

Challenges Ahead for Public Wastewater Systems Require a Creative Response

by Alan Cherubin

In many communities throughout New York and the nation, user charges for water and wastewater have risen dramatically over the past several years. Increases from 10 percent to 40 percent are not uncommon in a given year. Residents of Fairfield, Maine, recently experienced a 100 percent increase in their sewer rate. For customers, such an increase can wreak havoc with a monthly budget, even if the increase is

from a very low level. During this time much attention has been paid to the condition of aging public wastewater treatment infrastructure, primarily collection systems and treatment units. However, a less obvious force has been undermining these assets for as long as these systems have been in place. This force, in general, is the chronic underfunding of the people and assets responsible for the collection and treatment of wastewater.

Due to this chronic underfunding, the question will be how much a rate will increase rather than if. As detailed in the summer 2004 *Clearwaters* article by Erica Heintz, New York's respective water and wastewater needs are estimated at \$20.4 billion and \$13.15 billion. Robert Hennigan alludes in his article in this issue that the burden of this reinvestment will be the responsibility of the customers served by these systems.



Photo credit: NYSDEC Region 5 Water Division staff

New (80 foot by 14 foot) clarifiers under construction to replace smaller existing ones at Lake Placid WPCP

Meanwhile, Other Issues Loom

Significant additional challenges confront wastewater treatment management. These include

• Staffing

Key personnel at many systems began their employment when treatment facilities were funded and constructed following passage of the Clean Water Act in 1972. Without a transition plan in place, retirement of this group will result in the loss of vital management and process skills, as well as institutional knowledge of the systems. New skills will be needed to operate these facilities. Due to demographic trends, fewer applicants are likely, and the pool from which they'll come will be

New fine bubble diffuser aeration basins and blower building to replace the existing, inefficient mechanical surface aerators at Lake Placid WPCP



Photo credit: NYSDEC Region 5 Water Division staff

diverse in gender, culture, and ethnicity. Compensation will need to increase to attract a competent and motivated workforce.

• Regulations

Managers will need to treat an expanding array of pollutants and will likely encounter increasingly tighter effluent limits. Security and vulnerability assessment costs will add expense, yet these costs will not enhance service quality or yield cleaner water. Unfunded mandates in nonrelated areas, such as pension and health care areas, as well as environmental regulations, will continue to have a negative financial impact upon municipalities. Additionally, fewer compliance inspections are being conducted at these treatment facilities, diminishing the crucial ability of the inspector to be an advocate for the utility staff and management.

• Service Demands

Development sprawl is expanding service areas and challenging the capacity of existing systems to meet this growth. While this has been beneficial to some systems, as growth has provided the revenue funds necessary to maintain critical infrastructure and remain efficient, many other systems are experiencing problems providing the service/treatment mandated (lack of adequate water supply, lack of processing capacity, and so forth). Intensifying scrutiny by stakeholders is demanding better service that is more efficient, in full compliance, and financially transparent.

• Financial Sustainability

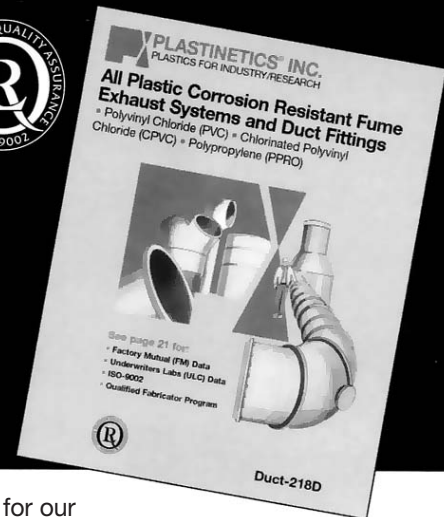
As written above, increasing user rates has been necessary to meet rising expenses and fund capital improvements. Local communities are now expected to provide greater financial contribution for capital enhancements. If not already doing so, managers may consider operating through an enterprise fund, which relies solely on user charges to support operation of the facility and uses no funds from the general tax revenue account.



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Working on the anaerobic digester at the Lake Placid WPCP

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Key to Success: Educate the Public

In the 1996 movie *Jerry Maguire*, Rod Tidwell demands of his agent, “Show me the money!” So, too, are many wastewater utility managers as they work to meet rising costs. Unfortunately, with limited funding opportunities—and in an effort to compensate for years of underinvestment—there is little some managers can do except to seek dramatically higher rates from customers.

