



TURNING IDEAS INTO ACTION

Getting America fit for the future

BY ETHEL NAVALES

It was a cold, gloomy morning in January and for the third day in a row, I was driving through heavy rain to get to work—a rarity here in California. As if anticipating my complaints, the radio host reminded listeners that this gloomy weather should make us smile. After all, thanks to this non-stop downpour, we were finally seeing the end of the state's infamous drought. But before the host could finish the report, his words were interrupted by the *thud* of my car running over a pothole. Just minutes later, a traffic jam formed in front of me as cars slowed and swerved to avoid another hole. Even as I turned into the office parking lot, I was rattled with a third *thud*. Needless to say, it was getting harder to smile.

This past winter, California received its highest amount of rainfall in 122 years. And while we rejoiced the end of the drought, the damage caused by the downpour was unsettling. According to Greg Spotts, Assistant Director for the City of Los Angeles Department of Public Works, the number of pothole requests tripled during the January rainstorms. Northern California's Bay Area saw hundreds of potholes and even sinkholes. Officials claim it was an unprecedented worsening of the already crumbling roadways. Simply put, our infrastructure was not prepared to take on the weather.



“A really good road in a rainy winter can deal with it,” said Randy Rentschler, spokesman for the Metropolitan Transportation Commission. “But a poorly maintained, alligator-cracked road can’t deal with being dumped on for three months.”

A Comprehensive Assessment

After a winter of watching the roads literally crumble, I was not surprised when the United States received a D+ grade on the 2017 Infrastructure Report Card released just a few months later by the the American Society of Civil Engineers (ASCE).

Founded in 1852, ASCE is the nation’s oldest engineering society, with over 150,000 members dedicated to advancing the science and profession of civil engineering. And for nearly two decades, the ASCE has released an Infrastructure Report Card every four years, assigning grades based on capacity, condition, funding, future need, operation and maintenance, public safety, resilience and innovation.

The 2017 Report Card not only sheds light on America’s infrastructure, it goes into the specifics of our weaknesses and most importantly, it offers solutions.

With a cumulative D+ GPA—largely unchanged since the previous report in 2013—America once again falls into the “Poor, At Risk” category. According to the ASCE, a D grade symbolizes infrastructure approaching the end of its service life. There is significant deterioration and a strong risk of failure. Of the 16 infrastructure categories, America’s grades ranged from a B for Rail to a D- for Transit. Though we have been taking some necessary steps toward progress, especially with investment, it is clear that we have not done enough.

2017 INFRASTRUCTURE REPORT CARD

Over the last four years, several infrastructure categories showed progress, resulting in grade increases. However, the 2017 Report Card's cumulative GPA of D+ reflects the significant backlog of needs facing our nation's infrastructure. Underperforming, aging infrastructure remains a drag on the national economy, and costs every American family \$3,400 a year.

	AVIATION	D		PARKS & RECREATION	D+
	BRIDGES	C+		PORTS	C+
	DAMS	D		RAIL	B
	DRINKING WATER	D		ROADS	D
	ENERGY	D+		SCHOOLS	D+
	HAZARDOUS WASTE	D+		SOLID WASTE	C-
	INLAND WATERWAYS	D		TRANSIT	D-
	LEVEES	D		WASTEWATER	D-

But rather than focus on our grade, we may benefit from noting that out of 16 infrastructure categories, seven showed improvement from four years ago. They included Inland Waterways, Levees, Ports, Rail, Schools, Hazardous Waste and Wastewater. This clearly demonstrates that when project solutions are approved and implemented, we can affect a positive change.

Budget Plan Concerns

Unsurprisingly, Americans have been in agreement with the urgency of this issue and have been anxiously awaiting more details about President Trump's proposed \$1 trillion investment in infrastructure. But when the Administration released the fiscal year 2018 budget proposal in May, it was met with mixed reviews.

The budget proposes \$200 billion in federal spending on infrastructure over the next decade. This amount concerns those who were hoping that the federal government would spend much more on infrastructure, as well as those who wanted more details about where exactly the money would go. The Administration responded by saying that the \$200 billion will spark the promised \$1 trillion in new investments, and Transportation Secretary Elaine Chao assured the press that while the "main key principles" were released, the Administration expects to unveil more details in the near future. Other causes for concern include the cuts to existing infrastructure programs, as well as the reevaluation the federal government's role in infrastructure investment.

