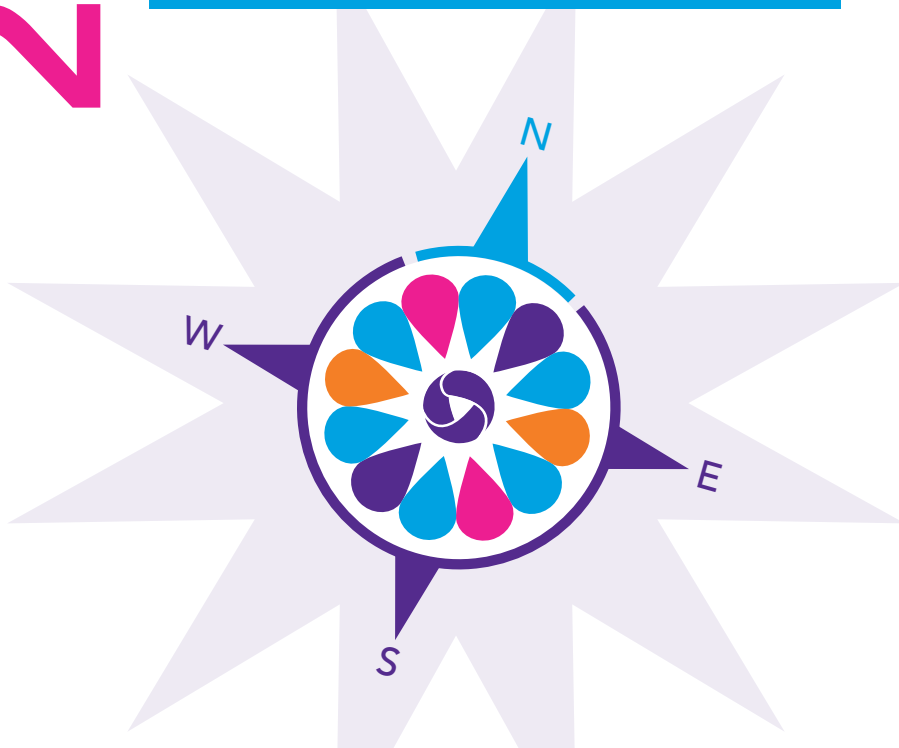




2022 WaterReuse
SYMPOSIUM
SHAPING OUR PAST &
CHARTING OUR FUTURE



IN COLLABORATION WITH THE WATER RESEARCH FOUNDATION

Welcome to the 37th Annual WateReuse Symposium

Dear Symposium Attendee:

The WateReuse Association and The Water Research Foundation are pleased to welcome you to the 2022 WateReuse Symposium! This year's theme, *Water Reuse: Shaping Our Past & Charting Our Future*, is a call to action for the water reuse community to apply available research and innovation to address the urgency of our changing Earth, including floods, fires, droughts, and pandemics.

Our Symposium kicks off with a keynote presentation from The Honorable Tanya Trujillo, Assistant Secretary for Water and Science in the United States Department of the Interior. Assistant Secretary Trujillo oversees the U.S. Geological Survey and Bureau of Reclamation and leads the Interior Department's efforts to address the country's worsening drought conditions.

San Antonio is a long-time leader in water reuse, and we invite you to learn from this city's accomplishments during locally focused tours, events, and plenary sessions. Beyond our strong foundation in Texas, this Symposium also takes an expanded look at water reuse in unexpected geographical locations. Join us for plenary sessions about different regional drivers and strategies, building-scale water reuse innovations nationwide, and more.

This year, our program features nearly 70 hours of technical content and provides the opportunity for

over 55 professional development hours. WateReuse and The Water Research Foundation continue to combine our strengths and bring you a comprehensive program that offers both practical approaches and theoretical considerations for the future of water recycling. You'll see an icon throughout the program that signifies which technical sessions align with Water Research Foundation projects, as well as which sessions align with National Water Reuse Action Plan efforts. You'll also see technical sessions demarcated by which project lifecycle phase they're most relevant to: Conceptual, Planning, Design & Construction, or Implementation & Operation.

We are overjoyed to see many of you joining us at this year's Symposium. For those participating in-person, please review our COVID-19 protocols at watereuse.org/COVID. We request that all attendees wear a mask while indoors at the Symposium. We are also excited to offer a robust on-demand virtual Symposium, available from March 21 through April 30, 2022.

Thank you again for your participation. Please do not hesitate to contact Symposium staff if you need any assistance throughout your Symposium experience. We look forward to seeing you again next March—in Atlanta, Georgia!



PATRICIA SINICROPI
Executive Director
WateReuse Association



PETER GREVATT
Chief Executive Officer
The Water Research
Foundation

EXHIBITION

The 37th Annual WateReuse Symposium's exhibit hall, located in Salon EF, will feature a wide variety of organizations and companies from all corners of the water reuse industry. Events such as the Welcome Reception and networking breaks will take place amidst this impressive display. So grab a cup of coffee or a snack to catch up with an old colleague or meet a new project partner.

EXHIBIT HALL HOURS (SALON EF)

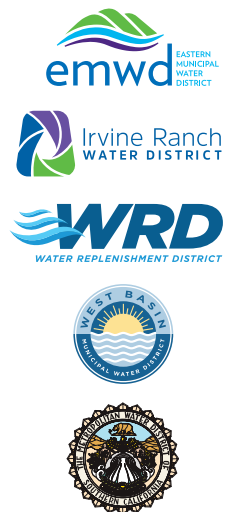
SUNDAY, MARCH 6	3:00 pm – 7:00 pm
MONDAY, MARCH 7	8:00 am – 4:00 pm
TUESDAY, MARCH 8	8:00 am – 4:00 pm

STAY CONNECTED

SYMPOSIUM WI-FI

Stay connected at the WateReuse Symposium thanks to our sponsors: Eastern Municipal Water District, Irvine Ranch Water District, Water Replenishment District, West Basin Water District, and the Metropolitan Water District of Southern California.

