Benchmarking is a valuable tool for utilities and an important part of continual improvement efforts. It is often tied to internal performance management and linked to strategic or tactical improvement plans. Benchmarking is a means of measuring improvements related to service-level targets, efficiency, quality, and effectiveness. Externally, it provides the ability to report against customer and environmental targets, communicate with stakeholders, compare with peer organizations, and link to industrywide frameworks such as Effective Utility Management (EUM).

"Water utilities embrace utility improvement as an essential requirement in meeting customer expectations; and through AWWA’s Benchmarking Program, related tools, and annual survey, we assist our membership in their journey."

David La France, CEO, AWWA
CASE STUDIES

ALBUQUERQUE–BERNALILLO COUNTY WATER UTILITY AUTHORITY

The Albuquerque–Bernalillo County Water Utility Authority was created by the New Mexico Legislature in 2003, having previously been a component of the city of Albuquerque with specific responsibility for public water, wastewater, and reuse in Albuquerque and Bernalillo County. The Water Authority uses a combination of metric and process benchmarking to evaluate its operations and service delivery levels and to determine if its performance measures are leading to the correct results.

The Water Authority uses AWWA’s Utility Benchmarking Survey in developing its Performance Plan. The survey provides utilities the opportunity to collect and track data from already identified and tested performance measures, based on the same collection process and definitions. The Performance Plan uses the survey data as a basis for its performance measures to track the Water Authority’s performance year to year and assess its performance relative to other high-performing utilities. The process starts with long-range goals and short-term objectives. These objectives are policy directives from the governing board to address the areas of improvement identified through the benchmarking process.

A good example of the integration between performance measures and objectives is employee lost time because of illness or injury. Since starting the benchmarking process, the utility noticed that lost workdays were on average 10 times higher than at other utilities. Excessive lost workdays affect productivity and can cost utilities in a number of ways, including adverse effects on health-care premiums, insurance premiums, and overtime pay.

“Active use of AWWA’s performance metrics and its annual survey have assisted us with ‘customer conversations’ as well as important linkages to EUM, strategic planning, and utility process improvements.”

Frank Roth, Senior Policy Manager

As a result, the one-year objectives were used to reduce the number of employee lost days. To accomplish this objective, the Water Authority implemented an improved light-duty program to get employees back on the job safely. This new process has provided a clearer understanding of what needs to happen when an injury occurs, including the documentation, payroll coding, and expectations for when injured employees will return to work. In addition, the utility created safety incentive bonuses for meeting the injury hour targets. Since 2006, there has been a 90% decrease in employee lost days, showing the organization is working smarter and safer.

In 2011, the Water Authority began working on incorporating EUM into its strategic planning process. A large component of this integration was its work as a participating utility on Water Research Foundation Project 4313, which developed a benchmarking framework and assessment methodology through an EUM Benchmarking Tool. Over the past two years, the utility has used this information to address performance gaps and determine how the utility can improve its performance in the EUM Attributes. Many of the recommendations that came out of several retreats and meetings are now part of the utility’s Goals and Objectives process.
The Water Authority regularly conducts “customer conversations” to help set service levels, priorities, and rates.

Through metric and process benchmarking, the Water Authority has been able to evaluate its performance and develop targets for continuous improvement. Incorporating the EUM Benchmarking Tool has helped to facilitate this discussion, achieve consensus on strategies and future targets, and determine where the utility wanted to be in order to move to the next level.

**CHARLESTON WATER SYSTEM**

Charleston Water System (CWS) was a founding member of the AWWA QualServe (2002) Program and has participated in the AWWA Utility Benchmarking Program since its inception. During and subsequent to development and deployment of the AWWA program, CWS developed a systematic process to measure performance, capture results, and make the process sustainable.

Before AWWA Utility Benchmarking, there was no generally available mechanism for the water sector to know whether a utility’s performance was efficient or effective. The only benchmarks readily available were those of internal trending. It was difficult to learn what utilities had best practices, quantified through metrics. AWWA Utility Benchmarking gave CWS the opportunity to gauge the level of performance in particular key areas.

Early on, specific beneficial quality improvements were the management of the ISO 14001-registered Environmental Management System (EMS) and the Capacity Management Operations and Maintenance (CMOM) program. Through metrics and comparisons, CWS was able to begin communicating the benefits of implementing such programs. Near the same time, the utility began using the AWWA Utility Benchmarking comparisons to set realistic targets, both short and long term.

