

Successful integration of the strategic asset management tools in SIMPLE into a utility asset management program

Adapting Leading Practices and Associated Tools (SAM1R06j)

The Central Issue

With the multitude of asset management tools available, how can a utility find the right one that conforms to its requirements, rather than a tool with predetermined set of parameters? Leading practices have been defined and refined continuously over the past decade and the best appropriate practices for each facility vary. Because of this, a decision support tool must have the flexibility to reflect those differences.

Context and Background

The SAM tools were designed to provide decision support following the 10 steps of asset management found in WERF's online knowledge base, the Sustainable Infrastructure Management Program Learning Environment (SIMPLE). To enhance familiarity, all of the SAM tools share a common look and feel. This project studied the use of four tools which are included as part of SIMPLE, how they fit into the asset management programs of four different utilities, and whether they were beneficial. The tools and the utilities where they were piloted include:

- Level of Service (City of Henderson, NV)
- Condition Assessment Scoring (JEA, FL)
- Life Cycle Cost Projection (Gwinnett County, GA)
- Capital Improvement Project Validation/Prioritization (Johnson County, KS)

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Ft. Wayne Hill Water Resources Facility, Gwinnett County, Georgia – One of four plants run by the Department of Water Resources.

Findings and Conclusions

The adaptability of the tools allowed adjustments ranging from minor tool language changes, to modifications of scoring methods, all the way to the creation of a software customization following the asset management principles of SIMPLE. The research found that integration of the SAM tools was far reaching, having positive impacts on organization structure, the technology in use, and asset management practices.

Management and Policy Implications

Incorporation and integration of the SAM decision support tools had impacts to organization structure, the technology in use, and asset management practices. One of the keys to success was to ensure approval and alignment across the organization, especially in cases where the results affected different departments such as maintenance and engineering. All four utilities encouraged proper employee participation during training to use the tool and integrate it into their asset management programs.



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Adapting Leading Practices and Associated Tools

Utility and Tool Summary	Utility Personnel Quotes
<p>Level of Service City of Henderson, NV</p> <p>The tool offered a good framework to guide internal discussions about levels of service. To deliver meaningful, practical service levels, careful thought about the inputs and an iterative approach were required. The tool helped the discipline and consistency of the steps.</p>	<p>“The Level of Service tool is easy to use and lends itself well to a workshop environment. It is organized with the complete picture and helped us to begin with the end in mind. Although our political, customer base, economic, and regulatory environments continue to change, we can revisit our LoS with the same framework for a repeatable process.”</p> <p>Victoria Underwood, City of Henderson</p>
<p>Condition Assessment Scoring JEA, FL</p> <p>The tool helped JEA reorganize its decision-making procedures by guiding inspectors to conduct clear, standardized, condition assessments that are consistent, repeatable, and well documented. These are fundamental requirements to reduce variability and subjectivity.</p>	<p>“JEA’s use of the Condition Assessment Scoring tool was the backbone of our condition assessment process for our 1,300 lift station locations. We have now included the same process in assessing the condition of all water and wastewater locations and equipment.”</p> <p>Darren Hollifield, JEA</p>
<p>Life Cycle Cost Projection Gwinnett County, GA</p> <p>The tool provided the concepts of LCC in a structured manner that allowed Gwinnett County to investigate the life cycle costs of various alternatives for failed linear assets. The concepts were incorporated into a module within the utility’s enterprise asset management software package which allowed them to offer the same type of analysis for vertical assets as well.</p>	
<p>Capital Improvement Project Validation/Prioritization Johnson County Wastewater, KS</p> <p>This tool also provides a structured process for evaluating competing projects. Following the steps in the tool, projects of varying sizes could be evaluated consistently. The tool identified areas where JCW needed additional information to have confidence in its capital decisions.</p>	<p>“The WERF SAM tools provide a good template for developing a consistent process for evaluating and prioritizing projects to include in the capital improvement plan.”</p> <p>Aaron Witt, Johnson County Wastewater</p>

Related WERF Research

Project Title	Research Focus
<p>SIMPLE: Sustainable Infrastructure Management Program Learning Environment (03CTS14)</p>	<p>This online knowledge enhances the ability to train personnel and provide guidance and tools to utilities of all types, sizes, and levels of practice in asset management. Moreover, SIMPLE helps practitioners learn how to extend the life of existing assets through changing strategies, tactics, and by implementing optimal maintenance practices and rehabilitation interventions, ultimately improving operational efficiency and reducing operational costs. SIMPLE contains over 16,000 pages of best practices and guidance developed over a 20-year period and from extensive international experience and collaboration with AM practitioners.</p>
<p>Condition Assessment Strategies and Protocols for Water and Wastewater Utility Assets (03CTS20CO)</p>	<p>Provides information on how to effectively use condition assessment tools and techniques to improve both long-term planning and day-to-day management of assets. The report is structured for two distinct audiences:</p> <ol style="list-style-type: none"> 1) Utility planning managers who want to use cost-effective condition and performance assessment programs to support long-term planning decisions. 2) Engineering/maintenance managers who want to identify and understand the advantages and disadvantages of tools and techniques for measuring the condition and performance of utility assets to support daily maintenance and operation of assets.
<p>Decision Analysis/ Implementation Guidance (SAM1R06c)</p>	<p>Presents the first step towards developing the Strategic Asset Management (SAM) “tool kit” in SIMPLE (Sustainable Infrastructure Management Program Learning Environment). Includes a 10-step model for building an asset management plan, plus corresponding tools to assist each step of the process. Includes factors that practitioners identified as either contributing to successful implementation and maintenance of asset management programs or inhibiting program success.</p>
<p>Decision Analysis/ Implementation Guidance – Asset Management Tools Development: Research Digest (SAM1R06e)</p>	<p>Presents an overview of the concept, description, purpose, and benefits of the level of service (LOS), condition assessment/performance scoring, business risk exposure (BRE), and capital investment validation/prioritization tools. Each tool is associated with one of the Five Core Questions/Ten Steps of Asset Management.</p>
<p>Leading Practices for Strategic Asset Management (SAM1R06h)</p>	<p>Identifies, documents, and validates leading practices through site visits and a research forum held in 2010. Leading practices are presented in an easy-to-follow format that cites and explains the practice and provides examples. The research is intended to assist utility managers in the practice areas of Organization and People, Strategic Asset Planning, Business Risk, Maintenance, Secondary Data and Knowledge, and Accounting and Costing.</p>