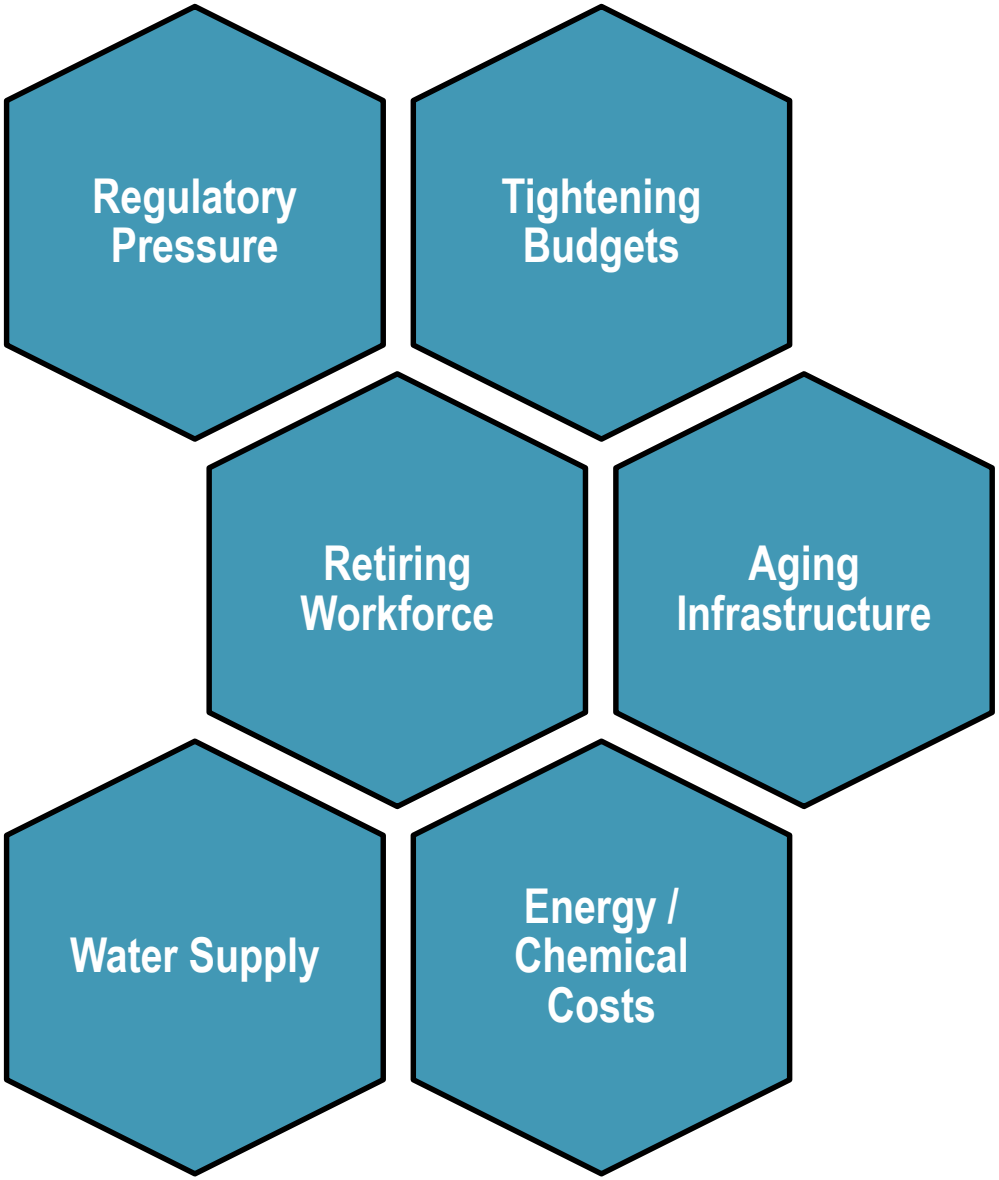
Strategic and Organizational Review to Become a High-Performing Utility

Carter H. Strickland, Jr.
Carter.Strickland@hdrinc.com

Bryon Wood, PE
Bryon.Wood@hdrinc.com

Today's Challenges: What Every Utility is Facing



Today's Challenges: What Every Utility is Facing

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

Does this sound familiar?

Challenges are multi-faceted…

Organizational

- Talent attraction and retention
- Aging workforce/anticipated retirements
- Certification and training
- Workforce diversity
- Improving customer, constituent, and community relationships
- Cyber-security issues
- Physical security issues
- Emergency preparedness

Infrastructure / Operations

- State of water and sewer infrastructure
- Water conservation/efficiency
- Water loss control
- Long-term water supply availability
- Watershed protection
- Drought or periodic water shortages
- Expanding water reuse/reclamation
- Wastewater resource recovery

Economic

- Financing for capital improvements
- Acceptance of rate increases
- Cost recovery
- Energy use and costs
- Rising chemical costs
- Affordability for low-income households
- Price and supply of chemicals

Regulatory / External

- Compliance with current regulations
- Compliance with future regulations
- Groundwater management and overuse
- Stormwater management and costs
- Fracking/oil and gas activities
- Climate risk and resiliency
- Public understanding of the value of water resources, water systems and services

So solutions must be multi-faceted and <u>strategic</u>

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

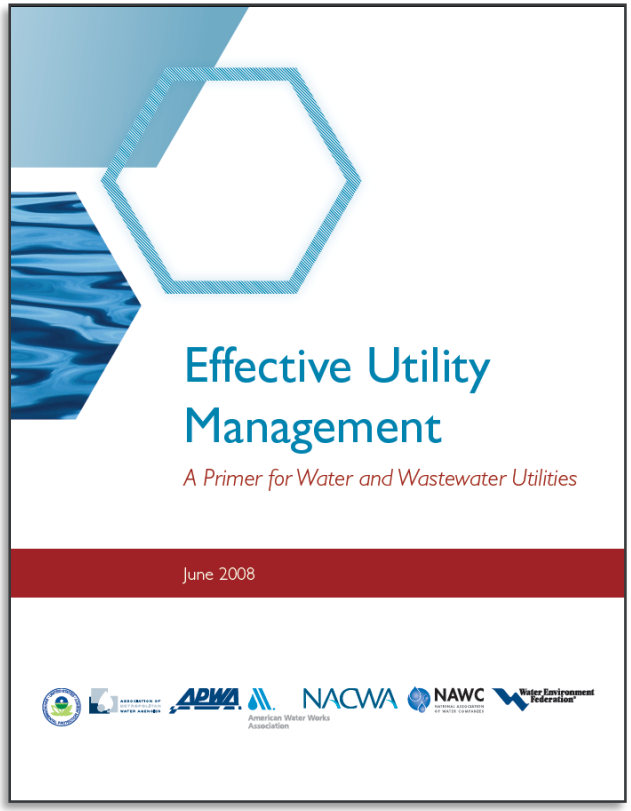
- **Don't** look back too long - move forward immediately through strategic planning process
- **Don't** just plan - act and manage change
- **Don't** think all change will occur overnight

