Small Community Managers Have a New Tool

Financial Benchmarking Provides Valuable Information

by Michelle Moore
NDWC Promotions Editor

Raising sufficient money to cover operating costs and promptly paying off debts are important financial activities for most water systems. This idea sounds simple enough and is obviously the right thing to do. But, the real-life practice of sound management for community water systems requires a lot more than good intentions.

The Midwest Technical Assistance Center (MTAC) sponsored a study to evaluate financial benchmarking as a management tool for small community drinking water systems. The results of the study are published in Benchmark Investigation of Small Public Water System Economics, an extensive collection of observations and data relating to financial management of small systems in the Midwest.

“Benchmarking is an ongoing, systematic means for measuring and comparing the work processes of an organization,” says Duke Ebert, financial management analyst at West Virginia University. “Benchmarks are indicators of the performance of an organization in comparison to its goals, customer expectations, competitors, and other organizations performing similar tasks at a high level of quality and efficiency.”

In a nutshell, the purpose of benchmarking is to provide managers with an external point of reference or standard for evaluating the quality and costs of the processes they manage. According to Ebert, benchmarking helps to identify opportunities for improvement, quantify the magnitude of those opportunities, find other institutions that operate particularly well, and illuminate areas or practices elsewhere that are worth considering.

For the Benchmark Investigation of Small Public Water System Economics, researchers Ben Drzgulewski, Tom Bik, and Roger Beck from Southern Illinois University at Carbondale used various methods to identify and gather information from small drinking water systems. They consulted more than 70 small system economics and benchmarking literature resources and spoke with acknowledged experts on the study and management of small systems.

The team met with small system professionals (managers, state and federal agency officials, and technical assistance providers) and got their opinions on the potential of financial benchmarking during focus group sessions and small water systems site visits.

They also acquired economic and operations data from 350 randomly selected small public water systems in 10 Midwest states.

The following is a summary of the researchers’ conclusions regarding benchmarking needs and practices:

Benchmarking is a pervasive management tool that is effective in improving operation and management, even though researchers found few programs to develop benchmark measures and practices in the existing literature. Additionally, the capacity development provisions of the 1996 Safe Drinking Water Act have created an urgency for state primacy agencies to find ways to evaluate financial conditions of small systems.

Most members of the small drinking water system community who participated in the study were not familiar with financial benchmarking, and those who had heard of benchmarking were unsure of its role in improving management of small systems.

Financial Indicators for Benchmarking

Water systems undergoing a benchmarking study typically begin with the following information:

- Gross revenue per 1,000 gallons delivered
- Net revenue per 1,000 gallons delivered
- Total expense per 1,000 gallons delivered
- Operating expense per 1,000 gallons delivered
- Gross revenue per person served
- Net revenue per person served
- Total expense per person served
- Operating expense per person served
- Gross revenue per total connections
- Total expense per total connections
- Net revenue per total connections
- Operating expense per total connections
- Gross revenue per total connections
- Operating ratio
- Debt service coverage ratio
- Population served per residential connection
- Gallons per person per day
- Maximum daily pumpage/average daily pumpage
Few of the conditions needed to implement benchmarking in small systems are currently in place (awareness of the technique, perceived need for financial evaluation, baseline data, and institutional support).

In addition to revealing financial benchmarking needs, the study also found several key pieces of information related to the surveyed small water systems' operations:

- Two-thirds of the 350 small system respondents said that the need to increase water rates will have to be addressed in the next five years. Water service reliability, as measured by "boil water orders," was also a concern.
- Compiling with drinking water regulation is a problem for 20 to 30 percent of the small systems that participated in the survey.
- Nearly two-thirds of the small systems meter all of their service connections. But only 17 percent of participating systems reported data on unaccounted water, which may suggest that many systems may not be tracking one of the most basic operational indicators.
- The price of water and rate structure varied substantially among the surveyed systems. Residential monthly water charges, calculated at the consumption level of 6,000 gallons ranged from $4.67 to $61 with a mean value of $25.80 per month. The median price for 1,000 gallons per month for residential customers was estimated to be $4.30. The median price charged by surface water and purchased water systems was respectively 82 and 88 percent higher when compared to the median price for groundwater systems.
- System peaking factors (maximum-day to average-day pumpage ratio) were greatest for the smallest systems.

Findings related to the development of financial and economic benchmarks for small systems show that:

- Only one-third of surveyed systems reported using one or more types of financial indicators, primarily the monthly or annual net revenues. Less than 10 percent reported using operating ratios or debt service ratios that have long been promoted as effective indicators by technical assistance organizations and regulatory agencies.
- More than 80 percent of systems reported that they prepare some kind of financial report including the annual budget, monthly financial reports, and income statements.
- Only 56 percent of respondents provided sufficient financial information for their systems to calculate the operating ratio used in this study (total annual revenues to total annual operating expenditures). The reported data indicate that 16 percent of participating systems had insufficient revenues to cover their costs.
- Efforts to introduce benchmarking for small systems are likely to be hampered by the lack of routine and standardized record keeping at small systems.

In their conclusion, the authors state that more data sources need to be examined and that "the potential of using existing national databases to develop benchmarks should be explored." They also recognize, however, that many small systems don't have adequate information and that "the adoption and use of benchmarking procedures is not a top priority for the managers of small public water supply systems."

Copies of the Benchmark Investigation of Small Public Water System Economics are available from MTAC, 2204 Griffith Drive, Champaign, IL 61820-7495 or by calling (217) 333-9321.

The study was conducted by Ben Dziegielewski and Tom Bik, both from the Department of Geography, and Roger Beck, Department of Agribusiness Economics, at Southern Illinois University at Carbondale, Carbondale, IL 62901-4514.

**Benchmarking on the Web**

The Water Utility Benchmarking Association is a free association of public and private water utilities that seeks to "identify practices that improve the overall operations of its members." Members pay only if they are part of a specific study. Visit their Web site at www.waterbenchmarking.com.

The Water Utility Benchmarking site is geared toward Baltic and Scandinavian water utilities. However, water systems in the U.S. may find useful information for comparative purposes. Visit their Web site at www.water.hut.fi/BUBI/.

For an overview of benchmarking and suggestions about how to implement this tool, visit Australia's Department of Finance on the Web at plsc.uark.edu/book/books/policy/stage/evaluate/eval2.htm.

The World Bank offers a "start-up kit" for water and sanitation utilities that wish to undertake a benchmarking study. The kit has a set of core indicators for various parts of the world. The kit is available online at www.worldbank.org/html/fpd/water/topics/uam_bench.html.

**National Drinking Water Clearinghouse**
West Virginia University
P.O. Box 6064
Morgantown, WV 26506

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