

Planning and Sustaining the Water Loss Control Program



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The most important step is for the Utility to actually start and then maintain momentum.

Chapter 6 of M36 Manual

- Proactive Culture of Efficiency
- Active Monitoring
- Water Resource Preservation
- Minimize Service Disruption
- Improve Financial Bottom Line
- Build on Successes

Identify the Desired Outcomes and Benefits of the Water Loss Control Program

Improvements in a water Utilities accountability, reducing leakage, and recovering additional revenue can improve the efficiency of the utility operations

- Benefits could include
 - Reduce need to spend to develop new sources
 - Reduced Liability
 - Improved Customer Satisfaction (rates, service)
 - Enhanced economic development opportunities
 - Equity and affordability of water rates
 - Elevating the value of water in the utility employees mind

Establish a Cross-Functional Team

As everyone who "touches the water" is involved in the process of measuring, reporting and utilizing, an inherent "culture of efficiency" emerges as "what gets measured gets done" comes into play.

- Team members include
 - Distribution operations
 - Distribution maintenance
 - Customer metering
 - Customer meter reading
 - Infrastructure management
 - Water quality
 - Wastewater collection systems
 - Water conservation
 - Billing systems
 - Water rate setting & finance
 - Customer Service
 - Public Relations
 - External stakeholders
 - Executive leadership

Identify Resource Needs

Often times the only resource that is considered is financial. A system must be "ready, willing and able." There are many things that can begin with little or no money. Policy and behavioral changes by leadership and staff can yield huge results.

• **Early/Easier Improvements**

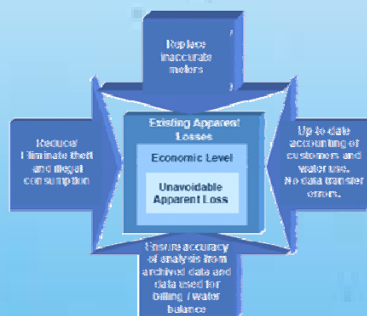
- Billing system procedures
- Meter reader education
- Zero account procedures
- Improved response time in Leak Detection and repair
- Internal team incentives

• **Move to targeted funding**

- Training
- Equipment
- Specialized services

Launching the Water Loss Control Program

The program must be a solid combination of short, medium and long term activities. In addition there should be continuous and ongoing practices that are being implemented, evaluated and refined.



• **Apparent Loss Control Activities (Example)**

- Calibrate Production Meters (S)
- Flowchart Customer Billing Process (S)
- Sample meter accuracy testing (S)
- Audit billing records (S)
- Evaluate AMR (M)
- Implement Policies to thwart theft (M)
- Upgrade/Replace Production Meters (M)
- Install AMR System (L)
- Install a new customer billing system (L)
- Conduct wholesale customer meter replacement (L)

(S)hort, (M)edium, (L)ong term

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• Real Loss Control Activities (Example)

- Record and analyze line break patterns (S)
- Establish a Pilot DMA and perform minimum hour leakage analysis (S)
- Compile data on variation of pressure throughout the system (S)
- Launch a Pilot Leak Detection Survey (S)
- Create a Leak Detection Team (M)
- Install pressure management areas (M)
- Deploy leak noise monitors (M)
- Create additional DMAs (L)
- Institute Capital Replacement for water main infrastructure (L)

Report the success of the Water Loss Control Program

You must report the success of the program to all who are interested and who can impact the long term viability of the program

• Who needs to know?

- Water Loss Team Members – if you do not share back how their information is used, apathy can creep in
- The Customers need to see the Utility gaining in efficiency and improving operations
- The press needs to celebrate the effort and success, this allows the political will to continue to persist in a culture of efficiency
- Shout the message far and wide – civic groups, key businesses, major water users

Throw the Message – Don't catch the Spear!

