MC Engineering, Inc.

Sample Water System Efficiency Program Opportunity Assessment Table

Reporting Category	Your Score (out of 10)	Basis of Input Derivation	Recommendations
Water Supplied/Volume from Own Sources	5	There are currently 9 wells that are all individually metered and maintained by Source. All source meters are currently metered but not tested regularly. Meters are read manually and are archived in a database.	Implement a source meter testing program to validate the accuracy of the source meters.
Meter Supplied Meter Supply Error Adjustments	4	Source meter data is logged each business day. Source meters are not tested regularly, only control signals are calibrated annually.	Test and calibrate all source meters annually.
Authorized Consumption Billed Metered	6	100% of the system is metered but there is no testing program. There is no historic test data available.	Test customer meters to develop a historical database for meter accuracy to verify overall average Apparent Losses and provide a basis for meter replacements. Consider datalogging select intermediate and large meters to verify right sizing and typing.
Authorized Consumption Unbilled Metered	10	70% of the residential meters have been replaced within the last 8 years. The current read system is a mixture of AMI/AMR. Testing of meters only occurs when there is a customer complain. Operational flushing and fire department usage is metered and documented.	Continue documenting all Authorized Consumption and replacing residential meters.
Water Losses/ Apparent Losses Customer Meter Inaccuracies	4	Currently, 10% of meters are changed out annually with a goal of total meter changeout by 2021. There is no existing testing program-but reliable recordkeeping exists.	Test customer meters to develop a historical database for meter accuracy to verify overall average Apparent Losses and provide a basis for meter replacements. Implement a comprehensive meter testing program along with a pro-active leak detection program
Water Losses/ Real Losses	4	There is currently no leak detection program in place to capture non-revenue water. Repairs to the system is accomplished through normal work order processes which are accurately documented. Repairs to the system are more reactive than proactive.	Implement a proactive leak detection and repair program. Improve work order record keeping by adding information on pipe size, material type, age, etc. while reducing response time for repairs. Consider preparing a Leakage Component Analysis per AWWA M36 as a means to analyze real losses and their causes by quantity and type.
System Data/ Length of Mains	9	The length of mains is based on an updated GIS database. Updates to the database are accomplished through normal work order processes. There is currently not an asset management system in place.	Develop an asset management plan to accurately capture City's assets. Consider developing a CIP program to include accurate GPS-based mapping and repair of mains, services, and connections.
System Data/Number of Service Connections	9	Derived from a standard report from the billing system. There are a small number of services that may branch to more than one meter.	Develop an asset management plan to accurately capture City's assets. Consider developing a CIP program to include accurate GPS-based mapping and repair of mains, services, and connections.
System Data/Average Operating Pressure	10	There are currently 3 pressure zones which are managed, calibrated and updated.	Verify appropriate system-wide pressures via existing modeling and analyze as needed.
Cost Data/Annual cost of operating system	10	Cost data is derived from official financial reports with internal and external annual auditing	Update CIP projects based on future main replacements and meter changeout program. Document cost of repairs versus cost of main replacements to justify long-term capital investments.
Cost Data/Customer Retail Unit Cost	7	There are too few rate classes and certain customers have sewer charges based on water usage.	Prepare a water loss study and related rate study in accordance with AWWA Manual M36 to verify retail pricing with consideration of documented losses and optimized rate structures.
Cost Data/Variable Production Cost	7	Input based on internal sources only, there is no auditing by third-party familiar with AWWA M36 best practices. Primary costs include treatment chemicals supply & distribution power, and purchase costs.	Verify variable production costs based on energy, labor, chemicals, and related operating costs with consideration of on-going maintenance and repairs.