

## Methodology

To develop this *Report Card*, we assembled a panel of 24 of the nation's leading civil engineers, analyzed hundreds of studies, reports and other sources, and surveyed more than 2,000 engineers to determine what was happening in the field. We added three new categories to the 12 we graded in 2001, including one for infrastructure security.

Grades were assigned on the basis of condition and capacity, and funding versus need, generally following a traditional grading scale (e.g., if 77% of our roads are in good condition or better, that would earn a grade of C). Base grades were then reviewed by the Advisory Council and adjusted, usually with a plus or minus but sometimes as much a full letter grade, to reflect positive or negative trends or the critical consequences should a catastrophic failure occur. For example, the failure of a bridge or dam would have much more immediate and deadly consequences than a problem related to solid waste disposal.

# Report Card

FOR AMERICA'S

# Infrastructure



Subject	2001 Grade	2005 Grade	Comments
Aviation	<b>D</b>	<b>D+</b>	Gridlock on America's runways eased from crisis levels earlier in the decade due to reduced demand and recent modest funding increases. However, air travel and traffic have reportedly surpassed pre-Sept. 11 levels and are projected to grow 4.3% annually through 2015. Airports will face the challenge of accommodating increasing numbers of regional jets and new super-jumbo jets.
Bridges	<b>C</b>	<b>C</b>	Between 2000 and 2003, the percentage of the nation's 590,750 bridges rated structurally deficient or functionally obsolete decreased slightly from 28.5% to 27.1%. However, it will cost \$9.4 billion a year for 20 years to eliminate all bridge deficiencies. Long-term underinvestment is compounded by the lack of a Federal transportation program.
Dams	<b>D</b>	<b>D</b>	Since 1998, the number of unsafe dams has risen by 33% to more than 3,500. While federally owned dams are in good condition, and there have been modest gains in repair, the number of dams identified as unsafe is increasing at a faster rate than those being repaired. \$10.1 billion is needed over the next 12 years to address all critical non-federal dams—dams which pose a direct risk to human life should they fail.
Drinking Water	<b>D</b>	<b>D-</b>	America faces a shortfall of \$11 billion annually to replace aging facilities and comply with safe drinking water regulations. Federal funding for drinking water in 2005 remained level at \$850 million, less than 10% of the total national requirement. The Bush administration has proposed the same level of funding for FY06.
Energy (National Power Grid)	<b>D+</b>	<b>D</b>	The U.S. power transmission system is in urgent need of modernization. Growth in electricity demand and investment in new power plants has not been matched by investment in new transmission facilities. Maintenance expenditures have decreased 1% per year since 1992. Existing transmission facilities were not designed for the current level of demand, resulting in an increased number of 'bottlenecks' which increase costs to consumers and elevate the risk of blackouts.
Hazardous Waste	<b>D+</b>	<b>D</b>	Federal funding for 'Superfund' cleanup of the nation's worst toxic waste sites has steadily declined since 1998, reaching its lowest level since 1986 in FY05. There are 1,237 contaminated sites on the National Priorities List, with possible listing of an additional 10,154. In 2003, there were 205 U.S. cities with 'brownfields' sites awaiting cleanup and redevelopment. It is estimated that redevelopment of those sites would generate 576,373 new jobs and \$1.9 billion annually for the economy.
Navigable Waterways	<b>D+</b>	<b>D-</b>	A single barge traveling the nation's waterways can move the same amount of cargo as 58 semi-trucks at one-tenth the cost—reducing highway congestion and saving money. Of the 257 locks on the more than 12,000 miles of inland waterways operated by the U.S. Army Corps of Engineers, nearly 50% are functionally obsolete. By 2020, that number will increase to 80%. The cost to replace the present system of locks is more than \$125 billion.
Public Parks & Recreation	<b>--</b>	<b>C-</b>	Many of our nation's public parks, beaches and recreational harbors are falling into a state of disrepair. Much of the initial construction of roads, bridges, utility systems, shore protection structures and beaches was done more than 50 years ago. These facilities are anchors for tourism and economic development and often provide the public's only access to the country's cultural, historic and natural resources. The National Park Service estimates a maintenance backlog of \$6.1 billion for their facilities. Additionally, there is great need for maintenance, replacement and construction of new infrastructure in our nation's state and municipal park systems.
Rail	<b>--</b>	<b>C-</b>	For the first time since World War II, limited rail capacity has created significant chokepoints and delays. This problem will increase as freight rail tonnage is expected to increase at least 50% by 2020. In addition, the use of rail trackage for intercity passenger and commuter rail service is increasingly being recognized as a worthwhile transportation investment. Congestion relief, improved safety, environmental and economic development benefits result from both freight and

