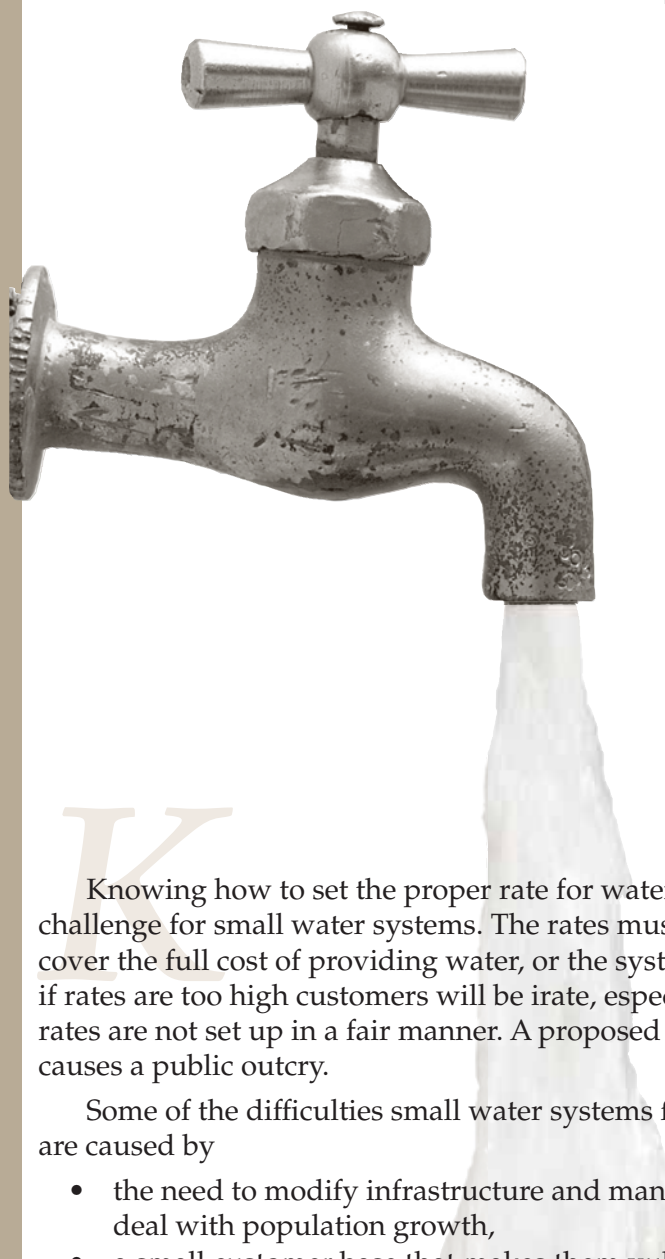


Rate Setting for Small Water Systems

Gene Theodori, Associate Professor and Extension Specialist;
Monty Dozier, Assistant Professor and Extension Specialist; and
Ric Jensen, Assistant Research Scientist, Texas Water Resources Institute;
The Texas A&M University System



“A proposed rate hike almost always causes a public outcry.”

Knowing how to set the proper rate for water service is a daunting challenge for small water systems. The rates must be high enough to recover the full cost of providing water, or the system will lose money. But if rates are too high customers will be irate, especially if they believe the rates are not set up in a fair manner. A proposed rate hike almost always causes a public outcry.

Some of the difficulties small water systems face when setting rates are caused by

- the need to modify infrastructure and management strategies to deal with population growth,
- a small customer base that makes them vulnerable to wide fluctuations in production costs, and
- water quality regulations and other factors that increase the cost of doing business.

The challenge for small water systems is to provide affordable drinking water while generating enough revenue from rates to remain solvent over time.

Publications to Help with Rate Setting

Several agencies and organizations have publications to help with rate setting.

