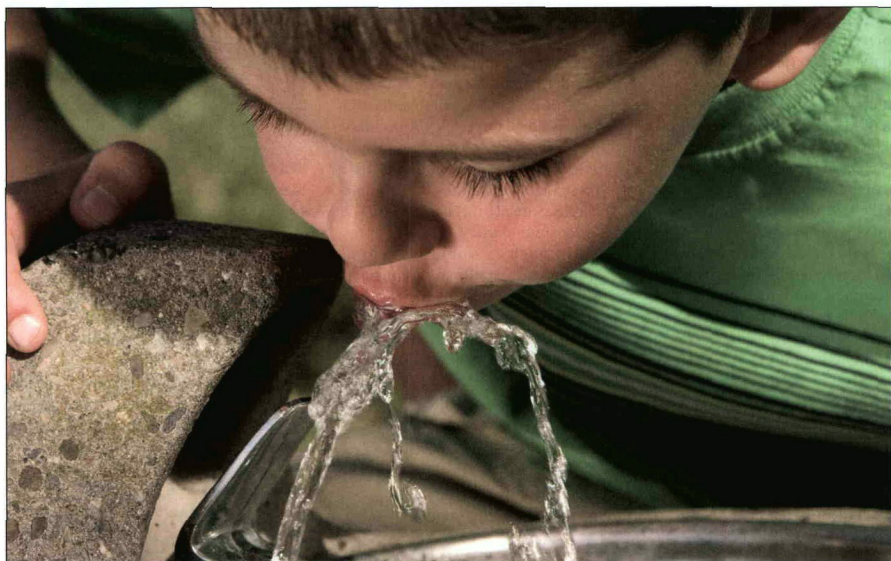


resource management



GEORGE A. RAFTELIS

Balancing financial sufficiency and community sustainability

ONCE PRIMARILY FOCUSED ON
ENGINEERING AND OPERATIONS,
UTILITIES NOW OPERATE IN
A COMPLEX ENVIRONMENT IN
WHICH THEY MUST BALANCE
THE MULTIPLE NEEDS OF DIVERSE
GROUPS OF STAKEHOLDERS.

On the surface, running a water utility would seem to be pretty straightforward: Find the water, treat it, and sell it to the customers. In actuality, though, a water utility is a complex organism that has many stakeholders and several goals and objectives. What at one time was primarily an engineering and operational challenge has blossomed into an industry that must address complicated financial issues, delicate environmental concerns, a wide range of community interests, and varying levels of regulatory oversight. Keeping all that in balance is hard enough in the best of times. Add to that mix the economic distress that is rolling through all levels of society, and you have a situation that is sending utilities into uncharted territory. This article recognizes the changed landscape in which many utilities now operate. It outlines the main points of consideration in keeping a utility financially stable and community-focused while gaining buy-in from its stakeholders as it establishes the "new normal." Three main points are addressed:

- achieving and maintaining financial sufficiency,
- defining and incorporating community sustainability objectives, and
- communicating effectively through public outreach to gain commitment to the utility's mission and vision.

Financial issues have always been a concern of utilities. But as systems age and as community needs change over time, financial planning becomes an expanded and much more complex challenge for utility management. Likewise,

community concerns and sustainability become an ever-increasing element of a utility's mission. A generation ago, a utility's concerns were confined primarily to availability and affordability, but they now encompass a variety of issues, including economic development and "green" operating practices. As this article shows, there are competing elements between these two large areas of concern and within them as well. Keeping them in balance requires the infusion of a third element—tactical and strategic communications with stakeholders that are well thought out and crisply executed.

FINANCIAL SUFFICIENCY IS MORE THAN BUSINESS AS USUAL

"Financial sufficiency" is a term that encompasses all phases of a utility's financial life. It is achieved by carefully balancing all aspects of financial management with the utility's anticipated future needs, all within the framework defined by the utility's stakeholders. Specifically, financial planning and management consist of effectively generating sufficient revenues while appropriately managing costs.

