

INFRASTRUCTURE

The Water Challenge

Photo courtesy of Metchalk & Eddy



It may be out of sight, but it shouldn't be out of mind. The condition of the nation's water infrastructure, much of which is reaching the end of its useful life, requires a national response.

By Ken Kirk

The plants that treat and the pipes that convey drinking water and wastewater are in poor shape nationwide. The country assumes a significant risk by ignoring this reality. While public and private water and wastewater entities serve their customers well, we must recognize they do so with decaying infrastructure. Furthermore, they do so despite increasing burdens imposed by growing population and sprawling communities, both of which add demands on water systems, and by federal regulations that impose high compliance costs but offer little or no offsetting funding.

The United States faces a serious situation: Its fundamental environmental and public health protections are in jeopardy. Federal contributions to water infrastructure programs have declined dramatically for more than a decade. Insufficient funding makes it increasingly difficult to ensure that disease-carrying bacteria and dangerous toxins are fully extracted from our drinking water and that the effluent sent to our rivers, streams and lakes meets national water quality standards.

Recent national statistics produced by the Water Infrastructure Network (WIN) suggest the funding gap to repair or replace the nation's deteriorated water infrastructure comes to \$23 billion per year for 20 years. Although the funding gap for water infrastructure is substantial, when compared to what is at risk, the federal contribution required is a reasonable investment. Local and state contributions to water quality programs account for 90 percent of spending in this area. According to the WIN report, "Water Infrastructure NOW: Recommendations for Clean and Safe Water in the 21st Century," water systems account for \$11 billion a year, and wastewater systems account for \$12 billion a year of the water infrastructure funding gap.

The U.S. Environmental Protection Agency is expected to report similar figures in a study to be released in November. This is important. It confirms the administration is documenting the condition of these vital systems. More significantly, it presages action by Congress. The urgent need to repair and replace our aging and ailing water infrastructure is becoming more visible on Capitol Hill, in federal agencies, and in virtu-

ally every municipality nationwide. Federal and local officials are poised to meet this daunting challenge by initiating a comprehensive plan to ensure the safety of our drinking water and our wastewater, necessary to both human health and environmental protection.

The extent of this problem became clear this summer when sewers overflowed in Washington, DC, causing the administration to declare parts of the city a federal disaster. Officials have noticed the problem, and ways to fix aging water and wastewater infrastructure problems are now being discussed at federal and local levels across America.

Earlier this year, Congress began to look at the magnitude of the problem. Several key House and Senate committees have held hearings. In April, 80 Congressional Representatives formed a bipartisan Water Infrastructure Caucus in the House of Representatives, committing Congress to active involvement in developing a solution to the shortfall of funds for water infrastructure. While Senate rules prohibit the formation of such caucuses, Senators on both sides of the aisle have demonstrated support to funding this huge and crucial infrastructure issue. Indeed, Sen. James Jeffords (I-VT), the new Chairman of the Environment and Public Works Committee, included water infrastructure as one of his top priorities in the 109th Congress, and work is now underway to draft legislation that could overcome, or at least help overcome, the funding issue.

These developments in Congress are welcomed. But we also look to the administration to follow suit and actively support the legislative process that could ultimately close the water infrastructure gap. Yet, as the lead-in to Bob Bein's article says: "It's up to civil engineers to lead the charge for infrastructure solutions and investment." We must remember that although aging pipes and treatment plants are largely out of sight, we can no longer afford to keep them out of mind. TWT

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The Water Infrastructure Challenge

Federal funding of water infrastructure programs has fallen and consequently, the quality of America's water and wastewater treatment is in jeopardy

By Ken Kirk

Americans take for granted safe drinking water and clean wastewater, and no one would deny that we all deserve this sense of comfort. The current condition of the nation's drinking water and wastewater infrastructure, however, demands our immediate attention. Without decisively addressing water infrastructure funding, we cannot continue to take these essential services for granted. The challenges we face are aging treatment plants and failing systems of pipes that are essential to drinking water and wastewater quality and provide basic protection of human health and environmental protections. Absent resolute federal action, the nation will ultimately face a crisis akin to, but of greater consequence than, the energy debate that President George W. Bush and the 107th Congress are currently confronting.

Both the energy and water infrastructure systems supply vital commodities to the

nation's citizenry; however, there is no simple alternative to a clean and safe water supply. As the citizens of California found out during the past several months, the United States waited too long to formulate a decisive energy strategy. The country can ill-afford a similar delay in federal action for our water and wastewater infrastructure.

