



State Asset Management Initiatives for Public Water Systems

A Synthesis Paper

**Co-Published by
The Institute of
Asset Management
USA Chapter &
Asset Leadership
Network**

November 2024

Reports by the United States Environmental Protection Agency (EPA) show that many states are investing increasingly in technical and financial resources to enhance Public Water System asset management. The EPA continues to emphasize the need for states to implement the 2018 America's Water Infrastructure Act regulatory requirements.

This paper provides a timeline and overview of recent studies and regulations relating to US water systems. It provides asset owners with insights into the various states' asset management initiatives. By learning from these initiatives, Public Water Systems can enhance the promotion of asset management planning across their organization and foster collaborations with technical assistance providers.

Preface

The term "asset management" is inherent to the lexicon utilized by the US EPA and is frequently used in this paper as it refers to the use of the term by the EPA in referenced material.

We also note that the EPA use of the term "asset management" varies from the global asset management community as represented by ISO/TC 251 and other organizations. ISO/TC 251, notes that the term "asset management" should be differentiated from "managing assets" as described in the ISO publication Asset Management - Managing Assets in the Context of Asset Management [1].

Managing assets (things you do to assets) can be done with or without a structured organizational strategy and context. An organization gains more value from managing assets within a context of organizational purpose and strategy that steers this activity (and becomes asset management).

While many water companies engage in activities labeled as asset management, the focus is often not on organizational outcomes but instead the condition of the assets themselves which is a narrower focus with more limited upside and is typical of "managing assets."

In this context the EPA and state initiatives efforts largely fall under the label of "managing assets" that would benefit from greater integration with



The EPA Established a State Governments Work Group to Evaluate and Report on Best Practices

organizational objectives in line with the EPA's own definition of asset management which includes a focus on overall outcomes based on a desired level of service at lowest life cycle cost.

Introduction

In 2010, a U.S. Environmental Protection Agency and State Governments workgroup was established to evaluate and report best practices in building and evaluating managerial capacity. One key area of focus was assessing how

states utilized asset management practices to strengthen the technical, managerial, and financial capacity of Public Water Systems. The workgroup surveyed 50 States and Puerto Rico and published its findings in the EPA's primordial 2012 State Asset Management Initiatives Document [2].

In 2018, America's Water Infrastructure Act of 2018 [3] amended Section 1420 (c)(2) and (c)(3) of the Safe Drinking Water Act to require

“ Clean water is essential to life and is one of the most basic human needs. ”

State drinking water programs to consider and include Asset Management Plans (AMPs) as part of their capacity development strategies. Some states are imposing penalties for not developing asset management plans.

In December 2019, the EPA's Director of the Office of Water issued a Memorandum to the EPA's Region I-X Water Directors [4] which set the expectation that State drinking water programs must update their capacity development strategies to describe how Asset Management (AM) will be promoted by addressing the EPA's Five-Core-Question Asset Management Framework:

1. What is the current state of the utility's assets?
2. What is the utility's required "sustainable" level of service?
3. Which assets are critical to sustained performance?
4. What are the utility's best "minimum life-cycle cost" capital improvement plan and operations and maintenance strategies?
5. What is the utility's best long-term financing strategy?

Though required by the America's Water Infrastructure Act of 2018, asset management initiatives were only undertaken by approximately 51% of the States in the year of the act's inception. By 2018, the percentage of compliant States derived from the 2018 State Asset Management Initiatives Document [5] was approximately 71%.

In May 2023, the EPA's Director of the Office of Water provided additional guidance to the EPA's Region I-X Water Directors [6] to remind the States that all State Drinking Water Programs are required by statute to submit a

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The 2024 State Asset Management Initiatives Document indicated that the compliance level is approximately 76%

The Infrastructure Investment and Jobs Act (IIJA) provisioned nearly \$200 million to expand Water Technical Assistance programs nationwide



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triennial Capacity Development Report to The Governor, addressing certain asset management-related elements required under (AWIA) to their Governor’s office by September 30, 2023.

Further, the States were requested to send a courtesy copy of their report to their EPA Regional Water Director. Subsequently, the States’ reports were made available to the public on the EPA’s website at <https://www.epa.gov/dwcapacity/capacity-development-reports-governor>.

The 2024 State Asset Management Initiatives Document [7] indicated that the compliance level is approximately 76%. Note that not all states reported having adopted all the asset management framework elements; the percentage of compliance shows the number of states that have undertaken any asset management activities.

Though not explicitly stated in the EPA’s documents, the increase in

asset management activities between 2018 and 2024 is likely attributed to the Governments enacting the Infrastructure Investment and Jobs Act (IIJA) [8] in November 2021. The IIJA provisioned nearly \$200 million to expand Water Technical Assistance programs nationwide.

