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Testimony Of
The American Society Of Civil Engineers
Before The
Committee On Banking, Housing, And Urban
Affairs
United States Senate
On the
Condition of Our Nation's Infrastructure and
Proposals for Needed Improvements
March 11, 2008

Mr. Chairman and Members of the Committee:

Good morning. I am David G. Mongan. I am the 2007-2008 President of the American Society of Civil Engineers (ASCE), and I am pleased to appear before you today to testify for ASCE on the condition of the nation's infrastructure and proposals for needed improvements.

The Problem of Failing Infrastructure

As you know, ASCE concluded in our 2005 Report Card for America's Infrastructure that the nation's infrastructure deserved an overall grade of "D."

We said then that America's aging and overburdened infrastructure threatens the economy and quality of life in every state, city, and town in the nation.

In addition, we estimated that it would take an investment of \$1.6 trillion by 2010 to bring the nation's existing infrastructure into good working order.

Nothing approaching that level of investment has been made. Indeed, little has changed in the three years since we handed out that dismal grade, and establishing a long-term plan to finance the development and maintenance of our infrastructure remains a pressing national priority.

This nation continues to under invest in infrastructure at the national level. The total of all federal spending for infrastructure as a share of all federal spending has steadily declined over the last 30 years, according to the Congressional Budget Office (CBO).¹

The problem is not unique to the United States.

¹ Cong. Budget Office, *Trends in Public Spending on Infrastructure* (February 2008).

In the United Kingdom, Her Majesty's government has concluded that it needs to make greater investment in infrastructure. "The Government is committed to reversing the legacy of under-investment in the nation's infrastructure. Major increases in capital investment in recent years have delivered continued improvements in health, education, transport and housing. This investment is set to continue, with public sector net investment set to be to 2¼ [percent] of [gross domestic product] from 2007 onwards—almost four times the level in 1997."²

In the European Community, the share of investment in transportation infrastructure alone decreased from 1.5 percent of GDP in the 1970s to 0.9 percent in the 1980s; and investment in ports and inland waterways has fallen to less than half its 1975 volume.

Japan has seen government fixed investment as a percent age of GDP decline, from almost 11 percent in the late 1970s to below seven percent at the start of the 1990s, according to a report by the Organization for Economic Cooperation and Development (OECD) in 2007. The Japanese levels, however, are still well above the U.S. investment program.

In February, the French Senate recommended that the French government invest an additional €2 billion (\$3.06 billion) annually starting in 2009 in transportation infrastructure. The report, "Transportation Infrastructure: Putting France on the Right Track," concluded that under investment in transportation infrastructure threatens the modernization of the French economy. "The French transportation system ... [is] in peril

² HM Treasury, Public Spending and Reporting, at http://www.hm-treasury.gov.uk/documents/public_spending_reporting/psr_index.cfm (accessed Mar. 7, 2008).

if a strong political consensus is not quickly reached to save the investments in the transportation infrastructure.”³

At home, the problem remains a daunting one. We need cite only a few of the more pressing infrastructure investment needs.

Surface Transportation System

In 2005, we concluded that total spending on America’s roads and highways should be about \$94 billion each year to improve transportation infrastructure conditions nationally. The federal investment in 2006 totaled approximately \$34 billion, barely a third of the investment needed.

The Congressional Budget Office (CBO) recently estimated that America’s investment in surface transportation infrastructure by all levels of government in 2004 was \$191 billion (in 2006 dollars), or 1.5 percent of gross domestic product (GDP).

The federal government provided about one-quarter of those funds, and states and localities provided the rest. Those funds were split about equally between spending for capital projects and operation and maintenance. Most of that spending was for roads. In comparison, the Chinese government invested an estimated 2.5 percent of GDP in highway construction in 2001, according to the American Road and Transportation Builders Association.

In 2007, the Department of Transportation reported that the cost to maintain the nation’s highways would require an annual investment of \$78.8 billion in 2004 dollars by all levels of government.

³ Commission des Affaires Économiques, *Infrastructures de transport: remettre la France sur la bonne voie* (2008), at <http://www.senat.fr/rapcomdir/crecon.html> (accessed Mar. 7, 2008).

Even at this level, however, congestion would worsen, according to the report, because it would finance too little new highway capacity. The U.S. DOT report calculates an annual investment of \$89.7 billion in 2004 dollars would be required to achieve this policy goal. Most of the additional \$11 billion investment each year would be for new capacity.

