Do these circumstances mean we are destined to crumble? Not necessarily. The silver lining is that economic benefits of infrastructure investment

will also reverberate throughout. Just as one weakened infrastructure system can bring the others down, a strengthened one can positively affect the various systems as well. The *Failure to Act* series shows that closing each infrastructure investment gap is actually possible, and the economic consequences are avoidable with investment. After all, the nation’s inland waterways, marine ports, airports, and electricity and water infrastructure have all shown modest signs of investment gap improvements. Ultimately, it is insufficient funding which brings down economic productivity.

Although creating innovative answers and long-term solutions for this national crisis will be no easy task, one thing is certain: if we continue to turn a blind eye to the widening infrastructure investment gap, then the expectations of the *Failure to Act* report will surely turn into a reality. ★

For more information and to download the full report, visit <http://www.asce.org/failuretoact/>



Ethel Navales is the Assistant Editor for Right of Way Magazine.