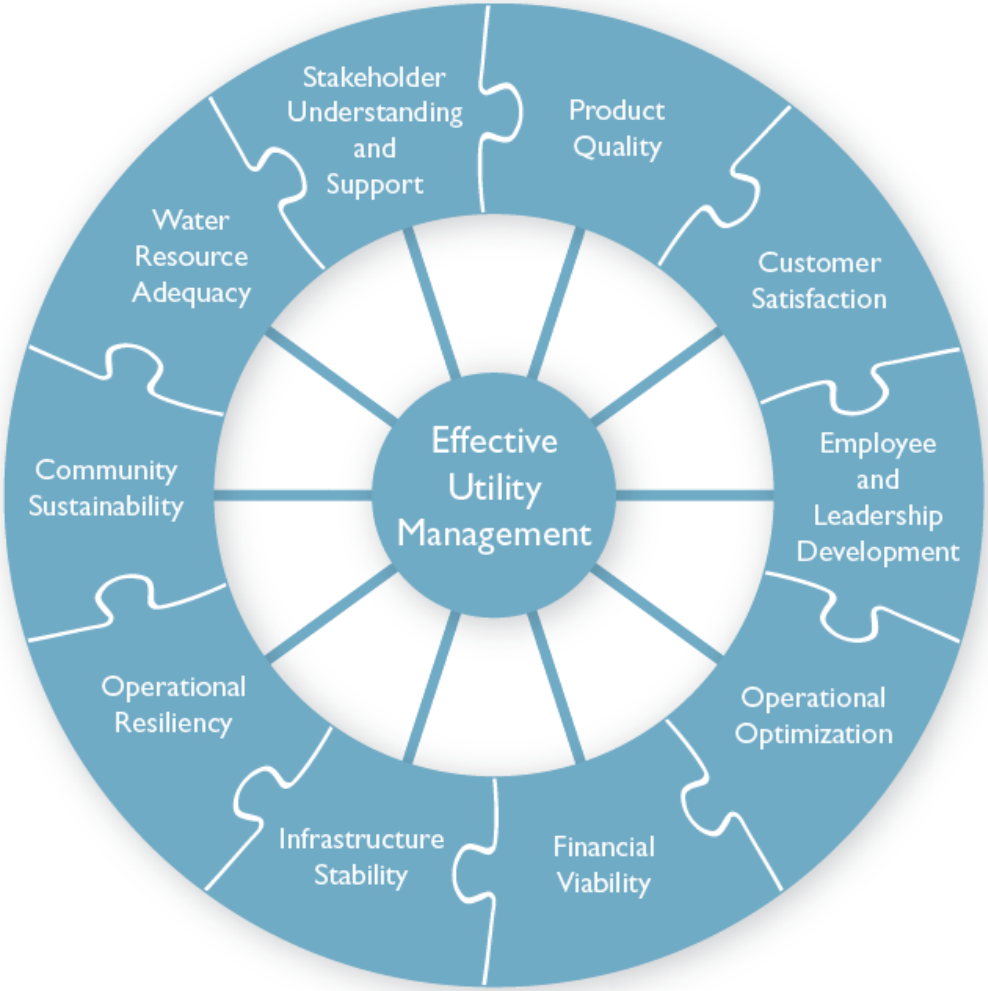
Effective Management Requires Strategy

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

Frameworks for Strategic Planning

Effective Management is the Key





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

Strategic Plan

Stakeholder Input and Feedback

- Employees
- Management
- Regulators
- Bondholders
- City
- Community

Self-Assessment

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

Rating (Higher Achievement – Lower Achievement)	1	2	3	4	5	6	7	8	9	10
5										
4			PQ							
3					CS					
2										
1										