But how does one go about this without political retribution or rejection by a governing board? Simply have a plan that

- clearly defines the needs of the infrastructure system,
- details why a rate increase is necessary,
- details how these additional funds will be used,
- explains how this will improve service and product quality,
- factually details the financial condition of the utility, and
- communicates the goals of the system and future plans.

In many cases, seeking to raise user rates will serve as a lightning rod, attracting negative attention to the clear needs for such an action. The best strategy management can take is to be proactive and emphasize the value of water and wastewater services to the community and users. Stress how vital these services are in relation to economic development, home values, public health, and protection of the environment.

A May 2003 survey by the Luntz Research Companies indicates that most Americans believe that safe and clean water is a right, not a privilege¹. Somewhat surprising is that 70 percent of those surveyed indicate that they would support a one percent increase in taxes to fund clean water initiatives if this money would indeed support such projects. Clearly, Americans value clean water!

Ironically, when it comes to clean, safe water and wastewater services, there still are those who believe that water, like air, should be free. As professionals reading this article can attest, delivering these services is anything but free. This archaic public mindset must be overcome through public education before a system can successfully establish a sustainable rate structure. Inform customers and stakeholders who understand the challenges, who are likely to provide constructive input during the rate setting process, and who are likely to be supportive of the outcome.

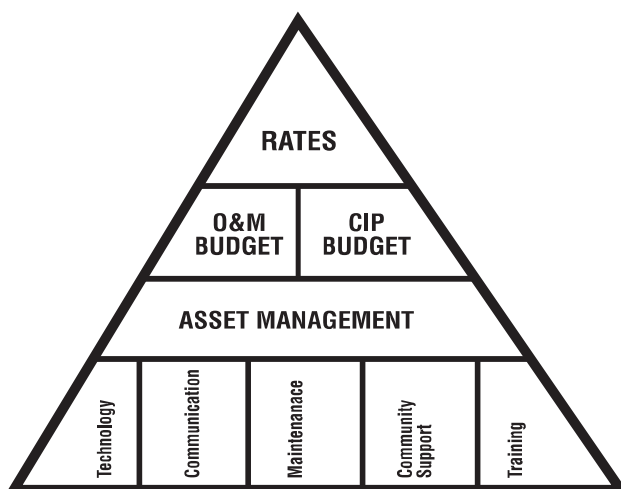


Figure 1. Factors and path toward achieving a new rate structure

Establishing a New Rate Structure

When a determination is made that new rates are necessary, this will initiate a lengthy process involving the input of a considerable

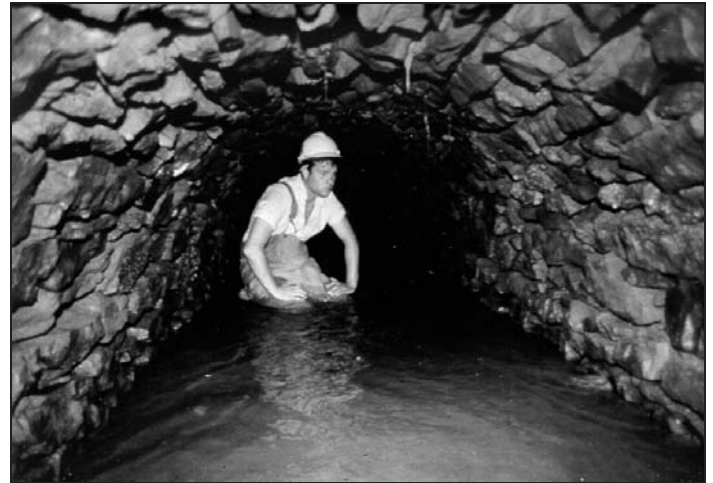


Photo credit: John Pronko

Infiltration entering the City of Utica’s wastewater collection system (circa 1880). Considering the materials used and the age of the system, it was fairly free of serious I&I, a testament to the quality of installation and craftsmen.

number of people and factors. Figure 1 illustrates the factors and path toward achieving a new rate structure. Each step along the way is vital to the process, and each segment is meant to ensure that the necessary details have been met. Addressing each segment will demonstrate to the customers and stakeholders that your utility is acting responsibly and is determined to provide efficient, reliable, and effective service.

