Strategic and Organizational Review to Become a High-Performing Utility

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Today’s Challenges: What Every Utility is Facing

- Regulatory Pressure
- Tightening Budgets
- Retiring Workforce
- Aging Infrastructure
- Water Supply
- Energy / Chemical Costs
Today’s Challenges: What Every Utility is Facing

<table>
<thead>
<tr>
<th>Rank</th>
<th>Category</th>
<th>Score (1-5)</th>
<th>% Ranked Critically Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Renewal and replacement of aging water and wastewater infrastructure</td>
<td>4.59</td>
<td>64</td>
</tr>
<tr>
<td>2</td>
<td>Financing for capital improvements</td>
<td>4.46</td>
<td>57</td>
</tr>
<tr>
<td>3</td>
<td>Long-term water supply availability</td>
<td>4.44</td>
<td>58</td>
</tr>
<tr>
<td>4</td>
<td>Public understanding of the value of water systems and services</td>
<td>4.37</td>
<td>52</td>
</tr>
<tr>
<td>5</td>
<td>Public understanding of the value of water resources</td>
<td>4.28</td>
<td>46</td>
</tr>
<tr>
<td>6</td>
<td>Watershed/source water protection</td>
<td>4.21</td>
<td>45</td>
</tr>
<tr>
<td>7</td>
<td>Cost recovery (pricing water to accurately reflect its true cost)</td>
<td>4.11</td>
<td>36</td>
</tr>
<tr>
<td>8</td>
<td>Emergency preparedness</td>
<td>4.05</td>
<td>33</td>
</tr>
<tr>
<td>9</td>
<td>Water conservation/efficiency</td>
<td>4.03</td>
<td>37</td>
</tr>
<tr>
<td>10</td>
<td>Compliance with future regulations</td>
<td>4.00</td>
<td>33</td>
</tr>
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</table>

Does this sound familiar?
Challenges are multi-faceted...

<table>
<thead>
<tr>
<th>Organizational</th>
<th>Infrastructure / Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Talent attraction and retention</td>
<td>• State of water and sewer infrastructure</td>
</tr>
<tr>
<td>• Aging workforce/anticipated</td>
<td>• Water conservation/efficiency</td>
</tr>
<tr>
<td>retirements</td>
<td>• Water loss control</td>
</tr>
<tr>
<td>• Certification and training</td>
<td>• Long-term water supply availability</td>
</tr>
<tr>
<td>• Workforce diversity</td>
<td>• Watershed protection</td>
</tr>
<tr>
<td>• Improving customer, constituent,</td>
<td>• Drought or periodic water shortages</td>
</tr>
<tr>
<td>and community relationships</td>
<td>• Expanding water reuse/reclamation</td>
</tr>
<tr>
<td>• Cyber-security issues</td>
<td>• Wastewater resource recovery</td>
</tr>
<tr>
<td>• Physical security issues</td>
<td></td>
</tr>
<tr>
<td>• Emergency preparedness</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Economic</th>
<th>Regulatory / External</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Financing for capital improvements</td>
<td>• Compliance with current regulations</td>
</tr>
<tr>
<td>• Acceptance of rate increases</td>
<td>• Compliance with future regulations</td>
</tr>
<tr>
<td>• Cost recovery</td>
<td>• Groundwater management and overuse</td>
</tr>
<tr>
<td>• Energy use and costs</td>
<td>• Stormwater management and costs</td>
</tr>
<tr>
<td>• Rising chemical costs</td>
<td>• Fracking/oil and gas activities</td>
</tr>
<tr>
<td>• Affordability for low-income</td>
<td>• Climate risk and resiliency</td>
</tr>
<tr>
<td>households</td>
<td>• Public understanding of the value of water resources, water systems and services</td>
</tr>
<tr>
<td>• Price and supply of chemicals</td>
<td></td>
</tr>
</tbody>
</table>

So solutions must be multi-faceted and strategic
A Strategic Path Forward
The Do’s and Don’ts of Moving Forward

- **Do** realize you are not alone
- **Do** know there are many resources available today
- **Do** start tracking current performance

- **Don’t** look back too long - move forward immediately through strategic planning process
- **Don’t** just plan - act and manage change
- **Don’t** think all change will occur overnight
Effective Management Requires Strategy

1. Leadership
2. Strategic Business Planning
3. Organizational Approaches
4. Measurement
5. Continual Improvement Management Framework
Frameworks for Strategic Planning