More Important — Less Important

Ranking

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

POSITIVE

Strengths	Weaknesses
Opportunities	Threats

NEGATIVE

Factors
EXTERNAL to
the Organization

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

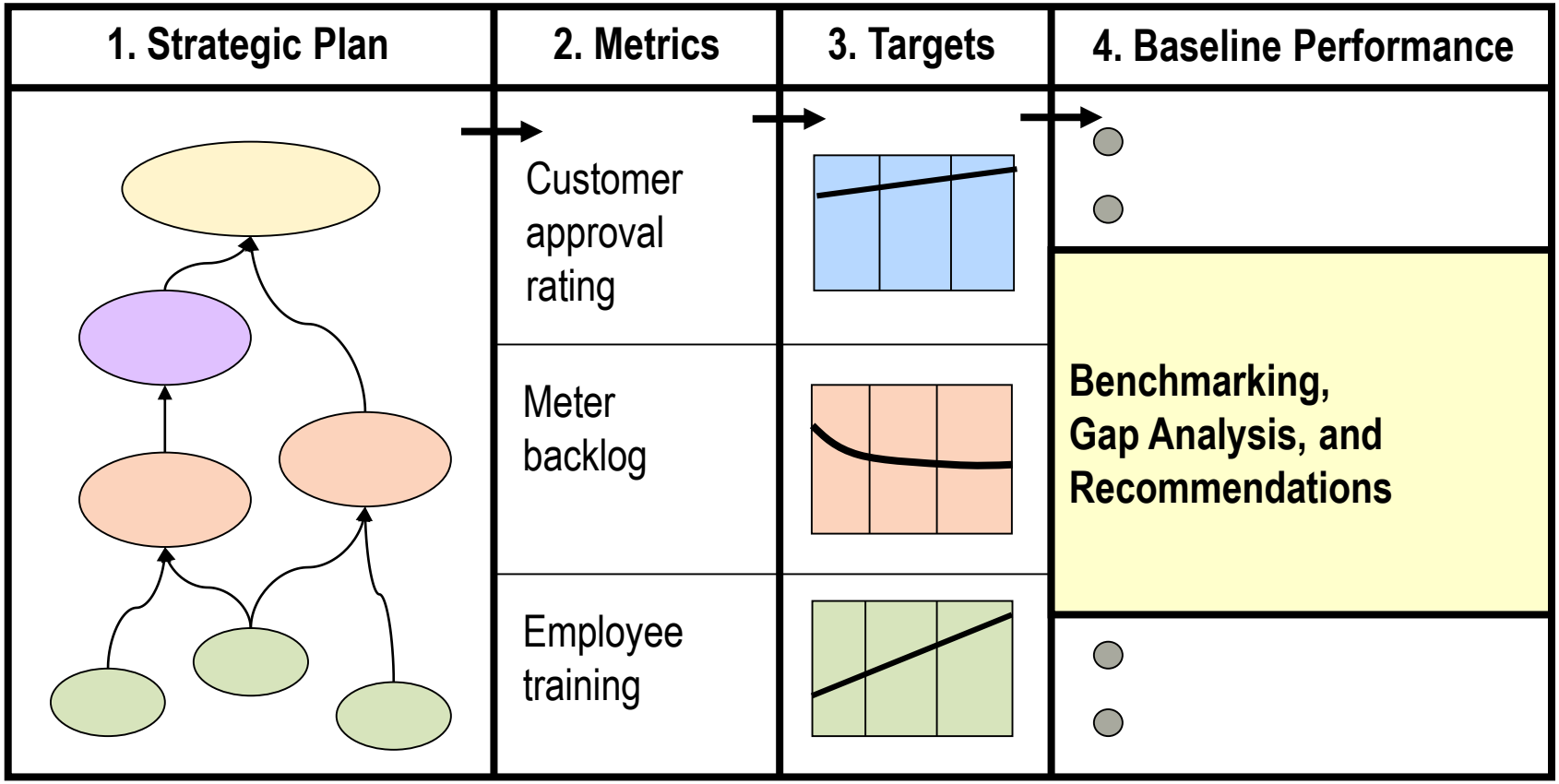
Weaknesses

Threats

Opportunities

Strengths

Strategic Planning Process
From Strategy to Baseline Performance

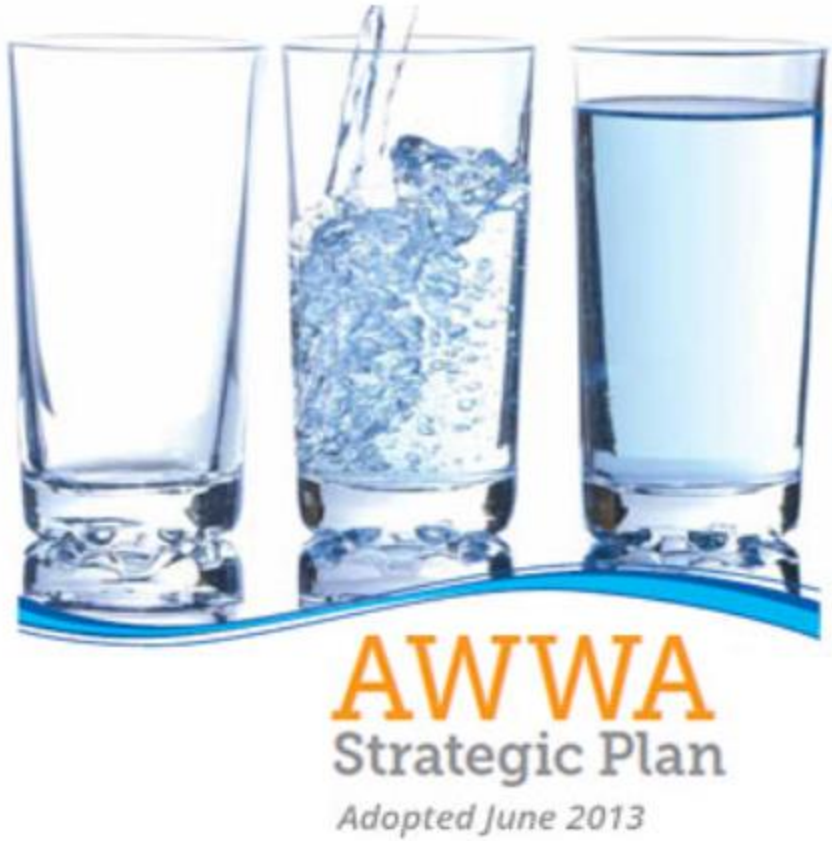


Strategic Planning Process
From Tactical Plans to Results (Success)

5. Tactical Plan	6. Monitor Performance	7. Quarterly Review	8. Annual Update
	Monthly Reports	Progress	Stakeholders External Factors Action Plan Updates
Each Tactical Plan contains: • Goals • Tasks • Schedule • Resources • Budget • Data Needed	Task Success Measure	Schedule/ Resource Corrections	
	Performance	Performance	
	KPIs/PIs Score Card	Action Review and Adjustments Opportunities and Efficiencies	