This review examines the initiatives undertaken by states to promote asset management and highlights the changes observed over the years.

Purpose and Approach

This Paper provides Public Water System asset owners and service providing organizations with insights into the various states’ asset management initiatives. The data for this study was collected from the EPA’s State Asset Management Initiatives Documents published in 2012 , 2018 and and 2024.

By reviewing this synthesis of initiatives, the audience will gain a clearer understanding of national efforts and regional actions, opening opportunities for collaboration, dialogue, and engagement with peer agencies in neighboring states

The asset management initiatives reported in the EPA documents are grouped into four categories:

- 1. Funding Activities:** These activities pertain to how asset management is funded or awarded funding.
 1. State Revolving Funds Priority Points
 2. Funding for Asset Management Planning
 3. Utilizes Drinking Water State Revolving Fund Set-Asides
 4. Loan Condition and Forgiveness Programs
- 2. Regulatory Activities:** These activities include integrating asset management into state requirements.

Table 1: Comparison of the Number of States Adopting Activities in each Category

Report Year	Funding Activities	Regulatory Activities	Assistance Activities	Internal Activities
2012	21	20	34	34
2018	41	33	44	33
2024	47	42	51	21

1. Additional Business or Financial Planning Requirements
 2. Needs Assessment
 3. Sanitary Survey
 4. State Statutes or Codes for Asset Management Planning
 5. Training Requirements
- 3. Assistance Activities:** These activities encourage asset management, including training, outreach, guidance documents, and technical assistance activities.
1. Guidance Documents
 2. Outreach
 3. Questions in Capacity Assessments
 4. Technical Assistance
 5. Training
- 4. Internal Activities:** These are activities at the Federal Agency level to promote further asset management.
1. Considering a Regulatory Requirement
 2. Considering Incentives in State Revolving Fund Programs
 3. Other Future Implementation
 4. Training for State Staff



Table 2: Highest Number of Asset Management Activities in each Category

Rank	Funding Activities	Regulatory Activities	Assistance Activities	Internal Activities
1	Loan Condition and Forgiveness Programs (25)	Sanitary Survey (32)	Training (50)	Future Implementation (11)
2	SRF Priority Points (23)	State Statutes or Codes for Asset Management Planning (23)	Technical Assistance (43)	State Staff Training (8)
3	Funding for Asset Management Planning (22)	Additional Business or Financial Planning Requirements (13)	Outreach (35)	Considering Regulatory Requirements (5)

Table 3: Asset Management Activity by State and Category

State	Activity	Count	State	Activity	Count	State	Activity	Count
Alabama	Funding Activities	1	Georgia	Funding Activities	1	Maine	Funding Activities	2
	Regulatory Activities	1		Regulatory Activities	1		Regulatory Activities	0
	Assistance Activities	1		Assistance Activities	2		Assistance Activities	2
	Internal Activities	0		Internal Activities	0		Internal Activities	1
Alaska	Funding Activities	1	Hawaii	Funding Activities	1	Maryland	Funding Activities	0
	Regulatory Activities	1		Regulatory Activities	3		Regulatory Activities	1
	Assistance Activities	5		Assistance Activities	1		Assistance Activities	3
	Internal Activities	2		Internal Activities	0		Internal Activities	0
Arizona	Funding Activities	0	Idaho	Funding Activities	2	Massachusetts	Funding Activities	2
	Regulatory Activities	1		Regulatory Activities	1		Regulatory Activities	2
	Assistance Activities	2		Assistance Activities	3		Assistance Activities	5
	Internal Activities	0		Internal Activities	1		Internal Activities	0
Arkansas	Funding Activities	2	Illinois	Funding Activities	1	Michigan	Funding Activities	1
	Regulatory Activities	1		Regulatory Activities	2		Regulatory Activities	1
	Assistance Activities	1		Assistance Activities	4		Assistance Activities	4
	Internal Activities	0		Internal Activities	2		Internal Activities	0
California	Funding Activities	0	Indiana	Funding Activities	1	Minnesota	Funding Activities	1
	Regulatory Activities	2		Regulatory Activities	2		Regulatory Activities	1
	Assistance Activities	4		Assistance Activities	2		Assistance Activities	3
	Internal Activities	2		Internal Activities	0		Internal Activities	0
Colorado	Funding Activities	1	Iowa	Funding Activities	0	Mississippi	Funding Activities	2
	Regulatory Activities	2		Regulatory Activities	1		Regulatory Activities	3
	Assistance Activities	4		Assistance Activities	3		Assistance Activities	4
	Internal Activities	0		Internal Activities	3		Internal Activities	1
Connecticut	Funding Activities	2	Kansas	Funding Activities	1	Missouri	Funding Activities	3
	Regulatory Activities	3		Regulatory Activities	0		Regulatory Activities	2
	Assistance Activities	3		Assistance Activities	3		Assistance Activities	3
	Internal Activities	0		Internal Activities	0		Internal Activities	1
Delaware	Funding Activities	2	Kentucky	Funding Activities	1	Montana	Funding Activities	1
	Regulatory Activities	1		Regulatory Activities	1		Regulatory Activities	1
	Assistance Activities	4		Assistance Activities	3		Assistance Activities	5
	Internal Activities	0		Internal Activities	0		Internal Activities	1
Florida	Funding Activities	2	Louisiana	Funding Activities	0	Nebraska	Funding Activities	1
	Regulatory Activities	0		Regulatory Activities	1		Regulatory Activities	1
	Assistance Activities	3		Assistance Activities	5		Assistance Activities	4
	Internal Activities	0		Internal Activities	0		Internal Activities	2