Development of a Strategic Planning Process

The Water Resources Utility of the Future: A Blueprint for Action

Effective Utility Management
A Primer for Water and Wastewater Utilities

June 2008

Strategic Communication Planning: A Guide for Water Utilities

Business Practices for Operation and Management

Using the ASME-ETI RAMCAP Plus Methodology
Effective Management is the Key

Effective Utility Management
A Primer for Water and Wastewater Utilities

June 2008

Ten Attributes of Effectively Managed Water Sector Utilities
Strategy is the Foundation for Performance Management

**Strategic Planning**
- SWOT analysis
- Goals/mission
- Strategies
- Implementation
- Organizational issues

**Benchmarking**
- Operational metrics
- AWWA or other self-assessment tools
- Continuous improvement
- Cost + Performance

**Asset Management**
- Condition assessment
- Optimize capital / operational mix
- Capital plan
- O&M plan, metrics
Related Components

Related Plans

- Asset Management
- Operational optimization / O&M
- Master Plans/Facility Plans
- Capital Improvement
- Regulatory Compliance
- Financial / rate
- Communications
- Human Resources
- Organizational development

Stakeholder Input and Feedback

- Employees
- Management
- Regulators
- Bondholders
- City
- Community
# Self-Assessment

<table>
<thead>
<tr>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Effective, systematic approach and implementation; consistently achieve goals.</td>
</tr>
<tr>
<td>2.</td>
<td>Workable systems in place; mostly achieve goals.</td>
</tr>
<tr>
<td>3.</td>
<td>Partial systems in place with moderate achievement, but could improve.</td>
</tr>
<tr>
<td>4.</td>
<td>Occasionally address this when specific need arises.</td>
</tr>
<tr>
<td>5.</td>
<td>No system for addressing this.</td>
</tr>
</tbody>
</table>

## Step 1
Candidly Assess Current Conditions

## Step 2
Rank Importance of Each Attribute to Your Utility

## Step 3
Graph Attributes to Determine Importance and Level of Achievement

## Step 4
Choose Attributes

## Step 5
Develop and Implement an Improvement Plan
SWOT Analysis

Factors INTERNAL to the Organization

- Strengths
- Weaknesses

Factors EXTERNAL to the Organization

- Opportunities
- Threats
The Outcome of a SWOT Analysis

Use SWOT process to:

- Review and prioritize performance indicators
- Identify areas to focus benchmarking and gap analyzes
- Assess opportunities and strengths, and how to capitalize on them
# Strategic Planning Process
From Strategy to Baseline Performance

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Diagram" /></td>
<td>Customer approval rating</td>
<td><img src="image" alt="Graph" /></td>
<td>Benchmarking, Gap Analysis, and Recommendations</td>
</tr>
<tr>
<td></td>
<td>Meter backlog</td>
<td><img src="image" alt="Graph" /></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employee training</td>
<td><img src="image" alt="Graph" /></td>
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</tr>
</tbody>
</table>

- **1. Strategic Plan**
- **2. Metrics**
  - Customer approval rating
  - Meter backlog
  - Employee training
- **3. Targets**
  - Graphs indicating performance levels
- **4. Baseline Performance**
  - Benchmarking, Gap Analysis, and Recommendations
### Strategic Planning Process
From Tactical Plans to Results (Success)

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Monthly Reports</td>
<td>Progress</td>
<td>Stakeholders</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>External Factors</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Action Plan</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Updates</td>
</tr>
<tr>
<td><strong>Each Tactical Plan contains:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Goals</td>
<td>Task Success Measure</td>
<td>Schedule/ Resource</td>
<td></td>
</tr>
<tr>
<td>• Tasks</td>
<td></td>
<td>Corrections</td>
<td></td>
</tr>
<tr>
<td>• Schedule</td>
<td>Performance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Resources</td>
<td>KPIs/PIs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Budget</td>
<td>Score Card</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Data Needed</td>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>
A Quick Case Study

Strategic Plan

VISION

A better world through better water

MISSION

Providing solutions to effectively manage water, the world’s most important resource

CORE PRINCIPLES

Protect Public Health
Safeguard the Environment
Pursue Excellence
Act with Integrity
Provide Value
Foster Diversity and Inclusion
NYCDEP Strategic Plan

