

Civil engineers are stewards of the nation's infrastructure, charged with the design, construction, operation and maintenance of our vital public works. Inherent in that responsibility is the obligation to periodically assess the state of the infrastructure, report on its condition and performance, and advise on the steps necessary for its improvement.

The 2009 *Report Card for America's Infrastructure* finds not much has changed since the last edition four years ago. Years of delayed maintenance and lack of modernization have left Americans with an outdated and failing infrastructure that cannot meet our needs.

Infrastructure has a direct impact on our personal and economic health, and the infrastructure crisis is endangering our nation's future prosperity. For the safety and security of our families, we can no longer afford to ignore the congested roads, aging dams, broken water mains and unsafe bridges we face every day. As a society, we must become better stewards of the environment through the use of sustainable infrastructure practices. The quality of life for this and future generations depends on our willingness to rise to the challenge.

These challenges are great, but they can be met. It will take government and industry leadership, sound technology, wise community planning and involved citizens to make real changes.

A healthy infrastructure will allow us to remain a strong and prosperous nation, but only if we move forward with vision, leadership and community involvement and support. We must work together to develop a path forward and begin the first crucial steps. With perseverance and a common goal, we can work together to rebuild our once great infrastructure.

The Need for Investment

In 2009, ASCE estimates that it will require \$2.2 trillion invested over five years to bring the condition of the nation's infrastructure up to a good condition - a \$600 billion increase since the 2005 *Report Card's* estimate of \$1.6 trillion. This number, adjusted for a 3% rate of inflation, represents capital spending at all levels of government and includes what is already being spent. Current spending only amounts to about half of the figure, which means the U.S. must invest an extra \$1.1 trillion over the next five years. (See Table B)

TABLE A ★ 2009 Report Card for America's Infrastructure

Aviation	D
Bridges	C
Dams	D
Drinking Water	D-
Energy	D+
Hazardous Waste	D
Inland Waterways	D-
Levees	D-
Public Parks and Recreation	C-
Rail	C-
Roads	D-
Schools	D
Solid Waste	C+
Transit	D
Wastewater	D-

AMERICA'S INFRASTRUCTURE G.P.A.	D
ESTIMATED 5 YEAR INVESTMENT NEED	\$2.2 TRILLION

NOTES Each category was evaluated on the basis of capacity, condition, funding, future need, operation and maintenance, public safety and resilience

A = Exceptional
B = Good
C = Mediocre
D = Poor
F = Failing

TABLE B ★ Estimated 5-Year Investment Needs in Billions of Dollars

CATEGORY	5-YEAR NEED (BILLIONS)	ESTIMATED ACTUAL SPENDING *	AMERICAN RECOVERY AND REINVESTMENT ACT (P.L. III-005)	FIVE-YEAR INVESTMENT SHORTFALL
Aviation	87	45	1.3	(40.7)
Dams	12.5	5	0.05	(7.45)
Drinking Water and Wastewater	255	140	6.4	(108.6)
Energy	75	34.5	11	(39.5)
Hazardous Waste and Solid Waste	77	32.5	1.1	(43.4)
Inland Waterways	50	25	4.475	(20.5)
Levees	50	1.13	0	(48.87)
Public Parks and Recreation	85	36	0.835	(48.17)
Rail	63	42	9.3	(11.7)
Roads and Bridges Discretionary grants for surface transportation	930	351.5	27.5 1.5	(549.5)
Schools	160	125	0**	(35)
Transit	265	66.5	8.4	(190.1)
	2.122 trillion***	903 billion	71.76 billion	(1.176 trillion)
Total Need**** \$2.2 trillion				
<p>* 5 year spending estimate based on the most recent available spending at all levels of government and not indexed for inflation ** The American Recovery and Reinvestment Act included \$53.6 billion for a State Fiscal Stabilization Fund for education, as of press time, it was not known how much would be spent on school infrastructure. *** Not adjusted for inflation **** Assumes 3% annual inflation</p>				
SOURCES For source information see page 150.				

Raising The Grades: Solutions

The nation's infrastructure faces some very real problems that threaten our way of life if they are not addressed. While it may not happen overnight, these problems are solvable if we have the right kind of vision and leadership. Raising the grades on our infrastructure will require that we seek and adopt a wide range of solutions in every category, including technical advances, funding and regulatory changes, and changes in public behavior and support.

ASCE has developed five key solutions to begin raising the grades. They are:

- **Increase** federal leadership in infrastructure to address the crisis.
- **Promote** sustainability and resilience in infrastructure to protect the natural environment and withstand natural and man-made hazards.
- **Develop** national and regional infrastructure plans that complement a national vision and focus on system-wide results.
- **Address** life-cycle costs and ongoing maintenance to meet the needs of current and future users.
- **Increase** and improve infrastructure investment from all stakeholders.