Executive Summary

WERF

What asset management practices used by leading utilities are appropriate for our utility?

Optimized decision making drives replacement strategies.

Leading Practices for Strategic Asset Management (SAM1R06h)

The Central Issue

Practical, advanced techniques for better management of physical assets have been developed and refined worldwide over the past decade. These techniques – a blend of processes and practices – have been slowly integrated into a general management framework that may or may not be suited for every organization. The results of this research show that there are certain "leading practices" that any utility can use as they refine their asset management programs.

Infrastructure asset management is a management model and a collection of practices. Often the term "best practice" is used, but in reality, these are not always appropriate for each utility. Best "appropriate" practice is the goal an organization can realistically hope to achieve over time.

Context and Background

This research examines the range of asset management program elements from planning to renewal and installation of new assets. It builds on earlier WERF work to identify utilities with leading practices, as well as those that wanted to improve their practices. The earlier work indicated that there was a wide range of proficiencies in asset management practices. Utilities that showed a higher level of proficiency in one or more of the major areas were studied to determine what made them leaders.

Findings and Conclusions

Although some of the more than 30 utilities studied in this research were considered leading in one or more categories; none were outright leaders in every practice area. Six areas of practice were studied.

Area of Practice	Finding
Accounting and Costing	Leading utilities use multiple valuation methods depending on the purpose and intended audience. The leading utilities use a business case approach to infrastructure decisions with a triple bottom line analysis.
Strategic (Asset) Planning and Asset Management Plans	Leading utilities define desired service levels and clearly state business goals to drive budget planning for both O&M and capital budgets. This practice area includes predicting failure modes, life cycle cost analysis, and optimized decision making (repair, rehab, replace).
Business Risk Management	Leading utilities assess risk on a periodic and regular (e.g., annual/biannual) basis and look broadly at all types of risk. Multiple levels of risk are defined and reviewed including strategic (long-term), tactical and operational (short-term) risks. Unacceptable risk is identified for further evaluation, mitigation, or corrective action. Business risk exposure is evaluated as part of all investment decision making.
Maintenance	Leading utilities exhibit good coordination between the operations department and the maintenance personnel; have a maintenance strategy in place for their key asset classes based on an understanding of failure modes, failure analysis, and risk. They use reliability-centered maintenance to focus resources and select maintenance, work flow management, and collect condition assessment data during routine preventive maintenance.
Secondary Data and Knowledge	Leading utilities focus on defining the data necessary to make informed decisions. They assure quality data by periodic review for completeness. The data collected includes capital, O&M costs including labor, contracts, rentals, and travel time (if significant). Condition-based assessments are performed based on an analysis of asset business risk exposure and cost.
Organization and People	Leading utilities develop supporting cultures, practice continuous improvement to improve business processes, and train the workforce. A vision, mission, and goals are developed, and a regular program of communication exists. Asset management is championed at the highest levels. Programs are developed to assess and build the skills and knowledge for the workforce to at multiple levels.

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Leading Practices for Strategic Asset Management

An asset management steering group meeting

Management and Policy Implications

Infrastructure assets are large, expensive, and long-lived. Well-maintained assets are essential to protect public health and the environment, and economic development depends on reliable and safe water delivery. The findings generated from this research suggest practices that have been demonstrated to be effective. Moreover, these practices are adoptable by utilities of varying sizes, personnel expertise, and budget restraints.

Related WERF Research

Project Title	Research Focus
SIMPLE: Sustainable Infrastructure Management Program Learning Environment (03CTS14)	This online knowledge base enhances the ability to train personnel and provide guidance and tools to utilities of all types, sizes, and levels of practice in asset management. It contains tools, best practices, case studies, research reports, training aids, and an extensive body of knowledge to help set up an asset management program, take a program to the next level, and increase knowledge. (**www.werf.org**)
Assessing Utility Practices with the Strategic Asset Management Gap (SAMGAP) Analysis Tool (SAM2R06COa)	Presents an overview of the development and structure of the SAMGAP tool and summarizes 37 utility self-assessments using the tool in a benchmarking research project.
Compendium of Best Practices in Water Infrastructure Asset Management (SAM7C07)	Compiles case studies from WERF and other research organizations that focus on asset management strategies and tactics from around the world into a compendium produced by the Global Water Research Coalition.
Gresham Oregon: Measuring Progress Towards a Sustainable Asset Management Program – WERF Strategic Asset Management Case Study (SAM6PR08)	This case study documents the City of Gresham, OR's approach to asset management, emphasizing areas of best practices. The lessons learned allowed the Gresham Water Services Division and other city departments to begin thinking about their assets in a different way and increased inter-departmental cooperation.

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