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

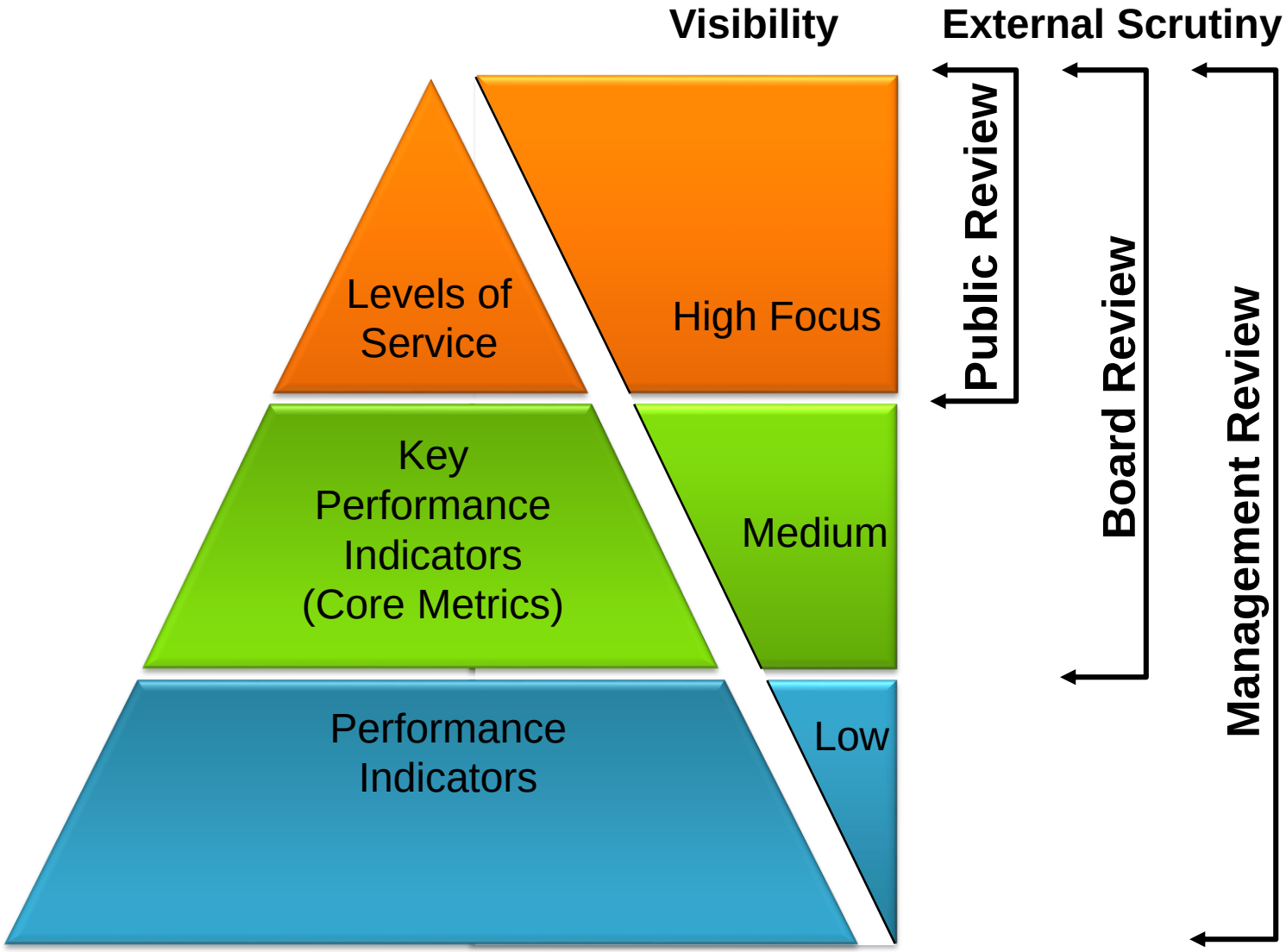
Benchmarking – Operational Excellence Program

- 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

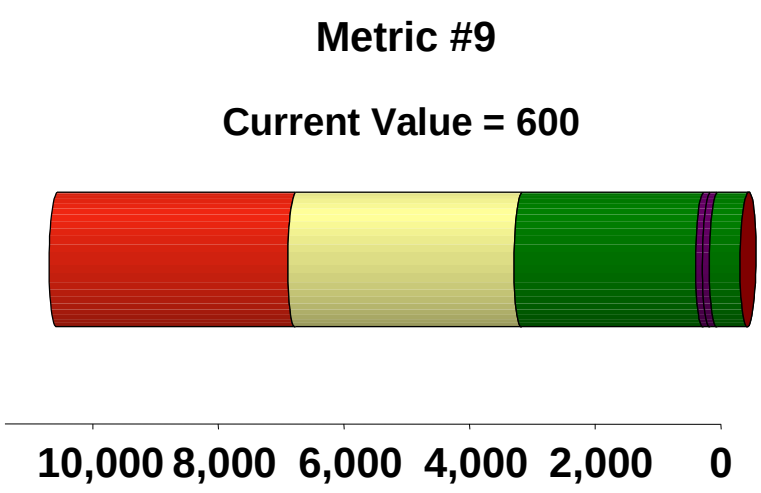
Goals of Transparent Performance Metrics

- ✓ **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

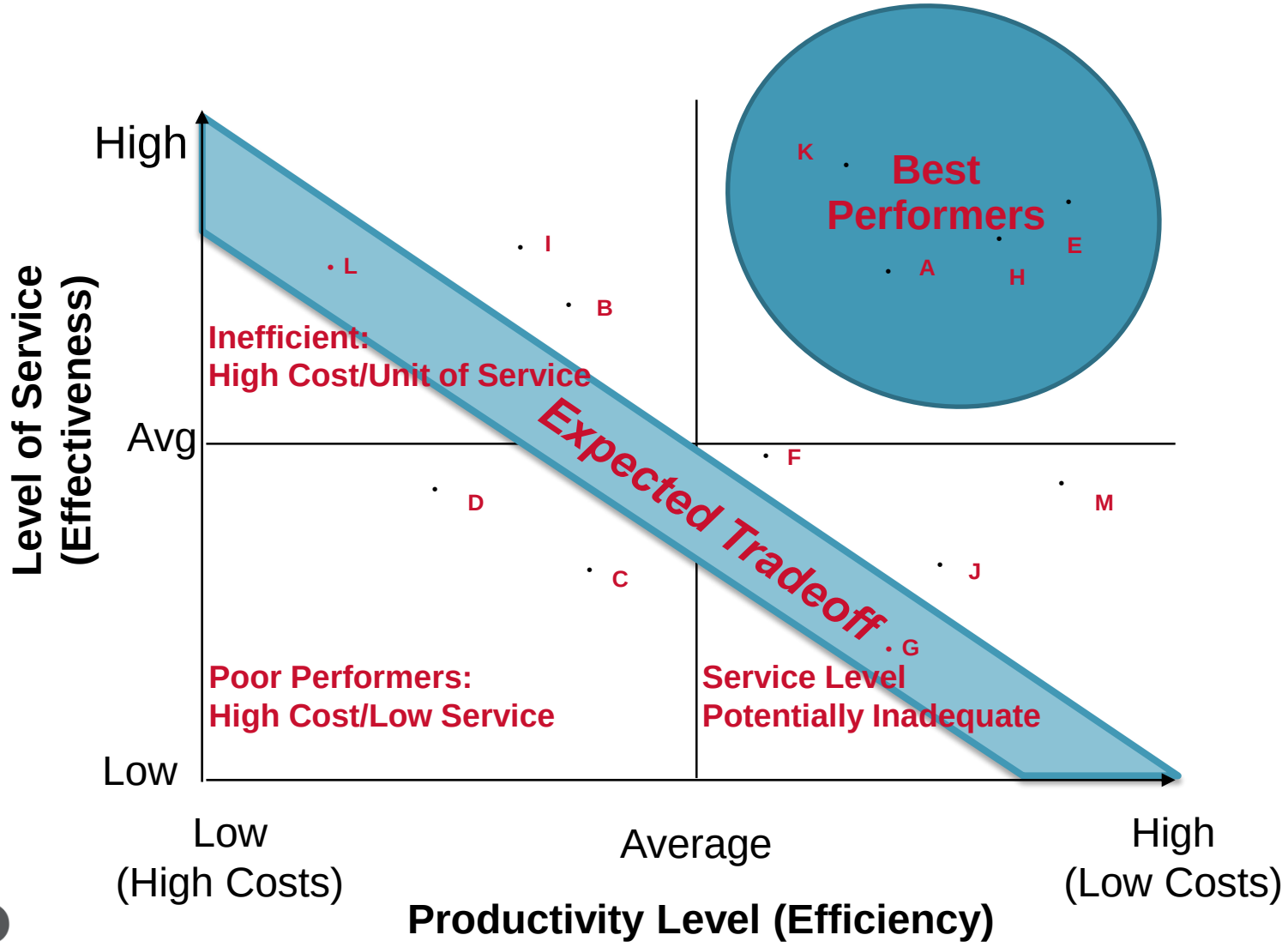
Metrics Matrix – Organization and Visibility