• Budgeting

Current, accurate budgetary figures are absolutely necessary to produce a new rate structure that provides sufficient revenue to cover operations and maintenance (O&M) expenses and to fund capital improvement projects through a capital improvement planning (CIP) budget.

• Asset Management

The term asset management has been given much attention, especially since the GASB-34 rule was announced in 1999. Among the intentions of this rule is that governmental entities report more accurately about the condition of their infrastructure assets and produce financial reports that are easier to read and more useful to customers, regulators, and financial firms. These infrastructure assets may include not only water and wastewater systems, but also roadways, lighting systems, bridges, sidewalks, and dams. An asset management program must include a complete inventory of all assets in use to provide collection and treatment and in a format that allows for periodic condition assessments or depreciation. Condition assessments are particularly useful because they help identify any deficiencies in the asset and prompt the necessary maintenance, repair, rehabilitation, or replacement of that asset. Only then can a monetary amount be assigned and included in an O&M or CIP budget.

The remaining items in Figure 1 form the base that each contributes, and simplifies the work necessary to develop accurate budgets in order to identify the revenue stream to meet utility goals. However, community support is such an important factor that it deserves elaboration and could be the subject of a full article.

At this year’s Water Environment Federation Technical Exhibition and Conference, a presenter made this profound statement regarding municipal wastewater treatment facilities: “If you do not exist in the press, you do not exist.” This simple yet powerful observation applies to many municipal wastewater (and water) utili-

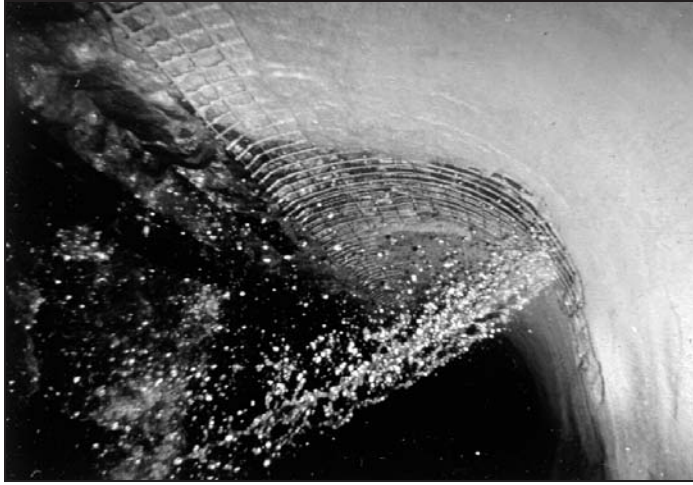


Photo credit: John Pronko

Infiltration entering the City of Utica's wastewater collection system

ties. Media coverage will assist the utility in gaining support to address the challenges that directly impact the customers.

This speaker focused on the positive environmental contributions of his employer, a regional provider of water and wastewater services outside of Portland, Oregon. He listed ways the utility took a proactive approach by issuing press releases for awards, recognition, staff accomplishments, and activities with trade groups (such as NYWEA). A highlight was when a local television station featured a family of ducks living in the clarifier. This positive exposure was free, appealing to the audience, and useful in educating the community about the facility. Local media, which often craves such stories, can be a most useful tool as plant management develops a strategy to inform and educate the community about its challenges and goals.

Conclusion

Many significant challenges confront municipal providers of water and wastewater treatment services, and these challenges will increase in the coming years. In order to successfully address these challenges, management personnel will need to adopt new business practices and embrace technological and cultural progress.

Due to the chronic underinvestment in these infrastructure assets, a considerable effort will be necessary for many facilities to find the necessary funding. Management may seek to increase user rates, contain expenses, postpone investment, or select some combination of these options in response to these challenges. However, substantial additional investment will also be necessary for many.

Management practices such as asset management, environmental management systems, intermunicipal cooperation and consolidation, and public-private partnerships can offer significant savings for these utilities. Full-cost pricing will help to ensure that sufficient revenues are in place to support the cost of doing business. Implementing conservation practices can also help to better manage O&M costs while potentially reducing the need for additional infrastructure.²

Generating public support is critical. Seeking community support will also be necessary for these providers due to the potential for impact upon their respective customers. A public outreach program that emphasizes the value and necessity of clean water will educate and inform stakeholders of relevant issues. Be diligent to avoid surprises, which can damage trust and erode confidence in the utility management. A community that has a sense of ownership and pride in these systems will be more likely to support clean water infrastructure.