Your utility can get out in front of Public Relations. Very specific points that continue to show up in conversation, build the brand and show consistency in normal business operations

• Potential Messages

- Promote the value of Reliable water supply to the community
- Emphasize reduced service interruptions and minimized damage to streets
- Celebrate reduce demand for the raw water resources
- Celebrate the economic viability and attractiveness of creating more supply to accommodate growth from within existing resources
- Delaying or foregoing new infrastructure construction – reservoirs, treatment plants
- Establish a reputation of strong reliability from sustainability of water service in periods of a drought
- Enhanced customer perceptions by conveying visible accountability and efficiency
- Ability to integrate customer and distribution side conservation messages to show how whole system is working together

Sustain the momentum

It is easy to get excited about the Top Down Water Audit and then let behaviors return to “the way we have always done it.” A successful program has to build key momentum boosts into the plan

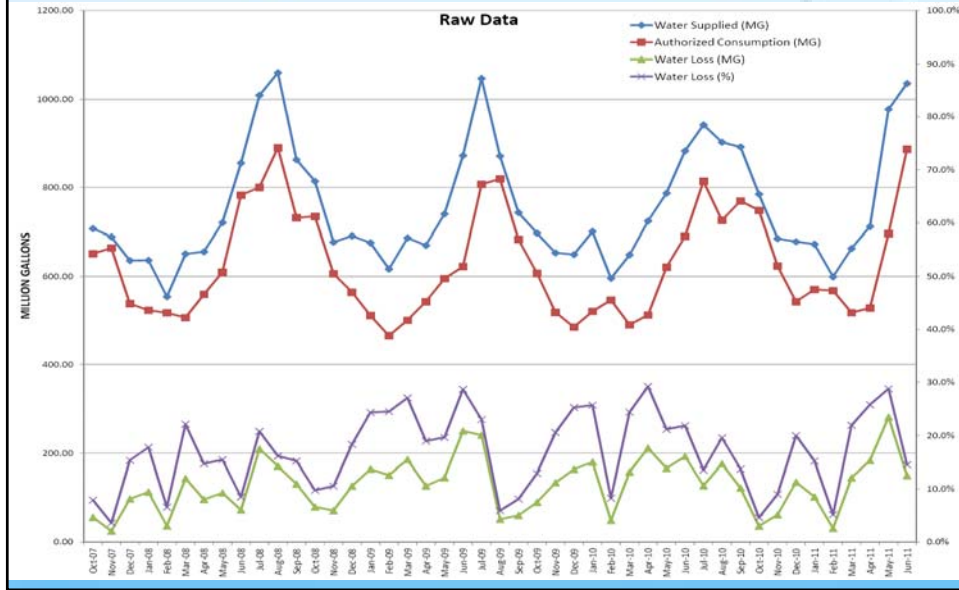
• Ideas

- Tie Revenue Recovery and enhancements to incentives
- Realized that loss control will be subject to diminishing returns. The big results are seen early, must recalibrate your secondary and tertiary goals
- Define your economic breakpoints and share those with the teams

