

Building Capacity for Small Water and Wastewater Systems

Environmental Finance Center Network
2024 Progress Report



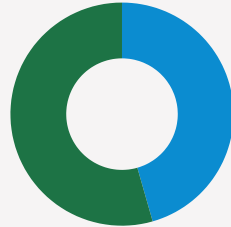
REFLECTING ON EFCN PROGRESS SINCE 2012

The EFCN is a university- and non-profit based organization that addresses the financial challenges of environmental protection and infrastructure through innovative solutions. The EFCN aims to assist public and private sectors through training, direct professional assistance, the production of durable resources, and innovative policy ideas.

Total Participants

51,262

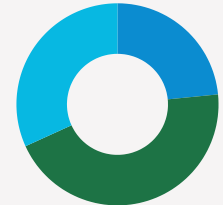
- Webinar Participants: 23,358
- Workshop Participants: 27,904



Multimedia Collection

239

- 107 Blog Posts
- 76 Podcast Episodes
- 56 Educational Videos & Animations



Technical Assistance Projects:

785

Drinking
Water

247

Wastewater

144,207

EFCN Website Visitors

Explore our new **LIVE Impact Dashboard!** Explore real-time updates showcasing our impact since 2012.



CHECK
IT OUT



POPULAR MEDIA FROM 2024

VIDEO



**What Happens When
You Flush?**



PODCAST



**Why Communicating About
Wastewater Is So Important**



BLOG



*Read the full blog
on pages 8-10*

**AI in Water Management: Six
Ways AI Can Help Solve Problems
Across the Water Sector**



DISCOVER THE IMPACT: NEW INTERACTIVE MAP

In 2024, we introduced a new interactive map to the EFCN website. This user-friendly tool highlights the training and technical assistance activities carried out by EFCNetwork partners across the United States and all US territories. Updated in real time, check out the resource below to stay up to date with the latest EFCN training and assistance updates.

The left-side menu allows for seamless navigation to specific states or territories.

Select location icons for details about completed projects.

Color-coded icons help differentiate between trainings and technical assistance projects.



View summaries of training and technical assistance activities by clicking on the state abbreviations.

NATIVE NATIONS AND TRIBAL COMMUNITY IMPACT

Serving indigenous communities by building technical, managerial, and financial capacity for Tribes and Native Nations across North America.

60+
ENGAGED
ENTITIES

13
TRIBAL
TRAININGS
IN 2024

300+
ATTENDEES
IN 2024

94% of Getting Grant Ready Series attendees agreed or strongly agreed that they learned something new

New Series from EFCN

Getting Grant Ready Webinar Series for Tribes

This 6-part series was designed to equip Tribes with essential tools and insights to successfully navigate the complex world of grant writing and funding. The series was led by **Cynthia Naha**, a member of the Hopi Tribe and Senior Associate at Capacity Collaborative. From identifying the right funding opportunities to developing a strong budget narrative, each webinar provided step-by-step guidance through critical processes for securing federal and other types of funding.

MAKING WAVES WITH OUR 2024 WEBINAR SERIES

In 2024, EFCN delivered crucial knowledge and resources to small wastewater and decentralized systems by hosting several popular national webinar series.

For new offerings from EFCN partners in 2025, visit efcnetwork.org/training-events

**PFAS Today, Tomorrow,
and Forever Webinar Series**

**1,500+
Attendees**

98% of attendees agreed or strongly agreed that they learned something new

**Onsite Wastewater
Webinar Series**

**900+
Attendees**

93% of attendees agreed or strongly agreed that they learned something new

“ Five-Star Feedback
The training was extremely informative, clear and as concise as it could be. This was one of those trainings where when my colleagues and I logged off of it, we immediately started chatting about how good the training was.
Great job!
”



TOP 2024 BLOG FROM THE EFCN:

AI in Water Management: Six Ways Artificial Intelligence Can Help Solve Problems Across the Water Sector

Written by: Mya Bonney, Project Assistant, Syracuse University Environmental Finance Center (SU-EFC)



When you think of Artificial Intelligence (AI), what comes to mind? Robots? Human-like machines designed to cause widespread destruction and chaos?

As the popularity of AI has surged in recent years, people are not only becoming more comfortable with the use of AI, but are also actively seeking out ways to use it to their advantage. As AI technologies continue to revolutionize various industries, the global artificial intelligence market has an expected annual growth rate of 37.3% between 2023 and 2030, as reported by [Grand View Research](#).

AI extends beyond the traditional scope of pattern identification and data analytics. It presents a range of opportunities that have the potential to revolutionize the water industry as we know it.

WHAT IS ARTIFICIAL INTELLIGENCE (AI)?

Artificial Intelligence, or AI, is the field of computer science dedicated to creating systems capable of performing tasks that would normally require human intelligence. It involves creating algorithms that enable systems to analyze and interpret vast amounts of data. These algorithms then allow computer systems to imitate aspects of human thought, enabling machines to replicate tasks such as learning, planning, problem-solving, and decision-making.

