

Section 2. Ten Attributes of an Effectively Managed Utility

The Ten Attributes of an effectively managed utility provide useful and concise goals for utility managers seeking to improve organization-wide performance. The Attributes describe desired outcomes that are applicable to all water sector utilities. They comprise a comprehensive framework related to operations, infrastructure, customer satisfaction, community sustainability, natural resource stewardship, and financial performance.

Water sector utilities can use the Attributes to select priorities for improvement, based on each organization's strategic objectives and the needs of the community it serves. The Attributes are not presented in a prioritized order, but rather can be viewed as a set of opportunities for improving utility management and operations in all aspects of the utility.

Section 5 provides steps for a utility to assess and prioritize the Attributes for itself, **Section 6** has steps for identifying performance indicators and creating an improvement plan based on the assessment, and **Appendix C** has example performance measures for each Attribute.

The Ten Attributes are: Community Sustainability, Customer Experience and Satisfaction, Enterprise Resiliency, Financial Viability, Infrastructure Strategy and Performance, Operational Optimization, Regulatory and Reliability Performance, Stakeholder Understanding and Support, Water Resources Sustainability, and Workforce Development.

1. Community Sustainability

Takes an active leadership role in promoting and organizing community sustainability improvements through collaboration with local partners (e.g., transportation departments, other local water sector utilities, electrical utilities, planning departments, economic development organizations, watershed and source water protection groups). Manages operations, infrastructure, and investments to support the economic, environmental, and social health of its community. Integrates water resource management with community planning of infrastructure and social and economic development to support community-wide resilience, support for disadvantaged households, community sustainability, and livability. Identifies and implements programs such as community benefits and workforce development initiatives to strategically increase investments in the community to enable widespread economic inclusion.

2. Customer Experience and Satisfaction

Provides reliable and responsive services in line with explicit, customer-derived service levels. Utilizes a mix of evolving communication technologies to understand and respond to customer needs and expectations, encourages all utility personnel to be aware of and actively responsive to customer needs, feedback, and emergencies. Provides tailored customer service and outreach to residential, commercial, and industrial customers to enhance trust in the utility. Understands and exercises as appropriate the opportunities presented by new product lines and related customer groups (e.g., high strength waste producers, electric utilities).

3. Enterprise Resiliency

Manages risk to ensure enterprise continuity in collaboration with internal and external partners. Assesses potential impacts such as legal, regulatory, financial, social, environmental, safety, physical and cybersecurity, knowledge, talent loss, and natural disaster-related. Proactively identifies, evaluates, and establishes acceptable tolerance levels for risk, including interdependencies with other services and utilities, by understanding relevant trends and forecasts to anticipate potential hazards. Responds to, adapts, and recovers from service disruption by understanding relevant trends and forecasts to anticipate emergency events and hazards, and by creating and executing response plans in coordination with regional partners.

4. Financial Viability

Establishes predictable rates consistent with community expectations that consider full life-cycle cost of utility operations and value of water resources. Effectively balances long-term debt, capital, operations and maintenance expenditures with revenues and asset values. Adopts and implements financial practices that adequately recover costs, provide reserves, invest for future needs, maintains optimal bond ratings, and

address cost of service and the needs of disadvantaged households. Implements a range of strategies for collecting customer payments while connecting customers with resources and assistance programs. Utilizes opportunities to diversify revenues and raise capital through new and innovative business and financing models.

5. Infrastructure Strategy and Performance

Understands the condition of and costs associated with critical infrastructure assets. Plans infrastructure investments to address environmental justice impacts and service equity, consistent with community needs, anticipated growth, and relevant community priorities, building in a robust set of adaptation and resilience strategies (e.g., for changing weather patterns, customer base). 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. Assures asset repair, rehabilitation, and replacement efforts are coordinated within the community to minimize disruptions and other negative consequences. Looks for innovative and cost-effective technologies to establish and maintain infrastructure resilience consistent with agreed upon service levels and available resources. Develops and implements an asset management plan aligned to a strategic business plan that is communicated, available, and visible to all stakeholders.