Customer Focused Level of Service Example

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	

Levels of Service and Cost Trade-offs



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

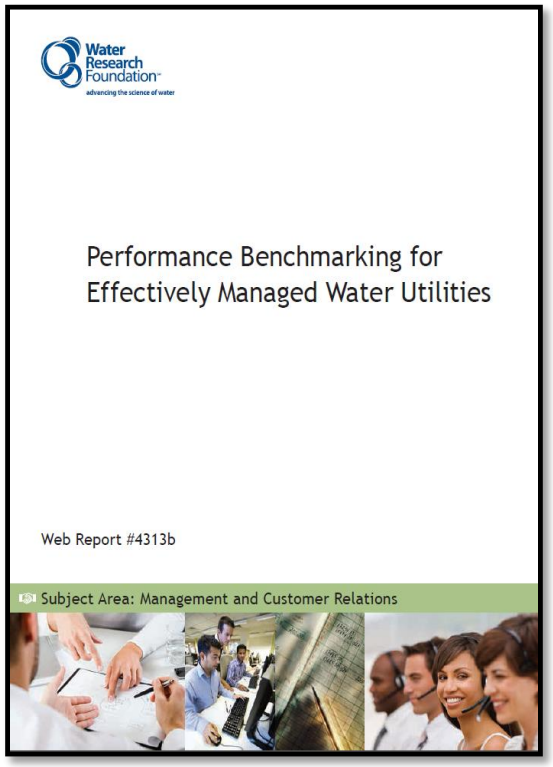
Performance Indicators – Leading and Lagging

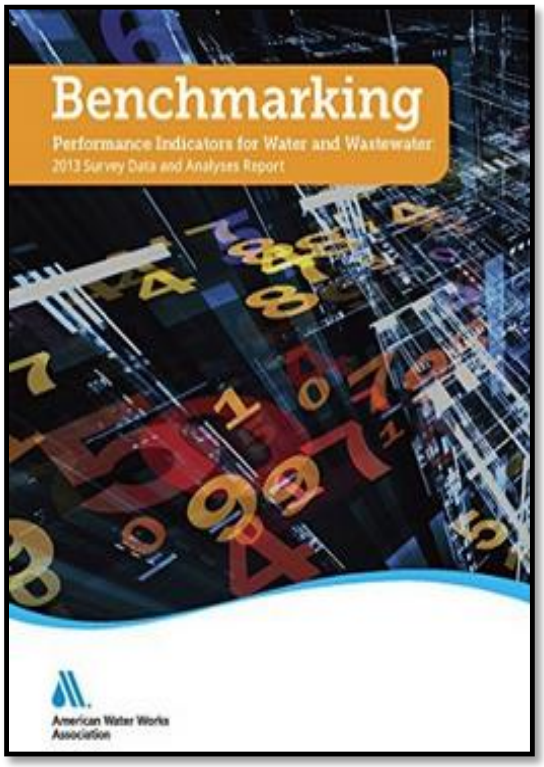
Leading Indicators	Lagging Indicators
Source Water, Energy and Chemical Use	Cost of Service
Preventative Maintenance, Main Breaks, Meters	Customer Outages
Leak Detection, Main Breaks, Meter Service	Repairs, Unaccounted for Water
Treatment, Water Age	Water Quality
Safety Training	Accidents

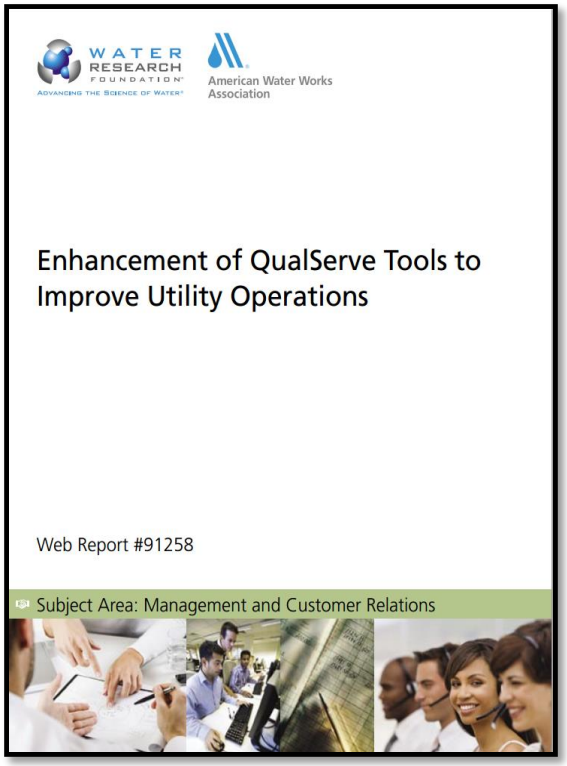
Where do we focus our efforts next?

