Findings and Recommendations for a Water Utility Sector Management Strategy

A Final Report Submitted by the Effective Utility Management Steering Committee to the Collaborating Organizations:

American Public Works Association
American Water Works Association
Association of Metropolitan Water Agencies
National Association of Clean Water Agencies
National Association of Water Companies
U.S. Environmental Protection Agency
Water Environment Federation

March 30, 2007

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Executive Summary

On May 2, 2006, the Effective Utility Management Collaborating Organizations—The Association of Metropolitan Water Agencies; the American Public Works Association; the American Water Works Association; the National Association of Clean Water Agencies; the National Association of Water Companies; the United States Environmental Protection Agency; and the Water Environment Federation—(referred to as the Collaborating Organizations) entered into a Statement of Intent[1] to "formalize a collaborative effort among the signatory organizations in order to promote effective utility management." The Statement of Intent included a commitment to produce "a joint strategy to identify, encourage, and recognize excellence in water and wastewater utility management."

The seven organizations formed and chartered the Effective Utility Management Steering Committee (Steering Committee) to advise them on a future, joint water utility sector management strategy that would be applicable to water, wastewater, and combined water/wastewater utilities across the country. The Steering Committee, composed of sixteen managers from water sector utilities across the country, was asked to prepare a synthesis of findings and recommendations on a future water sector strategy. The Steering Committee deliberated for nine months, met in person twice, and received targeted input from two focus groups. This report presents the Steering Committee's findings and recommendations to the Collaborating Organizations.

The Committee found that water sector utilities across the country face common challenges, such as rising costs and workforce complexities, and that utilities need to focus attention on these areas to deliver quality products and services and sustain community support. The Committee also explored the barriers that can inhibit improved utility management. These challenges and barriers provide insight into where a sector strategy should focus to be effective and how the Collaborating Organizations will want to structure their promotion of effective utility management to help utilities successfully make improvements. Within this context, the Committee identified the following findings and recommendations for a future sector strategy.

Ten Attributes of Effectively-Managed Water Sector Utilities

The Committee identified "Ten Attributes of Effectively-Managed Water Sector Utilities" (Attributes) that provide a succinct indication of where effectively-managed utilities focus and what they strive to achieve. The Attributes can be viewed as a continuum of, or a set of building blocks for, management improvement opportunities. The Attributes are listed below and explained more fully in the main body of the report.

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[1] See Appendix A or http://www.epa.gov/water/infrastructure/utility-mgmt-joint-statement.pdf.

Ten Attributes of Effectively Managed Utilities

- Product Quality
- Customer Satisfaction
- Employee and Leadership Development
- Operational Optimization
- Financial Viability

- Infrastructure Stability
- Operational Resiliency
- Community Sustainability
- Water Resource Adequacy
- Stakeholder Understanding and Support

Keys to Management Success

As a complement to the Attributes, the Steering Committee also identified the following "Keys to Management Success" as consistently utilized management approaches and systems that have been shown to foster utility management success and provide an important framework for using the Attributes and example measures described later:

1. Leadership (key throughout the management improvement cycle);
2. Strategic business planning;
3. Organizational approaches (e.g., participatory culture, change management processes);
4. Measurement; and
5. Continual improvement management framework (i.e., "plan, do, check, act").

The Steering Committee recommends:

- That the water utility sector adopt and utilize the "Ten Attributes of Effectively-Managed Utilities" as a basis for promoting improved management within the sector; and

- That the Collaborating Organizations explicitly reference the "Keys to Management Success" in efforts to promote the Attributes and enable effective management within the sector.

Water Utility Measures

The Steering Committee strongly affirms the view that measurement is critical to effective utility management. It has identified measurement as one of the Keys to Management Success for achieving or making progress toward the Ten Attributes of Effectively Managed Utilities, and has spent a substantial amount of time conceptualizing, researching, and discussing utility measures as part of its sector strategy recommendations.

The Committee identified a set of high-level example water utility measures and considered how to convey these examples and its findings on measurement more broadly to the Collaborating Organizations. The Committee believes that utilities should measure, and that the identified example measures are a good place to start when considering where to focus measurement efforts. The example measures are not, however, equivalent to a utility measurement program: they are high-level, illustrative examples and are not presented with enough information for "off the shelf" use.

The Steering Committee identified the following recommendations.

- Include a set of example utility measures that are related to the Attributes in the sector strategy. The example measures could be based on, or could be the same as, those identified by the Committee. In either case, it is important that example measures be accompanied by a preamble that includes the types of caveats and considerations identified in this report.

- Circulate a set of example measures to a broader sector audience as soon as possible.

- Initiate a longer-term effort to establish a program supporting a cohesive set of targeted, generally applicable, individual water sector utility measures. The purpose of this program would be to provide individual utilities with a robust measurement system for gauging and improving their internal operational and managerial practices and for communicating with external audiences such as utility boards, rate payers, and community leaders.

Water Utility Management Resources

The Steering Committee believes that water utilities are interested in tools that can support management progress, and that many utilities would benefit from a "helping hand" that can guide them to useful resources that address their management needs, particularly in the context of the Attributes. The Committee explored ideas on what developing a utility management "resource toolbox" could involve. Committee members identified resources that could be used as a starting point for a resource toolbox, and considered several options for toolbox scope, structure, and format. The Committee recognizes that there is currently no budget or coordinated plan for creating a resource toolbox, and that the ability to implement a toolbox will be critically dependent on available resources.

Within this context, the Steering Committee recommends:

- That, to effectively support utilities' ability to make progress toward achieving the Attributes, the Collaborating Organizations pursue the creation of a resource toolbox that is clearly linked to the Attributes;

- That the toolbox, even if in an interim form, be made available to a wider audience as soon as it is possible to do so;

- That the toolbox allow for resource cross-referencing and categorization (e.g., management tools cross referenced by Attribute, Key to Management Success, media type, file format, etc.) with, if possible, some form of interactive functionality; and

- That the Collaborating Organizations consider the Committee's other findings and observations on resources—such as including a targeted set of resources in the toolbox, making the toolbox easily accessible, and using peer-reviewed resources whenever possible.

Supporting Strategy Elements

The Steering Committee also explored a set of "supporting strategy elements" designed to create incentives for and reduce barriers to adopting management practices that would lead to Attribute-

related improvements. The Attributes, Keys to Management Success, resource toolbox, and example measures are designed to inform and enable management change, while the supporting strategy elements focus on providing additional motivation for change.

The Committee recommends that the Collaborating Organizations develop plans to enact as many of the following supporting strategy elements as possible:

- Explicit advocacy for the sector strategy, in particular by the Collaborating Organizations;

- Community education and outreach to raise awareness around the value water sector utilities provide, the critical challenges and needs water sector utilities face, and the benefits of enhanced utility management practices;

- Recognition to acknowledge commitment to progress and management excellence, which could be achieved in many ways, perhaps by explicitly aligning existing Collaborating Organization recognition efforts with the Attributes, initiating a "sector challenge" that lists utilities that commit to taking (any) actions to improve their management in at least one Attribute area, drawing on existing concepts of peer review programs, and/or combining recognition with the availability of volunteer peer experts that can help utilities evaluate current performance and identify opportunities for improvement; and

- Financial incentives or related opportunities for agencies using the Attributes to more clearly demonstrate "effective management" and, as a result, generate a favorable response from the sources of financial resources such as private capital markets, rate setting organizations, and rate payers.