The ASCE points out that even in the best-case scenario, our current efforts do not come close to the \$2 trillion that infrastructure actually needs. But the report goes on to state, "The good news is that closing America's infrastructure gap is possible if Congress, states, infrastructure owners, and voters commit to increasing our investment."

An IRWA Reality Check

With every Infrastructure Report Card, the ASCE provides comprehensive solutions to improving and restoring America's infrastructure. (For proposed solutions, see the blue boxes on pages 25, 26 and 27.)

To see how realistic these solutions are for raising the grades, we interviewed several of IRWA's industry committee representatives to get a right of way perspective.

Realization That Water is Life

Janella Cordova, Project Manger for Overland Pacific & Cutler, Inc. and Chair of IRWA's Electric and Utilities Committee, believes public-private partnerships is the solution with the most immediate impact to our energy markets and will allow us to hit our energy renewable goals. But, water infrastructure stands out as priority. "Being from the desert of Southern California, water and its infrastructure are a key component to the continued success of one of the largest markets in the world," says Janella. "Continuous droughts have wreaked havoc on the ground water basins and although we have received some recent rainfall it has not been consistent or sufficient to recharge

these basins. We need to prioritize groundwater recharge projects. Water is life."

Remove Cost-Prohibitive Restrictions

As it applies to the midstream oil and gas pipeline industry, Brian Green, R/W-RAC, THC, Inc. thinks it's all about balance. As Chair of IRWA's International Oil & Gas Pipeline Committee, he says, "Opposition by all sorts of groups is making investment in needed oil and gas infrastructure very expensive. It creates delays that endanger the economic viability of the project. These groups seem to be gaining strength and at times have been emboldened by local, state, federal and judicial opinions and actions to the point of making infrastructure development difficult and cost prohibitive. I am not sure what the solution is other than a more informed approach by our local, state, federal and judicial agencies that address bona fide concerns without the delays and cost prohibitive restrictions we have seen in recent years. These agencies have to understand the critical need for the infrastructure and the fact that it will not occur without economic justification for the parties building it."

INVESTMENT

To achieve an infrastructure system fit for the 21st century, ASCE outlines specific steps that must be taken, beginning with increased, long-term, consistent investment. To continue to delay such investment only escalates the costs and risks of an aging infrastructure. To close the \$2.0 trillion 10-year investment gap, meet future need and restore our global competitive advantage, we must increase investment from all levels of government and the private sector. This investment must be consistently and wisely allocated, and must begin with the following steps:

1. **Put the "trust" back into "trust funds."** Dedicated public funding sources on the local, state, and federal levels need to be consistently and sufficiently funded from user generated fees, with infrastructure trust funds never used to pay for or offset other parts of a budget.
2. **Fix the Highway Trust Fund by raising the federal motor fuels tax.** To ensure long-term, sustainable funding for the federal surface transportation program the current user fee must be raised and tied to inflation to restore its purchasing power, fill the funding deficit, and ensure reliable funding for the future.
3. **Authorize and fund programs to improve specific categories** of deficient infrastructure and support that commitment by fully funding them in an expedient, prioritized manner.
4. **Infrastructure owners and operators must charge**—and Americans must be willing to pay—rates and fees that reflect the true cost of using, maintaining, and improving infrastructure.



A train reportedly carrying vinyl chloride was derailed in Paulsboro, New Jersey in November 2012 after the railway bridge crossing Mantua Creek collapsed. The derailment prompted a multiagency emergency response.