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State	Activity	Count	State	Activity	Count	State	Activity	Count
Nevada	Funding Activities	2	Oklahoma	Funding Activities	1	Texas	Funding Activities	2
	Regulatory Activities	2		Regulatory Activities	0		Regulatory Activities	0
	Assistance Activities	4		Assistance Activities	4		Assistance Activities	4
	Internal Activities	0		Internal Activities	0		Internal Activities	0
New Hampshire	Funding Activities	4	Oregon	Funding Activities	1	Utah	Funding Activities	4
	Regulatory Activities	2		Regulatory Activities	1		Regulatory Activities	4
	Assistance Activities	3		Assistance Activities	5		Assistance Activities	5
	Internal Activities	1		Internal Activities	1		Internal Activities	0
New Jersey	Funding Activities	3	Pennsylvania	Funding Activities	3	Vermont	Funding Activities	3
	Regulatory Activities	1		Regulatory Activities	2		Regulatory Activities	1
	Assistance Activities	4		Assistance Activities	3		Assistance Activities	4
	Internal Activities	1		Internal Activities	1		Internal Activities	0
New Mexico	Funding Activities	1	Puerto Rico	Funding Activities	1	Virginia	Funding Activities	4
	Regulatory Activities	0		Regulatory Activities	0		Regulatory Activities	1
	Assistance Activities	2		Assistance Activities	4		Assistance Activities	3
	Internal Activities	0		Internal Activities	2		Internal Activities	2
New York	Funding Activities	2	Rhode Island	Funding Activities	2	Washington	Funding Activities	3
	Regulatory Activities	1		Regulatory Activities	1		Regulatory Activities	2
	Assistance Activities	5		Assistance Activities	2		Assistance Activities	4
	Internal Activities	0		Internal Activities	0		Internal Activities	0
North Carolina	Funding Activities	2	South Carolina	Funding Activities	2	West Virginia	Funding Activities	2
	Regulatory Activities	0		Regulatory Activities	1		Regulatory Activities	1
	Assistance Activities	3		Assistance Activities	3		Assistance Activities	3
	Internal Activities	0		Internal Activities	0		Internal Activities	0
North Dakota	Funding Activities	1	South Dakota	Funding Activities	2	Wisconsin	Funding Activities	4
	Regulatory Activities	0		Regulatory Activities	1		Regulatory Activities	1
	Assistance Activities	4		Assistance Activities	5		Assistance Activities	4
	Internal Activities	0		Internal Activities	0		Internal Activities	1
Ohio	Funding Activities	3	Tennessee	Funding Activities	2	Wyoming	Funding Activities	1
	Regulatory Activities	2		Regulatory Activities	1		Regulatory Activities	2
	Assistance Activities	4		Assistance Activities	3		Assistance Activities	4
	Internal Activities	1		Internal Activities	1		Internal Activities	1



Findings

The EPA's reports show that many States are increasingly investing in technical and financial resources to enhance Public Water System Asset Management. Table 1 compares the number of states that performed various activities in each category in 2012, 2018, and 2024, highlighting the growing emphasis on asset management.

An analysis of state asset management efforts highlights the most adopted activities. Table 2 shows the highest number of activities by type undertaken in each category. The general emphasis has been on training and technical assistance as primary practices to promote asset management.

Figure 1 (below) shows a breakdown of discrete activities under the four asset management categories extracted from the EPA's 2024 State Asset Management Initiatives Document. Thus far, the States have significantly emphasized technical assistance and asset management training for Public Water Systems.