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



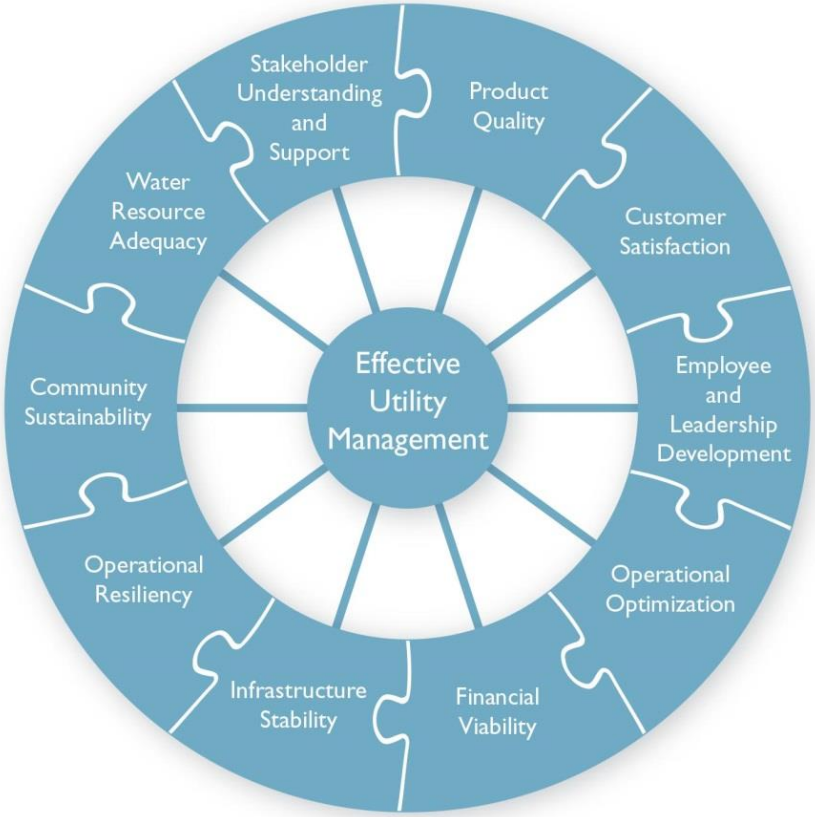




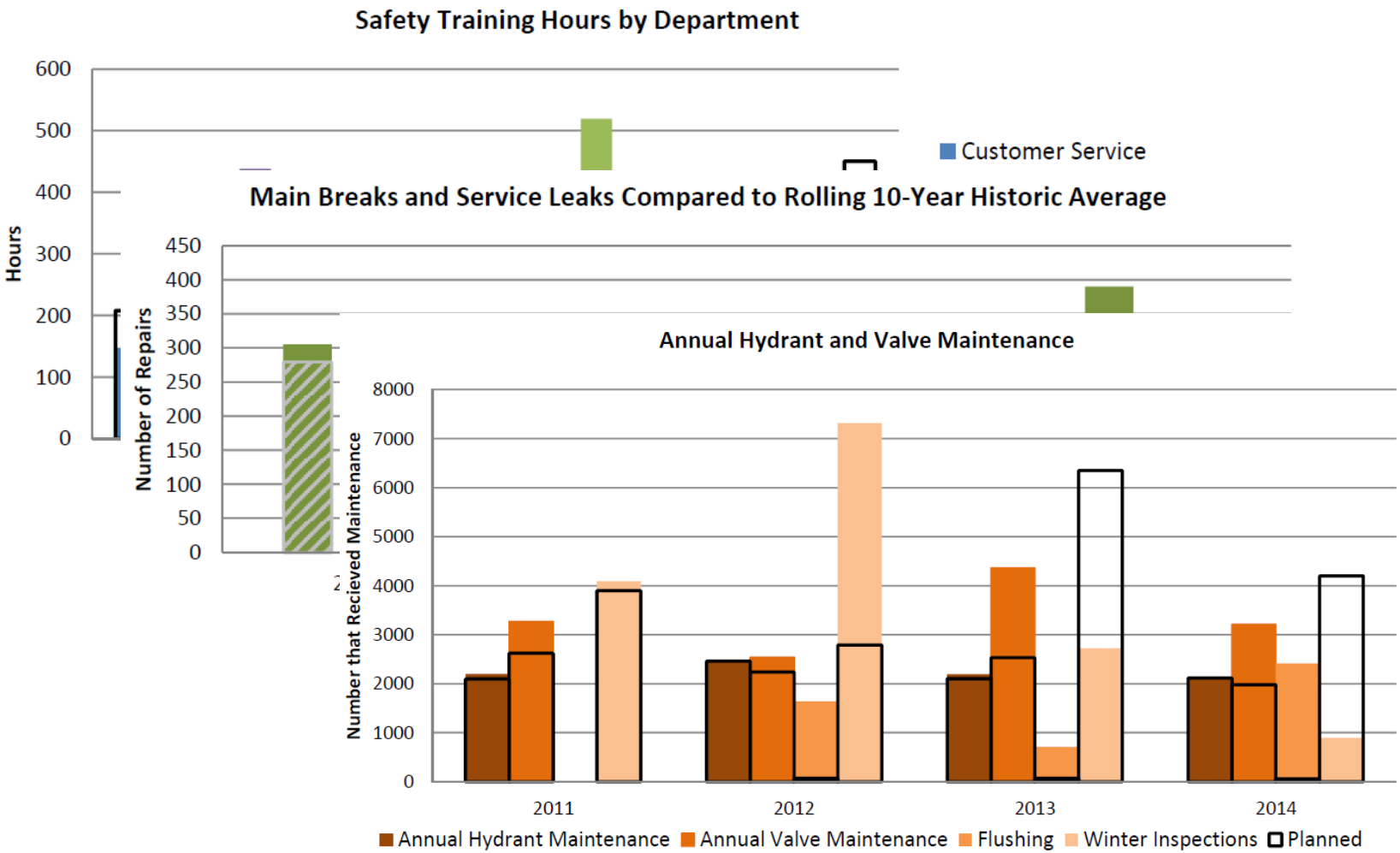
A Case Study – Confidential Client in New York