With the changing climate and strained resources, whether that be financial or labor shortages, the water industry is facing significant challenges. Extreme weather events are making water increasingly scarce, unpredictable, and polluted, leading to more stress on our water infrastructure, treatment processes, and those who manage it all.

AI technology has the potential to revolutionize the future of water and wastewater systems and ensure the long-term viability of the industry. **Here are six ways in which AI can solve problems across the water sector:**

1. WATER QUALITY MONITORING

AI can be used to continuously monitor the quality of water in real time. By analyzing data from sensors placed in water bodies, AI algorithms can **detect changes** in water quality and identify potential contaminants or public health hazards such as pollution plumes and waterborne disease pathogens. Through this, AI can also detect eutrophication, harmful algal blooms, and the dumping or discharging of hazardous chemicals.

2. LEAK DETECTION AND PREVENTION

AI can help in identifying and preventing **leaks** in water distribution systems. By analyzing data from sensors and meters, AI algorithms can detect anomalies in water flow and pressure, indicating possible leaks. This proactive approach can potentially save significant amounts of water and reduce the costs associated with repairing leaks.

3. INFRASTRUCTURE MAINTENANCE

AI can use real-time data from **network sensors** to measure, monitor, and optimize flow pressure and velocity to be more energy efficient and reduce operating costs. Advanced systems may even assist in preventing detrimental sewage overflows during severe weather conditions by adjusting storage usage in wastewater pump stations, pipes, and manholes. Additionally, predictive analytics can be used to detect anomalies and predict, diagnose, and fix wastewater network defects and blockages. AI can even expedite notifications to cleanup teams in the event of unexpected discharges.

4. FLOOD PREDICTION AND MANAGEMENT

AI can be used to analyze data from **weather** forecasts, river levels, and historical flood patterns to predict and manage flood events. By using machine learning algorithms, AI can provide accurate and timely flood warnings, allowing authorities to take necessary measures to mitigate the impact of floods and protect their communities.





5. WATER CONSERVATION

AI can help **optimize** water usage by analyzing data from various sources, such as weather patterns, soil moisture levels, and crop water requirements. By utilizing this data, AI algorithms can provide valuable insights on when and how much water should be used for irrigation, reducing water waste and promoting sustainable agriculture practices.

6. WATER RESOURCE MANAGEMENT

AI can assist in **managing** water resources more efficiently. By analyzing data on water availability, usage patterns, and population growth, AI algorithms can help authorities make informed decisions on water allocation and infrastructure planning, especially when navigating water scarcity.

AI IN ACTION

In 2020, the city of Tucson, Arizona implemented AI technology in an effort to be more proactive in managing its water **system**, consisting of over 4,600 miles of distribution water main pipes. The city used machine learning **technology** from **VODA.ai**, which discovers patterns from historical pipe failures, and evaluates data on soil, weather, land use, and more, to develop targeted and precise pipe break predictions. The AI technology then calculates the Likelihood of Failure (LoF) and Consequence of Failure (CoF) scores for each pipe segment. From these two scores, the technology generates a quarterly Business Risk Exposure score, allowing utilities to focus their resources on the most important assets. “There is limited data we currently have to make expensive decisions around maintaining our pipe network. With VODA.ai’s daVinci machine learning technology, we will be able to make smart decisions, save valuable resources, and protect our water infrastructure,” said Tim Thomure, previous Director of the Tucson Water Department. The current Director of the Tucson Water Department, John P. Kmiec, believes that coupling human experience with AI technology will help the city make better-informed decisions with greater **confidence**.

AI is a rapidly evolving field with the potential to transform industries and our daily lives. While there are challenges and ethical concerns to address, the advancements in AI technology continue to push the boundaries of what machines are capable of achieving. By harnessing the power of AI, we can address the challenges faced by water and wastewater systems, potentially leading us down a path of a more sustainable and resilient water sector.



About Us

The Environmental Finance Center Network (EFCN) is a non-profit and university-based organization creating innovative solutions to the difficult how-to-pay issues of environmental protection and infrastructure. The EFCN works with the public and private sectors to promote sustainable environmental solutions while bolstering efforts to manage costs.

Building TMF Capacity

Our Building TMF Capacity Programs seek to address major issues facing the nation's smallest drinking water and wastewater systems. Our team of experts works with systems across the country, US territories, and the Navajo Nation to address these issues and build technical, managerial, and financial capacity through training, the production of durable resources, and technical assistance.



Our Team

- Southwest Environmental Finance Center at the University of New Mexico
- Environmental Finance Center at the University of Maryland
- Environmental Finance Center at Wichita State University
- Environmental Finance Center at Sacramento State
- The Capacity Collaborative
- Syracuse University Environmental Finance Center
- Great Lakes Environmental Infrastructure Center
- Moonshot Missions
- Government Finance Officers Association (GFOA)
- Morgan State University
- WaterNow Alliance
- Mississippi State University Extension & Water Resources Research Institute
- New England Environmental Finance Center at the University of Southern Maine



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To learn more about the **Environmental Finance Center Network (EFCN)**, visit
efcnetwork.org



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