In 2005, the U. S. Environmental Protection Agency (EPA) published a handbook titled "Setting Small Drinking System Rates for a Sustainable Future." It helps managers of small systems understand how to set rates to reflect the full costs of providing a safe and reliable supply of drinking water to customers. The handbook recommends informing customers of a supplier's water rate structure so they will understand that they are paying a fair share of the cost of providing safe drinking water. Outreach programs to educate customers can include mailings, announcements in newspapers, flyers and public meetings to explain why a rate increase is needed. If customers understand system finances they may be more likely to support rate proposals.

The handbook suggests this step-by-step procedure for developing and implementing proper water rates:

- Determine the full cost of doing business.
- Determine current revenues.
- Consider revenue needs (including the cost of anticipated repairs).
- Calculate the amount of money customers must be charged to fully cover current and projected costs.
- Evaluate various rate structures and design the appropriate rates.
- Implement the rates.
- Regularly review the rates and make changes when appropriate.

The EPA suggests that small rate increases implemented over a number years may be more acceptable to customers than infrequent, large rate increases. It also recommends that small water systems consider setting different rates for various classes of water users such as residential customers, industries, businesses and agricultural producers, because different types of customers may have distinctly different water use patterns.

The handbook discusses different water rate strategies and describes circumstances in which each rate type might be appropriate:

- *Flat or fixed rates* charge customers the same amount regardless of how much water they use. This may save small systems the expense of installing meters to record water use.
- *Uniform rates* charge a standard rate per unit of water used. This structure may encourage conservation because the average cost of water does not decrease as larger volumes of water are used
- *Decreasing block rates* can be used when a system serves industrial, commercial or agricultural customers who use large amounts of water, but this method offers little incentive for customers to conserve. Customers are charged lower rates per unit for fixed quantities of water.
- *Increasing block rates* charge customers higher rates per unit of water use. This rate structure offers the greatest incentive to conserve.

The 2005 handbook and other EPA reports make the following points:

- Rates should generate sufficient revenue to cover the full cost of operating a water system. By charging customers the full cost of water, small water systems send a message that water is a valued commodity that must be used wisely and not wasted.
- Rates should be equitable, with each class of customers paying a fair share of the cost of providing water service.
- When rates are set to cover the full cost of production, water systems are more likely to have financial stability and security.
- Revenues from rates should not be used to subsidize other municipal services.
- If the full cost of producing and distributing water exceeds revenues, managers should consider setting higher rates or pursuing other options such as reducing operating costs, finding additional sources of revenue such as grants or loans, and restructuring (that is, purchasing water from another system or contracting out operations and maintenance).
- Rates should be viewed as short-term strategies and reviewed periodically.

The EPA (2005) has also published case studies of small water systems that have implemented sustainable water pricing strategies. These strategies achieve full-cost pricing, improve the management of finances and assets, and focus on efficient water use. One Texas system, the Grimes & Waller (G&W) Water Supply Corporation, was cited as an outstanding example of how small systems can address rate issues. G&W is faced with rapid population growth as suburbs from Houston expand to its service area, and is developing a new rate structure to ensure that new customers bear much of the financial burden associated with expanding the system to meet increased demand.

Another source of information for managers is The Community Resource Group, Inc. (CRG), which has a series of fact sheets about rate setting and financial management. These fact sheets cover such topics as how to develop appropriate rates and charges; how to ensure that revenues achieve a balanced budget and how to prepare, understand and use a budget; how to establish internal accounting and financial management controls to safeguard system finances; and how to work with customers and stakeholders to determine if rate increases are needed. CRG advises small water system managers to divide expenses into fixed and variable costs and use that data to determine the minimum water bill that can be charged. Once this is done, rate structures for specific customer classes can be considered. Customers should be informed about why rate increases are needed (for example, to meet regulations that enhance drinking water quality and protect public health, to pay for needed expansions or improvements, etc.).

The Texas Commission on Environmental Quality (TCEQ) has several reports and publications to help small water systems with rate setting and financial management. One fact sheet explains to customers how rates are set, which factors can be considered when a rate increase is proposed and which cannot. When a privately owned small water system applies for a rate increase, the TCEQ assesses the system's ability to operate and can suggest improved management practices. A TCEQ report titled "The Water District Financial Management Guide" (2004) contains guidelines for

developing and following audits and related accounting practices for water districts.