LEADERSHIP & PLANNING

The ASCE report emphasizes that smart investment will only be possible with leadership, planning and a clear vision for our nation's infrastructure. Leaders from all levels of government, business, labor, and nonprofit organizations must come together to ensure all investments are spent wisely, prioritizing projects with critical benefits to the economy, public safety and quality of life, while also planning for the costs of building, operating, and maintaining the infrastructure for its entire lifespan. To do so, we must:

1. **Require all projects greater than \$5 million that receive federal funding use life cycle cost analysis** and develop a plan for funding the project, including its maintenance and operation, until the end of its service life.
2. **Create incentives** for state and local governments and the private sector to invest in maintenance.
3. **Develop tools to ensure that projects most in need of investment and maintenance are prioritized**, to leverage limited funding wisely.
4. **Streamline the project permitting process** across infrastructure sectors, with safeguards to protect the natural environment, to provide greater clarity to regulatory requirements, bring priority projects to reality more quickly, and secure cost savings.
5. **Identify a pipeline of infrastructure projects attractive to private sector investment and public-private partnerships.** ASCE recognizes civil engineers' unique leadership role in addressing our infrastructure challenges. ASCE issued its "Grand Challenge," a call to action for the entire civil engineering profession to increase the value and capacity of infrastructure and increase and optimize infrastructure investments by transforming the way we plan, deliver, operate, and maintain our nation's infrastructure.

Get Solutions Off Paper

Sheila Mills, SR/WA, R/W-NAC is the Vice President and Director of Right of Way for H.W. Lochner, Inc., and Chair of IRWA's International Transportation Committee. "While the ASCE suggested solutions seem realistic and valid, in reality, I believe many of these same recommendations are a continual repeat from past years with no definite action or funding in place to be successful," says Sheila. "In other words, the solutions are solid, but we need the support and expertise of the right leadership to get the solutions off paper and implemented. Some may have the necessary funding to be implemented, but without a continual supply of funding, it will be difficult to sustain those plans."

Sheila believes that raising the fuel tax could have one of the greatest impacts. "The last fuel tax increase was in 1993. We have gone without an increase for 24 years, so let's compare that to business as we know it. If a right of way services provider kept the same fixed fees—with no consideration for rising costs, employee benefits or inflation for 24 years—would they still be in business today? Odds are they would not. So why would we think our Highway Trust Fund would remain self-sufficient with no fuel tax increases?"

Having worked for the Texas Department of Transportation for 28 years before retiring and moving into the private sector, Sheila is a strong proponent for private sector investments and public-private partnerships.

Get Proactive and Take Action

IRWA's International President Jerry Colburn, SR/WA, R/W-RAC, responded to the ASAE report by saying, "America's infrastructure is the backbone of our economy, health and safety. The taxpayers of our country are paying for so many things that are not necessary and border on ridiculous. We need to get our priorities straight. America has the money to fix the

infrastructure—we're just spending it on other things."

Jerry agrees with the ideas presented by ASAE, but believes the execution is lacking. He questions whether Americans are really willing to pay for the true cost of what it takes for our infrastructure to function well. And even if it was funded, he wonders how likely is it that we can implement the investment-related solutions. "The solutions with the greatest impact are in the area of reducing permitting and environmental requirements to compress the time it takes to deliver a project. The Carlsbad, California desalination plant took 17 years to come on line. California just came out of the worst drought in 1,200 years, so water projects have become increasingly important. If it takes 17 years to build a desalination plant, we are in trouble. Our role is to educate our citizens. We can no longer expect the low cost of enjoying our infrastructure. We take our comfort for granted. Freeways might not always be free."

Jerry also believes that private sector dollars are essential for the future of infrastructure in the U.S. "They work and allow our government to leverage their dollars and put them to work," he says. "But it seems like we wait for disaster to strike before we react. We have bridge collapses, failing dams and pipeline explosions that get our attention—and then we take action. Get proactive, America! Invest in our backbone! It is going to take bold steps by our government to attract the private money that will rebuild our crumbling infrastructure."

Time For Continuous Focus

Matthew Harris, SR/WA, R/W-RAC, who works for the Mississippi Department of Transportation and is Chair of IRWA's International Public Agencies Committee says, "In order to solve concerns, there must be continuous focus and effort in seeing matters getting resolved. The likelihood of implementing the investments and achieving the related solutions starts and ends with us doing something. Private sector investments

PREPARING FOR THE FUTURE

According to ASCE, we must utilize new approaches, materials, and technologies to ensure our infrastructure is more resilient—to more quickly recover from significant weather and other hazard events — and sustainable—improving the “triple bottom line” with clear economic, social, and environmental benefits.