6. Operational Optimization

Continuously incorporates innovative solutions through ensuring ongoing, timely, cost-effective, reliable, and sustainable performance improvements in all facets of its operations in service to public health and environmental protection. Effectively utilizes technological approaches and tools to optimize data management and analysis. (See **Section 3** Keys to Management Success on Measurement and Continual Improvement). Maintains awareness of information and operational technology developments to anticipate and support timely adoption of improvements and ensure information technology and information system business alignment. Maintains attentiveness to supply chain vulnerabilities to ensure efficient and timely acquisition of critical parts and supplies.

7. Regulatory and Reliability Performance

Meets or exceeds regulatory requirements, provides reliable services/products within the utility's community. Service reliability ensures consistent and equitable outcomes for livable communities (municipal operations, institutional operations, industrial users, commercial users, residential users). Maintains consistency with customer, community, public health, safety, ecological, and economic priorities (applies to drinking water, wastewater, stormwater, and recovered resources).

8. Stakeholder Understanding and Support

Enables understanding and support from stakeholders (anyone who can affect or be affected by the utility including direct customers, oversight bodies, community and watershed interests, regulatory bodies, and consumers) for service levels, rate structures, operating budgets, capital improvement programs, and risk management decisions. Actively

promotes an appreciation of the true value of water and water services, and water's role in the social, economic, and environmental health of the community. Through community dialogue, considers the full spectrum of impacts at all stages of decision making to a diverse set of stakeholders to ensure the same level of service and quality to all communities served. Understands what it takes to operate as a “good neighbor,” and positions the utility as a critical asset (anchor institution³) to the community.

9. Water Resource Sustainability

Ensures integrated and sustainable water resource management that considers all water of value. Understands the utility's role in the complete water cycle including fit for purpose water reuse options, ensuring attainment of designated uses and maintenance of surface water quality, and integrating utility objectives and activities with other watershed managers and partners. Analyzes the potential for water resource variability (e.g., changing weather patterns, including extreme events such as drought and flooding), and utilizes as appropriate a full range of watershed investment and engagement strategies to plan appropriately to meet community needs. Undertakes long-term integrated water resource planning, striving to equitably meet customer, community, and ecological water-related needs.

10. Workforce Development

Recruits, develops, retains, and inspires a workforce that is inclusive, competent, motivated, adaptive, and reflective of the community they serve. Builds community relationships that foster a diverse pipeline of potential employees. Maintains a participatory, collaborative organization dedicated to continual learning, technical proficiency, safety, and innovation where employees recognize themselves as valuable team members that belong and actively contribute to achieving utility goals. Ensures institutional knowledge is retained, transferred, and improved upon over time through knowledge management policies. Emphasizes and invests in opportunities for professional and leadership development, taking into account the differing needs and expectations of a diverse, multi-generational workforce. Establishes a supportive, collaborative, and aligned senior leadership team.

Section 3. Keys to Management Success

The Keys to Management Success represent management approaches and systems that enable water sector utilities to manage more effectively. Operating within a continual improvement-based Organizational Culture, the Keys to Management Success create a supportive context for a utility as it works towards the outcomes outlined in the Attributes, and they can help integrate the utility's improvement efforts across the Attributes. Each Key is a rich topic that can be studied further and will evolve as it is implemented within each utility. The Five Keys to Management Success are: Continual Improvement Management, Knowledge Management, Leadership, Measurement, and Strategic Business Planning and Management. The main concepts for each Key are described below.

Continual Improvement Management

Continual Improvement Management is a large field of study. At a minimum, it is usually implemented through a complete, start-to-finish management system, also referred to as a “Plan-Do-Check-Act” framework. Continual improvement is the central component of healthy Organizational Culture. Implementation of the EUM Self-Assessment, adopting performance measures and working towards

improvement on the Attributes, either through Strategic Business Planning or an EUM Attribute Improvement Plan, is in itself Continual Improvement Management. Continual improvement timeframes can align with your strategic business planning timeframe for optimal implementation.

Continual Improvement Management includes:

- Conducting an honest and comprehensive self-assessment, informed through staff engagement, to identify management strengths, areas for improvement, priority needs, etc. (See **Section 5** for Self-Assessment).
- Establishing a regular periodic timeframe to hold sessions among interested parties (stakeholders) to identify improvement opportunities.
- Reporting your results and following up on improvement projects underway.
- Establishing and implementing performance measures and specific internal targets associated with those measures (See **Section 6** for full description of Measurement and **Appendix C** for example performance measures).
- Defining and implementing related operational requirements, practices, and procedures.
- Defining supporting roles and responsibilities to derive clear accountability for conducting assessments and implementing performance improvements.
- Implementing measurement activities such as regular evaluation through operational and procedural audits.
- Responding to evaluations using an explicit change management process.