Generating adequate revenues. The major sources of utility revenue are the rates imposed on customers and the special charges that may be levied to recoup specific costs. User rates are normally billed monthly, bimonthly, or quarterly and typically include both a fixed component (which is constant among billing periods) and a variable component (which fluctuates with the amount of water consumed). Historically there has been tension between fixed rates and variable charges. Financial markets prefer a major portion of a customer's bill to be fixed, providing a more predictable revenue stream and thus a better guarantee that debt payments will be made. Variable charges can be deemed to be more equitable because the customer pays only for the water used. In recent years, as efficient water use has become more of an issue, conserva-

tion rates (i.e., variable-charge structures) have become more widespread, even though conservation rate revenue is a less predictable source of revenue. Most utilities use a combination of fixed and variable charges in an effort to balance predictability and equity objectives.

Some utilities have also developed charges to recover costs that relate to a special problem or specific need in their service areas. For example, the cities of Phoenix and Scottsdale, Ariz., have adopted environmental fees to recover the costs of regulatory compliance. Water supply charges implemented by the San Antonio Water System in Texas recover the costs of water supply source development. The Washington Suburban Sanitary Commission in the greater Washington, D.C., metropolitan area has investigated the possibility of adopting reconstruction charges to

Some utilities with large land holdings make money through timber sales. Toledo, Ohio's, water utility has produced and marketed bottled water; Spartanburg Water Works in South Carolina produces and sells ice. The Grand Strand Water and Sewer Authority in the Myrtle Beach area of South Carolina provides certain plumbing services to homes and businesses, a trendy nonmission water service. The sale of used and surplus equipment is yet another source of nonmission revenue.

In essence, utilities have numerous opportunities to develop and implement charges and to create new revenue sources to allow them to operate on a self-sustaining basis. Although these innovative methods are growing in popularity, they rarely provide more than 10% of a utility's overall revenue, and therefore utilities must be cognizant of the

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recover the cost of replacing and rehabilitating substantial miles of underground infrastructure.

Another source of revenue from special charges is generated by capital recovery charges, which recover major expansion costs to serve new customers. Connection fees and system development charges are examples of these charges. Some utilities mandate that developers provide some or all of the infrastructure in a development under the supervision of the utility. Yet another avenue is the creation of special taxing districts for system upgrades.

Some enterprising utilities are branching out by selling products and services that are apart from their main mission of providing water service. These nonmission revenue streams vary by locale and are subject to the resources of the system.

amount of resources they devote to such endeavors.

Revenue generation is also affected by a community's growth and maturity. A utility that is serving a growing region will have needs that are different from a utility in a mature or declining environment. Furthermore, the capacity of a utility to generate revenue is often a function of its growth and maturity. A utility must be alert to changes within its community to provide the best service while attaining financial sufficiency.

Development patterns have a major effect on a utility in a growing area, which can create difficulties when there are competing interests. In addition, utilities often influence development patterns. For example, extending water service to an undeveloped area increases the likelihood of development, and

infrastructure construction will also affect development, creating conflict among industrial, commercial, and residential interests. Getting it right means understanding the community's short- and long-range goals and accurately gauging the strength and depth of emotions associated with the competing interests. The financial implications are obvious. The amounts and sources of capital for investment, length of

utilities to be confronted with major capital challenges as they address reliability, regulatory, and expansion issues. By its very nature, infrastructure is costly and traverses a long timeline from inception to development. As noted earlier, infrastructure is not something that can be decided on in a vacuum. The community must have a voice in what gets built, when it gets built, to what standards it is built, how it will be paid for, and how

however, it includes more than just the region it serves. A utility's community encompasses the full spectrum of "stakeholders" in the utility—customers, utility employees, regulatory agencies, lending institutions, developers, suppliers, government officials, policymakers, and community leaders. Each has an interest in the equitable, vibrant allocation of a finite resource—interests that are sometimes *in conflict*. In recent years the traditional interests of availability and affordability have expanded to include resource conservation, watershed protection, alternative energy sources, green infrastructure, and minimization of greenhouse-gas emissions.

Utility managers, facing an increasing number of voices clamoring to be heard, may feel like throwing their hands up in dismay. Questions that managers must address cover a gamut of issues:

- How can a utility balance the desire to reward those who conserve water with the need to provide a steady stream of revenue to satisfy the financial community?
- How can a utility juggle the interests of those who seek to restrict or balance growth in certain areas with the needs of developers?
- Are the benefits of a fixture-rebate program a worthy conservation method or an unwarranted intrusion into the usually private matter of what to put in the bathroom?
- Is a utility justified in rewarding one type of landscaping over another by implementing a specific landscape rebate program?