Next Steps for the Sector Strategy

The Committee identified the following recommendations around transforming this report into a sector strategy that utilities can start to benefit from.

The Committee recommends that the Collaborating Organizations:

- Roll out the sector strategy to the water industry as soon as possible;

- Prepare a brief, stand-alone primer with water sector utility managers as its intended audience;

- Continue the collaboration among the Collaborating Organizations; and

- Employ a continual improvement approach to the strategy's implementation over time.

The Steering Committee recognizes that several steps need to be taken between the submittal of this report and the launching of the sector strategy, such as gaining the formal support of each Collaborating Organization for the content of this report.

The Steering Committee thanks the Collaborating Organizations for the opportunity to participate in this ground-breaking effort. The Committee hopes and believes that these findings and recommendations will be valuable to the Collaborating Organizations and to the sector in general.

I.   Introduction

This report presents the findings and recommendations of the Effective Utility Management Steering Committee to the Effective Utility Management Collaborating Organizations— Association of Metropolitan Water Agencies (AMWA); American Public Works Association (APWA); American Water Works Association (AWWA); National Association of Clean Water Agencies (NACWA); National Association of Water Companies (NAWC); United States Environmental Protection Agency (EPA); and Water Environment Federation (WEF)—referred to as the Collaborating Organizations. As described below, the findings and recommendations in this report are to be used by the Collaborating Organizations to develop a water utility sector management strategy.

Background

In July 2005, the EPA Office of Water convened a group of water and wastewater utility managers to discuss effective management practices within the sector. Outcomes of this meeting included a draft list of "Attributes of a Sustainably-Managed Utility" and a set of "critical success factors" for effective utility management. Following this meeting, EPA and the Associations met to discuss possible ways to collaborate in order to promote more effective utility management.

As a result of those discussions, on May 2, 2006, AMWA, APWA, AWWA, EPA, NACWA, NAWC, and WEF entered into a Statement of Intent[2] to "formalize a collaborative effort among the signatory organizations in order to promote effective utility management." The Statement of Intent included a commitment to produce "a joint strategy to identify, encourage, and recognize excellence in water and wastewater utility management."

As part of the ongoing utility management collaborative effort launched by the Statement of Intent, the Collaborating Organizations chartered an Effective Utility Management Steering Committee (Steering Committee). The Steering Committee, composed of sixteen water and wastewater utility managers from across the country who were nominated by the Collaborating Organizations, was charged with identifying findings and recommendations related to the advancement of effective management of water and wastewater utilities that would be used by the Collaborating Organizations to support the development of a future joint water sector strategy aimed at supporting water, wastewater, and combined water/wastewater utilities.

According to its charge, the Committee's final findings and recommendations were to include:

- A refined list of existing key attributes of effectively-managed utilities and related critical success factors (in this report, the critical success factors are called "Keys to Management Success");

- Exploration of existing utility management resources (linked to the Attributes) and options for presentation of these resources;

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[2] See Appendix A or http://www.epa.gov/water/infrastructure/utility-mgmt-joint-statement.pdf.

- An evaluation of a set of potential measures of success for utilities to gauge progress; and

- An examination of barriers to more widespread implementation of utility improvement efforts, as well as incentives and a path forward that could help lead to greater adoption of these efforts.

To achieve this charge, the Steering Committee held several conference calls, two in-person meetings (one in Washington, D.C. on July 6-7, 2006, and one in Seattle on November 9-10, 2006), and communicated extensively via e-mail and ad-hoc telephone calls. During the summer and fall of 2006, two subgroups of the Steering Committee held separate calls to explore ideas on a resources toolbox and example utility measures. Additionally, two focus groups were convened in late September, one in Las Vegas, Nevada, and one in Elmhurst, Illinois, to discuss effective utility management and provide feedback to the Steering Committee's findings to date. (Appendices B and C provide a list of focus group participants and the focus groups' agenda.) Through a contract with the Water Environment Foundation funded by a cooperative agreement with U.S. EPA, Ross & Associates Environmental Consulting, Ltd. supported and facilitated the Committee's work.

Report Approach and Organization

This report reflects nine months of deliberation by the Steering Committee and delivers the Committee's findings and recommendations to the Collaborating Organizations. The report is divided into eight sections, listed below. Following the Introduction, Section II explores the challenges faced by water utilities today and the barriers that keep some utilities from engaging in management improvement efforts. The sector strategy recommendations have been developed with these challenges and barriers in mind and are intended to help utilities to overcome these obstacles. Section III, Ten Attributes of Effectively Managed Water Sector Utilities, presents the Committee's findings and recommendations regarding the Attributes. The Attributes define what utilities should aspire to achieve over time. Section IV, Water Utility Management Resources, explores ways to approach presenting management resources that can help utilities translate aspirational goals into action. Section V, Water Utility Measures, includes ideas on how utilities could think about measuring their progress. These three sections—Attributes, Resources, and Measures—form the primary components of the Committee's findings and recommendations, in direct response to the Committee's charge as outlined in the May 2 Statement of Intent. The Committee added Section VI, Supporting Strategy Elements, to begin investigating the kinds of opportunities and mechanisms that would create incentives for utilities to engage in management improvement work. Finally, Section VII explores ideas for the future of the collaboration.

II. Challenges Faced by Water Utilities and Barriers to Implementing Management Improvement Efforts

A key aspect of the Committee's deliberations involved exploring the context in which the Collaborating Organizations' efforts to promote more effective utility management will take place. These deliberations took the form of exploring key challenges faced by the water sector and the barriers utilities experience when attempting to implement management improvements. The focus groups were designed to make a significant contribution to the Committee's understanding of challenges and barriers, and a substantial portion of the focus group meetings were devoted to these topics. The Committee spent a portion of its November meeting reviewing Focus Group results and adding its own perspectives to these findings.

A critical aspect of exploring and discussing challenges was to ensure that efforts to develop a sector strategy for improved management would be well grounded in the sector's most pressing needs and that individual components of the strategy would be highly relevant to the challenges utilities are facing on a day-to-day basis. The Committee viewed understanding barriers as an important aspect of identifying the incentives needed to motivate utilities to push forward with management improvement efforts. The Committee wanted its findings and recommendations to promote incentives that address the key constraints utility managers experience as they consider and implement management improvements.