The *WaterSense* newsletter (part of the National Drinking Water Clearinghouse at West Virginia University) published a series of articles about how to set water rates and win approval for rate increases. The newsletter advises that involving the public early in the process can mitigate negative publicity or ill feelings customers may have about a rate hike. Managers of small systems must identify the specific reason a rate increase is being proposed and should consider holding town meetings and using mass media to communicate with the public about these issues (Campeon, 1996, 1995).

Two other resources from the EPA can be helpful to managers. A national study of small water systems (2000) recommends that managers calculate their operating ratio by dividing total operating revenues by operations and maintenance expenses. Generally, a ratio of less than 1.0 suggests that a system is operating at a loss. This study shows that 30 to 40 percent of small water systems operated at a loss between 1995 and 2000. A report titled "Asset Management: A Handbook for Small Water Systems" contains strategies for funding infrastructure replacement from rates and external sources.

Finally, The American Water Works Association published a handbook titled "Developing Rates for Small Systems" (2004). The manual is specifically for systems that lack data on customer water demands, system water use and physical assets the system may own. It describes how to compile such data, develop a financial plan, and set water rates based on revenue requirements and expenses.

University Research

In 2005, Greg Landreth and David Eaton of the LBJ School of Public Affairs at the University of Texas at Austin assessed economic, performance and management issues associated with small water systems throughout Texas. They studied six drinking water providers in Texas (including small and medium-sized utilities) to compare the performance of public and privately owned systems. The researchers looked at the advantages and disadvantages of

public and private water providers, including whether these systems have taxing authority, have power to condemn property through eminent domain, and are eligible for federal and state grants and loans. They gathered data on the rates the systems charge, the extent to which systems of all sizes violate state water quality rules, and the number of state-certified treatment plant operators each system employs on a per-customer basis. They found that publicly financed small water systems have certain advantages over privately owned systems—primarily taxing authority, easier access to lower cost capital, and flexibility in how to allocate costs.

Other Resources

Several other organizations provide guidance and information about rate setting.

Texas Cooperative Extension, with its network of county Extension agents and state-wide specialists, can work one-on-one with small water system managers to help them develop strategic plans, make financial plans and set rates.

The Texas Commission on Environmental Quality, the state agency with authority to consider and approve rate increases, also helps small water systems with rate and financial management issues. Its annual Public Drinking Water Conference is an excellent resource for managers. Regional TCEQ offices are located throughout the state.

The Texas Office of Rural and Community Affairs (ORCA) helps small water systems and communities manage finances and obtain federal and state funds. ORCA has field offices in the High Plains and South Texas that can provide on-site assistance. The agency administers the Texas Community Development Block Grant Program, which offers grants to eligible rural and small communities to plan and build such public facilities as water and wastewater projects.

The Texas Rural Water Association helps small water system managers develop budgets, conduct rate studies and create reserve funds to pay for unanticipated expenses. TRWA has a contract with TCEQ to provide financial, managerial and technical assistance to small water systems.

The EPA has nine research and education centers at universities throughout the nation to assist small water systems with such issues as system management, capacity building and rate setting. The EPA-funded center at Boise State University has developed a free software program (“RATE Checkup”) that helps small water systems set rates and prepare budget forecasts. The center that serves Texas is located at New Mexico Tech University. In addition to other services, these centers can facilitate focus groups and meetings with stakeholders.

Summary

Setting the right rates for water service is one of the most important obligations of small water systems. Proper rates ensure that these systems cover their costs while still providing affordable service. Setting fair rates builds positive relationships with the people they serve. Fortunately, there are many resources and people in Texas who can help.

For More Information

American Water Works Association. 2004. *Developing Rates for Small Systems*. Denver, Colorado.

Brown, C. 2004. “Making Small Water Systems Strong.” *Journal of Contemporary Water Research & Education*, 128: 27-30.