These and other issues are all part of the larger question: What role does the utility have in addressing the broader sustainability objectives of the community? The issues and their respective weights will vary from one utility service area to another. In places of scarcity, conservation will likely rise to the top of the list. Where water is abundant but the economy is stagnating, economic development may be more important. Residents of low-income areas

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time to pay-out, rate charges, development fees, and other financial issues will all be affected by the decisions the utility makes.

Although the issues in a mature community are different, they are no less important and generate no less heat within the community and among stakeholders. Financial concerns may shift from growth and development to maintenance and replacement. If the community is continuing to grow, then there are compound issues of replacing aging infrastructure while continuing to expand the system. Each decision must be guided by community concerns, because without community support there can be pushback or worse—a complete loss of trust in the utility.

Cost management. One way of maintaining a community's trust is by careful cost management. Being a good steward of a community's resources—and being recognized as such—is key to a utility's ability to fulfill its mission. A utility's costs fall into two broad groups—infrastructure or capital and operations.

A utility that suffers repeated breakdowns or gives poor service as a result of aging or improperly maintained equipment will have a hard time keeping the trust of its stakeholders. Yet it is common for most

it will be maintained. Community input goes a long way toward helping a utility make complicated choices among various financing options and determine whether outsourcing (for a private utility) or privatization (for a public utility) are worthwhile options.

Regardless of the path taken, however, the utility whose name is on the bill will ultimately be held responsible for both the product and service. This is why operational oversight is so important. Customers don't care whether maintenance is outsourced or performed by utility employees as long as satisfactory service is provided. Today utilities must also be skilled in managing energy purchase arrangements and use, chemical handling and costs, maintenance, and other areas of operations.

A UTILITY'S COMMUNITY IS MORE THAN THE REGION IN WHICH IT'S LOCATED

As noted at the outset, today's utilities are more sophisticated, and utility managers are balancing many more issues than their predecessors did a generation ago. One element that has come to the forefront is community involvement. Usually the word "community" conjures up visions of a geographic region. When we speak of a utility's community,

may value affordability above all else, whereas those in another area may see the long-term effects of "going green" as a way of maximizing long-term affordability.

UTILITIES MUST EXPAND THEIR DEFINITION OF PUBLIC COMMUNICATION

The one constant across all utilities and all service areas is that community sustainability comes with a price, and that is why a well-thought-out utility strategic plan will include a third element: public communication.

The successful balancing of financial sufficiency and community sustainability is determined by how effectively a utility engages in public communication with its stakeholders. As with other aspects of running a utility, the concept of communication has evolved and expanded over time. A utility can no longer get away with announcing a rate increase with a bill stuffer and think it has "communicated." For a utility to achieve its mission, it must broaden its definition of communication to include:

- actively seeking the input of stakeholders;
- understanding what the stakeholders are saying and why they are taking their positions;
- synthesizing the information with the utility's mission, vision, and strategic plan; and
- informing the stakeholders about what the utility is doing as well as describing the community input that led the utility to make a particular decision.

In short, the solution to balancing financial sufficiency with community sustainability can be found within the community itself.

The first step should be to actively seek the input of stakeholders. This can be done by holding community forums, having utility managers address civic clubs, publishing newspaper articles that describe an issue and invite comment, soliciting feedback on the utility website, and care-

fully using social media such as Facebook to gather comments. The temptation for many utilities is to make a decision, announce it, and then see what the reaction is. A more community-sustainable approach is to seek input before the decision is made.

Seeking stakeholder input can produce a barrage of information that is hard to digest, but that information does not come to the utility in a vacuum. Any issue raised by a stakeholder has probably been thrashed out thoroughly in other forums. Such issues need to be examined in order for utility managers to give proper weight to competing interests. Developers may be very vocal about their needs, but are their arguments supported by what others are saying in the community?

Weighting arguments is not easy, but if done honestly and transparently, it will lay the logical groundwork for the decisions and actions to follow. Not everyone will agree with a utility's decision, but being able to give reasons for the decision will show that it was arrived at after research and thought, and will demonstrate that all stakeholders had a chance to influence the decision will go a long way toward community acceptance.