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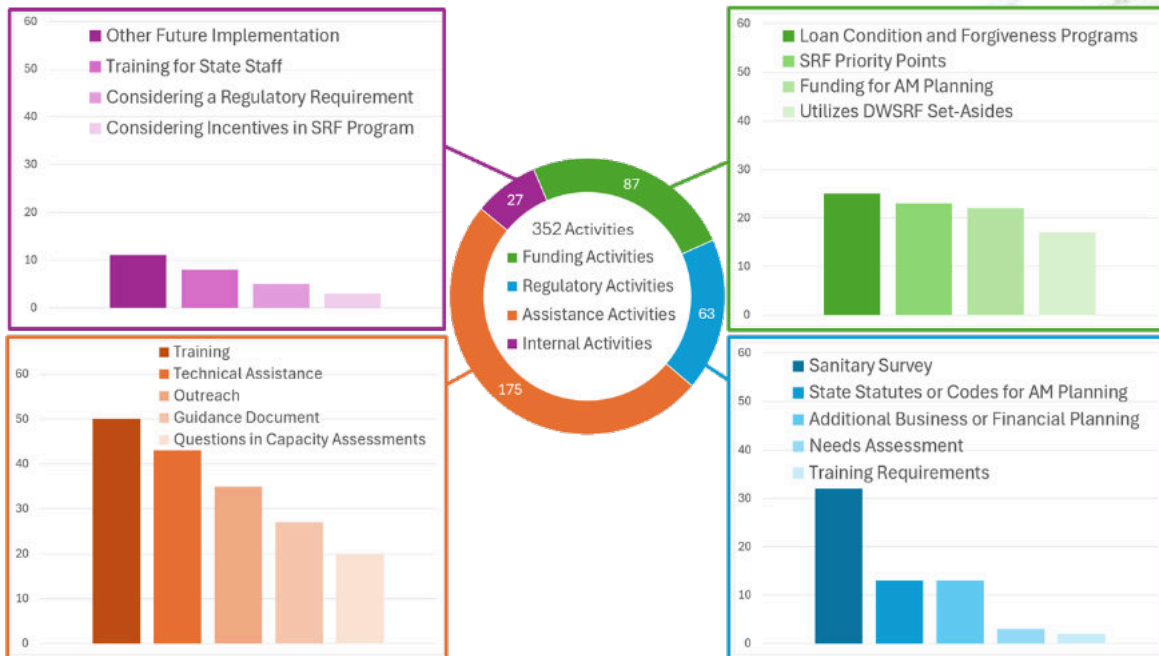


Figure 1: State Count by Asset Management Activity Category

“ The EPA continues to emphasize the need for states to implement the 2018 America’s Water Infrastructure Act regulatory requirements. ”

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The locations of states engaged in asset management and the asset management activity categories being delivered, as stated in the EPA's 2024 State Asset Management Initiatives Document, are shown in Figures 2 through 5.

Summary

The EPA's State Asset Management Initiatives publications (2012-2024) provide valuable insights into the funding, regulatory requirements, assistance, and activities undertaken at the state level to support Public Water Systems asset management efforts.

By leveraging this information, State Public Water Systems can enhance their asset management programs through collaboration with technical assistance providers and peers in their State and in other States.

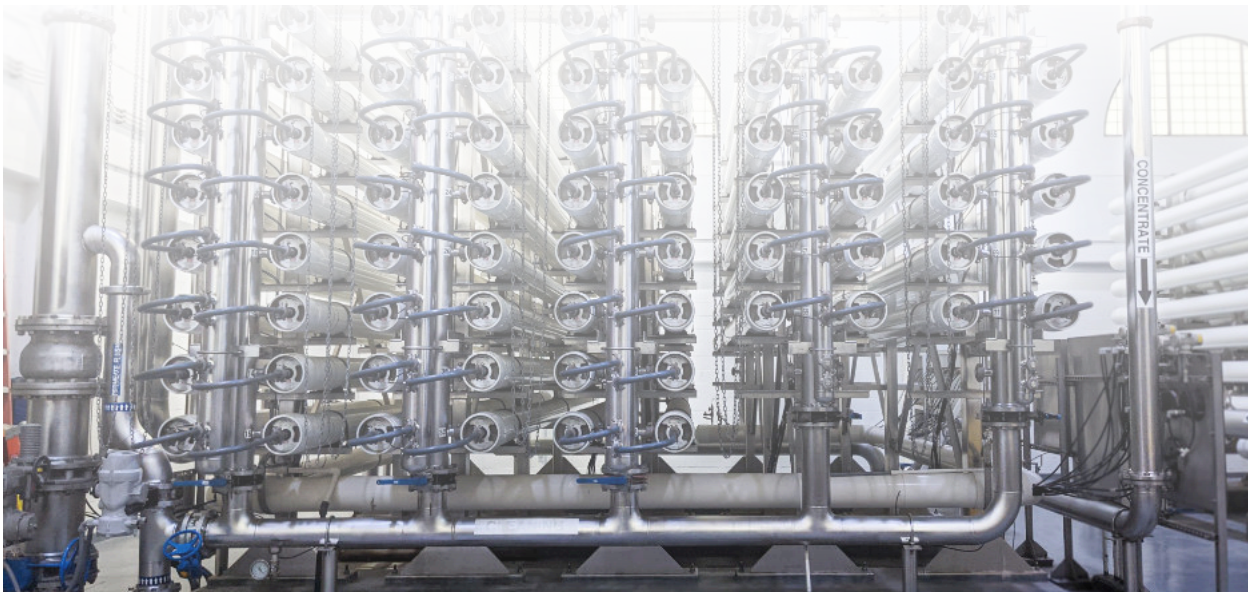
Further, they may ascertain if loans or grant funding is available to assist them with developing