Continual Improvement Management is further supported by gap analysis, establishment of standard operating procedures (SOPs), internal trend analysis and external benchmarking where appropriate, best practice review and adoption, and other continual improvement tools. It can be used as a framework to help utilities 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.

A component of Continual Improvement Management is Organizational Change Management. Organizational Change Management is a structured approach to implementing change within an organization ensuring that lasting benefits are achieved. It involves strategic planning, effective communication, training, leadership involvement, and continuous monitoring to achieve desired business outcomes. The goal is to minimize disruption, increase employee adoption, and maximize the benefits of the change.

Knowledge Management

Knowledge management is another cornerstone of EUM and is critical to ensuring reliable utility operations and fostering continuous improvement. It spans SOPs, workforce management, business systems, and operating systems data integration to support dependable operations and continual improvement across all Ten Attributes. In particular, the Workforce Development Attribute is strongly tied to this Key due to the succession planning, recruiting, training and onboarding plans that advance Knowledge Management goals. A utility is able to respond effectively to the inevitable knowledge loss brought on by employee turnover or unexpected absence by ensuring that processes are well documented, SOPs are regularly updated, and knowledge is shared among all employee categories (formal and informal knowledge). An effective knowledge management system is flexible to the use of new and evolving technologies and should be updated on an ongoing basis.

Knowledge Management Strategy:

- Starts with a knowledge management inventory, considering formal and informal knowledge to

facilitate knowledge transfer (e.g., policies and procedures, institutional knowledge, business processes, onboarding information, and SOPs).

- Includes SOPs that provide step-by-step detail on how to perform defined functions.
- Validates existing knowledge to determine that high-quality knowledge is recorded and transferred.
- Requires a standardized system to be implemented throughout the organization.
- Treats knowledge as an asset to be managed, prioritizing efforts based on a risk profile that identifies processes that would result in the largest losses to operations if that knowledge were not maintained.
- Uses automated “smart” systems and data integration/management capabilities. These are an increasingly important aspect of efficient and effective continual improvement management. These systems and capabilities are available across all areas of utility management, and they can substantially improve the ability of utilities to track performance in real time, identify variability, and manage performance more effectively and precisely.

Leadership

Leadership is critical to overall success and must be present at every level of the organization. It is vital to EUM, particularly in the context of leading and inspiring purposeful change within an organization and in its surrounding community. Effective leadership embodies a commitment to cultivating a desired Organizational Culture, helping the establishment and adoption of methods to achieve the utility’s vision, and ensuring all employees both understand and connect with their role in achieving this vision through the organization’s day-to-day operations.

Leaders have an important responsibility to engage proactively with stakeholders and community decision makers; advocate for the utility as a valued, competent, and trustworthy environmental and public health steward and community asset; and collaborate with external partners (including new and nontraditional partners, like the agricultural sector). Leaders should drive an awareness and commitment to

Leadership includes:

- Supporting and modeling an Organizational Culture that inspires others to participate in developing, achieving, articulating, and embodying a shared set of values, a sense of purpose, and shared vision of the desired goals of the utility.
- Developing a culture that clearly connects the organizational values to performance objectives while supporting job functionality, employee coaching, and solidifying performance-based compensation parameters.
- Professionals who are highly interpersonally competent, as well as self-aware, and are prepared to use various approaches and communication techniques to engage and inspire others.
- Individuals who can be effective champions for improvement, and those who can work as a team to provide resilient day-to-day management continuity and direction.
- Making difficult decisions in the best interest of the organization after reviewing all aspects of the issue.

Measurement

Measurement is the basis for management improvement efforts associated with the Attributes and is the backbone of successful continual improvement management and strategic business planning. A measurement system serves many vital purposes, including focusing attention on key issues, clarifying expectations, facilitating decision making, supporting learning and improving, establishing and maintaining accountability, and, most importantly, communicating effectively internally and externally. A measurement system can also

allow benchmarking relative to utility peers.