 **Symposium Network: WateReuse_Symposium**
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SOCIAL MEDIA

Follow WateReuse on social media, and share your Symposium content:
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RESOURCES TO SUPPORT YOUR EXPERIENCE

PROFESSIONAL DEVELOPMENT

The 37th Annual WaterReuse Symposium is pleased to offer Professional Development Hours (PDHs) for all states. It is the attendee's responsibility to follow up with state accreditation agencies to see whether you qualify.

How Do I Earn Educational Credits at the Symposium?

The 37th Annual WaterReuse Symposium PDH/CEU Request form is available at the registration desk. Please complete the form and return the form to the registration desk before the end of the Symposium.

When Will I Receive Credits for the Symposium?

Certificates will be emailed to participants within 3-4 weeks after the Symposium. It is the attendee's responsibility to submit the certificates to state accreditation agencies to request credit.

General Information

Terminology and education credit requirements and restrictions vary widely. All participants are responsible for checking with their license/certification authority to ensure that the WaterReuse technical sessions meet specific requirements.

POWERPOINT PRESENTATIONS

A link will be emailed to all Symposium attendees at the conclusion of the conference for access to the Power-Point presentations.



TECHNICAL TOURS & NETWORKING EVENTS

TOUR OF STEVE CLOUSE WATER RECYCLING CENTER

Sunday, March 6 | 9:30 am - 12:30 pm



(Ticket Required, Departs Outside Main Entrance)

Tour the largest wastewater treatment facility in the greater San Antonio area and learn about its environmental "trifecta:" reusing all three sewage treatment by-products: water, biosolids, and methane gas. The plant is the largest direct recycled water system in the nation with approximately 130 miles of pipeline delivering high-quality recycled water for non-potable uses.

Wear closed-toe shoes, comfortable clothing, and bring your own set of safety glasses.

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WELCOME RECEPTION: WELCOME TO TEXAS

Sunday, March 6 | 5:30 pm - 7:00 pm | Salon EF



Join your colleagues in the Exhibit Hall for a Texas-themed welcome reception with hors d'oeuvres, cocktails, and conversation. This meet-and-greet event is a great opportunity to make connections, begin the exchange of ideas, and gear-up to begin your 37th Annual WaterReuse Symposium experience. Participate in the Texas-themed scavenger hunt put on by WaterReuse Texas!

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Gulf Coast Authority
Protecting the Waters of Texas



YOUNG PROFESSIONALS CHARTING THE FUTURE OF WATER REUSE

Monday, March 7 | 5:30 pm - 6:30 pm | Room 1-2

Meet other emerging professionals in the water reuse industry, share experiences, and learn from your peers.

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WRF RESEARCH CONNECTIONS

Monday, March 7 | 5:30 pm - 6:30 pm | Room 3-4

Come learn more about the different research programs at The Water Research Foundation (WRF). Staff will be on hand to answer questions about research programs and facilitate connections between utilities and researchers.

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WATEREUSE AWARDS FOR EXCELLENCE CEREMONY

Tuesday, March 8 | 7:30 am - 9:00 am | Salon GHI

The WaterReuse Association's Awards for Excellence recognize utilities, businesses, and individuals that are leading the way in advancing water recycling across the nation. This event includes breakfast and videos highlighting the award winners.

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AN EVENING AT KNIBBE RANCH

Tuesday, March 8 | 5:30 pm - 9:30 pm



Experience the real Texas with your WaterReuse colleagues! Founded in 1852, this scenic ranch has been in the Knibbe Family for over a century. Join us for fresh air, fun, and networking!

Buses depart from main entrance.

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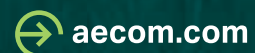
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SYMPOSIUM PROGRAM HIGHLIGHTS

WATER REUSE 101 – AN INTRODUCTION FROM THE EXPERTS

Sunday, March 6 | 1:30 pm - 5:00 pm | Salon AB
 Tuesday, March 8 | 1:45pm – 5:15pm | Conference Room 1-2 (Repeat Session)

If you're unsure of how to start a water reuse program or just need a good refresher, the Water Reuse Boot Camp is the perfect way to begin the Symposium. And for the first time an additional session of Water Reuse 101 will be offered on Tuesday afternoon!



OPENING GENERAL SESSION

Monday, March 7 | 8:00 am – 10:00 am | Salon GHI

WELCOME

Craig W. Lichty P.E.
 Vice President, Client Director, Black & Veatch; WaterReuse Association President



KEYNOTE PRESENTATION

The Honorable Tanya Trujillo
 Assistant Secretary for Water and Science, United States Department of the Interior
 Assistant Secretary Trujillo oversees the U.S. Geological Survey and Bureau of Reclamation and leads the Interior Department's efforts to address the country's worsening drought conditions. She is a water lawyer with more than 20 years of experience working on complex natural resources management issues.



PANEL DISCUSSION

Water Reuse and Integrated Planning – The San Antonio Story: Exploring the Drivers, Benefits, and Challenges of a One Water Strategy

A panel discussion of the unique nature of San Antonio's management of its water resources whereby multiple government and private sector entities work together.

Moderator:

Craig W. Lichty P.E., Vice President, Client Director, Black & Veatch; WaterReuse Association President

Panelists:

- Melissa Bryant, Director of Technical Services, San Antonio River Authority
- Erika Crespo, Assistant Deputy Director of Water Quality, Texas Commission on Environmental Quality
- Gregg Eckhardt, Senior Analyst, San Antonio Water System
- Nefi Garza, Assistant Director of Public Works, City of San Antonio



WATEREUSE ASSOCIATION ANNUAL BUSINESS MEETING & LUNCHEON PLENARY

Monday, March 7 | 12:00 pm – 1:30 pm | Salon GHI

WELCOME

Craig W. Lichty P.E.

