

## SUMMARY WHITE PAPER: IMPLEMENTATION & OPERATION OF WATER RECYCLING



### OVERVIEW & CONTEXT

In March 2021, the WaterReuse Association convened the virtual 36th Annual WaterReuse Symposium, which included eight live roundtable discussions with facilitated breakout sessions. Led by WaterReuse members and Champion sponsors, the live roundtables were presented in a format that allowed both knowledge sharing and interaction between participants. First, a group of six to ten experts participated in a web-based video panel discussion viewed by several hundred attendees. When the live roundtable discussion concluded, the attendees moved into one of six pre-selected breakout sessions. Each breakout session focused on one aspect of the broader live roundtable discussion. WaterReuse member volunteers facilitated the breakout dialogs, with one taking notes that were later used to produce this series of summary white papers.

**This paper summarizes the discussions held during the 36th WaterReuse Implementation and Operation of Water Recycling Systems roundtable.**

### LIVE ROUNDTABLE SUMMARY

The expert panel discussed implementation and operation of water recycling systems from the perspectives of employee development and training, public partnerships, pilot project development, funding for continued operations, recruitment, and natural systems.

While panelists agreed that there are important technical requirements for water recycling systems, discussions focused on workforce considerations and public engagement. Drawing on examples from the Pacific Northwest and Texas, panelists discussed the importance of increasing public acceptance of water reuse, particularly potable reuse, to garner support as facilities move through the regulatory process and generate excitement among youth in the community.

Public and regulator support are critical factors in successfully implementing or expanding a water recycling program. As Oregon's Clean Water Services works to expand the water recycling capacity in urban Washington County,

#### SPEAKERS

- CHRISTINA MONTOYA, Communications and Marketing Manager, El Paso Water
- JIM HORNE, Sustainability Program Manager, U.S. EPA (Co-Moderator)
- KEVIN FLIS, Client Solutions Manager, Xylem
- MARK JOCKERS, Chief of Staff, Clean Water Services, Oregon (Co-Moderator)
- THOMAS MONG, Wastewater Operations Supervisor, City of Jerome, Idaho
- TRESSA NICHOLAS, Technical Support Coordinator, Idaho Department of Environmental Quality

the utility recognizes the importance of public acceptance. To support the expansion, Clean Water Services partnered with local brewers to launch the Pure Water Brew Challenge, allowing brewers to compete in making beer using purified recycled water.

Following the success of the Pure Water Brew Challenge, Clean Water Services partnered with Xylem to create the Pure Water Wagon, a mobile water recycling facility that educates the public on treatment technology and processes. Panelists discussed the importance of building trust with the public and with regulators, citing projects like the Pure Water Wagon that allow for operator training while demonstrating the safety of water recycling to stakeholder groups. This trust-building, coupled with the opportunity to train operators, allows for successful project actualization.

Beyond project implementation, project operations can be quite challenging for water recycling facilities, which require deep understanding and experience working with highly technical systems. Ensuring operators are sufficiently trained to work in water recycling is key to successfully managing a facility. Panelists discussed means of addressing workforce challenges when there is a limited pool of pre-trained operators. Drawing from the City of Jerome, ID example, utilities can better meet workforce needs by providing employees with incentives and support to progress through various

certification levels. Growth opportunities not only lead to more satisfied employees, but also allow for internal staff to fill high-level, difficult to fill open positions.

Training support can come both from the utility itself and from the state regulating body. Idaho Department of Environmental Quality offers various levels of classes, online training, and facility tours. These training opportunities protect public health and the environment and allow for continued successful operations.

Panelists discussed branding water reuse as a key water management strategy and incorporating it into integrated planning as a means to revolutionize the water industry and water recycling. Discussing water reuse in the context of the One Water concept can break down institutional barriers and allow for more integrated planning in water resource management. Using El Paso Water's upcoming Advanced Water Purification Facility as an example, panelists discussed ways to design water recycling facilities to help the public understand the integrated nature of water resources. Water recycling facilities can also be interactive museums that incorporate public viewing spaces. Finally, panelists emphasized the importance of promoting the great career opportunities within the water industry and water reuse. Excitement around water reuse should begin at a young age and continue as young adults are carving out their career path.