Using the Effective Utility Management Framework:

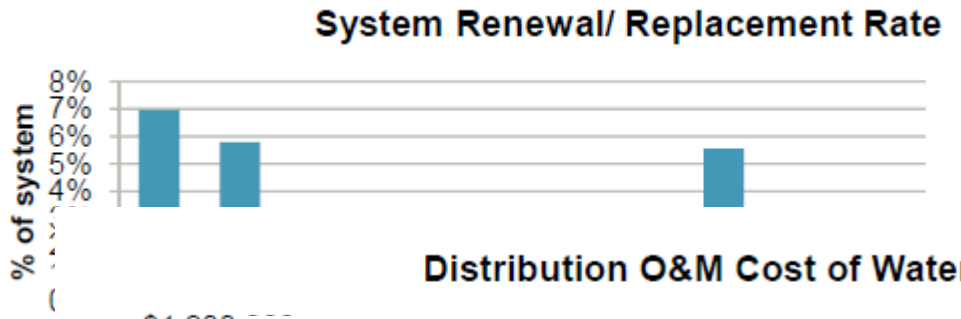
1. Self-Assessment
2. SWOT Analysis
3. Current Performance Review
4. Benchmarking – AWWA
5. Metrics Review
6. Recommendations

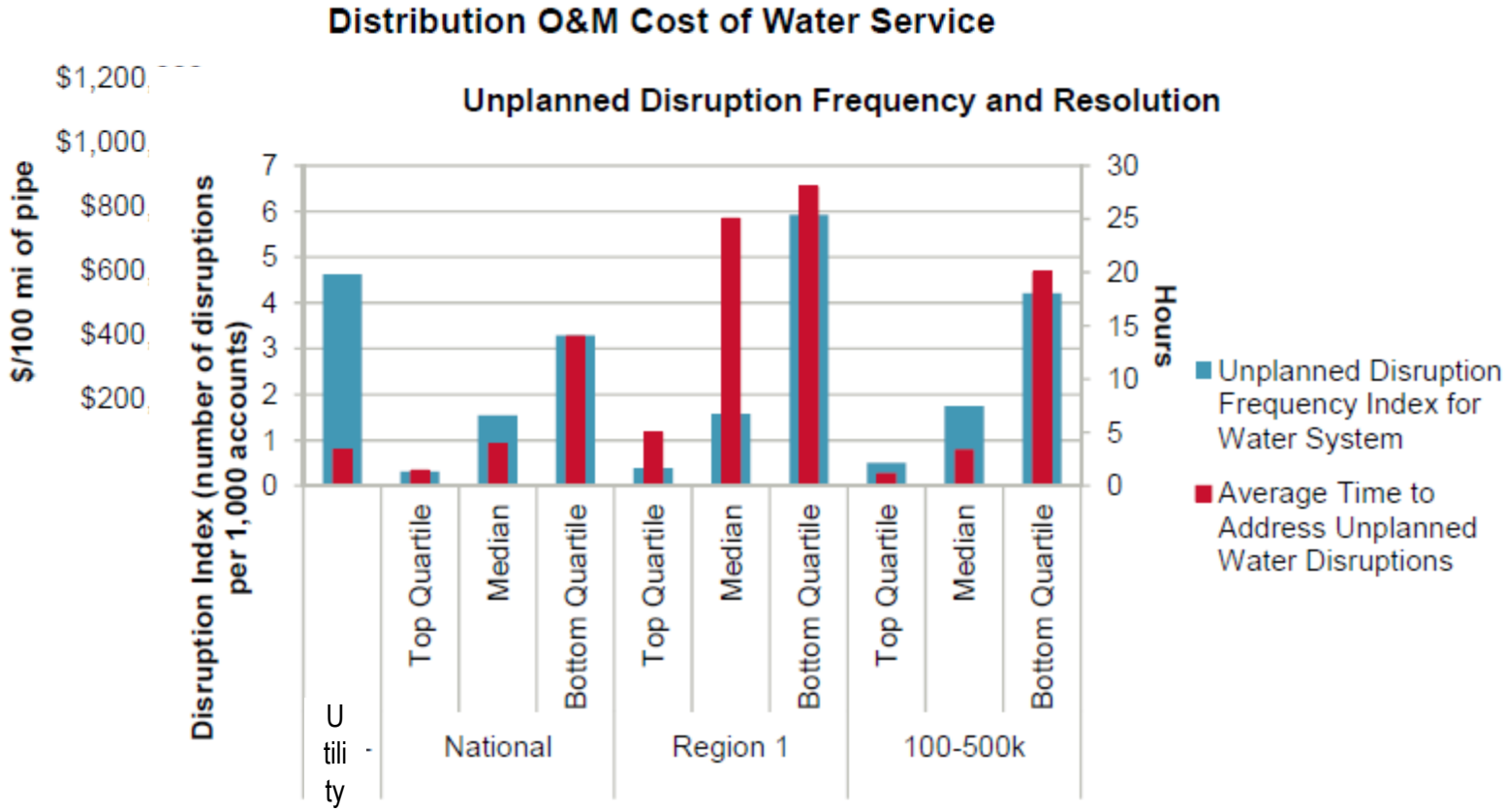


Case Study – Current Performance Review



Case Study – Benchmarking

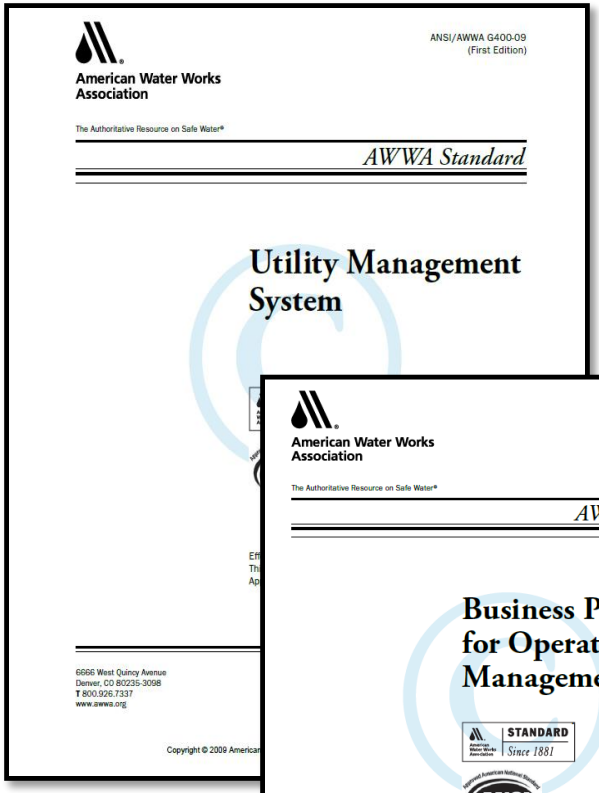


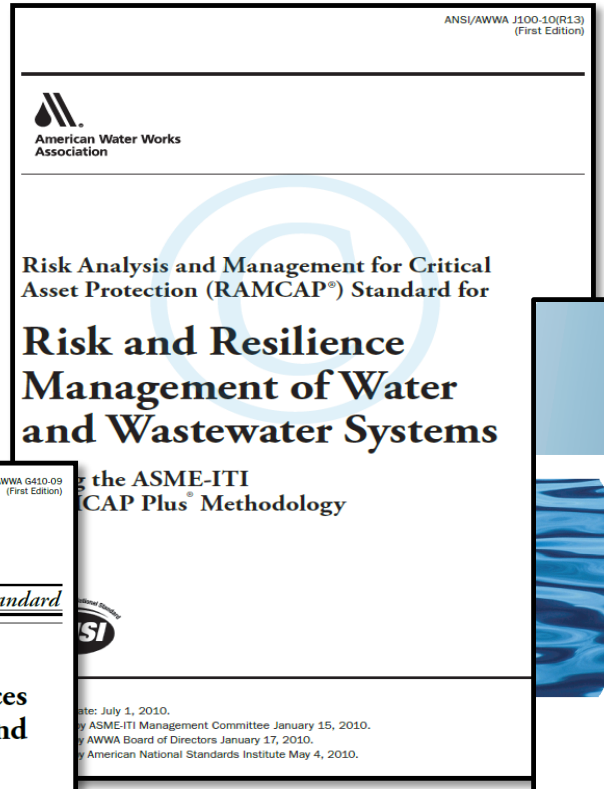


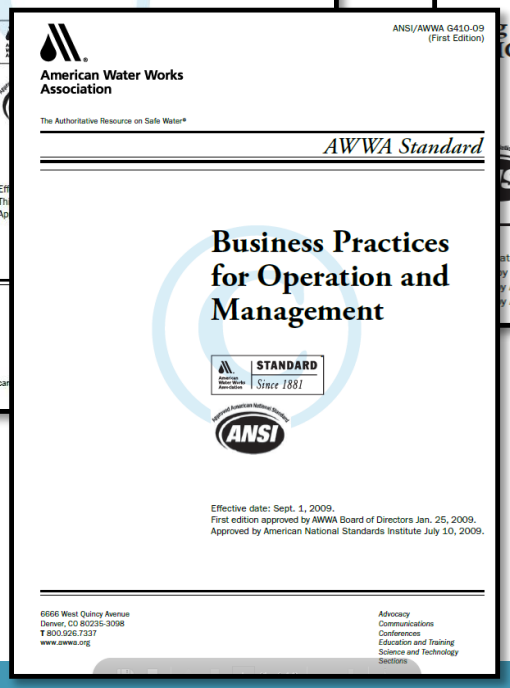
Case Study – Metrics Review

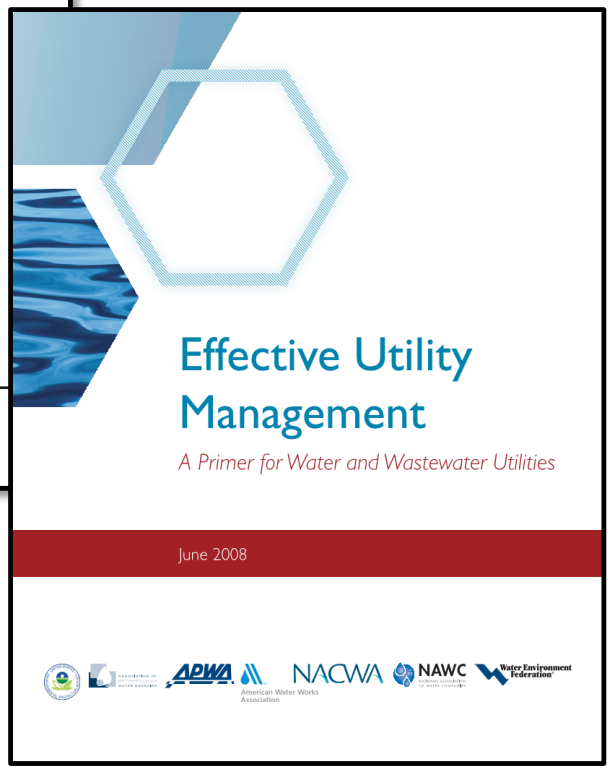
EUM Attribute	Indicator	Calculation	Day-to-Day Operations Metric	Long-Term Strategic and / or Benchmarking Metric	Orientation	Type
Customer Satisfaction	Customer Service Complaints Rate (number per 1,000 customers)	1,000 times number of customer service complaints divided by total number of customers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

Additional Resources – EUM, Utility Standards









Additional Resources

- **WEF Utility Management Site**
  - http://www.wef.org/AWK/pages_cs.aspx?id=1068
- **AWWA Utility Management Site**
  - http://www.awwa.org/resources-tools/water-utility-management.aspx
  - Strategic Planning and Organizational Development for Water Utilities [Project #2849]
- **EPA – Planning for Sustainability Handbook**
  - http://water.epa.gov/infrastructure/sustain/upload/EPA-s-Planning-for-Sustainability-Handbook.pdf
- **Environmental Finance Center Network (EFCN)**
  - http://efcnetwork.org

Thanks for coming!
Questions?

Carter Strickland
NE Water Program Manager
carter.strickland@hdrinc.com
(212) 542-6129

Bryon Wood, PE
Utility Management Services Leader
bryon.wood@hdrinc.com
(732) 332-6438