Vice President, Client Director, Black & Veatch; WaterReuse Association President

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STATE OF THE ASSOCIATION

Patricia Sinicropi

Executive Director, WaterReuse Association

PANEL DISCUSSION

Different Drivers, Different Strategies: Water Reuse in New Places

A panel discussion of the emerging role of water recycling in new geographies and new industrial sectors.

Moderator:

Karen Pallansch, Chief Executive Officer, Alexandria Renew Enterprises; Treasurer, WaterReuse Board of Directors

Panelists:

- Jeff Glass, Director of Public Works, City of Westminster, Maryland
- Greg Goodwin, Applied Research Consultant, Bluefield Research
- David Niese, Technical Services Officer, ReWa – Renewable Water Resources, South Carolina
- Brian Perkovich, Executive Director, Metropolitan Water Reclamation District of Greater Chicago
- Rusty Smith, Director of the Texas Produced Water Consortium

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BREAKFAST PLENARY SESSION & ANNUAL WATEREUSE AWARDS FOR EXCELLENCE

Tuesday, March 8 | 7:30 am – 9:00 am | Salon GHI

WATEREUSE AWARDS FOR EXCELLENCE

B Narayanan

President and CEO, Carollo Engineers; WaterReuse Board of Directors; WaterReuse Association Awards for Excellence Committee Chair

Craig W. Lichty P.E.

Vice President, Client Director, Black & Veatch; WaterReuse Association President

PANEL DISCUSSION

Water Reuse Leaders Panel

A panel discussion of the future economy of water recycling from the perspective of private sector leaders.

Moderator:

Craig W. Lichty P.E., Vice President, Client Director, Black & Veatch; WaterReuse Association President

Panelists:

- Steve Johnson, Senior Vice President, Director of Strategy and Growth, AECOM Global Water
- B Narayanan, President and CEO, Carollo Engineers
- Heather Polinsky, PMP, F. SAME, Global President, Resilience, Arcadis
- Dave Ross, Partner, Troutman Pepper
- Cindy Wallis-Lage, Executive Director, Sustainability and Resilience, Black & Veatch

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ecosystems. It all comes at a critical time in
our industry because while many see uncertainty,
we see opportunity. It's all in how you look at it.

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PLENARY LUNCHEON PANEL

Tuesday, March 8 | 12:15 pm – 1:30 pm | Salon GHI

Master of Ceremonies:

Juan Gomez, Director of Engineering, San Antonio Water System; WateReuse Board of Directors; Symposium Planning Committee Co-Chair

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PANEL DISCUSSION

Onsite Water Reuse Systems Showcase: Building-Scale Innovation that Benefits the Entire Community

A discussion of the emerging role of onsite systems as a tool in urban planning.

Moderator:

Greta Zornes, Water Reuse Practice Leader, CDM Smith; Vice-Chair, WateReuse Association Onsite and Distributed Systems Committee

Panelists:

- Wendy Broley, P.E., Executive Director, California Urban Water Agencies (CUWA), Vice President, Director of Technical Practices, Brown and Caldwell
- Kevin Critendon, Assistant Director, Environmental, Planning and Development, Austin Water
- Zach F. Gallagher, PE, LEED AP, President & COO, Natural Systems Utilities
- Bob Salvatelli, Director, Water Origination, NextEra Distributed Water (formerly Sustainable Water)
- Drew Wenzel, Real Estate Development Executive, Google

BREAKFAST PLENARY SESSION

Wednesday, March 9 | 8:00 am – 8:45 am | Salon GHI

WELCOME

Bart Weiss

Chief Officer, Innovation and Resiliency, Hillsborough County Public Utilities (Florida); Vice President, WateReuse Board of Directors

PANEL DISCUSSION

The Federal Government's Role in Promoting Reuse

A panel of federal agency representatives discussing federal funding, research, priorities, and opportunities to improve water resilience.

Panelists:

- Sharon Nappier, PhD, MSPH, National Program Leader for Water Reuse, US EPA – Office of Water
- Yuliana Porras-Mendoza, Advanced Water Treatment Research Coordinator, Bureau of Reclamation
- Martin Page, Operational Water Research Team Leader, Department of Defense

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WRAP ACTION REPORT OUT

Wednesday, March 9 | 8:50 am – 9:00 am | Salon GHI

REPORT OUT: WRAP ACTION 2.2, REGULATOR STATE SUMMIT PLANNING

Shellie Chard

Water Quality Division Director, Oklahoma Department of Environmental Quality

CLOSING SESSION

Wednesday, March 9 | 9:05 am – 11:45 am | Salon GHI

REUSE IN THE ONE WATER RESEARCH PORTFOLIO

Peter Grevatt

Chief Executive Officer, The Water Research Foundation

Presented by: The Water Research Foundation

PANEL DISCUSSION

Running Towards the Hard Topics: Capturing and Communicating the Resiliency and Equity Value of Water Reuse

A discussion of the challenges of changing climate and ensuring equity and resilience.

Facilitator:

H.G. Chissell, Founder and Chief Executive Officer, Advanced Energy Group

Panelists:

- Steven Clouse, Senior Vice President & Chief Operating Officer, San Antonio Water System
- Paul Kerr, Supply Chain Facilities Engineer, Global Supplier Management, Intel Corp
- Sharon Nappier, PhD, MSPH, National Program Leader for Water Reuse, US EPA – Office of Water
- Deven Upadhyay, Chief Operating Officer and Assistant General Manager, Metropolitan Water District of Southern California

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THANK YOU TO OUR SPONSORS

The WaterReuse Symposium would not be possible without the generous support of our sponsors.