Water Sector Utility Challenges

The Steering Committee, through input from the focus groups and its own deliberations, found that water utilities across the country face common challenges. These challenges represent some of the most pressing issues faced by utility managers today and were consistently identified as areas where utilities need to focus attention and make improvements to produce quality products and services and sustain community support. These key challenges include the following:

- Rising materials costs (concrete, steel, chemicals, fuel, etc.) that are significantly affecting ongoing operational expenses and, more importantly, capital expenses associated with new and replacement infrastructure projects;

- Aging infrastructure in need of more intensive asset management attention and in need of intensive repair and replacement efforts;

- Regulatory challenges including substantial new capacity and treatment requirements in the context of water quality standards and combined and sanitary sewer overflows, compounded by a sense that regulators and the sector have been unable, in many areas, to establish a workable set of sequenced priorities that communities can effectively fund and implement;

- Ensuring adequate long-term water supply (particularly in high-growth and arid areas);

- Identifying and meeting security and emergency/hazard preparedness needs;

- <u>Cuts in federal funding</u>, in the form of cuts to the State Revolving Loan Fund (SRF) and uncertainty of future federal funding;

- <u>Rate structures under stress</u> from a combination of federal funding cuts, new regulatory requirements, and infrastructure asset maintenance, repair, and replacement needs; and

- <u>Workforce complexities</u>, including a significant number of pending retirements, compounded by difficulties recruiting and retaining qualified staff in the context of more competitive labor markets.

These challenges provided an important lens through which the Steering Committee members and focus group participants could evaluate the appropriateness and relevance of the Attributes. Both Committee members and focus group participants found the Attributes well aligned with these challenges. For example, there are Attributes addressing operational efficiency (speaking to rising materials costs), asset management (speaking to infrastructure repair and replacement needs), workforce and leadership development (speaking to workforce planning needs), and operational risk management (speaking to all hazards preparedness needs). The Steering Committee further believes that the Attributes, together with the Keys to Management Success, the resource toolbox, and example measures of success, will provide a set of sector strategy tools that can help utilities address these challenges.

Barriers to Implementing Management Improvement Efforts

The Steering Committee members and focus group participants also explored and discussed what factors can limit management improvement efforts. These barriers provide insight into how the Collaborating Organizations will need to promote effective utility management efforts to help utilities move beyond barriers and successfully enact improvements.

One consistent theme emerged during discussions of barriers—the difficulty of generating and sustaining the support of a governing body and the general community for enhanced management efforts. Discussions consistently indicated that utility managers struggle to establish the value of their services to communities and the need for enhanced management efforts if service quality and reliability are to be maintained in the long term. Several dynamics within communities underlie this difficulty including the long-term nature of utility management decisions and benefits as compared to the potentially more short-term decision horizon of elected officials. Additional factors include turnover of elected and other community leaders requiring constant re-education efforts, and the "hidden infrastructure" aspect of the water sector utility business which causes residents to undervalue the service provided. Discussion indicated that these dynamics place significant political leadership and strategy demands on utility executives who may have limited knowledge of the strategies needed or available for working effectively in these contexts.

In addition to this overarching sense of difficulty faced by utility managers, other barriers included:

- Cultural resistance to change (the "if it ain't broke why fix it" mentality experienced in many organizations);

- Difficulty sorting through and establishing the relevance and potential benefits of management improvement options (described by some as a sense of initiative overload);

- Difficulty establishing appropriate performance expectations and associated performance measurement approaches; and

- Difficulty identifying how and where to get started in a manageable way on what can appear from the outside to be a complex, time consuming, and generally overwhelming undertaking.

The Steering Committee has kept a focus on these potential barriers as it has worked to produce its findings and recommendations. This focus has influenced its efforts to produce the refined set of Attributes and associated Keys to Management Success, the findings and recommendations on a resource toolbox and utility measures, and, in particular, the identification of the supporting strategy elements that are intended to provide incentives for enacting change.

III. Ten Attributes of Effectively-Managed Water Sector Utilities

The Steering Committee developed the Ten Attributes of Effectively Managed Water Sector Utilities during discussions and review of current utility management practices among water and wastewater utility executives, water sector associations, and EPA. The May 2 Statement of Intent specifically indicates that outreach to utilities during the collaboration will, in part, focus on "key attributes of effectively managed utilities."

The Attributes recommended below emerged from analysis of current utility management practices, discussion among Committee members regarding what they view as promising developments in utility management efforts, and input from the focus groups. When asked to independently define "effective utility management," focus group participants' observations overlapped substantially with the Committee's initial list of Attributes. The utility management challenges identified by focus group participants also tracked closely with the Attributes, indicating their strong relevance to pressing water sector concerns. Overall, focus group participants indicated a high degree of comfort with the concept of using outcome-oriented attributes as a basis for promoting effective utility management, and were comfortable with the draft version of the Attributes that they reviewed.

Findings

The Steering Committee identified ten Attributes, summarized in Figure 1, that cover a range of desired utility outcomes in the areas of operations, infrastructure, customer satisfaction, community welfare, natural resource stewardship, and financial performance. The Attributes provide a succinct indication of where effectively-managed utilities focus and what they strive to achieve. They can best be viewed as a continuum of, or a set of building blocks for, management improvement opportunities. Individual utilities will need to tailor the timing, sequence, and degree to which they address each Attribute to their management and community needs and circumstances.

The Committee deliberately has not presented the Attributes in a particular order; utility managers can decide their relevance and relative importance depending on individual utility circumstances. For those utilities with a strong need for guidance on where to start, implementation experience suggests the Product Quality and Customer Satisfaction Attributes—as critical, basic aspects of utility operation—are strong candidates for initial attention. Even as all utilities will need to approach improved management one step at a time, utility mangers involved in the development of the Attributes believe increasingly excellent, overall utility management will emerge when utilities address more, and eventually all, of the Attributes.

Figure 1: Ten Attributes of Effectively Managed Utilities

• Product Quality	• Infrastructure Stability
• Customer Satisfaction	• Operational Resiliency
• Employee and Leadership Development	• Community Sustainability
	• Water Resource Adequacy
• Operational Optimization	• Stakeholder Understanding and Support
• Financial Viability	

An articulation of each Attribute follows.

- **Product Quality:** Produces potable water, treated effluent, and process residuals in full compliance with regulatory and reliability requirements and consistent with customer, public health, and ecological needs.

- **Customer Satisfaction:** Provides reliable, responsive, and affordable services in line with explicit, customer-accepted service levels. Receives timely customer feedback to maintain responsiveness to customer needs and emergencies.

- **Employee and Leadership Development:** Recruits and retains a workforce that is competent, motivated, adaptive, and safe-working. Establishes a participatory, collaborative organization dedicated to continual learning and improvement. Ensures employee institutional knowledge is retained and improved upon over time. Provides a focus on and emphasizes opportunities for professional and leadership development and strives to create an integrated and well-coordinated senior leadership team.

- **Operational Optimization:** Ensures ongoing, timely, cost-effective, reliable, and sustainable performance improvements in all facets of its operations. Minimizes resource use, loss, and impacts from day-to-day operations. Maintains awareness of information and operational technology developments to anticipate and support timely adoption of improvements.