At the heart of the problem is a crumbling system of drinking water and sewage pipes and aging treatment plants, much of which was built in the early 1900s and some dating as far back as the 1800s. These pipes are the national equivalent to a person's heart and lungs. They are literally disintegrating from age and use, or like arteries, are clogged to the point of rupture. The nation's wastewater and drinking water systems are old, tired and lacking the necessary upgrades to continue to provide clean and safe water to citizens and businesses across the country.

The nation's core environmental and public health protections are in jeopardy, in part, because the federal contribution to water infrastructure programs has fallen dramatically during the past 15 years. Insufficient funds to repair, replace, and upgrade treatment facilities and their delivery systems are making it increasingly difficult to ensure that disease-carrying bacteria and dangerous toxins are fully extracted from our drinking water and that the effluent we return to our rivers, streams and lakes meets national water quality standards. Simply put, without significant increases in federal funding for water infrastructure repair and replacement, these facilities will soon reach the end of their useful lives.

In addition to the most basic of public health protections, America's drinking water and wastewater systems create direct economic value across nearly every sector of the economy and every region of the coun-

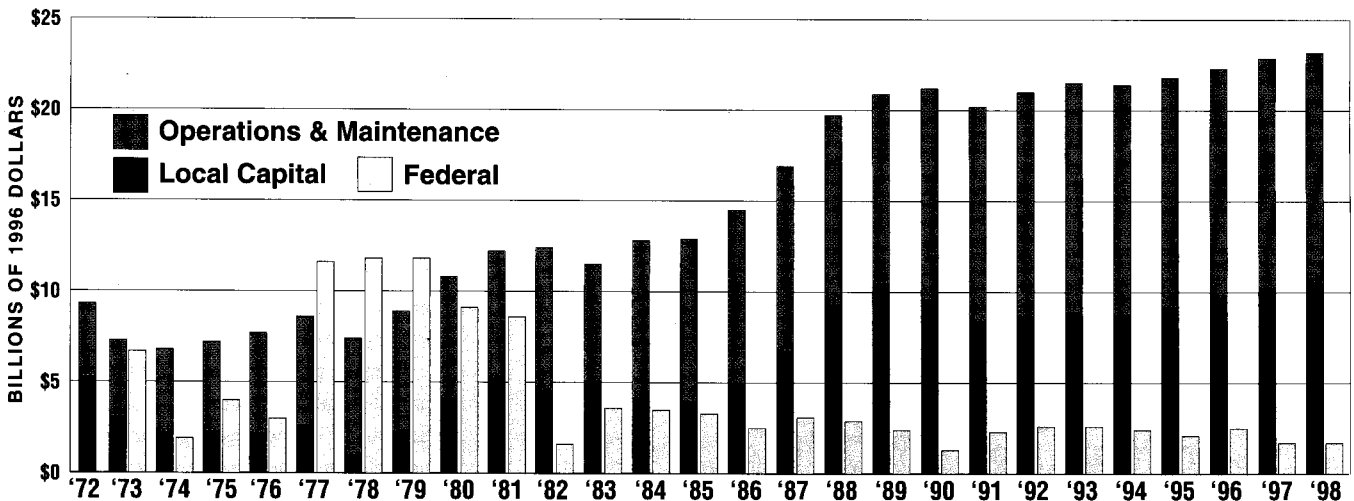


Figure 1. Measuring Funding: The federal government's disturbing trend of decreasing investment in the nation's water and wastewater infrastructure leaves local governments with the impossible task of coming up with ever-increasing funds for upgrades.

try. America's drinking water and wastewater systems contribute directly to the productivity of our workforce and help ensure continuous growth in the gross domestic product (GDP).

Despite the benefits, there is a disturbing shortfall in the level of investment needed to maintain and make necessary upgrades to these systems. The level of investment necessary to close the funding gap is unprecedented. An April 2000 report of the Water Infrastructure Network (WIN), a broad-based coalition of local elected officials, drinking water and wastewater service providers, state environmental and health administrators, engineers and environmen-

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talists seeking to protect the health and environmental gains of America's drinking water and wastewater, estimates that our water and wastewater systems face a predicted funding gap of \$23 billion a year between current investments in infrastruc-

ture and the investments that will be needed annually over the next 20 years to replace aging and failing pipes and meet mandates of the Clean Water Act and Safe Drinking Water Act. WIN's second report, *Water Infrastructure NOW: Recommendations for Clean and Safe Water in the 21st Century*, makes it clear that the investment we have made in our water infrastructure is of great value to many industries, and includes \$50 billion a year in water-based recreation products, \$300 billion a year in coastal tourism, \$45 billion a year in commercial fishing, and hundreds of billions of dollars in basic manufacturing.