WINNER'S CIRCLE

AECOM

Vijay Sundaram, National Water Reuse Technical Practice Leader, Water Business Line
vijay.sundaram@aecom.com

Arcadis

Ufuk Erdal, Water Reuse Practice Director
ufuk.erdal@arcadis.com

Black & Veatch

Zeynep Erdal, Integrated One Water Solutions Leader, Water Business
erdalz@bv.com

Carollo

Eva Steinle-Darling, Reuse Innovation Manager
esd@carollo.com

CDM Smith

Greta Zornes, Water Reuse Practice Leader
zornesgl@cdmsmith.com



CHAMPION

Brown and Caldwell

Melanie Holmer, Water Reuse Leader
mholmer@brwncald.com

Eastern Municipal Water District

Joe Mouawad, General Manager
mouawadj@emwd.org

El Paso Water

Christina Montoya, Communications & Marketing Manager
cmontoya@epwater.org

HDR

Chance Lauderdale, Drinking Water Market Sector Director
chance.lauderdale@hdrinc.com



Stantec

Zakir Hirani, Vice President, Water Reuse Practice Lead
zakir.hirani@stantec.com

Suez

Steve Katz, Market Development Manager
stephen.katz@suez.com

Tetra Tech

Tracy Lewis, Global Practice Leader Wastewater
tracy.lewis@tetratech.com

Xylem

Michele Braas, Business Development Manager – Water Utilities
michele.braas@xylem.com



VISIONARIES

Irvine Ranch Water District

Mark Tettermer, Recycled Water Development Manager
tettermer@irwd.com

Jacobs

Larry Schimmoller, Global Technology Leader for Water Reuse
larry.schimmoller@jacobs.com

McCarthy Building Companies

Curtis Horner, Vice President Water
chorner@McCarthy.com

Metropolitan Water District of Southern California

Raymond Jay, Senior Resource Specialist
rjay@mwdh2o.com

Plummer

Ellen McDonald, Principal, Water Planning Practice Leader
emcdonald@plummer.com

Sundt

Bob Mitchell, Industrial Group
rlmitchell@sundt.com

Water Replenishment District

Jenn Swart, Senior Public Affairs Representative
jswart@wrdd.org



INNOVATORS

Atkins

Raj Chavan, Vice President, Sr Project Director of Water for Technical Solutions
raj.chavan@atkinsglobal.com

Digital Realty

Walter Leclerc, Director, Environmental Occupational Health & Safety
wleclerc@digitalrealty.com

Freese and Nichols

David Sloan, Sr Water Treatment Technologist
dws@freese.com

Garver

Heather Wootton, Water Marketing Team Leader
hawootton@garverusa.com

Gulf Coast Authority

Jonathan Sandhu, Technical Director
jsandhu@gcatx.org

Hazen & Sawyer

Troy Walker, Water Reuse Practice Leader
twalker@hazenandsawyer.com

Natural Systems Utilities Water

Zach Gallagher, President & COO
zgallagher@nsuwater.com

National Association of Clean Water Agencies

Adam Krantz, Chief Executive Officer
akrantz@nacwa.org

National Water Research Institute

Kevin Hardy, Executive Director
khardy@nwri-usa.org

NextEra Distributed Water

Bob Salvatelli, Director, Water Origination
bob.salvatelli@nexteraenergy.com

San Antonio Water Systems

Juan Gomez, Director, Plants & Major Projects
juan.gomez@saws.org

West Basin Water District

Patrick Sheilds, General Manager
patrick@westbasin.org

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Zivaro

Sean McCroskey, SLED Director
smccroskey@zivaro.com



ADVOCATES

Clean Water Services

Diane Taniguchi-Dennis, Chief Executive Officer
dennisd@cleanwaterservices.org

El Dorado Irrigation District

Elizabeth Dawson, Engineering Manager
edawson@eid.org

Epic Clean Tec

Aaron Tartakovsky, Co-Founder and CEO
aaron@epiccleantec.com

Garney Construction

Mark Kelly, Director of Business Development
mkelly@garney.com

Kando

Anne-il Steutel, US Business Development & Marketing Strategist
anne-li@kando.eco

Kennedy Jenks

Nicole Conner, Principal
nicoleconner@kennedyjenks.com

Kiewit

Bjorn Adolfsson, Manager - Markets & Strategy
water@kiewit.com

Trussell

Shane Trussell, President
shanet@trusselltech.com



HOST

Trinity River Authority of Texas

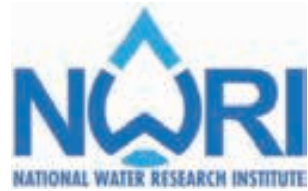
Kevin Ward, General Manager
wardk@trinityra.org