1. **Develop active community resilience programs for severe weather and seismic events** to establish communications systems and recovery plans to reduce impacts on the local economy, quality of life, and environment.
2. **Consider emerging technologies and shifting social and economic trends**, such as autonomous vehicles, distributed power generation and storage, and larger ships when building new infrastructure, to assure long-term utility.
3. **Improve land use planning at the local level** to consider the function of existing and new infrastructure, the balance between the built and natural environments, and population trends in communities of all sizes, now and into the future.
4. **Support research and development into innovative new materials, technologies, and processes** to modernize and extend the life of infrastructure, expedite repairs or replacement, and promote cost savings.

<https://www.infrastructurereportcard.org/>



In February 2017, damage to the Oroville Dam's main spillway caused the evacuation of more than 180,000 people living downstream.

are needed in order to build new and improve existing infrastructure. For IRWA and the industry as a whole, the solution requires that we be very proactive in every way to ensure the safety of all who are involved.”

Establish Framework for Managing Assets

Brian Taylor, SR/WA, R/W-AC, AACI and Chair of IRWA's Asset Management Community of Practice has a different point of view. “The solutions are realistic, but they are not short term. A number of them require significant changes in order to implement, such as funding structures, approval processes and evaluation methodologies, none of which can or should be changed too quickly. At the same time, infrastructure is a long-term asset. Though it will likely take a decade to implement some of these changes, considering the century-long lifespan of some of our infrastructure, is ten years really that long?”

In terms of what can be easily implemented, Brian cites toll roads and access fees for national parks, where users already pay to use the amenity. “The next step would be to increase

these fees gradually to reflect some of the actual cost of operation,” he says. “An increase in the motor fuels tax is one of the easiest changes to make. Most people do not really understand the cost breakdown of gas. They might not even notice the day-to-day impact of an increase. Yet, because of these reasons, changes to these hidden taxes need to be scrutinized heavily and monitored closely.”

Brian suggests a regular and realistic assessment of the condition of current assets, along with an analysis of the current and future needs of the organization. Often times, once an asset is acquired or built, major capital repairs are postponed. When it is finally addressed, the deferred maintenance has exponentially increased the cost. “Several governments around the world have been looking at the overall management of their assets, creating broad review requirements and establishing framework policy for managing those assets. Investing in federal funding across infrastructure — instead of tying it to specific departments—would be a good first step,” says Brian.



Cars rest on the collapsed portion of the I-35W Mississippi River bridge after the August 2007 collapse in which 13 people were killed and 145 were injured.

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Moving Forward

While we have certainly made some progress in recent years, we still carry the weight of decades of underinvestment in our infrastructure. Reversing this will require major action from all facets of the American government and the American people.

Janella believes that IRWA can play a key role in this progress. “Right of way professionals garner a unique perspective on how infrastructure projects affect the individual citizen. IRWA can focus on this boots-on-the-ground perspective to connect with leaders outside of the right of way industry. IRWA can reach out to government agencies, political leaders and market innovators.”

Sheila agrees saying, “Globally speaking, I think it begins with selecting the right leadership to develop and implement a plan of action followed by the necessary support from our world leaders to move it forward. Within IRWA, we are fortunate to have a tremendous amount of great people in leadership roles ready and willing to share ideas and help lead those efforts. Our

challenge may be getting in front of the right focus group to be heard.” Sheila continues, “Our Association’s leadership recognizes the need for our industry experts to be more actively involved. I believe IRWA is already reaching out to other agencies and firms like ACSE to offer support and areas of expertise. I think this is a great start, and I am looking forward to seeing the results of those efforts. I would encourage anyone that has a remote interest and the knowledge and expertise to step up and volunteer.”

Infrastructure is the foundation that connects our businesses, communities and people. It improves our quality of life and ensures our public health and safety. As the ASCE points out, now is the time to renew, modernize and invest in our infrastructure. As evidenced by our current grade, our nation’s infrastructure challenges are significant—but solvable. Through strategic investment, bold leadership, comprehensive planning and careful preparation for the needs of the future, America’s infrastructure can be improved and restored. ✪

For more information, please visit www.infrastructurereportcard.org



Ethel Navales is the Associate Editor of Right of Way Magazine.