- Blueprint to meet its goal of becoming the safest, most efficient, cost-effective, and transparent water utility in the nation.
- Drove $14.4 billion, 10-year capital plan
- Framework for
  - innovative technology
  - customer service initiatives including leak detection and notification, service line protection, online permitting
  - Restructuring operating units for maximum effectiveness and accountability
  - Uses internal and external KPIs performance metrics to identify and resolve issues
Benchmarking – Operational Excellence Program

- OpX impact is over $97 million (and counting)
  - $46 million in cost savings
  - $51 million in revenue
- Internal review teams from each operational bureau, supported by consultants
- Initiatives include:
  - Improve chemical and service contracts
  - Aggressively replace 26,300 large meters (and counting)
  - Optimize dewatering and sludge thickening
  - Improving aeration while reducing energy
Goals of Transparent Performance Metrics

✓ **Communicate** utility performance with management and stakeholders
✓ **Connect** with customers regarding delivery service and quality
✓ **Uncover** areas for improvement and process for getting there
✓ **Build** case for additional resources (people, technology, infrastructure)
✓ **Strengthen** negotiation position with legislative body and/or stakeholders
✓ **Understand** long-term relationship between cost and level of service
Metrics Matrix – Organization and Visibility

Levels of Service

High Focus

Key Performance Indicators (Core Metrics)

Medium

Performance Indicators

Low

Visibility

External Scrutiny

Public Review

Board Review

Management Review
1. **Water Outages**

*Definition*: Number of customers experiencing a cumulative outage of water from one or more events totaling greater than 4 hours in a year.

*Previous Value*: Tracking begun Q1 ‘03

*Minimum Target Value*: 7,200 customers or less annually (4%)

*Reporting Frequency*: Quarterly on a cumulative basis

<table>
<thead>
<tr>
<th>Metric #9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Value = 600</td>
</tr>
</tbody>
</table>

![Graph showing the current value of 600 for Metric #9 with values ranging from 0 to 10,000]
Levels of Service and Cost Trade-offs

- **Level of Service (Effectiveness)**
  - High
  - Avg
  - Low

- **Productivity Level (Efficiency)**
  - Low (High Costs)
  - Average
  - High (Low Costs)

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**Inefficient:** High Cost/Unit of Service

**Poor Performers:** High Cost/Low Service

**Service Level Potentially Inadequate**

**Best Performers**

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Expected Tradeoff
Performance Indicators – Leading and Lagging

Leading performance indicators
- Action-oriented / internal
- Usually able to directly control
- Metrics related to tactical plans and utility operation changes
- Catalyst for improving lagging indicators

Lagging performance indicators
- Result-oriented / external
- Usually not able to directly control
- Core metrics related to strategic plan and customer expectations (levels of service)
- Can be result of leading indicators
## Performance Indicators – Leading and Lagging

<table>
<thead>
<tr>
<th>Leading Indicators</th>
<th>Lagging Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source Water, Energy and Chemical Use</td>
<td>Cost of Service</td>
</tr>
<tr>
<td>Preventative Maintenance, Main Breaks, Meters</td>
<td>Customer Outages</td>
</tr>
<tr>
<td>Leak Detection, Main Breaks, Meter Service</td>
<td>Repairs, Unaccounted for Water</td>
</tr>
<tr>
<td>Treatment, Water Age</td>
<td>Water Quality</td>
</tr>
<tr>
<td>Safety Training</td>
<td>Accidents</td>
</tr>
</tbody>
</table>
Where do we focus our efforts next?

1. Existing Performance Baseline Summary
2. Benchmarking Survey
   a. KPIs/Targets/Actual Performance
   b. Industry Resources (QualServe Indicators, AWWA – 2013 Benchmarking Performance Indicators for Water and Wastewater Utilities, etc.)
   c. Similar Utilities for Benchmarking (if available)
3. Performance Gap Analysis
   a. Target vs. Baseline
4. Tactical Plan Prioritization
   a. Gap Closure Recommendations
   b. Data Needs!
5. Follow-up Plan
   a. Make Improvements
   b. Monitor Performance
   c. Make Adjustments
Water Utility Benchmarking Resources

Performance Benchmarking for Effectively Managed Water Utilities

 Enhancement of QualServe Tools to Improve Utility Operations

Web Report #4313b

Web Report #91258
A Case Study – Confidential Client in New York

Using the Effective Utility Management Framework:

