IAM USA Case Study: Moving Up a Level: Charleston Water System's Journey to Update its Strategic Asset Management Plan

Organization Name	Charleston Water System		
Location	Charleston, SC	Organization Type	Water / Wastewater Utility
Organization Overview			
Charleston Water System is a water and wastewater provider for the City of Charleston, South Carolina and surrounding areas. It operates a 115 MGD water treatment plant serving about 500k people and a 36 MGD wastewater treatment plant serving 200k people. CWS is the largest drinking water supplier in the state of South Carolina and has a total of 475 staff.			
Keywords	SAMP, ISO 55001, SAM+, Maturity Assessment, ISO 14001, Integrated Management System		

Problem Statement

Charleston Water System (CWS) needed to update its Strategic Asset Management Plan (SAMP) and plan out its asset management trajectory for the next five years. The previous SAMP was designed for 2018 to 2023. Through that time, CWS made significant strides in growing its asset management program. The operating environment at CWS had also changed and there was a new need to align the SAMP with the updated organizational Strategic Plan as well as the Effective Utility Management (EUM) framework. CWS knew it needed to update its SAMP and maturity assessment to better reflect the current asset management needs of the organization.

Approach

Asset management has been a focus at CWS for over 10 years. Asset Management Excellence is part of Charleston Water System's corporate strategic plan. Back in 2018, CWS took its asset management program to a new level by creating an initial SAMP and Asset Management Policy. The development of the initial SAMP formalized a strategic focus on asset management and helped build governance, teams and leadership support for the program.

During this period, CWS also conducted an internal asset management maturity assessment using the Institute of Asset Management (IAM) Self-Assessment Methodology+ (SAM+) tool to assess maturity against the International Organization for Standardization (ISO) 55001 asset management standard.

The internal assessment fit CWS's needs at the time very well; particularly assisting in growing internal buy-in for the program as a whole. However, CWS recognized that an outside perspective would be more important for the next assessment. For the next 5-year period (2024-29), CWS decided to utilize an external consultant for performing a maturity assessment and developing a 5-year plan.

Success Factors/Lessons Learned/Messages/Key Takeaways

For CWS, the 2018 maturity assessment showed an average maturity score of 1.5. The average score increased to 2.4 by 2023, showing, at a high level, the success of initial efforts to build the program.

The independent assessment results showed progress in several areas including AM system documentation, organizational roles/responsibilities, determining objective and planning, awareness, document controls, outsourcing, internal audit and management review. As a result of these findings, CWS saw an opportunity to 'take their foot off the gas' on program elements which was causing 'strategy fatigue'.

One of the unique aspects of CWS' assessment is the fact that CWS is ISO 14001 certified. In 1999 CWS became the first public water or wastewater utility in the nation to become certified under the ISO 14001 standard for environmental management. There is significant overlap between ISO 14001 and ISO 55001 requirements. The 2023 assessment was helpful in recognizing how a mature environmental management system (EMS) supports asset management practices by having well documented and managed procedures, governance and audit processes, and environmental risk management.

On the flip side, the assessment identified areas for improvement, especially around asset data, analysis, reporting, decision-making and risk management. Although CWS spent considerable time in the prior five years trying to improve asset data, the assessment showed the real challenges in making progress on this front.

The assessment also showed areas where the EMS and the asset management system (AMS) cannot build off each other. Although the EMS also has a risk approach, the assessment highlighted the need for an overarching risk management strategy. An integrated management system was identified as an opportunity.

The 5-year plan was based on recommendations from the maturity assessment. Identifying specific improvement initiatives was a big benefit from the assessment. The initiatives were organized by IAM Six-Box Model; the same structure was also carried over to the SAMP update. The AM Policy was also updated to a 1-page document (from 14 pages) in alignment with the Environmental Management Policy. Both AM Policy and SAMP are published on CWS website.

The initiatives and resource needs identified in the 5-year plan reflect the challenging climb ahead, considering limited staff resources. CWS has seen positive response when strategy is linked to immediate wins that staff can relate to. Maintenance management which involved improvements in the way Operations collect data and develop maintenance plans, has been a good example of this.

A Roadmap Dashboard (based on monday.com) was developed to monitor the status of roadmap initiatives; this has been helpful to communicate progress to leadership and stakeholders.

References / Further Information

Moving Up a Level: Charleston Water System's Journey to Update its Strategic Asset Management Plan, presented at the AWWA/WEF Utility Management Conference, February 2024; presented (virtual) at IAM USA National Branch Meeting, June 11, 2025

IAM Subject Specific Guidance 1, 2 & 5 Asset Management Policy, Strategy and Plans

CWS AM Policy: https://www.charlestonwater.com/documentcenter/view/1665

CWS SAMP: https://www.charlestonwater.com/documentcenter/view/1663