The DOT report, however, may understate the need. The American Road and Transportation Builders Association believes that federal highway funding in the next surface transportation bill would have to start at \$54.5 billion in FY 2010 and grow to \$61.5 billion by FY 2015 to provide the federal share of the annual highway investment needed to maintain both physical conditions and operating performance.

Wastewater and Drinking-Water Systems

In January, the Environmental Protection Agency (EPA) reported that we must invest at least \$202.5 billion just to prevent combined sewer overflows and sanitary sewer overflows at the nation's 16,000 publicly owned wastewater treatment works.

But in 2002, the EPA estimated that the projected gap in what is spent on sewage treatment systems and what is needed was between \$331 billion and \$450 billion by 2019. The investment "gap" for drinking-water systems was equally stark: \$102 billion over 20 years.

Waterways Infrastructure

The Corps of Engineers operates and maintains 240 locks at 195 locations along 12,000 miles of inland waterways. The average lock on these waterways is 53 years old—past the 50-year service life.

It costs about \$600 million to replace a lock. If we were to replace just half of the 240 locks that are known to be beyond their design life, we would need to spend \$72 billion. Simply to rehabilitate the other half of the system would cost another \$30 billion.

That's more than \$100 billion just to bring our antiquated waterways into the 21st century.

At the annual rate of spending of \$180 million in the administration's budget proposal for FY 2009, it would take the Corps 20 years simply to fund all the inland waterways projects authorized in WRDA 2007.

Solutions to the Problem

The National Infrastructure Bank Act of 2007 (S. 1926) would begin to address a problem that is rapidly approaching crisis levels—the physical deterioration of the nation's major public works systems.

Briefly, the legislation would establish a National Infrastructure Bank. The Bank would be an independent body designed to evaluate and finance “capacity-building” infrastructure projects of substantial regional and national significance.

Eligible infrastructure projects would be limited to publicly owned mass transit systems, public housing, roads, bridges, drinking-water systems, and sewage-treatment systems.

Sponsors— states, cities, counties, tribes, or an infrastructure agency such as a transit or wastewater treatment agency, or a consortium of these entities—would propose infrastructure projects. To be eligible, the projects would need a minimum federal investment of \$75 million.

The National Infrastructure Bank would evaluate and finance “capacity-building” infrastructure projects of substantial regional and national significance, the bill would prime the pump to begin meeting the staggering investment needs for our infrastructure.

We believe the National Infrastructure Bank Act of 2007 is essential to beginning the long-term effort to maintain or replace economically vital infrastructure systems across the nation. This nation cannot afford to wait much longer to invest significant sums in its infrastructure, and this bill will help to lead the way.

Other Financing Options

ASCE supports the establishment of a federal multiyear capital budget for public works infrastructure construction and rehabilitation. This budget would be similar to those used by state and local governments. The capital budget must be separated from non-capital federal expenditures. The current budgeting process at the federal government level has a short-term, one- to two-year, focus. Infrastructure, by its very nature, is a long-term investment.

The current federal budget process does not differentiate between expenditures for current consumption and long-term assets. This causes major inefficiencies in the planning, design and construction process for long-term investments. A federal capital budget could create a mechanism to help reduce the constant conflict between short-term

and long-term needs. It also would help increase public awareness of the problems and needs facing this country's physical infrastructure.

Without long-term financial assurance, the ability of the federal, state, and local governments to do effective infrastructure investment planning is constrained severely.

In addition, we support:

- User fees (such as a motor fuel sales tax) indexed to the Consumer Price Index.
- Appropriations from general treasury funds, issuance of revenue bonds, and tax-exempt financing at state and local levels.
- Trust funds or alternative reliable funding sources established at the local, state and regional levels, including use of sales tax, impact fees, vehicle registration fees, toll revenues, and mileage based user fees be developed to augment allocations from federal trust funds, general treasuries funds and bonds.
- Public-private partnerships, state infrastructure banks, bonding and other innovative financing mechanisms as appropriate for the leveraging of available transportation program dollars, but not in excess of, or as a means to supplant user fee increases.
- The use of budgetary firewalls to eliminate the diversion of user revenues for non-infrastructure purposes.

Public-Private Partnerships

In closing, we need to say a few words about the use of public-private partnerships in providing financial assistance to U.S. infrastructure.