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			passenger market shifts to rail creating a rationale for public sector investment. The freight railroad industry needs to spend \$175-\$195 billion over the next 20 years to maintain existing infrastructure and expand for freight growth. Expansion of the railroad network to develop intercity corridor passenger rail service is estimated to cost approximately \$60 billion over 20 years. All told, investment needs are \$12-13 billion per year.	
Roads	<b>D+</b>	<b>D</b>	Poor road conditions cost U.S. motorists \$54 billion a year in repairs and operating costs—\$275 per motorist. Americans spend 3.5 billion hours a year stuck in traffic, at a cost of \$63.2 billion a year to the economy. Total spending of \$59.4 billion annually is well below the \$94 billion needed annually to improve transportation infrastructure conditions nationally. While long-term Federal transportation programs remain unauthorized since expiring on Sept. 30, 2003, the nation continues to shortchange funding for needed transportation improvements.	
Schools	<b>D-</b>	<b>D</b>	The Federal government has not assessed the condition of America's schools since 1999, when it estimated that \$127 billion was needed to bring facilities to good condition. Other sources have since reported a need as high as \$268 billion. Despite public support of bond initiatives to provide funding for school facilities, without a clear understanding of the need, it is uncertain whether schools can meet increasing enrollment demands and the smaller class sizes mandated by the No Child Left Behind Act.	
Security	<b>--</b>	<b>I</b>	While the security of our nation's critical infrastructure has improved since Sept. 11, the information needed to accurately assess its status is not readily available to engineering professionals. This information is needed to better design, build and operate the nation's critical infrastructure in more secure ways. Security performance standards, measures and indices need to be developed, and funding must be focused on all critical infrastructure sectors, beyond aviation.	
Solid Waste	<b>C+</b>	<b>C+</b>	The nation's operating municipal landfills are declining in total numbers, but capacity has remained steady due to the construction of numerous regional landfills. In 2002, the United States produced 369 million tons of solid waste of all types. Only about a quarter of that total was recycled or recovered.	
Transit	<b>C-</b>	<b>D+</b>	Transit use increased faster than any other mode of transportation—up 21%—between 1993 and 2002. Federal investment during this period stemmed the decline in the condition of existing transit infrastructure. The reduction in federal investment in real dollars since 2001 threatens this turnaround. In 2002, total capital outlays for transit were \$12.3 billion. The Federal Transit Administration estimates \$14.8 billion is needed annually to maintain conditions, and \$20.6 billion is needed to improve to "good" conditions. Meanwhile, many major transit properties are borrowing funds to maintain operations, even as they are significantly raising fares and cutting back service.	
Wastewater	<b>D</b>	<b>D-</b>	Aging wastewater management systems discharge billions of gallons of untreated sewage into U.S. surface waters each year. The EPA estimates that the nation must invest \$390 billion over the next 20 years to replace existing systems and build new ones to meet increasing demands. Yet, in 2005, Congress cut funding for wastewater management for the first time in eight years. The Bush administration has proposed a further 33% reduction, to \$730 million, for FY06.	
<p><b>America's Infrastructure G.P.A. = D</b>  <b>Total Investment Needs = \$1.6 Trillion</b>  <i>(estimated 5-year need—does not include security investment needs)</i></p>			<p>A = Exceptional            B = Good            C = Mediocre            D = Poor            F = Failing            I = Incomplete</p>	<p>Each category was evaluated on the basis of condition and performance, capacity vs. need, and funding vs. need.</p>