- **Financial Viability:** Understands the full life-cycle cost of the utility and establishes and maintains an effective balance between long-term debt, asset values, operations and maintenance expenditures, and operating revenues. Establishes predictable rates—consistent with community expectations and acceptability—adequate to recover costs, provide for reserves, maintain support from bond rating agencies, and plan and invest for future needs.

- **Infrastructure Stability:** Understands the condition of and costs associated with critical infrastructure assets. Maintains and enhances the condition of all assets over the long-term at the lowest possible life-cycle cost and acceptable risk consistent with customer, community, and regulator-supported service levels, and consistent with anticipated growth and system reliability goals. Assures asset repair, rehabilitation, and replacement efforts are coordinated within the community to minimize disruptions and other negative consequences.

- **Operational Resiliency:** Ensures utility leadership and staff work together to anticipate and avoid problems. Proactively identifies, assesses, establishes tolerance levels for, and

effectively manages a full range of business risks (including legal, regulatory, financial, environmental, safety, security, and natural disaster-related) in a proactive way consistent with industry trends and system reliability goals.

- **Community Sustainability:** Is explicitly cognizant of and attentive to the impacts its decisions have on current and long-term future community and watershed health and welfare. Manages operations, infrastructure, and investments to protect, restore, and enhance the natural environment; efficiently use water and energy resources; promote economic vitality; and engender overall community improvement. Explicitly considers a variety of pollution prevention, watershed, and source water protection approaches as part of an overall strategy to maintain and enhance ecological and community sustainability.

- **Water Resource Adequacy:** Ensures water availability consistent with current and future customer needs through long-term resource supply and demand analysis, conservation, and public education. Explicitly considers its role in water availability and manages operations to provide for long-term aquifer and surface water sustainability and replenishment.

- **Stakeholder Understanding and Support:** Engenders understanding and support from oversight bodies, community and watershed interests, and regulatory bodies for service levels, rate structures, operating budgets, capital improvement programs, and risk management decisions. Actively involves stakeholders in the decisions that will affect them.

Keys to Management Success

The Steering Committee further identified the following "Keys to Management Success" that, based on an exploration of and experience with utility management efforts, reflect several, consistently utilized, management approaches and systems that can foster utility management success.

1. Leadership

A consistent theme throughout Committee discussions and focus group observations was the critical role leadership plays in effective utility management, particularly in the context of driving and inspiring change within an organization. In this context, the term "leaders" refers both to individuals who can be effective champions for improvement, and to leadership teams that provide resilient, day-to-day management continuity and direction. Effective leadership ensures the utility's direction is understood, embraced, and followed on an ongoing basis throughout the management cycle. It further reflects a commitment to organizational excellence, leading by example to establish and reinforce an organizational culture that embraces change and strives for continual improvement.

2. Strategic Business Planning

Strategic business planning emerges as an important tool for helping utilities strike an effective balance among, and drive integration and cohesion across, the Attributes. Strategic business planning involves taking a long-term view of utility goals and operations and establishing, in that context, an explicit vision and mission that drive and guide utility objectives, measurement efforts, investments, and operations.

3. Organizational Approaches

Utility managers have identified a variety of organizational approaches as part of overall effective utility management and critical to the success of management improvement efforts. These include:

- Establishing a "participatory organizational culture" that actively seeks to engage employees in improvement efforts (e.g., establishing management improvement, employee empowerment, and cross-functional teams);

- Deploying an explicit change management process that anticipates and plans for change and encourages staff and managers to embrace rather than resist change; and

- Utilizing implementation strategies that seek early, step-wise victories that help utilities get started and remain motivated.

4. Measurement

A focus and emphasis on measurement emerges as critical to management improvement efforts associated with the Attributes and as the backbone of successful continual improvement management and strategic business planning. As one participant succinctly put it, "you can't improve what you don't measure." Committee members (and focus group participants) indicated that successful measurement efforts tend to share certain commonalities:

- They are viewed as a continuum starting with basic internal tracking, and moving on, as needed and appropriate, to more sophisticated base-lining and trend analysis, development of key performance indicators, and inclusion of externally-oriented measures speaking to community sustainability interests;

- They are driven by and focused on answering questions critical to effective internal management and external stakeholder needs (e.g., questions utility boards need answered to comfortably support large capital investments); and

- They are supported by a well-defined decision framework assuring results are evaluated, communicated, and responded to in a timely manner.

Even as Committee members embraced measurement as a critical part of effective utility management, they emphasized that measurement can be complicated, needs to be approached carefully, and presents several challenges. Deciding where to start and how much to measure can be difficult, especially when the benefits of measurement and appropriate performance levels may be uncertain. Measures can also be taken out of context and used to make baseless comparisons; measurement must therefore be approached, structured, and used with care.

5. Continual Improvement Management Framework

A continual improvement management framework, most frequently implemented through a complete, start-to-finish management system, plays a central role in effective utility management and is viewed as a critical management strategy to make progress in the context of the Attributes.

Continual improvement management includes:

- Conducting an honest and comprehensive self-assessment;

- Establishing explicit performance objectives and targets;

- Defining related operational requirements, practices, and procedures;

- Establishing supporting roles and responsibilities;

- Implementing measurement activities including regular evaluation through, for example, operational and procedural audits; and

- Responding to evaluations through the use of an explicit change management process.

This "plan, do, check, act" continual improvement framework is often further supported by gap analysis, benchmarking, and best practice review to understand improvement opportunities and establish explicit service levels, guide investment and operational decisions, form the basis for ongoing measurement, and provide the ability to communicate clearly with customers and key stakeholders.

Recommendations

1. The Steering Committee recommends that the water utility sector adopt and utilize the "Ten Attributes of Effectively-Managed Utilities" as a basis for promoting improved management within the sector.

2. The Steering Committee recommends that the Collaborating Organizations explicitly call out and reference the "Keys to Management Success" in efforts to promote the Attributes and enable more effective utility management within the sector.

IV. Water Utility Measures

Water utility performance measurement has long been a part of efforts to improve utility management. The May 2 Statement of Intent recognized this role by explicitly highlighting measurement as a component of the Collaboration's work. The Statement includes an objective to "improve utility performance through the utility-specific application of effective management tools, performance measurement, and other techniques and systems" and further specifies that the Collaboration is expected to involve outreach to utilities on "potential measures of success for utilities to gauge progress."   This assertion of the importance of measurement supports and complements multiple efforts over the past several years, including the 2005 Managing for Excellence analysis[3] and the draft AwwARF Triple Bottom Line Reporting report.[4]

The Steering Committee spent a substantial amount of time conceptualizing, researching, and discussing utility measures.   The Committee discussed measurement at length during both of its in-person meetings; formed a Measures Subgroup, which held separate conference calls to identify example measures and an approach to presenting those measures; and spent a substantial amount of additional time researching and considering the example measures and related information discussed below.   In addition, both focus groups discussed the role of measurement in effective utility management, and their input is consistent with the Steering Committee's findings and recommendations.