1. Self-Assessment
2. SWOT Analysis
3. Current Performance Review
4. Benchmarking – AWWA
5. Metrics Review
6. Recommendations
Case Study – Current Performance Review

Safety Training Hours by Department

Main Breaks and Service Leaks Compared to Rolling 10-Year Historic Average

Annual Hydrant and Valve Maintenance

- Annual Hydrant Maintenance
- Annual Valve Maintenance
- Flushing
- Winter Inspections
- Planned
Case Study – Benchmarking

System Renewal/ Replacement Rate

Distribution O&M Cost of Water Service

Unplanned Disruption Frequency and Resolution

- Unplanned Disruption Frequency Index for Water System
- Average Time to Address Unplanned Water Disruptions
# Case Study – Metrics Review

<table>
<thead>
<tr>
<th>EUM Attribute</th>
<th>Indicator</th>
<th>Calculation</th>
<th>Day-to-Day Operations Metric</th>
<th>Long-Term Strategic and/or Benchmarking Metric</th>
<th>Orientation</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Satisfaction</td>
<td>Customer Service Complaints Rate (number per 1,000 customers)</td>
<td>1,000 times number of customer service complaints divided by total number of customers</td>
<td>X</td>
<td>X</td>
<td>External</td>
<td>Quality</td>
</tr>
<tr>
<td></td>
<td>Customer Service Compliant Resolution Rate</td>
<td>Number of resolved customer service complaints divided by total number of complaints</td>
<td>X</td>
<td>X</td>
<td>External</td>
<td>Effectiveness</td>
</tr>
<tr>
<td></td>
<td>Water Quality or Delivery Complaints Rate (number per 1,000 customers)</td>
<td>1,000 times number of water quality complaints divided by total number of customers</td>
<td>X</td>
<td>X</td>
<td>External</td>
<td>Quality</td>
</tr>
<tr>
<td></td>
<td>Water Quality or Delivery Complaint Resolution Rate</td>
<td>Number of resolved water quality complaints divided by total number of complaints</td>
<td>X</td>
<td>X</td>
<td>External</td>
<td>Effectiveness</td>
</tr>
<tr>
<td></td>
<td>Billing Accuracy (% per 10,000 bills)</td>
<td>10,000 times number of error-drive billing adjustments divided by total number of bills generated</td>
<td>X</td>
<td></td>
<td>Internal</td>
<td>Quality</td>
</tr>
<tr>
<td></td>
<td>Response Time to Customer Problems (hours)</td>
<td>Average number of hours before a customer problem is resolved</td>
<td>X</td>
<td></td>
<td>Internal</td>
<td>Efficiency</td>
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<tr>
<td>Employee Leadership and Development</td>
<td>Human Resource Efficiency (Mgs per year per FTE)</td>
<td>Annual water produced (Mgs) per year divided by number of full time equivalent (FTE) employees</td>
<td>X</td>
<td></td>
<td>Internal</td>
<td>Efficiency</td>
</tr>
<tr>
<td></td>
<td>Training Hours Per Employee (per year per FTE)</td>
<td>Total annual training hours for employees divided by number of FTE employees</td>
<td>X</td>
<td></td>
<td>Internal</td>
<td>Quality / Effectiveness</td>
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<tr>
<td></td>
<td>Employee Turnover Rate (%)</td>
<td>Number of regular employee departures divided by number of FTE employees</td>
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<td></td>
<td>Internal</td>
<td>Effectiveness</td>
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<tr>
<td></td>
<td>Internal Employee Promotions (%)</td>
<td>Number of internal promotions divided by total number of positions filled</td>
<td>X</td>
<td></td>
<td>Internal</td>
<td>Effectiveness</td>
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<tr>
<td></td>
<td>Retirement Eligibility (%)</td>
<td>Number of regular employees eligible for retirement within the next five years divided by number of FTE employees</td>
<td>X</td>
<td></td>
<td>Internal</td>
<td>Effectiveness</td>
</tr>
</tbody>
</table>
Additional Resources – EUM, Utility Standards
Additional Resources

- WEF Utility Management Site

- AWWA Utility Management Site
  - Strategic Planning and Organizational Development for Water Utilities [Project #2849]

- EPA – Planning for Sustainability Handbook

- Environmental Finance Center Network (EFCN)
  - http://efcnetwork.org
Thanks for coming!
Questions?

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