Although the funding gap for water infrastructure is substantial, when compared to what is at risk, the federal contribution required is a reasonable investment. Local and state contributions to water quality programs already account for 90 percent of spending in this area. According to the WIN report, water systems account for \$11 billion a year and wastewater systems account for \$12 billion a year of the water infrastructure funding gap.

As Executive Director of the Association of Metropolitan Sewerage Agencies (AMSA), the largest association of publicly owned treatment works in the country and a WIN founding member, I see first-hand that municipal officials become frustrated in their efforts to obtain the necessary funding. Sometimes they must choose between system upgrades to meet complex, new federal regulations and pipe replacement and repair that ensures they will continue to meet the requirements of the Clean Water Act and Safe Drinking Water Act. Whatever priorities municipal officials choose to implement, something is left undone that must, subsequently, be factored into future budgets at a higher cost.

As Figure 1 demonstrates, these officials also face a dramatic decline in federal capital investment for water infrastructure repair and upgrades. In 1980, federal capital investment in water infrastructure was nearly \$10 billion of a total investment of \$18 billion, but by 1994 it fell to nearly \$3 billion and continues to decline.

Over the past year, WIN has met with many federal officials to help them become more aware of the challenges being faced at the local level and the consequences of inaction. Now, thanks primarily to the efforts of WIN, local officials, once alone in their knowledge of the breadth and profound

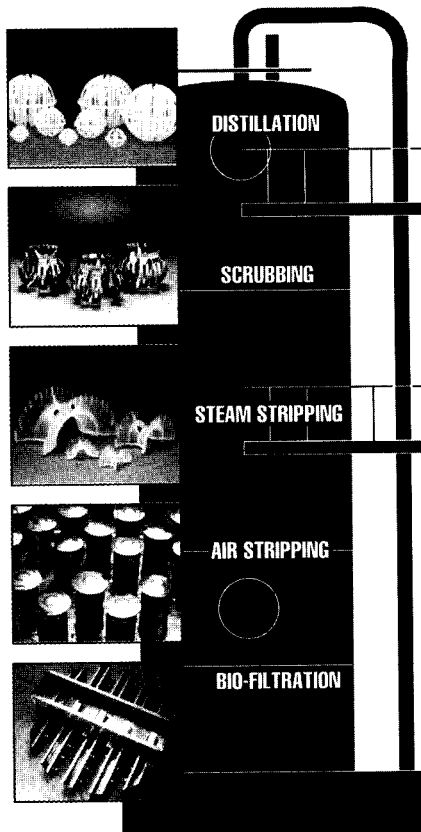
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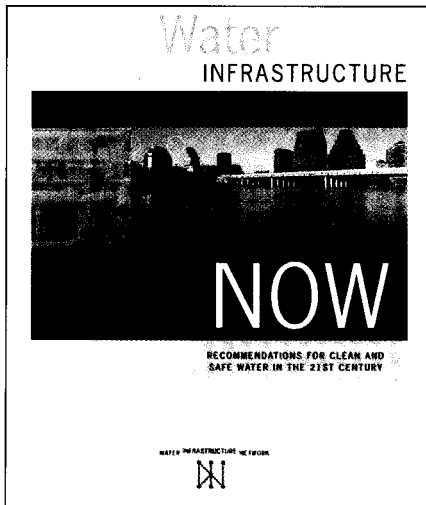
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risks posed by this massive problem, have a growing network of vocal allies in dozens of associations and in local and federal government. In April 2000, Capitol Hill took notice of the urgent need for federal involvement in the infrastructure dilemma. Eighty Congressional representatives joined the battle, forming a bipartisan Water Infrastructure Caucus (WIC) in the U.S. House of Representatives, committing Congress to active involvement in finding a solution to the shortfall in water infrastructure funding. While U.S. Senate rules prohibit the formation of such caucuses, senators from both sides of the aisle have broadly supported the infrastructure funding issue, and several introduced legislation earlier this year that takes aim at several small parts of the overall funding problem.

Furthermore, the U.S. Environmental Protection Agency (EPA) has estimated an infrastructure funding need that supports the estimates of WIN. At press time, EPA is expected to issue its water infrastructure gap analysis by early fall of 2001. AMSA members and the WIN stakeholders support EPA's efforts to quantify the problem and bring it to the nation's attention. As Americans slowly become aware of the fragile state of their precious water services, we believe that this will present EPA and the current federal administration to demonstrate a commitment to the environment. Bush can continue the path forward begun by his father by addressing this critical issue and furthering a national dialogue aimed at creating a long-term, sustainable fund to adequately finance our water infrastructure systems.