Findings

The Steering Committee strongly affirms the view that measurement is critical to effective utility management. It has identified measurement as one of the Keys to Management Success for achieving or making progress toward the Ten Attributes of Effectively Managed Utilities.

The Steering Committee is using the term "measurement" generally to refer to a combination of stand-alone units of measure (e.g., number of X), measurement indicators (e.g., yes/no questions or facts that are not necessarily numerical), and related performance measures. The discussion on measurement in this report and the example measures identified by the Steering Committee in Appendix D are intentionally not articulated as objectives, targets, or benchmarks. That is, they do not specify what result or improvement the utility should be aiming for or how a utility would use any example measure to compare itself to other utilities or some kind of sector norm. The Steering Committee wants to be clear, however, that identifying and gauging progress toward targets and benchmarking against previous utility performance and against the performance of similar utilities can be very helpful management exercises.

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[3] EPA Office of Wastewater Management, as prepared by Ross & Associates Environmental Consulting, Ltd., and Industrial Economics, Inc. *Managing for Excellence: Analysis of Water and Wastewater Utility Management Systems*. August 2005.
[4] AwwaRF, as prepared by Steven Kenway and Shiroma Maheepala. *Triple Bottom Line Reporting of Sustainable Water Utility Performance*. September 2006 [Draft].

➔ **Utilities should measure.**

Utilities need to measure their performance and progress to identify areas for improvement, make informed management decisions, improve operations, and communicate effectively with key stakeholders and the public. Benefits of measurement include:

- Helping to explain and justify decisions, expenditures, and rate increases;

- Helping to achieve long term strategic organizational goals;

- Explaining progress and making effective presentations to Boards, Councils, and regulatory agencies;

- Identifying the warning signs of compliance problems;

- Tracking the absolute numbers needed to gauge a utility's status regarding both specific issues (e.g., legal requirements) and more broad issues (e.g., regarding sustainability);

- Determining needs in new areas (e.g., watershed level work);

- Identifying and assessing group-based (e.g., multiple-utility) problems;

- Comparing a utility's performance against previous periods;

- Setting future goals;

- Promoting continuous improvement; and

- Benchmarking performance against similar utilities to better understand utility strengths and weaknesses and opportunities for utility practice improvement (done carefully to avoid "apples and oranges" comparisons).

➔ **The example measures identified by the Steering Committee are a good place to start.**

The example measures identified in Appendix D are not designed to be a utility measurement program. They are, however, a strong starting point for utilities to consider how they could approach measurement in support of the Attributes. The Steering Committee is therefore recommending (below) that they be used as the basis for a set of example measures that would be included in the Sector Strategy. The measures should be contextualized, however, as a diverse group of *preliminary* example measures that do not apply to all utilities. Some of the example measures focus on emerging issues that relatively few utilities are in a position to measure; others are more fundamental to water utility operations. Utilities will want to determine for themselves whether these examples apply or are of interest based on, for example, specific service-level requirements, improvement efforts, and stakeholder interests, and keep in mind that these example measures have not been fully "road tested" or validated by the Collaborating Organizations.

➔ **The example measures identified by the Steering Committee are <u>not equivalent to a measurement program</u>. They were not generated with the objective of gauging the progress of the water/wastewater industry. They are high-level, illustrative examples and are not presented with enough information for "off the shelf" use.**

The example measures identified by the Steering Committee are intended to provide a starting point for utilities to consider the kinds of measures that could be used to track status and progress against the Attributes. <u>The example measures are not ready or intended for "off the shelf" use</u>. Most of them have been generalized and are missing the detail and technical information that would be needed to implement them successfully. Instead, they are being offered as triggers or "think pieces" about where and how utilities could measure in these areas. (For approximately 20 measures, readers are given reference information for additional measurement specifics that will enable use of these measures. This information is included only in those instances where the measures are part of a formal, publicly-available measurement program.)

The example measures in Appendix D are not intended for comparative (cross-utility) purposes. Rather, they are intended for utilities to use for their own management purposes. In some instances, utilities may choose to use measures to report to the public, regulators, or other interested parties; or to explore benchmarking using comparative measures (e.g., their rates relative to the rates of similar utilities) to help gauge and improve management of their own utility. However, this kind of comparison could be taken out of context and used to compare "apples to oranges." For this reason, the Steering Committee urges caution when using measures for cross-utility purposes. A few measures in the example list, notably those that are QualServe Benchmarks, have been specifically designed to allow for meaningful "apples to apples" cross-utility comparisons. However, explanatory information and utility specific information is usually required to make appropriate and useful comparisons.

➔ **The example measures do not reflect a comprehensive set of utility measures**.

There are hundreds of measures in addition to the example measures identified by the Steering Committee that utilities use to manage themselves effectively. Several organizations have identified utility measurement systems that outline approaches to water utility performance measurement and include coordinated sets of measures. The example measures identified by the Steering Committee through the Effective Utility Management Collaboration simply reflect a subset of measures across the Attributes spectrum.

➔ **More measurement is not necessarily better measurement: start where you are and progress over time.**

Every utility starts measuring performance somewhere. It is important that utilities start with an appropriate set of measures tailored to their needs. The number of example measures included here is not intended to suggest that utilities need to measure everything to manage effectively. Similarly, some of the example measures are more advanced and may be appropriate for future consideration. It is important to not be paralyzed by the universe of measurement opportunities, and to just start with a few measures in core areas.

Utilities do not need to measure everything to improve their own management performance. In fact, measurement efforts that take on too much too quickly can be crushed by their own weight. It is therefore important to be systematic about undertaking new measurement projects. It is also important, however, to not wait for the perfect measurement system before just starting

somewhere. Measurement will always evolve, and along with the rest of utility management efforts, a "continual improvement" perspective on measurement is realistic.

➔ **Utility measurement is complicated and needs to be done carefully to be useful.**

Performance measurement, while useful for management purposes, does present a number of challenges. For example, deciding what and how many things to measure to get started with performance measurement is difficult, especially when it is not clear what the benefits are and what the appropriate level of performance should be (e.g., what does "good" or "excellent" performance look like?). In addition, as stated earlier, performance measures can easily be taken out of context or used to compare "apples to oranges." It is important to develop meaningful measures that can be used to make real improvements and to communicate accurate information to those who will interpret the information correctly. This can be a challenging and time consuming exercise, but it is also important to "not let the perfect be the enemy of the good," and simply get started.

➔ **Utility measurement is constantly evolving, and any "ideal" set of measures will also dynamically evolve.**

The world of utility measurement, both outside of and within the U.S., is quickly evolving and will continue to be the topic of significant attention for years to come. The example measures identified by the Steering Committee should be viewed in this light—as an informed set of examples that would likely change as new information and insights are available.

Recommendations

1. The sector strategy should include a set of example utility measures that are related to the Attributes, based on those provided in Appendix D. The example measures could be based on, or could be the same as, those provided in Appendix D.