An added benefit was in the area of staff and supervisory motivation. A competitive culture was further promoted. It was emphasized that if others could reach higher performance, CWS could as well. The AWWA Utility Benchmarking Program additionally helped CWS focus on the metrics that were most important and the ones that needed the most work. It helped the utility focus better on continual improvement, prioritization, and strategic planning.

CWS uses AWWA Utility Benchmarking metrics and survey data to set targets and compare to actual utility performance.
In the latter 2000s, CWS began a quality journey using the EUM framework and the Baldrige Criteria for Performance Excellence. The EUM paints a vivid picture of the end goal, and Baldrige establishes criteria to get utilities there.

“CWS continues our quality journey using AWWA Utility Benchmarking to set targets and measure results for our customers and community benefit.”

Ken Hill, CEO

Of particular interest with the Baldrige Criteria is that 45% of the scoring is directly related to measurement and results. The other 55% is process oriented. So, a company can have well-defined and seemingly efficient processes, but the results show if the processes are effective. There are several important components to results measurement. First, utilities capture the results and establish trend lines. Then by benchmarking, utilities can set targets and forecast performance to take actions if needed for improvement.

Through the use of the AWWA Benchmarking Program, CWS was able to meet the requirements associated with benchmarking against peers and others that are known to have best practices.

The CWS Strategic Plan serves as a road map to performance excellence in achieving its vision. Well-defined, structured, industry-related benchmarks and a stable benchmarking program helped CWS win the South Carolina Governor’s Quality Award—the highest quality award in the state. CWS is now pursuing the Baldrige National Quality Award, another step toward achieving excellence.

COLUMBUS WATER WORKS

Columbus Water Works (CWW) participated in a pilot program with the Water Research Foundation (formerly the AWWA Research Foundation) in the development of a benchmarking program in 1996. The program created a means for utilities to measure performance toward goals to provide top quality service as economically as possible. Initially, the process involved a self-assessment followed with a peer review by representatives from other utilities trained in the peer review process. The information gained by establishing benchmarks and monitoring processes helped CWW define operational goals and measure progress toward meeting those goals.

In the early 2000s, CWW developed a strategic plan with associated goals, objectives, and tactics to carry out the planned strategies. Performance metrics were defined to measure progress on strategic goals, and AWWA Utility Benchmarks were used wherever applicable to track performance. CWW has participated in the AWWA Utility Benchmarking Survey since its inception and regularly uses this data to track progress and set performance targets.

Today, CWW’s strategic direction has been refined and is spelled out in specific goals and objectives, which are supported by tactics, actions, and responsibilities, along with measurable performance targets.

These benchmarking efforts are designed to serve as an “early warning signal” to ensure rapid and efficient responses to changing environmental factors and events.

In developing benchmarks, CWW chose to utilize two standards:

1. Compare CWW against established benchmarks within the industry using AWWA Utility Benchmarking performance indicators.
2. Review historical data to monitor performance against internal measures to show organizational trends.

These benchmarks are tracked monthly and used to measure progress relative to defined strategic objectives. Throughout the year, department managers are responsible for reviewing their respective benchmarks to identify actions to ensure that the utility meets these targets.

As part of the budget planning process, the operational departments, working with Executive Management and the Strategic Planning Division, will recommend updates or changes to the current organizational benchmarks.

For the current fiscal year, CWW has identified 30 benchmarks that track performance in specific strategic areas. These measures are communicated throughout the organization and reviewed on a monthly basis.

In addition to the AWWA Utility Benchmarking standards, CWW has also incorporated other industry resources in the management of the strategic plan, including the Effective Utility Management model and the Utility of the Future model. The integration of these tools provides CWW the means to achieve strategic goals.
DC WATER

The District of Columbia Water and Sewer Authority (DCWASA) was created by District law in 1996 as an independent authority of the District Government with a separate legal existence. In 2010 the Authority rebranded and became DC Water. DC Water provides more than 672,000 residents and 17.8 million annual visitors in the District of Columbia with retail water and wastewater (sewer) service. With a total service area of approximately 725 square miles, DC Water also treats wastewater for approximately 1.6 million people in neighboring jurisdictions, including Montgomery and Prince George’s counties in Maryland and Fairfax and Loudoun counties in Virginia.

The DC Water Blue Horizon 2020 Strategic Plan, adopted by the board of directors in March 2013, serves as a blueprint for achieving a vision to be a world-class water utility. By laying out a course of action, Blue Horizon represents a disciplined process for making fundamental decisions and shaping DC Water’s future. To achieve the goals in the plan, the enterprise is embracing a culture premised on strategy and performance.

