

Development, Deployment, and Refinement of the Water Technology Data and Analysis Management System (Water-DAMS)



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Challenge

Data on existing or emerging water treatment technologies and treatment trains performance are not widely available, or often lack sufficient context and consistent metadata to enable understanding or explain anomalies in reported values. These data availability and data quality gaps inhibit our ability to analyze technology innovation opportunities and improve performance or reduce the cost of water treatment.

The development of an open, universally accessible database that stores research, development, and performance data for mature and emerging technologies would provide a new tool that fills in data gaps and overcomes these challenges and limitations.

Research Approach

The Water Technology Data and Analysis Management System (Water-DAMS) provides the water treatment research community a secure central repository for technology and treatment train data that is accessible to researchers, decision-makers (e.g., water managers), DOE, and the public while also providing sufficient data security to protect water utilities. Data collection, management, curation, and analysis are accomplished within NAWI using two separate, but integrated tools:

1. The Data Foundry, a secure, internal collaboration space for working teams to share resources, work together on refining data, and organizing their digital information.
2. The Water Data and Analysis Management System (Water-DAMS) is the public-facing catalog and repository for curated NAWI data.

Data generated within NAWI through baselining and roadmapping activities or from projects funded through a NAWI RFP are uploaded, stored, and refined in the Data Foundry. Once ready for public consumption, the data are submitted to Water-DAMS, where they are reviewed by a team of curators and published. Data published to Water-DAMS are disseminated to the greater community and the public through a network of data-sharing partners. (Fig 1)

Impact

Water-DAMS will be essential in assisting NAWI's research investment decisions, tracking NAWI research progress, and conducting innovative NAWI analysis research. Water-DAMS provided openness and transparency for NAWI-funded research and helps to avoid duplication of effort by making data from NAWI research, development, baselining and roadmapping activities openly available the water treatment research community. Water-DAMS helps to protect NAWI's investment in water treatment research by preserving and disseminating the results of funded projects.

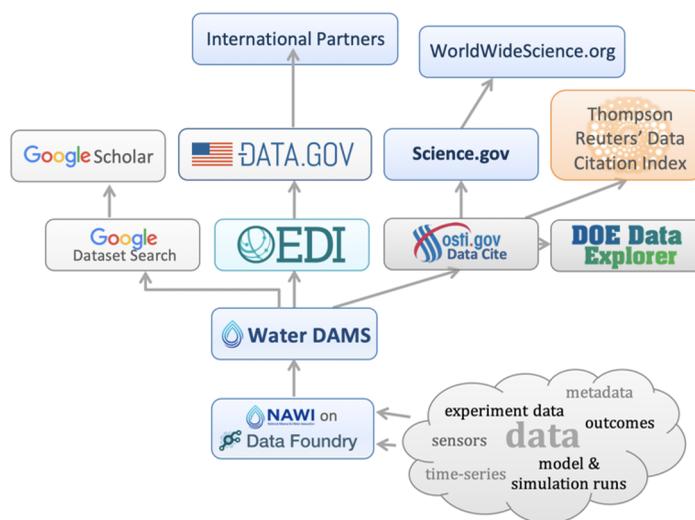


Figure 1. Network diagram of NAWI Water-DAMS metadata propagation to data sharing partners.

RESEARCH PARTNERS

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REFERENCES

1. Water-DAMS Data Submission Tutorial Videos: [Link here.](#)
2. Water DAMS Data Management and Best Practices for Submitters and Curators: [Link here.](#)
3. Department of Energy (DOE). "Strategic Plan". DOE/CF-0067. Washington, DC (2011). 43-44.