2. The example measures should be accompanied by a preamble that includes caveats and considerations that communicate the findings outlined above.

3. If possible, the sector strategy should include updates of the example measures in line with the "continual improvement" framework.

4. The Steering Committee recommends circulating a set of example measures to a broader sector audience as soon as possible, recognizing at the same time that additional tuning, validating, and "road testing" of the example measures with utilities over time would be desirable.

5. The Steering Committee also recommends that, in parallel to making the example measures available to the sector, the Collaborating Organizations initiate a longer-term effort to establish a program supporting a cohesive set of targeted, generally applicable, individual water sector utility measures. The purpose of this program would be to provide individual utilities with a robust measurement system for gauging and improving their internal

operational and managerial practices and for communicating with external audiences such as utility boards, rate payers, and community leaders. The program would fill an important gap between the Committee's identification of measurement as a "key to management success" and the "starting place" nature of the example measures compiled for this report. The Committee believes individual utilities could benefit from access to a strong, validated, cohesive system of strategy-related measures, thereby providing some structure and focus to individual experimentation and avoiding "reinventing the wheel" one utility at a time. The compiled example measures may or may not serve as a starting point for this measurement system—existing measurement efforts and other measurement resources will likely be valuable contributors to such an undertaking.

Steering Committee members also discussed the concept of leveraging the development of the individual utility measures program to support utility-to-utility benchmarking and sector-wide practice and performance assessment. Members expressed a range of opinions relating to the challenges and opportunities associated with moving in this direction, reflecting, in part, different past experiences with similar efforts. This mix of opinions left the Committee with insufficient common ground to formulate a recommendation on this topic.

V.   Water Utility Management Resources

The May 2 Statement of Intent identifies several key topic areas in which outreach to utilities is anticipated to occur, including "existing utility management resources."

Approach

The Steering Committee discussed how to approach this task at its first meeting in July 2006 and decided to form a Resources Subgroup to explore toolbox options, including identification of example resources that could be used in a future toolbox, and exploration of different toolbox formats, scopes, and management approaches. The Resources Subgroup, comprised of four volunteer Steering Committee members and three Collaborating Organization staff members, held two conference calls and conducted research and exchanged ideas via e-mail. In addition, all Steering Committee members and Collaborating Organization staff representatives were asked to submit nominations for their "top five" most useful utility management resources. These nominated resources, plus a few additional resources discussed at the November 2006 Steering Committee meeting, form the list of management resources provided in Appendix E, which is discussed in more detail below.

To be clear, the Steering Committee was not tasked with *creating* a resource toolbox. It was tasked with creating ideas and recommendations on the content and structure of a resource toolbox, and as part of this task, the Committee decided to identify a "starting point" set of useful management resources. This set of resources, and the accompanying conceptual matrix that links these resources to the Attributes and Keys to Management Success, would need to be updated and completed if the Collaborating Organizations decide to use them. The following options describe how a resource management toolbox could be developed and made available to interested utilities. There is currently no formal plan or funding to create the toolbox, therefore, these are hypothetical options.

Findings

The Steering Committee believes that utilities are interested in tools that can support management progress and that many utilities would benefit from a "helping hand" that can guide them to useful resources that address their management needs, particularly in the context of the Attributes. There are hundreds of resources available, and a resource "toolbox," linked to the Attributes and the other components of the sector strategy, would help to bridge the gap between the challenges and barriers faced by utilities and the actions they can take to improve their utility's management and performance.

The Steering Committee's more specific findings on the development of a resource toolbox are divided into three categories: (1) general toolbox findings; (2) findings regarding toolbox content; and (3) findings regarding toolbox structure, format, and management.

General Toolbox Findings

The Steering Committee believed that the toolbox would benefit from the following.

- Including a targeted set of resources that are linked to, or are related to, the Attributes and the Keys to Management Success.

- Providing the capability for toolbox users to search resources based on different filters or categories to prevent users from being overwhelmed and to help them navigate easily to the resources they need. These categories could be:
   □ Attribute;
   □ Keys to Management Success;
   □ Resources related to only one Attribute or topic area versus resources related to more than one Attribute or topic area;
   □ Resource media type/file format (e.g., videos versus publications);
   □ Utility type and size;
   □ Resource title;
   □ Resource author;
   □ Key word; and
   □ Date listed (assuming the resources would be updated over time).

- Making the resource toolbox—and, if possible, the resources themselves—quickly and easily accessible (e.g., PDF downloads from the web).

- Utilizing peer-reviewed resources whenever available.

- Enabling a continual improvement approach for the toolbox, including making adjustments based on (regularly) receiving feedback on the resources.

During the process of identifying the "starting point" resources in Appendix E, Committee members also observed that, based on their own experience, many of the most useful management resources are not specific to water utilities or even related to water, but rather are either general management resources, or resources developed for other sectors.

Findings Regarding Toolbox Content

The Steering Committee identified what they believe is a strong starting point in the form of a list of example resources for use in the toolbox. Committee members have found these resources useful in their own management practices, and this is the type of information that could be the foundation of the toolbox. In addition, the Steering Committee recognizes that a description of the Attributes and Keys to Management Success as well as some background on the sector strategy are also important toolbox foundational elements.

The Committee identified several additions to these foundational elements for possible inclusion in the toolbox:

- Case studies or examples of how the resources have been used by utilities;

- Actual resources, not just references to the resources (e.g., documents that are free, publicly available, and accessible/downloadable directly from the toolbox);

- Links to the example utility measures described in this report;

- Inclusion of or links to a compendium of additional resources available from the Collaborating Organizations[5]; and

- The logos of the Collaborating Organizations to make clear that this is an effort by all of the Organizations.

Findings on Toolbox Structure, Format, and Management

The Steering Committee also explored general toolbox structure, format, and management approaches.   The Committee's findings in these areas are included below, divided by the general categories of toolbox structure and format identified in discussions. Note that these options are neither mutually exclusive nor exhaustive—they simply explore some of the general options available.

➔ **Written Document (e.g., PDF/MS Word file)**

The toolbox could be made available as a hard copy document. In this case, organizing the resources by title, Attribute, Keys to Management Success, and/or another organizing framework may be preferable to other organizational constructs, such as listing resources by author as shown in the Committee's list of resources.

Advantages: These include the ease of completion and feasibility. Distribution would be easy, as the toolbox could be handed out at meetings, posted on websites as a PDF document for download, and otherwise made available without a lot of additional toolbox "construction."

There is also the option for the toolbox to be provided electronically in a format that would allow users to link or jump from one part of the document to another (e.g., from one Attribute to another without reading through all of the resources for each Attribute) if "hyperlink" functions like the one available in Microsoft Word or Adobe Acrobat files were used (for example, click here to return to the top of this section). This type of linking would still not be as user friendly as the more interactive options made available by creating a toolbox website (these are explored more below).