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SUNDAY, MARCH 6

9:00 pm - 1:00 pm	TOUR OF STEVE CLOUSE WATER RECYCLING CENTER SPONSOR: ARCADIS					
	INNOVATION IN REUSE SALON JK	ACHIEVING TREATMENT REMOVAL SALON LM Moderator: Martin Rumbaugh, AECOM	RETHINKING WATER'S FOOTPRINT ROOM 1-2 Moderator: Amy Middleton, Plummer	ADVANCING COMMUNITY REUSE ROOM 3-4 Moderator: Stephanie Basch, Black & Veatch		
1:00 pm - 3:00 pm	Multi-point Ozone Dissolution for Bromate Control & Trace Contaminant Oxidation Robert Pearce, Virginia Tech 	A Scientific Evaluation of Pathogen Removal Credits in MAR Systems Tanja Rauch-Williams, Carollo Engineers 	Aggregated Rain Grid Networks: PropTech Resilience & Adaptation Through Reuse Umi Kobayashi, RainGrid Inc.; Kevin Mercer, RainGrid Inc. 	Using Machine Learning to Optimize RO Chemical Cleaning at an AWTF Mark Donovan, GHD 	WORKSHOP DEVELOPING A NATIONWIDE WATER REUSE RESEARCH ROADMAP SALON CD Presented by The Water Research Foundation 	WORKSHOP WATER REUSE 101 – BOOTCAMP SALON AB Sponsored by Carollo Moderator: Ellen McDonald, Plummer What is Reuse? Eva Steinle-Darling, Carollo Determining Need Juan Gomez, San Antonio Water Systems Paying for Reuse Collins Balcombe, BOR Reuse Regulations Ellen McDonald, Plummer Case Studies Tracy Clinton, Carollo Building Public Support Christina Montoya, El Paso Water
	On-Site Residential Graywater Reuse in San Francisco Apartment Building Jeff Danner, Innovatreat 	Enhancing 1,4-Dioxane Removal with Co-Metabolic Biofiltration for Potable Reuse Hannah Stohr, Hampton Roads Sanitation District 	Gray Water Treatment at a Residential Property in Macon, Georgia Dalton Everhardt, Mercer University; Jonas Lang, Mercer University; Philip McCreanor, Mercer University; Nicholas Sun, Mercer University 	Three Years of Brine Recovery RO Pilot Testing with EMWD Lee Portillo, Black & Veatch 	Vijay Sundaram, AECOM; Eva Steinle-Darling, Carollo; Troy Walker, Hazen; Andrew Salvesson, Carollo; Chance Lauderdale, HDR; Christina Alito, HDR; Denise Funk, Brown & Caldwell; Greta Zornes, CDM; Ellen McDonald, Plummer; Chris Hill, AECOM; Gary Revoir, Tetra Tech; Zeynep Erdal, Black & Veatch; Greg Wetterau, CDM (continued on next page)	
	Data Analytics Practices for Efficient Water and Wastewater Management Guy Meiri, IOSight		Onsite Water Reuse Field Testing at an Informal Settlement Community Hsiang-Yang Shyu, University of South Florida 	Alternative Process Trains for Addressing Chemical Spikes in Potable Reuse Greg Wetterau, CDM Smith 		
3:00 pm - 3:30 pm	NETWORKING BREAK SPONSOR: DIGITAL REALTY					

SUNDAY, MARCH 6

	ACHIEVING TREATMENT REMOVAL SALON LM Moderator: Bohdan Bodniewicz, AECOM	RETHINKING WATER'S FOOTPRINT ROOM 1-2 Moderator: Nicole Conner, Kennedy Jenks	ADVANCING COMMUNITY REUSE ROOM 3-4 Moderator: Leanne Hammond, HDR		
3:30 pm - 5:00 pm	WWTP Effluent Reuse: Multibarrier Ozonation & Ceramic Membrane Filtration Martin Spruijt, PWN Technologies 	Innovative Approaches to Engaging Next-Gen Water Professionals Kristan VandenHeuvel, The Water Tower 	Sample Compositing for New Insights into the Fate of CECs in Potable Reuse Michael Watts, Garver 	WORKSHOP DEVELOPING A NATIONWIDE WATER REUSE RESEARCH ROADMAP SALON CD Presented by The Water Research Foundation  (Continued from previous page) Zeynep Erdal, Black & Veatch; Greg Wetterau, CDM; Rob McCandless, Brown & Caldwell; Tracy Lewis, Tetra Tech; JoAnne Jackson, Black & Veatch; Stephen Katz, Suez; Ashley Evans, Arcadis; Jill Vandegrift, CDM; Samir Mathur, CDM	WORKSHOP WATER REUSE 101 – BOOTCAMP SALON AB Sponsored by Carollo Moderator: Ellen McDonald, Plummer What is Reuse? Eva Steinle-Darling, Carollo Determining Need Juan Gomez, San Antonio Water Systems Paying for Reuse Collins Balcombe, BOR Reuse Regulations Ellen McDonald, Plummer Case Studies Tracy Clinton, Carollo Building Public Support Christina Montoya, El Paso Water
More is Better: Potable Reuse Pilot Study to Maximize Water Production with FRRO Ronit Erlitzki, Chart Industries; Megan Plumlee, Orange County Water District 	Five Steps to Successful Community Support John Mura, East Valley Water District; William Ringland, East Valley Water District 	The Perils of Using Chloramines for Pretreatment in Water Reuse RO David Brown, American Water Chemicals 			
Microbial Community Structure and Dynamics in Ozone-BAC System for Potable Reuse Sunayna Dasgupta, American Water Works Service Company Inc; Dr. Zia Bukhari, American Water Works Service Company Inc. 	Forest Glen Utility Texas Reuse Story Samantha Marin, Forest Glen Utility Company 				
5:30 pm - 7:00 pm	WELCOME RECEPTION: WELCOME TO TEXAS SPONSORS: EL PASO WATER, FREESE AND NICHOLS, GULF COAST AUTHORITY, PLUMMER, TRINITY RIVER AUTHORITY OF TEXAS, & WATEREUSE TEXAS				

