WRAP QUARTERLY UPDATE
July–September 2023

A Message from Felicia Marcus, William C. Landreth Visiting Fellow at Stanford University's Water in the West Program

What a quarter it has been for water reuse! As an environmental lawyer, advocate, and former public works director who has advised on and advocated for water reuse for over three decades, the acceleration of motivation and action to implement water reuse the past few years is inspiring and has arrived not a moment too soon. Around the country, communities are turning to water recycling as never before, and state and federal partners are responding with funding (though never enough) and state-level regulations (e.g., in Florida, Arizona, Colorado, California) that are improving the ability to develop smart recycled water projects.

The interest in water reuse is there, but we still have obstacles to overcome—obstacles of agency fragmentation, funding, and regulatory complexity. I'm particularly pleased EPA is using its convening power to bring people together across the country and across operational and regulatory silos to figure out how to bridge gaps and accelerate positive momentum through the WRAP. This is the kind of high-value—and often low-glamour—work that made me proud to have worked at EPA in the 90s and to be engaged again today.

Last year, I was pleased to be a part of the WRAP Action 2.16 team that completed a report on the challenges of achieving the cross-agency collaboration needed to make water reuse projects possible, since it is rare to have a single agency responsible for both water supply and wastewater treatment. Currently, I'm engaged with a team on WRAP Action 2.19 to identify how to make the NPDES permitting process more effective and responsive to innovative projects, like water reuse. We have been fortunate to engage a strong group of state and federal regulators, utility leaders, and NGOs to determine and prioritize measures that will really make a difference. To do this, our team held both a webinar in May to gain useful insights from a wide group of leaders, and an intensive retreat in August with a smaller group to dig deeper and hone our ideas. The beauty and utility of the meeting stemmed from the experience and candor that participants brought to the room, along with their commitment to making progress on next steps. Stay tuned for our report on findings and lessons learned from the innovative permitting convening to be released in early 2024!

Abbreviations are defined at the end of this document. See the Online Platform for more information about each action.

New WRAP Actions

WRAP actions seek to advance water reuse planning and implementation across the country. Actions are organized by strategic theme to help focus efforts and inspire future action. We are pleased to announce that the following new actions are now underway. To get involved or provide input, please email the action leaders using contact information from the Online Platform.

IN CASE YOU MISSED IT

WRAP email updates highlight relevant water reuse activities and events. Monthly updates from this past quarter are available online:

- July and August update
- September update

Integrated Research

Implement the DoD-Funded Water Reuse Consortium for Water Resiliency at Military and Municipal Facilities (Action 7.10, led by the **Water Reuse Consortium** and **USACE**)

The Water Reuse Consortium is a collaboration between USC; the University of Arizona; the University of Nevada, Reno; and USACE-ERDC-CERL, funded by DoD to advance water reuse adoption and provide national leadership on the integration of water reuse into water supply portfolios. The Water Reuse Consortium will accelerate the integration of water reuse into military and municipal water supply portfolios to ensure the security, sustainability, and resilience of our nation's water resources through research, education, communication, and technology transfer. The consortium aims to ensure uninterrupted water supplies, improve the detection and treatment of pathogens and emerging contaminants, and educate a workforce invested in forming partnerships to facilitate technology export that support global water security.

Integrated Research

Identify Opportunities for Industrial Reuse to Supplement Water Supply in Northeast Illinois (Action 7.11, led by **UIC Freshwater Lab**)

Regions of Illinois—particularly in the more populous northeast—face water supply constraints due to aquifer drawdown, geologic barriers to recharge, and withdrawal limits on Lake Michigan. Action leaders will convene stakeholders and conduct research to investigate the regional benefits of and opportunities for selling recycled treated wastewater for industrial and irrigation applications. This action aims to supplement the water supply of communities and lower demands on increasingly strained potable supplies.

We welcome federal, state, tribal, local, and water sector partners to propose actions to advance water reuse. Ideas for new actions may be sent to waterreuse@epa.gov. For information about how to propose, lead, or collaborate on a WRAP action, visit this webpage.

Completed WRAP Action

A WRAP action was completed this quarter, demonstrating productivity and progress under the strategic theme of Outreach and Communications. Completed WRAP action summaries are developed with action leaders and highlight impacts, lessons learned, and potential future activities.

Outreach and Communication

Engagement with Disadvantaged and Rural Communities on Water Reuse

(Action 8.5, led by **EPA** and **Ochotona LLC**)

This action team engaged small and underserved communities by helping them access resources needed to implement water reuse. Key action efforts included listening sessions; reuse-focused trainings; and community specific trainings with relevant technical assistance providers, called train-the-trainer presentations. The team also conducted technical assistance pilots with three self-identified small, underserved communities in California, Idaho, and Kansas. Action leaders detailed the engagements and lessons learned from those experiences in a final report.