Cameon, P. 1996. “Rate Increases: Dealing with the Public.” *WaterSense* newsletter, published by the National Drinking Water Clearinghouse, West Virginia University, Morgantown, West Virginia.

Cameon, P. 1995. “Rate Reviews Are Critical for System Finances.” *WaterSense* newsletter, published by the National Drinking Water Clearinghouse, West Virginia University, Morgantown, West Virginia.

Community Resource Group, Inc., Fayetteville, Arkansas. *Community Water Bulletin* fact sheet series:

“Establishing Internal Controls to Protect Your Financial Health.” No. 264.

“Financial Management and Your Water System.” No. 254.

“Gaining Customer Support for a Rate Increase.” No. 262.

“Protecting the Financial Health Your

Small Water System Has Achieved." No. 259.

"Rate Setting: How Much Should You Charge?" No. 259.

"Revenue and the Balanced Budget." No. 255.

"Setting Rate Breaks and Rate Blocks." No. 261.

"The Budget Process." Nos. 254 and 255.

"The Cost of Water Production." No. 260.

Texas Commission on Environmental Quality. 2004. *Water District Financial Management Guide*. Austin, Texas.

Texas Commission on Environmental Quality. 2005. *Report to the Governor: Public Water System Capacity Development Program*. Austin, Texas.

Texas Commission on Environmental Quality. 2006. *Utility Funding & Rate Design: A Guide for Customers of Private or Investor-Owned Utilities*. Austin, Texas.

Texas Office of Rural and Community Affairs and the United States Army Corps of Engineers. 2003. *Utilizing Technology for Small Water Systems in Texas*. Austin, Texas.

U.S. Environmental Protection Agency. 2000. *Community Water System Survey*. Washington, D.C.

U.S. Environmental Protection Agency. 2003. *Asset Management: A Handbook for Small Water Systems*. Washington, D.C.

U.S. Environmental Protection Agency. 2005. *Case Studies of Sustainable Water and Wastewater Pricing*. Washington, D.C.

U.S. Environmental Protection Agency. 2005. *Setting Small Drinking Water System Rates for a Sustainable Future*. Washington, D.C.

Williams, A. 1999. *A Guide for Financing and Rate-Setting Options for Small Water Systems*. Virginia Water Resources Research Center, Blacksburg, Virginia.

Websites with More Information

American Water Works Association:
<http://www.awwa.org>

Community Resource Group:
<http://www.crg.org/>

EPA:
<http://www.epa.gov/safewater/smallsys/ssinfo.htm>

National Drinking Water Clearinghouse:
http://www.nesc.wvu.edu/ndwc/ndwc_index.htm

New Mexico Environmental Finance Center:
<http://efc.nmt.edu>

Texas Commission on Environmental Quality:
http://www.tceq.state.tx.us/nav/util_water

Texas Cooperative Extension Community Development Programs:
<http://comdev.tamu.edu>

Texas Office of Rural and Community Affairs:
<http://www.orca.state.tx.us>

Texas Rural Water Association:
<http://www.trwa.org>

Texas Water Resources Institute:
<http://twri.tamu.edu>

This publication was funded by a grant through the USEPA by the Southeastern Regional Small Public Water Systems Technical Assistance Center and the Rio Grande Basin Initiative administered by the Texas Water Resources Institute of Texas Cooperative Extension, with funds provided through a grant from the Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture.



Produced by Agricultural Communications, The Texas A&M University System
Extension publications can be found on the Web at: <http://tcebookstore.org>

Visit Texas Cooperative Extension at <http://texasextension.tamu.edu>

Educational programs conducted by Texas Cooperative Extension serve people of all ages regardless of socioeconomic level, race, color, sex, religion, handicap or national origin.

Issued in furtherance of Cooperative Extension Work in Agriculture and Home Economics, Acts of Congress of May 8, 1914, as amended, and June 30, 1914, in cooperation with the United States Department of Agriculture. Edward G. Smith, Director, Texas Cooperative Extension, The Texas A&M University System. 500, New