Useful Publications

A number of useful publications are available as system management contemplates rate increases, a public relations strategy, or how to better manage their infrastructure assets.

Definitions

Asset Management

A management paradigm and associated management practices that seeks to provide for sustained performance of assets defined by customers and regulators at the lowest life-cycle cost.³

Full-Cost Pricing

Pricing to accurately reflect the true costs of providing high-quality water and wastewater services to consumers so as to maintain infrastructure and encourage conservation.

Footnotes

¹Clean and Safe Water Survey, Luntz Research Companies, May 2003

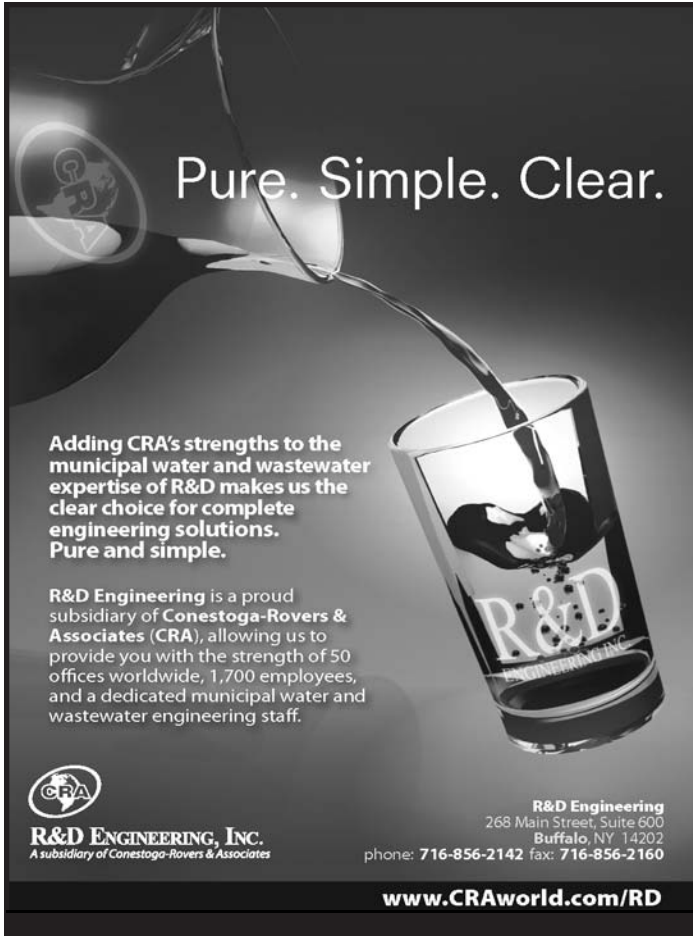
²Four Pillars of Sustainable Infrastructure, USEPA, www.epa.gov/water/infrastructure/index.htm

³Managing the Water and Wastewater Utility, WEF, 2004

Alan Cherubin is with the NYSDEC Division of Water, Facility Operations Assistance Section. He has been part of the DEC's effort to increase infrastructure awareness among operators and municipal officials. He can be contacted at axcherub@gw.dec.state.ny.us.

RESOURCES

Publication	ISBN	Source
<i>Avoiding Rate Shock: Making the Case for Water Rates</i>	1-58321-334-1	American Water Works Association www.awwa.org
<i>Managing Public Infrastructure Assets</i>	NA	Association of Metropolitan Sewerage Agencies www.amsa-cleanwater.org
<i>Managing the Water and Wastewater Utility</i>	1-57278-185-8	Water Environment Association www.wef.org
<i>Financing and Charges for Wastewater Systems - MOP 27</i>	0-07-145304-0	Water Environment Association www.wef.org
EPA website	NA	www.epa.gov/water/infrastructure/index.htm
NYS Office of State Comptroller		www.osc.state.ny.us/localgov/muni/cooperation1.pdf www.osc.state.ny.us/localgov/muni/publist1.htm



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