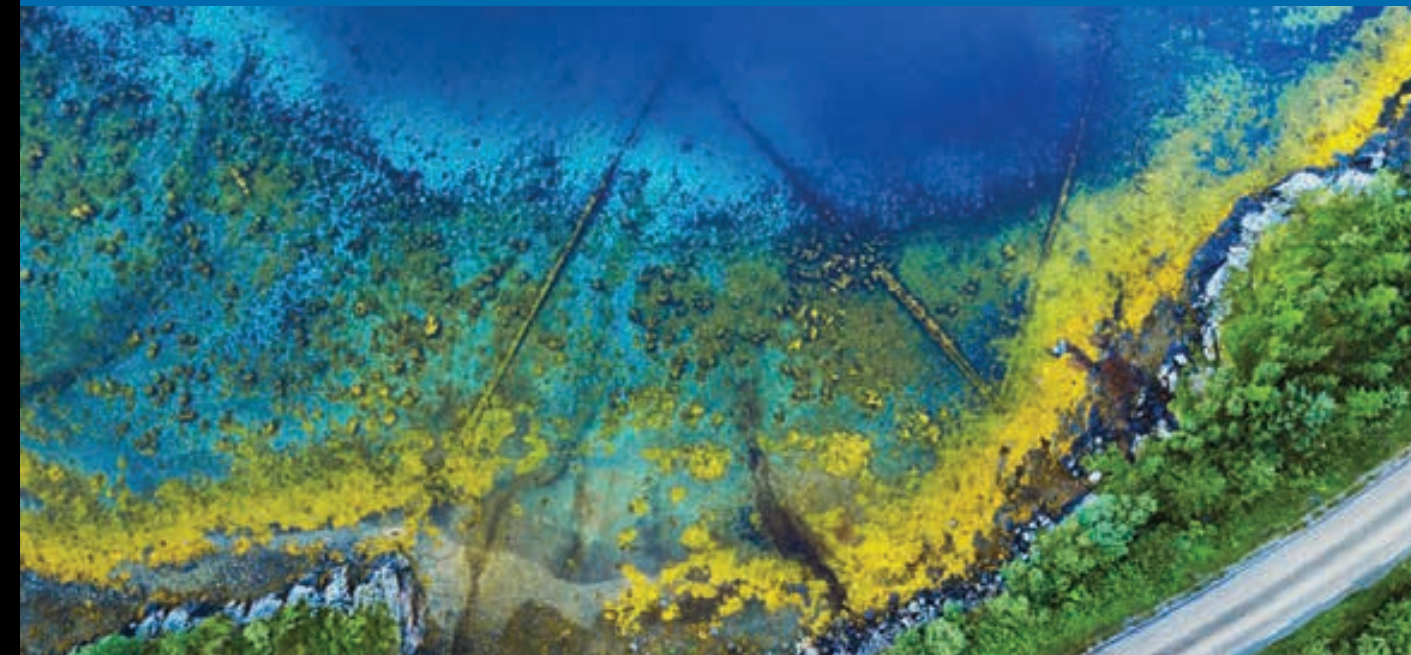
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MONDAY, MARCH 7

















8:00 am - 10:00 am	OPENING GENERAL SESSION - SALON IG SPONSORED BY AECOM Light Breakfast and Welcome Craig W. Lichty P.E., Vice President, Client Director, Black & Veatch, WaterReuse President Keynote Presentation The Honorable Tanya Trujillo, Assistant Secretary for Water and Science, United States Department of the Interior Panel Discussion Water Reuse & Integrated Planning – The San Antonio Story: Exploring the Drivers, Benefits, and Challenges of a One Water Strategy Moderator: Craig W. Lichty P.E., Vice President, Client Director, Black & Veatch, WaterReuse President Melissa Bryant, Director of Technical Services, San Antonio River Authority Erika Crespo, Assistant Deputy Director of Water Quality, Texas Commission on Environmental Quality Gregg Eckhardt, Senior Analyst, San Antonio Water System Nefi Garza, Assistant Director of Public Works, City of San Antonio					
10:00 am - 10:30 am	NETWORKING BREAK SPONSOR: JACOBS					
	RETHINKING WATER'S FOOTPRINT SALON AB Moderator: Emily O'Morrow, Brown & Caldwell	FROM POLICY TO PRACTICE: WATER REUSE GUIDANCE & MORE SALON CD Moderator: Alex Franchi, AECOM	INNOVATION IN POTABLE REUSE SALON JK Moderator: Dave Ebersold, CDM	ADVANCING COMMUNITY REUSE SALON LM Moderator: Jim Pembroke, HDR	BUILDING PARTNERSHIPS THROUGH COMMUNITY ENGAGEMENT, EDUCATION, & FINANCING ROOM 1-2 Moderator: Michele Braa, Xylem	TACKLING CECS ROOM 3-4 Moderator: Robert Jenkins, Arcadis
10:30 am - 12:00 pm	Tackling Water Conservation, Quality & Policy Evolution with District Reuse Pinar Balci, NYCDEP; Bonnie Campbell, Two Trees; Alan Cohn, NYCDEP; Zach Gallagher, Natural Systems Utilities; Rick Petrosino, Natural Systems Utilities 	T-minus 10 & Counting: Navigating Florida's Elimination of Surface Discharges Moderator: Robert Beltran, Dewberry David Ammerman, Altamonte Springs; Laura Donaldson, Manson Bolves; Donaldson Varn; Nory Hancock, Pinellas County; Lynn Spivey, Plant City; Bart Weiss, Hillsborough County; Wayne Young, JEA (invited); Tamara Richardson, Polk County (invited); 	The Future of Potable Reuse Using KPIs Mahmudul Hasan, George Washington University; Stephen Katz, Suez; Justin Mattingly, EPA; Jeff Mosher, Santa Ana Watershed Project Authority; Kristin O'Neill, Stantec; Michael Watts, Garver 	Innovation in Florida Water Reuse: Palm Beach County's Green Cay Project Dave MacNevin, CDM Smith 	Bringing Communication Pros Together to Further Water Reuse Ben Glickstein, WaterReuse; Mark Millan, Data Instincts; Melanie Mow Schumacher, Soquel Creek Water District; Patricia Tennyson, Katz & Associates 	Role of WRFs in Managing PFAS Circulation through the Water Cycle Nona Jesmani and Vijay Sundaram, AECOM 
				Benefits of a Large-Scale Recycled Water Project Bruce Chalmers, Metropolitan Water District of Southern California 	Equitable Recycled Water Expansion – Through Principles, Policies & Fees Dawn Taffler, Kennedy Jenks; John Wuerth, Eastern Municipal Water District 	The Fate of CECS in Pacific Northwest Reclaimed Water Infiltration Jeff Hansen, HDR 