Public-private partnerships (PPPs) are contractual relationships between public and private sectors in infrastructure development. They have been defined as “a cooperative venture between the public and private sectors, built on the expertise of each partner that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards.”

PPPs have been practiced worldwide in both developed and developing countries with multiple objectives including promoting infrastructure development, reducing costs, increasing construction and operation efficiencies, and improving service quality by incorporating private sector knowledge, expertise, and capital.⁴

These PPPs span a spectrum of contractual models from straight contracting out to outright privatization, with increasing responsibilities and risks allocated to the private sector. However, no matter which PPP model is used, the regulatory control remains the responsibility of the public sector, which determines the kind of public works and services to be acquired and the quality and cost requirements on the delivery of such works and services, and takes necessary remedial actions for substandard performance.⁵

Our research has discovered a wide range of barriers to public-private partnerships in infrastructure development. These are broadly classified as to (1) social, political, and legal risk; (2) unfavorable economic and commercial conditions; (3) inefficient public procurement framework; (4) lack of mature financial engineering

⁴ Xueqing Zhang, M.ASCE, Factor Analysis of Public Clients' Best-Value Objective in Public-Privately Partnered Infrastructure Projects, 132 ASCE J. CONSTR. ENG'G & MGMT 956 (2006).

⁵ Id.

techniques; (5) problems related to the public sector; and (6) problems related to the private sector.⁶

As a matter of policy, ASCE has concluded that:

- Any public revenue derived from PPPs must be dedicated exclusively to comparable infrastructure facilities in the state or locality where the project is based.
- PPP contracts must include performance criteria that address long-term viability, life cycle costs and residual value.
- Transparency must be a key element in all aspects of contract development, including all terms and conditions in the contract. There should be public participation and compliance with all applicable planning and design standards, and environmental requirements.

And, although these partnerships are increasingly popular at the state level and are believed to offer some help for financially strapped communities to provide basic infrastructure, that help can come at a price to the public.⁷

The Government Accountability Office (GAO) cautioned in February that these partnerships may be useful in boosting highway investments but that they are not a panacea.

⁶ Zhang, Paving the Way for Public-Private Partnerships in Infrastructure Development, 131 ASCE J. CONSTR. ENG'G & MGMT 71 (2005).

⁷ A recent survey found that 36 states have some type of legislation specifically authorizing public-private partnerships for infrastructure projects. Virtually all of the laws address the use of PPPs on transportation projects (highways, toll roads, and bridges). A few states also authorize PPPs for other infrastructure, including wastewater treatment plants, ports, airports, prisons, schools, sports stadiums, and others. See Michael E. Pikiel Jr. and Lillian Plata, *A Survey of PPP Legislation across the United States in GLOBAL INFRASTRUCTURE* (2008).

Highway public-private partnerships have resulted in advantages for state and local governments, such as obtaining new facilities and value from existing facilities without using public funding. The public can potentially obtain other benefits, such as sharing risks with the private sector, more efficient operations and management of facilities, and, through the use of tolling, increased mobility and more cost effective investment decisions. There are also potential costs and trade-offs—there is no "free" money in public-private partnerships and it is likely that tolls on a privately operated highway will increase to a greater extent than they would on a publicly operated toll road. There is also the risk of tolls being set that exceed the costs of the facility, including a reasonable rate of return, should a private concessionaire gain market power because of the lack of viable travel alternatives. Highway public-private partnerships are also potentially more costly to the public than traditional procurement methods and the public sector gives up a measure of control, such as the ability to influence toll rates.⁸

In the field of water infrastructure, for example, New Jersey American Water, a wholly owned subsidiary of American Water, a private, for-profit corporation, operates investor-owned drinking-water systems that supply water to more than 2.6 million people in New Jersey.

In January, New Jersey American announced that it is seeking an increase in water rates to raise an estimated \$350 million to pay for the cost of replacing outdated infrastructure. The proposed rate escalation will increase the cost of water for the average residential customer consuming 21,000 gallons quarterly from \$106.20 to \$145.71—about 37 percent.

“Replacing aging infrastructure and improving our supply capacity and water production facilities to meet increasing demand are the main drivers of this necessary rate increase,” said the company’s press release.

Thank you, Mr. Chairman, that concludes my testimony. I would be pleased to answer the Committee’s questions.

⁸ Government Accountability Office, *Highway Public-Private Partnerships: More Rigorous Up-front Analysis Could Better Secure Potential Benefits and protect the Public Interest* (February 2008).

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