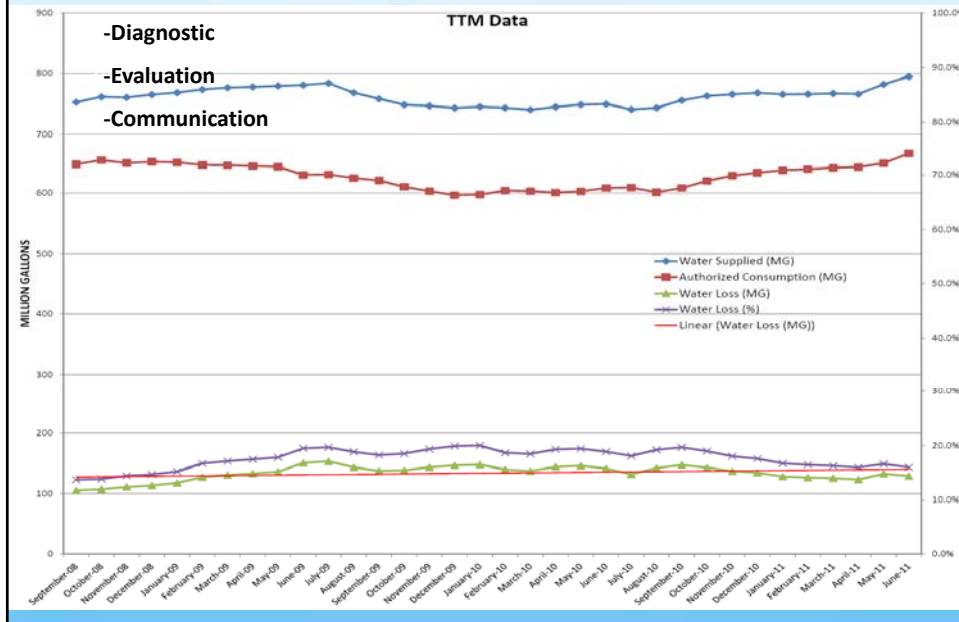
• Strive for these characteristics

- Celebrate reduced demand for the raw water resources
- Commitment
- Long term outlook
- Patience to avoid short term “quick fixes” that fail to produce lasting results
- Ability to implement comprehensive, integrated improvement approaches that provide lasting benefits

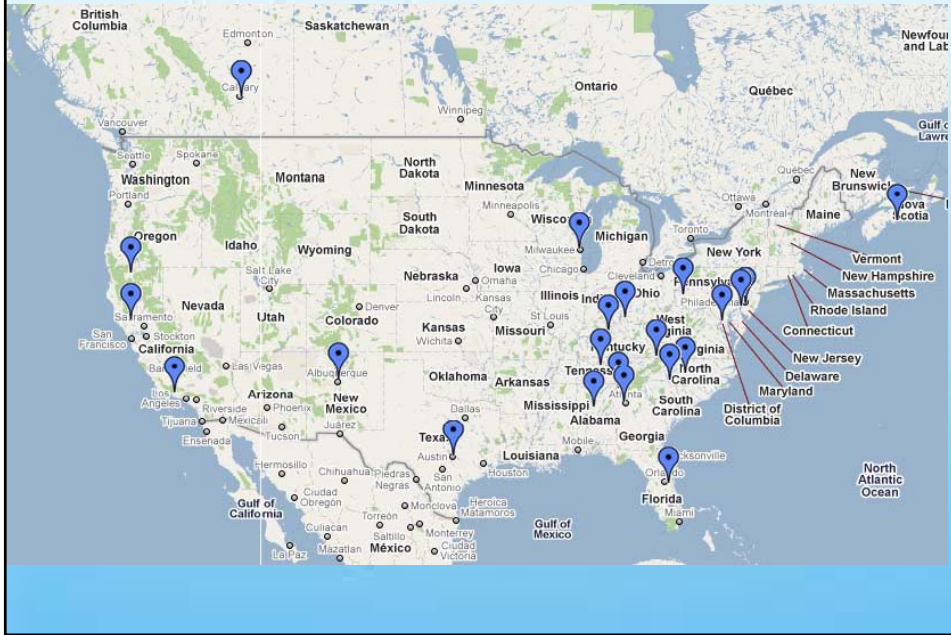
Benchmarking and Data Trending



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Excerpts from AWWA North-American Dataset (2011)



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Key Performance Indicator	#	Average	Range	
NRW as a % by Volume	21	22.6%	6.8%	45.5%
NRW as a % by Cost	21	10.0%	1.7%	23.0%
Apparent Losses (<i>gals/conn/day</i>)	21	14.95	2.36	65.89
Op24 – Real Losses (<i>gals/conn/day</i>)	18	63.32	17.07	149.71
Op24 – Real Losses (<i>gals/mile of main/day</i>)	3	1,821.15	645.42	3,496.21
Infrastructure Leakage Index (ILI)	21	3.57	1.15	12.68
Water Audit Data Validity Score	21	74.97	52.28	89.72

Excerpts from AWWA North-American Dataset (2011)

Cost Data	#	Average	Range		
Annual operating cost (Million \$)	21	51.22	1.36	-	224.43
Annual operating cost (\$/1,000 gal of Water Supplied)	21	\$ 3.32	\$ 1.15	-	\$ 8.14
Customer retail unit cost (\$/1,000 gal)	21	\$ 4.57	\$ 1.10	-	\$ 8.38
Variable production (or import) cost (\$/1,000 gal)	21	\$ 0.73	\$ 0.18	-	\$ 2.16
NRW - Total Annual Cost (Million \$)	21	5.81	0.04	-	42.97

Specific Next Actions

- Validation activities
- Bottom-up audit
- Calculate value of recovered water (in advance and afterwards)
- Annual reporting of successes and goals

