

WATER & WASTEWATER UTILITIES

DESIGNING THE RATE STRUCTURE OF THE FUTURE

ISSUE PROFILE

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3. American Water Works Association and Raftelis Financial Consultants, Inc. (2013). 2012 Water and Wastewater Rate Survey Highlights. American Water Works Association. <http://www.awwa.org/portals/0/files/publications/documents/samples/2012waterandwastewaterratesurvey.pdf>
4. American Water Works Association. (2012). Buried No Longer: Confronting America's Water Infrastructure Challenge. <http://www.awwa.org/Portals/0/files/legreg/documents/BuriedNoLonger.pdf>
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Municipal water and wastewater utilities across the country are developing strategies to address the challenges of:

- Uncertain or declining revenues;
- Increasing costs; and
- Lack of public awareness of revenue gaps.¹

Residential water use per customer in the U.S. has been gradually decreasing with changes in water use patterns over the last 30 years.² There is a growing gap between the revenues collected by water and wastewater utilities and the cost to provide those services.

Many utilities are experiencing financial hardship due to shrinking revenues. A 2012 national rate survey shows that water and wastewater utilities have already implemented rate increases since 1996 that outpace inflation.³ Yet it is estimated that water system infrastructure needs will cost at least \$1 trillion over the next 25 years⁴ and wastewater capital needs will cost \$298 billion over the next 20 years⁵ because system maintenance, replacement, and upgrades have been underfunded.

How will water and wastewater utilities generate the funds to continue operations and build necessary capital projects while all indicators point to continued revenue declines? Simple increases to volume-based rates are not the solution. The rate structure itself needs to change.

Pricing must evolve to account for changing residential water use patterns. Rate structures should seek full cost recovery, and business planning should incorporate the declining demand trend to provide for long-term system viability and utility financial stability. Rate structures must also encourage water conservation and consider customer affordability.

In Hampton Roads, water and wastewater utilities are looking at rate design and pricing strategies to reduce revenue uncertainties and to provide for long-term infrastructure needs. The report, *Water and Wastewater Utilities, Designing the Rate Structure of the Future*, characterizes the revenue gap and describes adaptation strategies being explored by utilities at the local and national levels.



The “New Normal” of Declining Water Use

From 2002 to 2012, billed water consumption in Hampton Roads declined from 127 million gallons per day (mgd) to 115 mgd. This 10% decrease in consumption occurred while the region’s population grew by more than 105,000 people. Based on this data, per capita water use decreased by 15% over ten years.

The gradual decline in water use, or “demand decay,” is attributed to low flow fixtures and appliances, smaller households, and societal changes that have accompanied the general adoption of a conservation ethic. The recession, relocation of industry, and efficient industrial practices have also decreased water demands.

Uncertain Revenues

Water, sewer collection, and sewer treatment bills are all based on water consumption. As water use declines, municipal water and wastewater utilities are struggling with shrinking revenues and obsolete business models.

The traditional utility rate structure is based on long-term debt financing that is paid off with revenues from growing sales projections. **Most water and sewer rates have not been restructured to address the disappearance of federal subsidies, nor have rates been evaluated in light of revenue decreases that have resulted from lower per-capita demands.** The result: traditional rate structures are

driving utilities toward risky financial positions in 2013 and beyond. In adapting to the “new normal,” municipal utilities are interested in employing rate structures that provide predictable cash flow and reduce revenue uncertainty.

Increasing Costs

For water and wastewater utilities, costs are largely fixed, while revenues generated by the traditional rate structure are mostly variable. It is common for costs to be at least 80% or more fixed, while revenues are typically 80% or more variable. Utilities incur fixed costs regardless of the volume of service supplied to customers.

Several factors are pushing water and wastewater utility costs upward: aging infrastructure and replacement needs, increasing regulations and more expensive environmental compliance requirements, increasing energy and chemical costs, and resource limitations.

Most municipal water and wastewater utilities in Hampton Roads are enterprise funds and must operate as self-supporting businesses. As costs continue to rise, utilities are interested in recovering a larger portion of fixed costs through rate structures and pricing mechanisms that provide more predictable revenue.

Lack of Public Awareness

The value of continuous, on-demand water and wastewater services is generally unrecognized by the public. There is a lack of awareness of personal water dependency, which makes it difficult for customers

to understand where utility costs come from and how rates are determined.

Water and wastewater utilities seek opportunities to encourage stakeholder understanding of utility financial requirements to facilitate transparent communication with customers and to help elected officials make tough financial decisions.

Adaptation Strategies

Utilities are exploring adaptation strategies to provide financial stability and resiliency. Rate structure adjustments, innovative pricing, and new business models are being assessed by small and large utilities alike. Most importantly, **water and wastewater utilities are reaching out to customers, City and County Councils and Boards, and other elected officials to prepare for the future.** This public dialogue encourages community participation in defining local goals and promotes a better understanding of the critical services provided by water and wastewater utilities to grow and sustain healthy, vibrant communities.

READ THE REPORT:

Water and Wastewater Utilities, Designing the Rate Structure of the Future

The full report, prepared for the HRPDC Directors of Utilities Committee, is available at www.hrpdcva.gov.

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