Always keep in mind the management adage, “If you can’t measure it, you can’t improve it.”

Successful Measurement:

- Utilizes performance measures that apply at strategic, tactical, and operational levels and advance decision making and focus the organization on its goals.
- Measures how well a utility delivers its primary services and internal support functions to internal and external customers.
- Views measurement as a continuum, starting with basic internal tracking and moving to more sophisticated baselining and trend analysis, as necessary, with the development of key performance indicators, and inclusion of externally oriented measures which address community sustainability interests.
- Is informed by staff input, clearly defined in terms of need for measurement, and is driven by and focused on answering questions critical to effective internal management and external stakeholder needs, including information needed to allow governing bodies to comfortably support large capital investments.
- Supports a continual improvement framework assuring results are evaluated, communicated, and addressed in a timely manner.

There is an expanded description of Measurement in *Primer Section 6* “Getting to Work: Implementation” that describes types of measurements and how to incorporate performance measures into your continuous improvement plans. Example performance measures for each of the Ten Attributes are provided in **Appendix C**.

Strategic Business Planning and Management

Strategic business planning directs and helps to achieve balance and cohesion across the Ten EUM Attributes. A strategic business plan, or simply a strategic plan, provides a framework for decision making by:

- Assessing current conditions and conducting an assessment of strengths and challenges;
- Characterizing a continuum of possible and likely future conditions;
- Assessing underlying causes and effects of future conditions; and
- Establishing the utility’s vision, objectives, strategies, and underlying organizational values.

A successful strategic business plan is dynamic and adaptable, allowing the utility to capitalize on new and emerging opportunities and cultivates a sense of purpose throughout the organization. It is made more robust by engaging with staff and external stakeholders (including governing bodies), and by utilizing planning methods that can accommodate and address a variety of future operating scenarios (e.g., managing for uncertainty through “stress testing” a plan’s ability to hold up during extreme events, such as extended drought).

A strong plan reflects specific implementation steps that will move a utility from its current level of performance to achieving its vision. Preparation of a strategic business plan involves taking a longer-term view of utility goals and operations and establishing a clear vision and mission.

A strategic plan, through engagement with external stakeholders, will:

- Reflect key community values, needs, and interests.
- Drive and guide utility objectives, measurement efforts, investments, and operations.
- Help explain the utility’s conditions, goals, and plans to staff and stakeholders, stimulate change, and increase engagement and support for improvement efforts.

Strategic Management

Strategic Management is the ongoing accountability for making the strategic plan relevant and an active part of the organization's work. Active monitoring of performance under the plan engages employees in the process and provides accountability. Communicating the status of measurement indicators will keep staff updated and engaged with the strategic plan, helping all employees understand how their roles align to the utility's goals and objectives and see value in achieving goals and fulfilling the organization's mission and purpose. Additionally, Strategic Management will ensure that strategic planning drives and guides budgeting, utility objectives, measurement efforts, investments, and operations.

The EUM Framework can be incorporated by all utilities whether they are engaged in Strategic Planning or not. For more information on Strategic Planning, See **Section 6** of the *Primer* "Getting to Work: Implementation." For more information on implementing EUM with the Self-Assessment, see **Section 5** of the *Primer*. The Self-Assessment is a key element in assessing current conditions and identifying areas for improvement. The practices that will be incorporated to improve performance on an EUM Attribute, and the suggested performance measures for tracking progress can be incorporated into an existing strategic plan. If your utility is not currently engaged in strategic planning, an EUM Attribute Improvement Plan can serve the same purpose and can help the utility to start strategically working through a continuous cycle of assessment and improvement.

The Ten Attributes and Five Keys Work Together

The Attributes and Keys are the basis of the EUM Framework, a combination of desired outcomes and management strategies that are applicable to all water sector utilities. The Keys are cross-cutting and create a supportive context for the utility as it works towards each of the outcomes outlined in the Ten Attributes. The processes of self-evaluation and cycles of implementation of this Framework described in the rest of this *Primer* will lend a utility to develop a continual improvement based Organizational Culture. The below graphic shows how the Keys and Attributes work together to create EUM Framework.

The Ten Attributes to an Effectively Managed Utility and Five Keys to Management Success