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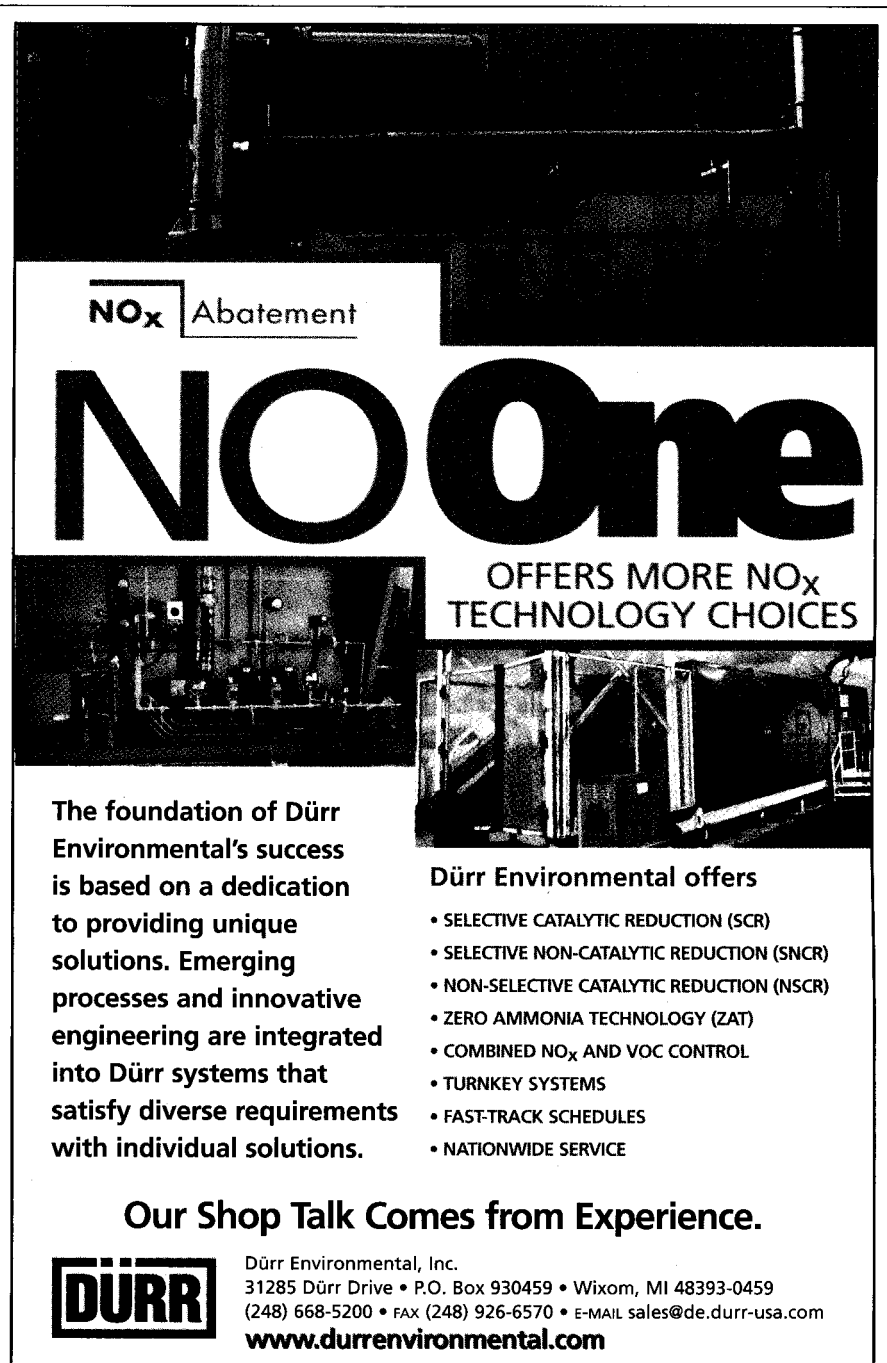
As we near the 30th anniversary of the Clean Water Act, leadership is needed to ensure that steps are taken now to preserve and build on the dramatic progress made in improving water quality and providing safe drinking water to all of our citizens. We know if we work together, clean and safe water will once again become a national priority. 



Water
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NOW
RECOMMENDATIONS FOR CLEAN AND SAFE WATER IN THE 21ST CENTURY
WATER INFRASTRUCTURE NETWORK

Ken Kirk is the executive director of the Association of Metropolitan Sewerage Agencies (AMSA). For more information on this issue, visit the Web site of the Water Infrastructure Network at www.win-water.org or call the AMSA at 202.833.2672. AMSA is a national trade organization representing over 260 of the nation's publicly owned wastewater utilities who treat more than 18 billion gallons of wastewater every day. AMSA members are environmental practitioners dedicated to protecting and improving the nation's waters.

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