and improving their asset management plans by accessing their State's triennial Capacity Development Report to The Governor on the EPA's website at <https://www.epa.gov/dwccapacity/capacity-development-reports-governor>.

The EPA continues to emphasize the need for states to implement the 2018 America's Water Infrastructure Act regulatory requirements. This, along with the Federal Government's significant investment in water infrastructure through the 2021 Infrastructure and Investment Jobs Act, will help Public Water Systems to develop and mature their asset management capabilities, enabling them to maintain their level of service commitments, realize value from their assets, and provide safe drinking water to all Americans.

The Asset Leadership Network and the Institute of Asset Management, USA Chapter offer web programs and in-person events to help spread best practices information, measurable benefits, and a collegial approach to addressing safe water asset management in the United States.

See more at www.AssetLeadership.net and <https://usa.theiam.org/>



“ People depend on clean water for their health: About 117 million Americans – one in three people – get drinking water from streams that were vulnerable to pollution before the Clean Water Rule. ”
– US Environmental Protection Agency

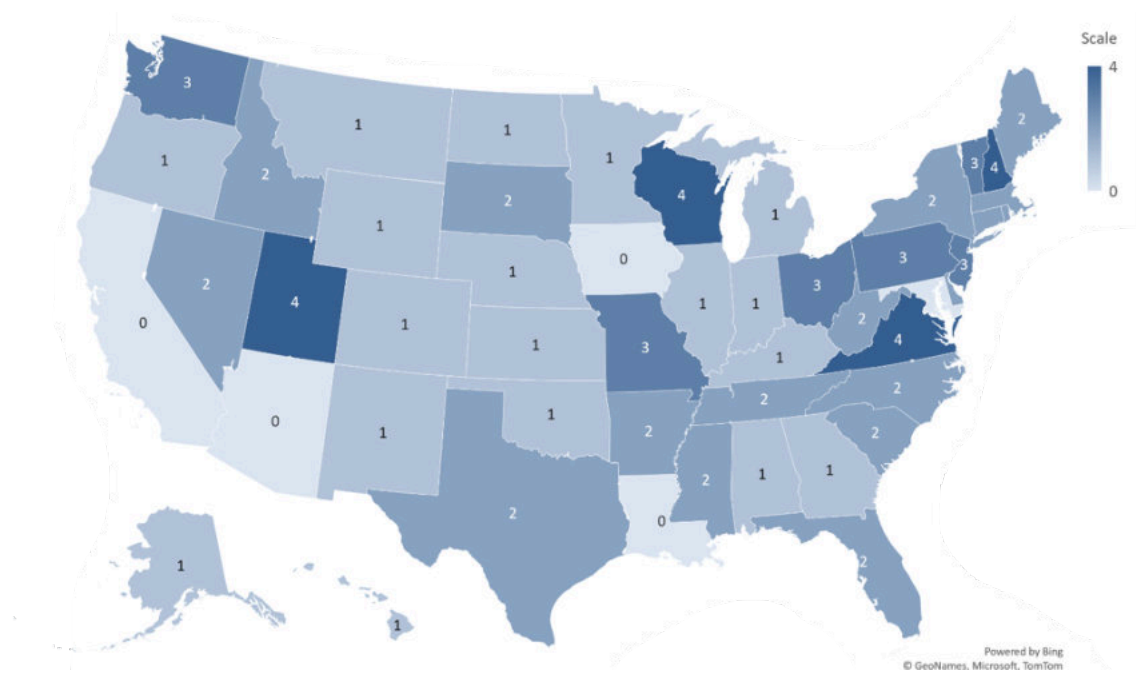


Figure 2: Count of Asset Management Funding Activities by State

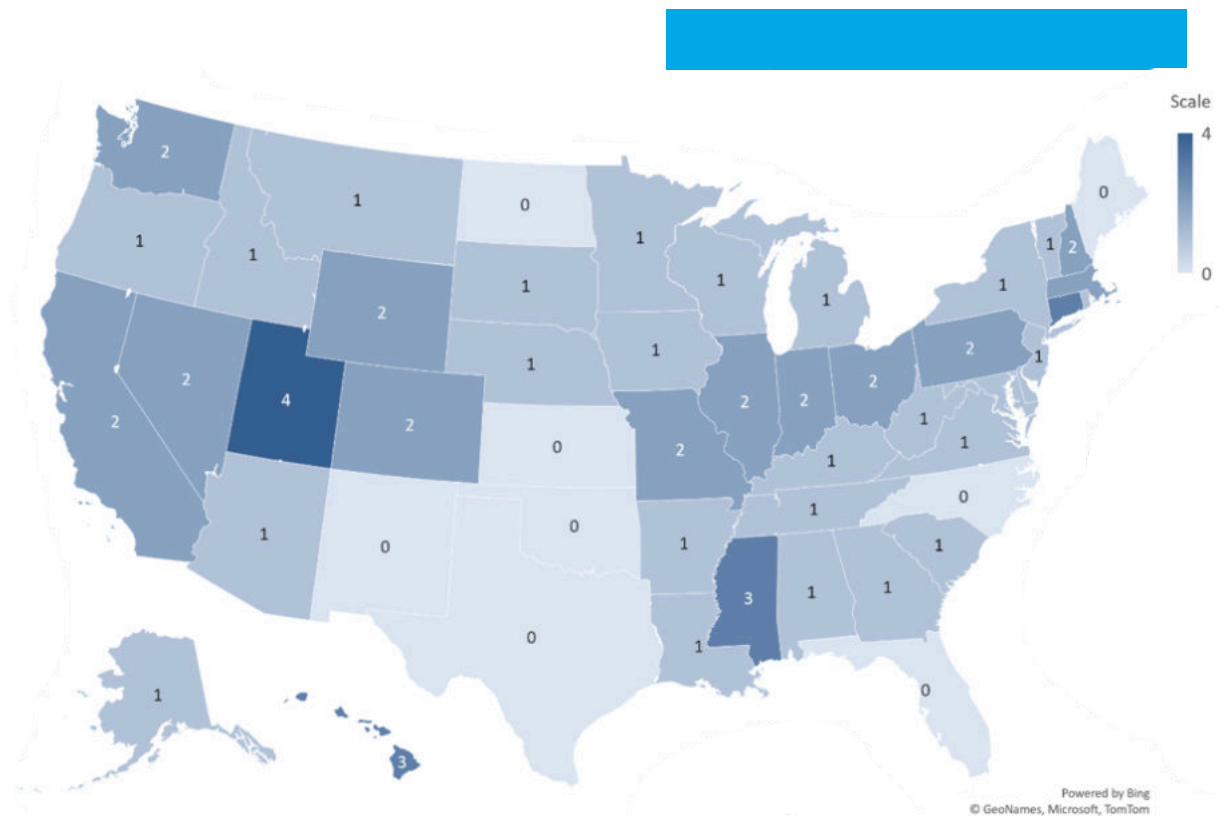


Figure 3: Count of Asset Management Regulatory Activities by State



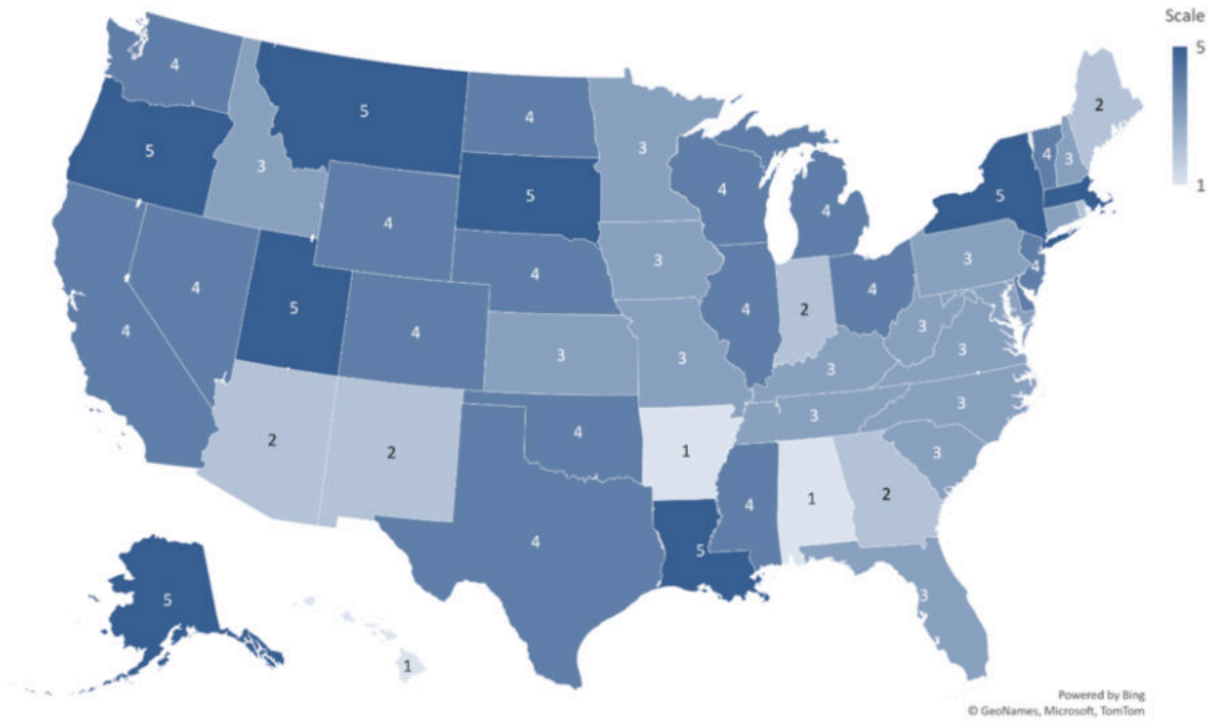


Figure 4: Count of Asset Management Assistance Activities by State

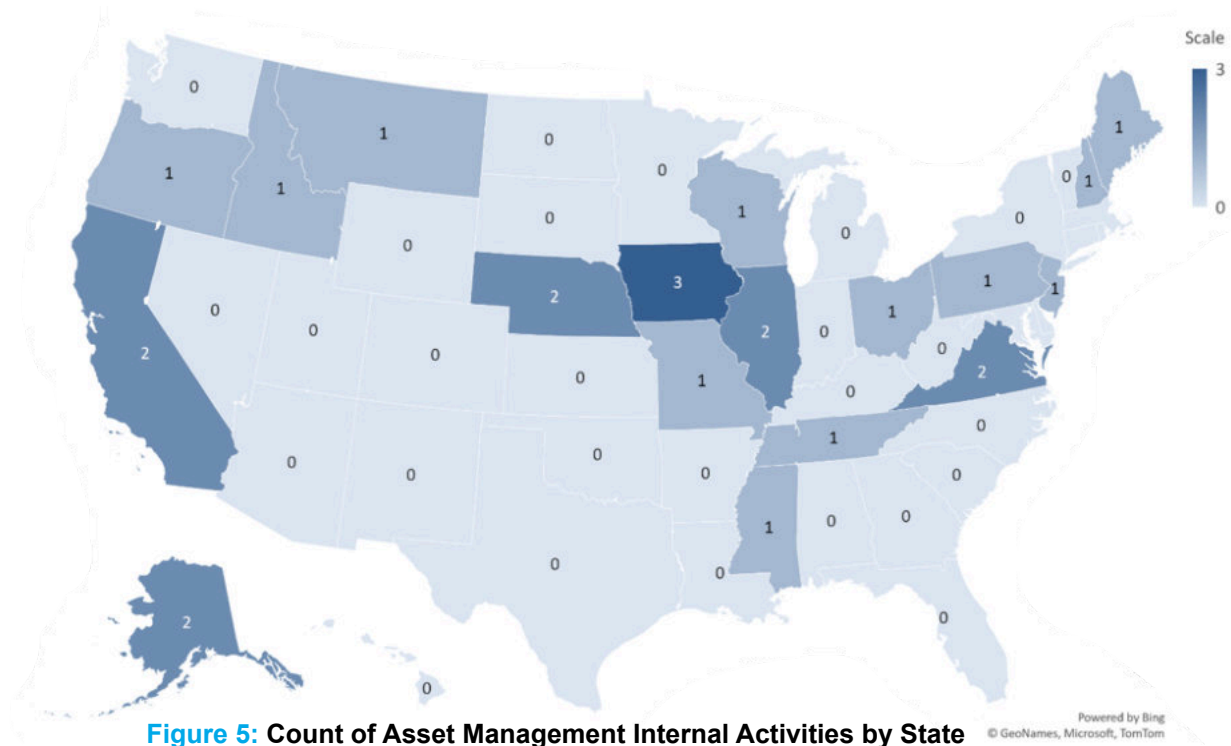


Figure 5: Count of Asset Management Internal Activities by State



References

[1] ISO/TC 251 (2017, May). Managing Assets in the context of Asset Management. Retrieved from ISO. org: <https://committee.iso.org/files/live/sites/tc251/files/guidance/ISO%20TC251%20WG4%20MACAM%20May%202017%20EN2.pdf>