HOW EFFECTIVE UTILITY MANAGEMENT CAN HELP

A cutting-edge management initiative, effective utility management (EUM), is playing an increasingly important role in addressing the challenges of financial sufficiency, community sustainability, and public communication. These three challenges are three of the 10 attributes that have been established under EUM, which also includes the five keys to success demonstrated by best-practice utilities. The initiative was formulated for the water and wastewater utility industry by leaders in the industry. It is an outgrowth of a conference hosted by the US Environmental Protection Agency in 2005 that sought to help utilities cope with a growing list of chal-

lenges. After nearly four years of study and work, the EUM primer, which identified the attributes and keys to success, was released in 2009. Utilities that begin approaching their challenges from the standpoint of balancing financial sufficiency with community sustainability through the utilization of public communication will be well on their way to achieving the 10 attributes identified by this initiative. The EUM website (www.watereum.org) provides information on how to get started with EUM.

THIS IS NOT YOUR FATHER'S WATER UTILITY

Times have changed, and progress has brought increasing complexity. However, keeping our eyes on three important aspects of utility management (financial sufficiency, community sustainability, and effective communications) will go a long way toward helping us achieve what we all seek—a well-run utility that is organized and managed to serve its customers both today and in the future.

ABOUT THE AUTHOR



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Off-the-shelf accuracies of residential water meters

Martilyn A. Neilsen, Steven L. Barfuss, and Michael C. Johnson

The accurate measurement of potable water by metering is a viable approach to conserving water resources and encouraging responsible water use. When utilities meter water and water consumers become accountable for their water use, consumers typically become more efficient with their water use. For this reason, water metering has become an important tool in water conservation and in billing consumers fairly. However, many of the residential water meters being used in the United States do not meet AWWA accuracy standards.

This study provides a common reference for accuracy by investigating all $\frac{3}{8}$ x $\frac{3}{4}$ -, $\frac{3}{4}$ -, 1-, 1½-, and 2-in. meters available in the United States by comparing them with the corresponding AWWA Standard for Cold-Water Meters. Although specific manufacturers are not named, this research shows the need for greater quality control by manufacturers and a great stewardship by utilities to ensure that the meters they are installing meet AWWA standards.



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In today's weak economy utilities are struggling to generate adequate revenues while attempting to respond to their communities' passion to be more "green," conservation-focused, and responsive to other programs that enhance community sustainability. A major part of the solution to this dilemma is for utilities to recognize the challenge, develop an effective solution, and gain community/stakeholder acceptance of the solution.

The challenge is for utilities to find innovative ways to generate revenues, lower operational costs, and embrace effective sustainability initiatives. Some leading-edge utilities have gone outside their missions to meet these challenges, selling products and services to increase the revenue stream feeding their

organizations. Toledo, Ohio's water utility produces and markets bottled water. Two utilities in South Carolina have found ways to expand their existing business: the Grand Strand Water and Sewer Authority in Myrtle Beach provides plumbing services to homes and businesses and the Spartanburg Water System produces and sells ice in its community. Some utilities with large land holdings pump up their bottom line by selling timber.

Many utilities are implementing or supporting programs to protect and preserve the environment; others are learning the value of gaining stakeholder acceptance of both creative revenue-generation approaches and community sustainability programs. They've come a long way from the engineering and operations-focused organizations of the past.



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Comparison of treatment process sustainability at water plants in the Sacramento region

Kenneth D. Kerri, Camille Campeon, Fabien Espinasse, and Kurt N. Ohlinger

With greenhouse gas (GHG) a suspected contributor to climate change and poor air quality, drinking water utilities are becoming more concerned about reducing GHG emissions. This study compares the total emissions of equivalent carbon, i.e., carbon footprint, for different processes used at 11 facilities in the Sacramento, Calif., region. Conventional treatment, microfiltration, pressure filtration, slow sand filtration, and ballasted flocculation were considered in terms of the environmental effects of construction, staff transpor-

tation, chemical consumption, energy consumption, and sludge production.

Results indicated that the carbon footprints of the processes used at urban facilities are quite similar. For rural plants, the carbon footprints differed, with slow sand filtration producing a larger carbon footprint than the other processes studied.

The procedures described here should help water providers better evaluate the emission consequences of the treatment processes they choose.