ASCE's *Report Card for America's Infrastructure* seeks to inform the public and policy makers about the condition of the nation's infrastructure and how best to improve it. Americans owe their economic prosperity, public safety, and high quality of life to the infrastructure that serves them every day.

RAISING THE GRADES

# FIVE KEY SOLUTIONS

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While the *Report Card* points out serious deficiencies in the nation's infrastructure as well as the need for focused and visionary leadership and adequate funding, these can be addressed. The key solutions offered by ASCE are ambitious and will not be implemented overnight, but Americans are capable of real and positive change. ASCE urges all of those who want to continue our tradition of a strong and prosperous nation to begin by maintaining and improving the infrastructure that makes us great.

The five key solutions are:

- ★ **INCREASE** federal leadership in infrastructure;
- ★ **PROMOTE** sustainability and resilience;
- ★ **DEVELOP** federal, regional, and state infrastructure plans;
- ★ **ADDRESS** life cycle costs and ongoing maintenance;
- ★ **INCREASE** and improve infrastructure investment from all stakeholders.

## 1. INCREASE FEDERAL LEADERSHIP IN INFRASTRUCTURE

America's infrastructure needs bold leadership and a compelling national vision. During the 20th century, the federal government led the way in building our nation's greatest infrastructure systems by means ranging from the New Deal programs to the interstate highway system and the Clean Water Act. Since that time, federal leadership has diminished and the condition of the nation's infrastructure has suffered. Currently most infrastructure investment decisions are made without the benefit of a national vision. That strong national vision must originate with strong federal leadership and be shared by all levels of government and the private sector. Without a strong national vision, infrastructure will continue to deteriorate.

## 2. PROMOTE SUSTAINABILITY AND RESILIENCE

America's infrastructure must meet ongoing needs for natural resources, industrial products, energy, food, transportation, shelter, and effective waste

management, and at the same time protect and improve environmental quality. Sustainability and resiliency must be an integral part of improving the nation's infrastructure. Today's transportation systems, water treatment systems, and flood control systems must be able to withstand both current and future challenges. Both structural and nonstructural methods must be applied to meet challenges. Infrastructure systems must be designed to protect the natural environment and withstand both natural and man-made hazards, using sustainable practices, to ensure that future generations can use and enjoy what we build today, as we have benefitted from past generations. Additionally, research and development should be funded at the federal level to develop new, more efficient methods and materials for building and maintaining the nation's infrastructure. Sustainable development will not only preserve our high quality of life and environment we enjoy today, but improve conditions in the future.

## 3. DEVELOP FEDERAL, REGIONAL, AND STATE INFRASTRUCTURE PLANS

Infrastructure investment at all levels must be prioritized and executed according to well conceived plans that both complement the national vision and focus on systemwide outputs. Goals of the plan should center on freight and passenger mobility, intermodality, water use, environmental stewardship, and encouraging resiliency and sustainability. The plans must reflect a better defined set of federal, state, local, and private sector roles and responsibilities and instill better discipline for setting priorities and focusing funding to solve the most pressing problems. The plans should also complement our broad national goals of economic growth and leadership, resource conservation, energy independence, and environmental stewardship. Infrastructure plans should be synchronized with regional land use planning and related regulation and incentives to promote nonstructural as well as structural solutions to mitigate the growing demand for increased infrastructure capacity.

## 4. ADDRESS LIFE CYCLE COSTS AND ONGOING MAINTENANCE

As infrastructure is built or rehabilitated, life cycle cost analysis should be performed for all infrastructure systems to account for initial construction, operation, maintenance, environmental, safety and other costs reasonably anticipated during the life of the project, such as recovery after disruption from natural or manmade hazards. Additionally, owners of the infrastructure should be required to perform ongoing evaluations and maintenance to keep the system functioning at a safe and satisfactory level. Life cycle cost analysis, ongoing

maintenance, and planned renewal will result in more sustainable and resilient infrastructure systems and ensure they can meet the needs of future users.

## 5. INCREASE AND IMPROVE INFRASTRUCTURE INVESTMENT FROM ALL STAKEHOLDERS

All levels of government, owners, and users must renew their commitment to infrastructure investments in all categories. All available financing options must be explored and debated. While great strides can be made with sustainable development and ongoing maintenance, if we are to make the necessary long-term improvements, significant funds must be invested. The longer critical investments to improve the operability, safety, and resilience of the nation's infrastructure are withheld, the greater the future cost and risk of failure. We must develop and authorize innovative financing programs that not only make resources readily available, but also encourage the most effective and efficient use of those resources. Federal investment must be used to complement, encourage, and leverage investment from the state and local government levels as well as from the private sector. In addition, users of infrastructure must be willing to pay the appropriate price for their use. ★

These five key solutions are holistic recommendations to improve the planning, building, and maintenance of the nation's infrastructure, but they must be applied in a way that meets the unique needs of each category. Along with detailed conditions descriptions, the individual chapters of this book contain specific solutions for raising the grade in each infrastructure category.