

Fight Back Against Rising Water Bills

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In keeping with NTU's ongoing mission of providing Dollars & Sense readers with practical solutions to local-level fiscal issues, this article offers an important perspective on one of the major infrastructure cost challenges facing our nation.

Ratepayers and taxpayers beware: the pipes serving you are corroding, and closed procurement policies are preventing the less expensive replacement option of using corrosive-proof pipe materials. That means sharply higher water bills could be on the way unless you demand accountability from public officials.

Every day, hundreds of water main breaks occur, adding up to a total repair cost of more than \$3 billion over the course of a year. This does not even include the costs associated with traffic disruptions, emergency equipment, lost work time, or depleted water supplies. The main cause of these breaks is corrosion, an epidemic which is degrading our water quality due to old metallic pipes. Corrosion is a \$50.7 billion annual drain to our economy –including repairs, lost water, pipe replacements, and implementation of expensive corrosion mitigation programs. Leaking pipes also lose an estimated 2.6 trillion gallons of drinking water every year, or 17 percent of all water pumped in the United States. This represents \$4.1 billion in wasted electricity annually.

This buried water infrastructure has been out of sight and mind for several decades. Water utilities laid thick cast iron pipes dating to the late 1800s, which have an average life of 120 years. More recent pipes with different manufacturing techniques, changing materials, and less thicknesses have shorter lifespans; post-World War II pipes only last 50 to 75 years. In highly corrosive environments across the United States the average life of metallic pipes can be less than 25 years. All of these pipes will need to be repaired or replaced over the next couple of decades at an enormous cost.

Water utilities are some of the most capital-intensive industries in the nation and most are just now experiencing the beginning of system outages caused by age and premature pipe failure due to corrosion (as evidenced by the increasing amount of water main breaks and boiling notices published in the news). This mountain of capital replacement needs, called a “Nessie curve,” will eventually create a “rate shock” of multiple-year, double-digit increases. The main driver of these large rate increases is the capital replacement requirements of distribution and transmission pipelines (which represent nearly 60 percent of the total replacement costs of our water systems).

In order to make sure water authorities learn from the lessons of the past surrounding corrosive materials, ratepayers and taxpayers should demand that these vital assets are not only maintained properly to prevent early failure, but also that new non-corrosive pipe material is selected when it does come time for pipe replacement prior to failure (failure may cost 2 to 3 times more). Many utilities have been able to save 30-70 percent on their capital improvement plans (often representing hundreds of millions of dollars) by choosing non-corrosive, environmentally friendly, durable pipe made from PVC, a common polymer. Recent studies in Europe and the United States demonstrate PVC pipe has a design life of over 110 years (even 170 years) and does not require expensive corrosion treatment programs.

Over the past half-century, America has spent trillions of dollars building some of the finest infrastructure that history has ever seen. This investment has played a substantial role in the sustained prosperity and quality of life of our country. A comprehensive asset management approach is needed to provide a sustainable level of asset performance to the ratepayer at the lowest life-cycle cost and at an acceptable level of risk to the provider. Many municipalities and utilities may be wasting opportunities to save millions of dollars in savings due to outdated procurement policies that fail to take advantage of best value, life-cycle cost analysis, new technologies, methodologies, and materials. While past practices of using old technology pipes may have helped a water utility 100 years ago, 21st Century utilities require the best materials and processes we have today to achieve greater cost savings while addressing both sustainability and affordability concerns.

Eighty-five percent of our water systems are controlled or owned by municipalities which have elected officials, city councils, or water boards making the rate increase decisions for the entire community. Experts have estimated that water and sewer bills will eventually grow to nearly 5 percent of the median household income, which could translate into a 200-300 percent increase compared to today's utility bill. Water customers and taxpayers who are confronted with such huge burdens need not simply accept them. Rather, they should look into the infrastructure "story" of their utility and ask the following questions: 1) Does the agency have an infrastructure asset management program to best calculate the timing of the replacement investment? 2) Does the agency have updated procurement policies which allow for less expensive alternate pipe materials like PVC? 3) Was a comparative cost analysis completed for PVC (and other options) vs. metallic pipes? 4) Does the agency allow for alternative project delivery methods like design-build to deliver pipeline replacement? Such methods have, on average, delivered a 6 percent savings with a 33 percent shorter project duration at a higher standard of quality installation. 5) Has the capital budget plan been revised to capture these cost savings?

Open procurement practices are an American value. It is time to do things more wisely and start focusing on long-term sustainable water infrastructure best practices, including consideration of materials such as PVC for pipe replacement projects and properly managing our water resources.

Note: For further reading, NTU members are encouraged to consult NTU Issue Brief #176, The Underground Infrastructure Crisis: Rebuilding Water and Sewer Systems without a Flood of Red

Ink, available at <http://www.ntu.org/news-and-issues/transportation-infrastructure/taxpayers-save-huge-sums-on-water-infrastructure.html>. There they will also find an online discussion of the topic involving the author of the Issue Brief and the Ductile Iron Pipe Association.

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