## BREAKOUT DISCUSSIONS TAKEAWAYS

---

**Following the themes of the roundtable, the six breakout rooms discussed employee and operator development and training, public partnerships and acceptance, pilot project development, funding and pricing for continued operation, recruitment of the right team members from traditional and non-traditional communities, and differences when implementing and operating natural systems. Discussions included 97 attendees with anywhere from 6 to 28 attendees in each room.**



### **BREAKOUT ROOM 1** **EMPLOYEE & OPERATOR** **DEVELOPMENT & TRAINING**

Building upon Thomas Mong's discussion on the City of Jerome's approach to operator development, this breakout discussed some common challenges associated with maintaining a trained workforce, while adapting to technology and regulatory changes. The group identified the

expansion of training opportunities and national support as approaches to address challenges in workforce development. One such successful support mechanism is the Idaho Department of Environmental Quality's online training classes. To strengthen successes like these, participants called for conferences that allow partnership building, particularly with academia, and a rebranding campaign that centers on the value of operators.



## BREAKOUT ROOM 2 PUBLIC PARTNERSHIPS & ACCEPTANCE

To increase public acceptance of water recycling, participants discussed the need to prioritize outreach and communicate about risk in ways that create transparency without causing undue concern. Participants highlighted the importance of developing non-traditional partnerships, including project opponents who have become supporters, students, and community businesses.

Public tours of water recycling treatment plants and outreach campaigns that promote beer brewed with purified recycled are examples of platforms to build such partnerships. Participants highlighted how research, such as [Talking About Water: Vocabulary and Images that Support Informed Decisions about Water Recycling and Desalination](#) authored by Linda Macpherson and Dr. Paul Slovic, supports successful public outreach efforts.



## BREAKOUT ROOM 3 PILOT PROJECT DEVELOPMENT

This breakout discussed successful pilot project development that supports project implementation. In particular, participants noted that water industry buy-in continues to be an area where assistance is needed. Explicit identification of pilot project goals that meet jurisdictional needs supports both successful pilot project development

and successful project implementation. Participants further explored the opening panel's discussion on public outreach, noting the importance of pilot projects as demonstration facilities for the public, rather than solely as a testing opportunity for technology. Partnerships with local universities and trade schools interested in research and pilot project involvement can further catapult the outreach success of a project.



## BREAKOUT ROOM 4 FUNDING & PRICING FOR CONTINUED OPERATION

Participants focused their discussion on operating expenses, noting interest in funding opportunities to support costs beyond capital expenses. Funding to support training for operators to operate new equipment or meet changing

regulations, for example, can assist utilities in maintaining successful operations. Participants noted that public outreach and cost-sharing partnerships successfully support continued operation. When the public understands and supports the project, utilities are more easily able to increase rates to cover the cost of operations. Cost-sharing partnerships allow utilities to minimize such increases.

**Idaho Department of  
Environmental Quality provides  
training opportunities for  
operators that include hands-on  
visits to treatment facilities.**





### BREAKOUT ROOM 5

#### RECRUITMENT OF THE RIGHT TEAM MEMBERS FROM TRADITIONAL & NON-TRADITIONAL COMMUNITIES

This breakout explored approaches to successfully recruiting and maintaining team members, particularly operators. Participants expressed the need to engage youth on water reuse, particularly young professionals making career

decisions. In addition, the group discussed the need to be open to diverse applicants and address any implicit bias in who is fit to be an operator. Sharing past successes, participants spoke to the importance of considering operators' needs, particularly their professional development needs. To better advertise opportunities within the sector, the group discussed the role of partnerships with influencers like sports teams and the public health sector.



### BREAKOUT ROOM 6

#### DIFFERENCES WHEN IMPLEMENTING & OPERATING NATURAL SYSTEMS

Implementing and operating a natural system, particularly a natural system that supplements an engineered system, requires unique considerations. This breakout group discussed the learning curve associated with natural system design and need for assistance in

balancing wetland needs with customer needs. Successful projects include those with high visibility that provide opportunities for outreach, such as Embassy projects that utilize constructed wetlands. Such natural systems can provide numerous co-benefits to a project design but can require specific education for operators that differs from more classic treatment education.

**Pure Water Wagon produces 3-5 gallons of pure water per minute.**

**Clean Water Services used this wagon as a public outreach tool, increasing transparency in the water recycling process.**



## CLOSING SUMMARY OF THE DISCUSSION

Co-moderators Jim Horne and Mark Jockers highlighted the importance of dedicating time to discuss and innovate around implementation and operation of water recycling facilities. Noting the importance of broadening the dialogue, the panelists summarized the importance of ensuring positive public perception and highlighting the great employment opportunities within the water reuse space.

***The WaterReuse Association thanks El Paso Water and Clean Water Services for sponsoring this live roundtable at the 36th Annual WaterReuse Symposium.***