This Quarter's WRAP Action Outputs and Activities

Visit the Water Reuse Information Library for a robust set of WRAP outputs and other water reuse resources.

Convenings, Research, and Resources

Attendees of the *Regulating Innovation* workshop.

- **EPA Workshop on Innovation and Permitting**. EPA held the *Regulating Innovation: Building the Nation's Capacity to Permit New Wastewater Management Approaches* workshop at the Johnson Foundation at Wingspread in Racine, Wisconsin. This workshop convened U.S. leaders from state regulatory agencies, wastewater utilities, and NGOs to develop a shared understanding of how NPDES permitting can influence the implementation of innovative wastewater technologies and management practices, including water reuse, that can protect water quality and enhance climate resilience. Workshop attendees identified and prioritized approaches to increase the capacity of permitting authorities, permitted utilities, and other entities to efficiently navigate permitting processes for innovative wastewater management methods. A workshop report is forthcoming. *(Action 2.19: Advance Strategies for Permitting Innovative Wastewater Management Practices and Water Reuse)*

- **EPA Awards Nearly $8 Million for Research Grants to Advance Groundwater Availability and Quality**. Four institutions received funding for research related to the use and risks of EAR to improve groundwater availability and quality. EAR is the practice of using water sources to replenish and supplement existing groundwater supplies for storage, potential water reuse, and to restore streamflow. While EAR implementation and management has been an active topic of research for many years, significant knowledge gaps remain concerning best practices in the design, siting, performance (hydrologic and water quality), longevity, maintenance, and monitoring of EAR in different land use and hydrogeologic settings. Learn more about the four awards here. *(Action 7.8: EAR Performance and Risk in Different Settings Research Grant)*

- **Journal Article: *Mitigating Risks and Maximizing Sustainability of Treated Wastewater Reuse for Irrigation***. This paper highlights the challenges and solutions involved in using treated wastewater for irrigation, identifies agronomic and public health considerations, and presents recommendations on sustainability. The paper is a result of a collaborative effort among an interdisciplinary group from the United States, Israel, and Europe that convened in Israel last October at the treWAG 2022 Conference. *(Action 1.6: Address Barriers to Water Reuse in Agriculture)*

- **Journal Article: *Onsite Nonpotable Water Systems Pathogen Treatment Targets: A Comparison of Infection and Disability-Adjusted Life Years (DALYs) Risk Benchmark Approaches***. In this *Environmental Science & Technology* paper, WRAP leaders calculate pathogen treatment targets for onsite non-potable water systems using both annual infection and DALY benchmarks. Water source types considered include greywater, onsite wastewater, stormwater, and roof runoff. *(Action 3.4: Develop Research and Tools to Support the Implementation of Onsite Non-Potable Water Reuse Systems)*

- **GSA Sought Proposals for Updating Design Standards for Facilities**. Through early October, GSA sought proposals to update the latest version of the P100, which are facilities standards for the Public Buildings Service. These standards establish design standards and contain both performance-based standards and prescriptive requirements for programing, design, and documentation of GSA buildings. The P100 includes goals for water net-zero, and GSA is considering the following language for its update: "Onsite non-potable water systems are permitted provided that they satisfy the risk-based water quality standards established by the National Blue-Ribbon Commission on Onsite Non-potable Water Systems." *(Action 2.18: Incorporate Onsite Reuse Research into Codes and Standards for Premise Plumbing)*

- **Technical Assistance Provider Map**. This map can help connect communities with organizations that are part of EPA's technical assistance program. Technical assistance providers may be able to help with local issues related to centralized and decentralized/onsite wastewater management. Currently, 19 providers are also listed as supporting water reuse projects specifically. *(Action 4.9: Incorporate Water Reuse Technology Resources into the SCOWT Platform)*

WATER REUSE CASE STUDIES

Nine water reuse case studies organized by end-use application are available on this webpage and within the Resource Hub. These case studies were individually authored by the World Bank, GHD, Jacobs, Stantec, New York City Department of Environmental Protection, and EPA. New examples include:

- Native American tribe utilizes treated municipal wastewater for irrigation and wetland restoration (Minnesota)
- Diverting stormwater for beneficial reuse to reduce experienced water stress (California)
- Leveraging a new development project to reduce potable demand and improve sewer capacity (New York)
- Reusing water for landscape irrigation and wetland maintenance to lower dependence on groundwater (Georgia)
- Microsoft reuses water to improve local groundwater supply (Washington)

(Action 11.3: Develop and Highlight Case Studies Relevant to the WICER Framework)

EPA and Israel Sign MOU on Environment and Climate Cooperation. EPA Administrator Michael S. Regan and Israeli Minister of Environmental Protection Idit Silman signed an MOU in September 2023 that advances bilateral cooperation on climate change, water reuse, and other environmental issues of mutual interest. The MOU is effective for five years and builds on existing bilateral arrangements. *(Action 11.1: Facilitate U.S.-Israel Collaboration on Water Reuse)*

Pictured, left to right: EPA Assistant Administrator Jane Nishida, EPA Deputy Administrator Janet McCabe, Israel Minister of Environmental Protection Idit Silman, Israel Ministry of Environmental Protection Director General Moshe Guy Samet.