MONDAY, MARCH 7












				<p>Anne Arundel County, MD – Our wAAter Program: Advanced Water Treatment for MAR</p> <p>Christina Alito, HDR; George Heiner, Anne Arundel County, Maryland Department of Public Works</p> 	<p>Thinking Big While Building Small: A Museum Quality Pure Water Demo</p> <p>Amos Branch, Carollo Engineers; Darrell Johnson, Las Virgenes Municipal Water District</p> 	<p>PFAS in Wastewater Effluent: Meta-Analysis of Occurrence and GAC Removal</p> <p>Pranjali Kumar, Carollo Engineers; Kyle Thompson, Carollo Engineers</p>  
12:00 pm - 1:30 pm	<p>WATERUSE ANNUAL BUSINESS MEETING & LUNCHEON PLENARY - SALON IG SPONSORED BY STANTEC</p> <p>WaterReuse Association Business Meeting Craig W. Lichty P.E., Vice President, Client Director, Black & Veatch, WaterReuse President State of the Association Patricia Sinicropi, Executive Director, WaterReuse Association</p> <p>Different Drivers, Different Strategies: Water Reuse in New Places Karen Pallansch, Chief Executive Officer, Alexandria Renew Enterprises (Moderator) Jeff Glass, Director of Public Works, City of Westminster, Maryland (invited) Greg Goodwin, Applied Research Consultant, Bluefield Research David Niesse, Technical Services Officer, ReWa – Renewable Water Resources, South Carolina Brian Perkovitch, Executive Director, Metropolitan Water Reclamation District of Greater Chicago Rusty Smith, Director of the Texas Produced Water Consortium</p>					



MONDAY, MARCH 7

	<p>RETHINKING WATER'S FOOTPRINT SALON AB Moderator: Aaron Tartakovsky, Epic CleanTech</p>	<p>FROM POLICY TO PRACTICE: WATER REUSE GUIDANCE & MORE SALON CD Moderator: Trent Stober, HDR</p>	<p>INNOVATION IN POTABLE REUSE SALON JK Moderator: Stephen Katz, Suez</p>	<p>BUILDING PARTNERSHIPS THROUGH COMMUNITY ENGAGEMENT, EDUCATION, & FINANCING SALON LM Moderator: Jaime Kypuros, Tetra Tech</p>	<p>TACKLING CECS ROOM 1-2 Moderator: Roshan Aflaki, CDM</p>	<p>DIGITAL INNOVATIONS ROOM 3-4 Moderator: Xiaohong He, AECOM</p>
1:45 pm - 3:15 pm	<p>Water Reuse for Corporate Campus in Austin, TX Katherine Jashinski, Austin Water; Eric Lohan, Sustainable Water/NextEra Energy; Bob Salvatelli, NextEra Distributed Water</p> 	<p>Advancing Water Reuse through Policy: Implementation of the Bipartisan Infrastructure Law Greg Fogel, WaterReuse Association; Deidre Finn, CIFIA</p> 	<p>When IPR Is Not Enough Roshan Aflaki and Greta Zornes, CDM Smith; Bruce Chalmers, Metropolitan Water District of Southern California; Anselmo Collins, Los Angeles Department of Water and Power; Lynn Spivey, Plant City</p> 	<p>Bumpy Road or Smooth Ride? Strategies for Mobile DPR Demonstrations Jason Assouline, Carollo Engineers; John Rehring, Carollo Engineers</p> 	<p>Microplastics Regulation and Testing Scott Coffin, State of California Water Resources Control Board; Rick Zimmer, Eurofins Eacon Analytical, LLC</p> 	<p>Digital Innovations Will Make Potable Reuse Projects More Affordable Ozan Erdal, Arcadis; Ufuk Erdal, Arcadis</p> 
		<p>Compilation & Synthesis of US State Water Reuse Regulations Sharon Nappier, EPA</p>  		<p>Building (& Rebuilding) Trust with Boise's Recycled Water Program Royce Davis, City of Boise; Melanie Holmer, Brown and Caldwell; Natalie Monro, City of Boise</p> 	<p>Antibiotic Resistance Genes in Agricultural Reuse Water Celestene Sebag and Wen Zhang, University of Arkansas</p> 	<p>Advancements in Digital Water Quality Monitoring Provide Optimized Potable Reuse Tyler Abercrombie, GHD</p> 
				<p>Raise a Glass to Potable Reuse Patrick Dube, Water Environment Federation</p> 	<p>Constituents of Emerging Concern Using a One Water Framework James Christopher, Tetra Tech</p>  	<p>Integrating Real-Time Collection System Monitoring for Potable Water Reuse Scott Mansell, Clean Water Services; Kyle Thompson, Carollo Engineers</p>  
3:15 pm - 3:45 pm	<p>NETWORKING BREAK SPONSOR: PLUMMER</p>					