Disadvantages: This option would not enable the toolbox to be tailored to users' interests as would be, for instance, a different kind of interactive toolbox that would provide tailored information based on a user's specific characteristics (e.g., size of utility) and needs. As a static document, the toolbox could contain outdated information and the user would not know this. Depending on how the resources were organized, the toolbox could be quite cumbersome. For example, organizing the toolbox by Attribute would require those resources that apply to multiple Attributes (as many of the listed resources do) to be listed multiple times, making the toolbox both long and duplicative. (Note that this additional length could be avoided if the resources were only listed in detail once—perhaps by title—and readers would use a cross-reference table like the conceptual example provided in Appendix E to identify which resources apply to which Attributes, Keys to Management Success, etc.). Another drawback of this option would be that users would not immediately be able to "jump" or link to more information on the resource, or be able to

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[5] The Collaborating Organizations were asked to approximate the number of resources they may each want to include if this were to be pursued. Estimates ranged from 5 to 40 resources per association.

download or purchase the resource immediately, though written information about how to do so could be provided.

For an electronic option in PDF form, any changes made to the document would require creating a new PDF file, and all of the links would have to be recreated for each update. This would take a substantial amount of time if an extensive linking system were put in place or if the document were frequently updated.

➜ **Toolbox on Compact Disk (CD)**

The toolbox could be made available electronically on a CD, which would allow users to see a structured hierarchy of topics (like a Table of Contents) and then to pick and choose which information to access based on interest, need, etc. This would function like browsing a set of electronic file folders on a desktop computer. This option, like the written document/flat file option, could take advantage of document hyperlink functions so that users could jump from one section to another, or easily return to the beginning of the toolbox.

Advantages: This option would be fairly quick and easy to create and distribute (e.g., handed out at conferences, sent by mail), and it would have some interactivity available for users. In addition, CDs can store fairly large amounts of data, which is advantageous for people with slower internet connections or for files which are too big to send by email. Finally, electronic files on a CD could be used to "jump" directly to the web to download/purchase items.

Disadvantages: These are the same as those described for the written document/hard copy toolbox, except that electronic files on a CD could be used to jump directly to the web to download/purchase items. In addition, there is a physical waste factor associated with CDs, as CDs can't be updated, only replaced.

➜ **Basic Website/Web-Enabled Toolbox**

The toolbox could be available on a relatively basic website. Users could jump/link to resources by Attribute, Key to Management Success, media type (e.g., video or book), author, and/or any other organizing constructs chosen. Users could follow links directly to other websites where they could download or purchase the resource. It is also possible that some resources could be available for free download from the toolbox website itself.

Advantages: This option would allow more user interactivity, and, in general, a toolbox that is more tailored to users' interests because users could be provided with links to navigate the site based on their profile. This option would allow users to more quickly and easily access the resources themselves, by linking to the source of the resource (e.g., organization where the resource is available to purchase) or perhaps directly to the resource itself. Assuming the website would be updated periodically, it would be fairly easy to update the toolbox to add new resources, include new sector strategy-related components (e.g., information on Attribute-related performance measures), or to update information on resource availability. This option would also not require a tremendous amount of work. *Assuming that all decisions on website content and general approach have been made, and that there would not be automated interactions between this site and other websites,* the initial website design would require perhaps 20-30 web

designer/database developer hours to develop the design and back-end database and to create the site; relative to more extensive website options, this is a small investment. Finally, this option could easily (and logically) be tied into a general sector strategy website that introduces the Attributes.

Disadvantages: This option would require more up-front investment than the document/flat file or CD options. In addition, if the site were updated periodically, links to resources could cease to work, as links are likely to change over time. This option may therefore best be pursued if ongoing or routine website maintenance were possible. Also, this option would not provide as many interactive options as would a more extensive and sophisticated website, though it could be designed to allow expansion to such a site in the future if desired.

➔ **More Extensive Website Options**

There are a variety of options for building a more extensive website with more sophisticated and interactive functions, such as the following:

- An (optional) interactive survey to allow resources to be screened based on information about the user's utility type, size, needs, and interest areas;

- A mechanism for allowing users to suggest or submit resources;

- A mechanism for tracking feedback on resources; and

- Possibly, the option of linking more "seamlessly" to Collaborating Organization websites in order to view more information and purchase resources without leaving the original website. (Note, however, that this particular option is likely to be technically very complicated and costly to implement.)

Several Steering Committee members noted that having a more interactive website, tailored to each user's interests and needs, would be desirable, but at the same time acknowledged that pursuing this kind of site may be prohibitively expensive and difficult to maintain.

Advantages: Although the Steering Committee did not explore the scope and functions of more complicated website options in detail, it is clear that this kind of site *could* be very user-friendly, providing both more information and more user-tailored information. It could make accessing the resources easier, and could even result in some kind of personalized portfolio of resources for each utility that decides to take advantage of this kind of tool. It could also greatly improve the toolbox's "continual improvement" ability by allowing for feedback on resources, suggestions for additional resources, etc.

Disadvantages: These more complicated website options would require substantially more up-front website design work and database/website programming, would require more ongoing maintenance, and in general, might cost substantially more than the other options, though the actual cost would depend on the specific scope and functions selected.

Recommendations

The Steering Committee recognizes that there is currently no budget or coordinated plan for creating the toolbox, and that the ability to implement the toolbox will be critically dependent on the resources available to the Collaborating Organizations to do so. With this as context, the Steering Committee identified the following recommendations.

1. To effectively support promoting the Ten Attributes, the Collaborating Organizations should pursue the creation of a resource toolbox with, in particular, clear linkage to the Attributes.

2. The toolbox, even if in an interim form, should be made available to a wider audience as soon as is feasible.

3. Toolbox design should allow for resource cross-referencing and categorization, perhaps by Attribute, Keys to Management Success, resource media type/file format, utility type, and author.

4. As possible, some form of interactivity between the user and the toolbox itself should be pursued to allow some tailoring of toolbox information based on user interests and to make acquisition of resources as easy as possible. In this context, the Committee believes the Collaborating Organizations should seriously consider a searchable CD or basic website format as a means to organize and deliver the information.

5. The other findings—such as including a targeted set of resources, making the toolbox easily accessible, using peer-reviewed resources whenever possible, allowing for toolbox improvements over time, observations regarding content, and the pros and cons of the different options for toolbox structure—should be considered as the Collaborating Organizations make their decisions on how to proceed on the toolbox.

VI. Supporting Strategy Elements

As part of their deliberations, Committee members explored a set of "supporting strategy elements" designed to create incentives for and reduce barriers to adopting management practices consistent with the Attributes. In this context, Committee members recognize that utility managers will need to be both motivated and enabled to make management change. The Attributes, the resource toolbox, and example measures are all designed to enable management change, while the supporting strategy elements lean into providing additional motivation for change.

Findings

As described earlier in this report, the Steering Committee members, with additional input from the focus groups, identified several key barriers that act to constrain utilities' ability to adopt more effective management approaches, as well as potential incentives to motivate and enable utilities to enact management improvements. The Steering Committee used the results of these discussions to identify the following set of sector strategy components that would complement and support the Attributes, the Keys to Management Success, resource toolbox, and example utility measures.