Infrastructure Funding and Awards

- **EPA's WIFIA Program Announces $7.5 Billion in Available Financing for Water Infrastructure Projects**. This innovative low-interest loan program helps communities invest in drinking water, wastewater, and stormwater infrastructure while saving millions of dollars and creating good-paying local jobs. To date, EPA's WIFIA program has announced $19 billion to help finance 109 projects across the country. The WIFIA program is implementing five key Administration priorities in this 2023 notice of funding, two of which are supportive of reuse projects: *Mitigating the Impacts of Drought,* and, *Supporting One Water Innovation and Resilience.* Find out more on how to apply here. *(Action 6.2B: Support and Communicate WIFIA Funding)*

- **FEMA Announces Nearly $3 Billion in Infrastructure Project Selections to Help Communities Build Resilience, Includes Water Reuse**. On August 28, 2023, FEMA announced project selections through two competitive grant programs to help communities across the nation enhance resilience to climate change and extreme weather events including droughts and flooding. The selections included over $200 million in funding for six projects that will employ aquifer recharge, a nature-based solution to drought that replenishes groundwater supplies. Two of these projects will increase local water supplies through reuse of treated municipal wastewater. (*Action 2.14: Integrate Water Reuse into FEMA Hazard Mitigation Programs)*

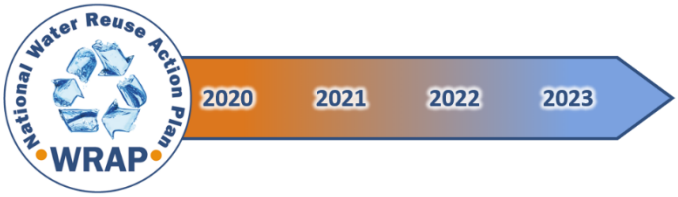
- **EPA Provides $305 Million in WIFIA Loans for Alternative Water Supply Program in Florida**. On July 26, Florida's Polk Regional Water Cooperative announced two WIFIA loans totaling $305 million. Its Alternative Water Supply Program is a regional solution to sustain the local drinking water supply and alleviate the strain on the Upper Floridan Aquifer. The Polk Regional Water Cooperative, composed of 16 local governments, will use its WIFIA loans to design and construct two new water production facilities that will draw brackish water from the Lower Floridian Aquifer. Through these projects, the cooperative will produce 10 million gallons per day of new water supplies, and is expandable to 22.5 million gallons per day in the future. *(Action 6.2B: Support and Communicate WIFIA Funding)*

WATERSMART WATER RECYCLING FUNDING OPPORTUNITIES

The following Reclamation opportunities are open on grants.gov. Note that many application submission deadlines fall between November 2023 and September 2024.

- Title XVI Congressionally Authorized Projects and Title XVI WIIN Act Projects. A total of $239 million is available for the planning, design, and construction of water reclamation and reuse projects.
- Large-Scale Water Recycling Projects. Up to $180 million is available for water recycling projects with total project costs exceeding $500 million.

(Action 6.5: Develop Reclamation's Large-Scale Water Reuse Funding Opportunity)



The WRAP has:

- **66** Action Commitments
- **150** Action Leader & Partner Organizations
- **160+** Developed Resources

Presentation of Global Industrial Water Reuse Champions Awards. The Global Industrial Water Reuse Champions Awards recognize top companies that incorporate best-in-class water recycling and reuse programs to improve water stewardship and achieve their water management goals. Carlsberg Group and Kimberly-Clark Corporation were the first to receive this award for their leadership in reducing water consumption with water reuse. *(Action 8.4: Establish a Water Reuse Champion Award Program)*

Presentation of the Global Industrial Water Reuse Champions Awards at the 2023 Sustainability and Circular Economy Summit. Photo credit: Greg Fogel, WateReuse Association.

Abbreviations Used in This Document			
CERL	Construction Engineering Research Laboratory	NGO	non-governmental organization
DALYs	disability-adjusted life years	NPDES	National Pollutant Discharge Elimination System
DoD	U.S. Department of Defense	Reclamation	U.S. Bureau of Reclamation
EAR	enhanced aquifer recharge	SCOWT	Searchable Clearinghouse of Wastewater Technology
EPA	U.S. Environmental Protection Agency	USACE	U.S. Army Corps of Engineers
ERDC	Engineer Research and Development Center	UIC	University of Illinois, Chicago
FEMA	Federal Emergency Management Agency	USC	University of Southern California
GSA	General Services Administration	WICER	Water in Circular Economy and Resilience
MOU	memorandum of understanding	WIFIA	Water Infrastructure Finance and Innovation Act