[2] Echeverria, M. (2023, May 11). Capacity Development Reports to the Governor. Retrieved from EPA.gov: <https://www.epa.gov/system/files/documents/2023-05/2023%20Reporting%20Criteria%20for%20Report%20to%20the%20Governor%20Memo.pdf>

[3] EPA. (2012, November). State Asset Management Initiatives Documents. Retrieved from epa.gov: https://www.epa.gov/sites/default/files/2020-03/documents/2012_state_asset_management_initiatives_pdf_0.pdf

[4] EPA. (2019, February). State Asset Management Initiatives Documents. Retrieved from epa.gov: https://www.epa.gov/sites/default/files/2019-03/documents/asset_management_initiatives_document_508.pdf

[5] EPA. (2024, January). epa.gov. Retrieved from State Asset Management Initiatives Documents: https://www.epa.gov/system/files/documents/2024-01/2024-state-asset-management-initiatives-document_508.pdf

[6] McLain, J. (2019, December). EPA.gov. Retrieved from https://www.epa.gov/sites/default/files/2019-12/documents/awia_sec_2012_reflections_memo_508.pdf

[7] United States Congress. (2018, January). S.3021 - America's Water Infrastructure Act of 2018. Retrieved from www.congress.gov: <https://www.congress.gov/115/bills/s3021/BILLS-115s3021enr.pdf>

[8] United States Congress. (2021, November). H.R.3684 - Infrastructure Investment and Jobs Act. Retrieved from [congress.gov](https://www.congress.gov): <https://www.congress.gov/bill/117th-congress/house-bill/3684>



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Palm Beach County Water Utilities Department


This case study shows how one utility in the state of Florida embraced the intent of the 2018 AWIA regulatory requirements and went beyond simple compliance. They choose to align their efforts to global best practices and became certified to the ISO 55001 standard and are realizing value from doing so.

Palm Beach County Water Utilities Department (PBCWUD) became the first water and wastewater utility in North America to achieve ISO 55001 certification for its asset management system.

PBCWUD is a County-owned utility, governed by the Palm Beach County Board of County Commissioners (BCC) that provides potable water, wastewater, and reclaimed water services to 600,000 residents, and is the third-largest provider in the State of Florida.

PBCWUD recognized that to become a best-in-class utility, the whole organization had to transform how it operates and manages risk. In 2016, senior leadership chose to implement an ISO 55001 compliant asset management system across the organization. ISO 55001 is the global benchmark for utilities to effectively manage the balancing of costs, opportunities, and risks over the whole life cycle of an organization's assets.

This framework coupled with using data to drive decision-making has benefited the organization's internal and external stakeholders. PBCWUD undertook this journey to assure regulators, customers, and other stakeholders that assets and services are efficiently managed to ensure an abundant supply of fresh, high-quality drinking water for the future and keep average household service fees low. Gaining ISO 55001 certification proved the utility's commitment towards best practice and continuous improvement in core business functions.



The Asset Management Improvement Program was broken down into actions, categorized into documentation, people, processes, systems, data, risk, and supply chain. Employees from across the business – i.e. Operations, Maintenance, Engineering, Customer Service, Procurement, Finance, IT, Environmental, Health, and Safety, and HR were trained and developed their knowledge on a wide range of asset management topics. A framework was established that supported the definition of organizational arrangements, setting out roles and responsibilities across Asset Management’s subject areas.

The team recognized that changes are difficult and often met with hostility. The ISO Core team, taken from middle management and rank personnel, understood that to get buy-in from the organization, they would have to show how everyone could benefit from asset management. It was equally important that the framework slowly permeated and supported a positive organizational culture towards asset management.

By influencing the culture, finding like-minded individuals, and using the ISO 55001 framework to drive improvement and mitigate risks, a new perspective has taken root in the utility.

The development of PBCWUD’s asset management culture is self-driven and is not a response to a trend or an attempt to be buzzword-compliant. Ultimately, ISO 55001 was the vehicle that changed how people view their worth and the importance of their work in delivering on the organization’s mission of providing safe and quality drinking water. It took ten years for PBCWUD to change its culture and as the organization has completed its ISO 55001 recertification in 2024, the axiom of continuous improvement is alive and well and is driving the utility’s next-generation asset management improvement program.

Leading By Example



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Co-Published by
The Institute of Asset Management USA Chapter
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Addition Sources of IAM and ALN Information

<https://theiam.org/knowledge-library/iso-55000/>
The Institute of Asset Management

<https://www.assetleadership.net/assetleadership-papers/>
Asset Leadership Network

<https://theiam.org/professional-development/qualifications/>
The Institute of Asset Management

<https://www.assetleadership.net/training/>
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The Institute of Asset Management USA Chapter and Asset Leadership Network would like to acknowledge the work of George Galambos in preparing this paper.