➔ **Explicit Advocacy**

First and foremost, Committee members believe that promotion of the Ten Attributes, to be successful, must be led by the Collaborating Organizations. Committee members view the Organizations as an important and credible source of information for and leadership to the water utility sector. Explicit and focused advocacy of the Attributes, and perhaps other sector strategy components, by the Organizations could take a variety of forms, including inclusion in key note addresses made by executive directors and other representatives; ongoing coverage in newsletters and other literature; acknowledgement on organization websites; inclusion in the programs of annual and other meetings sponsored by the Collaborating Organizations; and development of specific workshops/trainings devoted to promotion and adoption of the Attributes.

➔ **Community Education and Outreach**

Committee members and focus group participants consistently identified generating and maintaining support from governing bodies and the broader community as a key utility management challenge and a barrier to pressing forward with utility management improvements. In this context, Committee members believe education programs that raise awareness of the value water sector utilities provide, the critical challenges and needs they face, and the benefits of enhanced utility management practices will play a critical role in creating an atmosphere in which utility managers can succeed. The Committee envisioned both general education efforts undertaken on behalf of the sector that target community leaders (e.g., city mayors, city councils, utility board members, etc.), and more targeted education efforts that individual utilities could use to raise awareness and garner support within their local communities.

➔ **Recognition**

Acknowledging excellence through awards and other programs has been a means for Collaborating Organizations and others to encourage water utility sector change and improvement. Committee members see a continuing role for such efforts and believe that, at minimum, an opportunity exists to more explicitly align current Collaborating Organization recognition efforts with the Attributes. This would entail reviewing the selection criteria for current recognition efforts and aligning or adjusting them to be reflective of the Attributes. In addition to leveraging existing efforts, Committee members believe that recognition could be broader and simpler than awards programs. For instance, one idea for increased recognition would be acknowledging through a "sector challenge" a list of utilities that commit to taking (any) actions to improve their management in at least one Attribute area. Recognition could also draw on existing concepts of peer review programs, combining recognition with the availability of volunteer peer experts that can assist utilities to evaluate current performance and identify opportunities for improvement.

➔ **Financial Incentives**

There may be opportunities for agencies using the Attributes to more clearly demonstrate "effective management" and, as a result, generate a favorable response from the sources of financial resources such as private capital markets, rate setting organizations, and rate payers.

Recommendation

1. Develop plans to enact supporting strategy elements as possible.

The Steering Committee recognizes that these supporting strategy elements could require the investment of a significant amount of time and resources to implement, and that there are currently no funds set aside for these purposes. At the same time, Committee members believe that, although the Attributes, the Keys to Management Success, resource toolbox, and example measures can provide a basis to enable water sector utility management improvement, on their own they likely lack the ability to motivate timely change. The supporting strategy elements are designed to help provide the motivating force for change and, as such, should be given serious consideration by the Collaborating Organizations.

VII. Next Steps for the Sector Strategy

Findings

Feedback to the Steering Committee has affirmed that a water utility sector management strategy is timely and very important, and that the primary elements of the sector strategy outlined in this report (Attributes, Keys to Management Success, resources, and measures) will help water utilities to make improvements and take a step toward the "next generation" of water utilities in this country. The following recommendations are intended to support the work of the Collaborating Organizations in transforming this report into the strategy that utilities can start to benefit from. In addition to these recommendations, the Steering Committee recognizes that several steps need to be taken between the submittal of this report and the launching of the sector strategy, such as gaining the formal support of each Collaborating Organization for the content of this report.

Recommendations

1. Roll out the sector strategy as soon as possible.

The Steering Committee encourages the Collaborating Organizations to develop and roll out the sector strategy as soon as possible. This can be achieved one strategy element at a time, presumably starting with the Attributes, which have received the most attention and agreement to date, and which the Steering Committee believes are ready for a wider audience.

2. Launch the sector strategy with a short, stand-alone document geared to the sector.

The Steering Committee recommends that, as part of the process of launching the sector strategy, the Collaborating Organizations prepare within the next several months a brief, stand-alone primer with water sector utility managers as its intended audience. The primer would be based in the content of this report (Attributes, Keys to Management Success, example measures, and resources), be short enough to read quickly, and yet provide enough information to act as an initial guidepost for engaging in utility management improvement efforts. The primer would focus on the Ten Attributes of Effective Utility Management and the associated Keys to Management Success, and could include one or a few of the example measures for each Attribute included in Appendix D of this report. (Alternatively, the document could refer to relevant utility measures that have been developed as part of separate utility measurement programs.) The document could also include reference to utility management resources, perhaps through a selection of the examples explored through the Steering Committee's work, a discussion of how utilities could access similar resources, or, at a minimum, information on the plans to date for how the Collaborating Organizations will support a resource toolbox in the future.

3. Continue the collaboration among the Collaborating Organizations.

The Steering Committee recommends that collaboration continue in some manner. In particular, to further the future of the collaboration, the Steering Committee recommends that the Collaborating Organizations continue to work together on the strategy's development, implementation, and rollout. The Steering Committee wants to acknowledge the importance of this positive working relationship among the Collaborating Organizations and encourage a furthering of such efforts in the future. In addition, several Steering Committee members and focus group participants have indicated they see value in the continuation of a member steering committee in some form to help support and guide sector strategy development, implementation, and advocacy. In this context, the Steering Committee recommends that the Collaborating Organizations consider forming a new committee drawn at least in part from current committee membership to provide input to the Collaborating Organizations and help promote adoption of the key elements of the sector strategy.

4. Employ a continual improvement approach to the strategy's implementation over time.

Similar to the previous recommendation, the Steering Committee recommends that the sector strategy itself be reflected upon and improved/updated periodically. The water utility sector will continue to advance over time, and as information becomes available and additional feedback is sought and provided, the sector strategy will be strengthened by employing a "continual improvement" approach. Doing so will necessarily involve gaining feedback on the sector strategy from water utilities. It would also ideally involve identifying the sector's status—how the sector is doing relative to the strategy, particularly the Attributes—and whether the sector strategy has played a role in the sector's progress (or lack thereof) over time. The Committee hopes that the Collaborating Organizations will identify ideas on how to achieve this recommendation, and the Committee members are happy to provide additional thought in this regard to the extent that doing so would be useful.

VIII. Conclusion

The Steering Committee would like to thank the Collaborating Organizations for the opportunity to participate in this ground-breaking effort.   The Committee hopes that the findings and recommendations in this report will be valuable both to the Collaborating Organizations and to the sector on the whole. Although it is understood that the Collaborating Organizations will need time to reflect upon these findings and recommendations and to translate them into the sector strategy itself, we hope and expect that this will take place in a timely manner to help move the sector in the right direction. We look forward to staying engaged as the sector takes this step toward moving ahead in a coordinated manner toward realizing the next generation of water utilities in this country.

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