Blue Horizon instructs DC Water to implement an internal performance management program, as well as participate in national and international benchmarking surveys. While performance management ensures DC Water is accomplishing enterprise strategies, benchmarking studies help define the utility’s performance compared to peer utilities. Essentially, performance management is an internal compass and benchmarking serves as an external compass to guide DC Water in a direction of excellence among its peers in the water utility sector.

In 2016, DC Water developed strategic outcome metrics to align with the strategies in Blue Horizon 2020. The AWWA Benchmarking Survey metrics served as a vital resource in the selection of these metrics. DC Water reviewed the AWWA metrics and selected a combination of indicators that represented a holistic perspective of enterprise performance. By aligning DC Water’s strategic outcome metrics with the AWWA metrics, DC Water can more routinely monitor performance beyond the annual Benchmarking Survey.

Moving forward, DC Water will evaluate annual benchmarking data and strategic outcome metrics to track trends in performance. Both will serve as tools for determining areas of improvement and areas of excellence.

“Our utility has benefited from AWWA Benchmarking by enabling comparison to peer utilities, providing a tool for evaluating utility performance year to year, informing selection of internal strategic outcome metrics, and highlighting the importance of monitoring performance.”

Sarah Neiderer, Strategic Planning Officer

DC Water participates in the AWWA Utility Benchmarking Survey, which serves as a vital tool for understanding utility performance and provides a foundation for understanding trends in performance year to year. Each year, DC Water staff participate in the survey representing departments across the enterprise. The survey highlights the importance of tracking, monitoring, and reporting on quantitative metrics within DC Water to better understand performance.
TOHO WATER AUTHORITY

Toho Water Authority (TWA) is a special independent water district that is located in Kissimmee, Florida, and governed by a six-member board of supervisors. A staff of approximately 290 employees delivers water, wastewater, and reclaimed water services to a population of approximately 250,000.

This utility and its staff have been among the most active organizations nationally in participating in benchmarking programs, including AWWA’s Benchmarking Program; its predecessor QualServe Program; EUM; the Florida Benchmarking Consortium; and the asset management practice benchmarking program offered by the Water Services Association of Australia. Toho has used metric benchmarking and practice benchmarking and participated in numerous research projects and industry collaborations.

The utility has regularly participated in AWWA’s metric surveys and used many performance metrics for its day-to-day utility management. For example, Toho has tied them to its own strategic plan, mapped measures to the industry’s EUM framework, used research projects as a means to focus on specific improvement areas, and developed targets and milestones to measure progress against objectives. The figures below indicate how AWWA measures are used to track performance and take necessary corrective action.

For instance, the example figure shows how Toho integrated AWWA’s metrics, by focusing on 3 of the 10 EUM Attributes—infrastructure stability, operating resiliency, and water resource adequacy; reviewed its practices for these selected attributes; and identified current and targeted performance levels for each practice area.

AWWA’s performance measures play a critical role in Toho Water’s planning and monitoring processes.

Toho’s overall performance management system has aided in the development of a high-level plan to close the gap between current and target process performance. It helped validates the utility’s tactical and strategic plans and facilitated a discussion on how TWA needed to:

• Perform condition assessment activities by staff.
• Use a Lift Station rehab program, which is now fully implemented.
• Reinforce the effort to obtain consistency and completeness of work order information.
• Determine that a highest score on implementation and performance may not be applicable or desirable within TWA’s financial, social, or environmental space.

AWWA’s performance measures play a critical role in Toho Water’s planning and monitoring processes.
SUMMARY

Benchmarking is providing useful tools and industry-developed processes that are key to management success for water utilities. It enables the use of common metrics and performance measures in tracking performance against internal targets, as well as engage with peer utilities to compare performance and share information about underlying business practices. Benchmarking, as evidenced by numerous case studies, provides a consistent framework that can be used in a utility’s continual improvement journey. Increasingly, utilities are choosing to include benchmarking in conjunction with their long-term strategic and financial planning. It also assists in customer-engagement activities and helps ensure accountability with environmental and regulatory requirements. The AWWA Utility Benchmarking Program provides standard measures used across the water sector, developed over the years; and as seen in case studies, it is a remarkable tool that assists in improving efficiency, quality, and effectiveness to advance utility management capabilities.

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