MONDAY, MARCH 7

	RETHINKING WATER'S FOOTPRINT SALON AB Moderator: Jeff Hansen, HDR	FROM POLICY TO PRACTICE: WATER REUSE GUIDANCE & MORE SALON CD Moderator: Patrick Regan, DuPont	INNOVATION IN POTABLE REUSE SALON JK Moderator: Kathleen Peach, Suez	DIGITAL INNOVATIONS SALON LM	SYNERGIES ACROSS INDUSTRIES ROOM 1-2 Moderator: John Rehring, Carollo	WATER REUSE PROJECTS US & BEYOND ROOM 3-4 Moderator: Chris Hill, AECOM
3:45 pm - 5:15 pm	Case-Studies: Improving Industrial Water Footprints with Reuse Christopher Kramer, JEA; Amelia Luna, Sherwood Engineers; Ken Martins, Stantec; Patrick Regan, DuPont Water Solutions; Bob Salvatelli, NextEra Distributed Water	Partnering: Accelerating Regional Integrated Water Management Solutions Blaga Delic, AECOM; Ralph Exton, Suez Water Technologies and Solutions; Haley Falconer, City of Boise; Jon Freedman, SUEZ Water Technologies and Solutions; Jeff Mosher, Santa Ana Watershed Project Authority; Lydia Teel, Truckee Meadows Water Authority; Rick Warner, Warner and Associates	Approach to Implement the World's Largest Potable Reuse System – Hyperion 2035 Amos Branch, Carollo Engineers; Hubertus Cox, LASAN; Nasir Emami, LASAN; Zakir Hirani, Stantec; Roland Pilemalm, Carollo Engineers; Andrew Salveson, Carollo Engineers; Rueren Yu, Stantec	Cybersecurity Barriers to Innovation: Addressing Risk & Innovation for Reuse Sponsored by Hazen and Sawyer and Zivaro Ben Stanford, Hazen and Sawyer; Dan Weiske, Zivaro; Kevin Morley, AWWA; Mehul Patel, Orange County Water District	Moving to a Portfolio Approach for Water-Energy-Food Resilience Zeynep Erdal, Black & Veatch	Beenyup Advanced Water Recycling Plant – Commissioning and Testing Outcomes Fabian Fenoglio, Suez
						
					A Recommended Framework for Industrial Enhanced Source Control Programs Tyler Nading, Jacobs	Developing Water Reuse in Underserved Communities: Learning from the US & Abroad Michele Braas, Xylem; Clementine Stip, World Bank; Greta Zornes, CDM
					 	
					Condensate Recovery & Reuse: A Visual Tour of UC San Diego's Innovative Systems Jeff Eisert, University of California San Diego's Innovative Systems	Planning & Implementation of a Comprehensive Water Reuse Project in Barbados Simon Baker, AECOM
						
5:30 pm - 6:30 pm	YOUNG PROFESSIONALS CHARTING THE FUTURE OF WATER REUSE SPONSOR: HDR					









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GUIDE TO WATEREUSE SYMPOSIUM TECHNICAL SESSIONS

					
PROJECT PHASE: CONCEPTUAL	PROJECT PHASE: PLANNING	PROJECT PHASE: DESIGN & CONSTRUCTION	PROJECT PHASE: IMPLEMENTATION & OPERATION	ALIGNS WITH: NATIONAL WATER REUSE ACTION PLAN EFFORTS	ALIGNS WITH: THE WATER RESEARCH FOUNDATION EFFORTS



NextEra Distributed Water specializes in the design-build of an ecologically engineered and decentralized water reclamation system called The WaterHub®.

Beyond environmental stewardship and long term utility cost savings, decentralized reuse is becoming a key component of campus and facility operational resiliency.

As a treatment system designer, NextEra Distributed Water looks at maximizing the triple bottom line of every project: economics, environment, and social responsibility.









TUESDAY, MARCH 8

7:30 am - 9:00 am	AWARDS BREAKFAST AND PLENARY SESSION - SALON IG SPONSORED BY BLACK & VEATCH Annual WaterReuse Awards for Excellence B Narayanan, President and CEO, Carollo Engineers, WaterReuse Board of Directors Craig W. Lichty P.E., Vice President, Client Director, Black & Veatch, WaterReuse President Water Reuse Leaders Panel Steve Johnson, Senior Vice President, Director of Strategy and Growth, AECOM Global Water B Narayanan, President and CEO, Carollo Engineers Heather Polinsky, PMP, F. SAME, Global President, Resilience, Arcadis Dave Ross, Partner, Troutman Pepper Cindy Wallis-Lage, Executive Director, Black & Veatch					
	INNOVATION IN POTABLE REUSE SALON AB Moderator: Robert Fowlie, CDM	INNOVATIVE APPROACHES TO WATER RECYCLING SALON CD Moderator: Ufuk Erdal, Arcadis	OPTIMIZING TREATMENT, OPERATIONS, & MORE SALON JK Moderator: Michael Priest, Stantec	MONITORING, MODELING, & ASSESSING RISK SALON LM Moderator: Jocelyn Lu, Brown & Caldwell	INNOVATIONS IN PROJECT FINANCE ROOM 1-2 Moderator: Michaela Rempkowski, McCarthy	SUSTAINABILITY & RESILIENCY ROOM 3-4 Moderator: Pranjali Kumar, Carollo
9:00 am - 10:00 am	Bureau of Reclamation Advanced Water Treatment Research Roadmap Yuliana Porras Mendoza, Bureau of Reclamation 	One Water: What Does It Mean to You? Moderator: Grant Macinnis, Suez Daniel Nix, City of Wichita Falls; Paula Paciorek, City of Houston; Greg Meszaros, Austin Water; Sam Marie Hermitte, Texas Water Development Board; Renee Willette, US Water Alliance 	Innovation in Oxidation for Reuse: A Seamless Pipeline Erin Mackey, Brown and Caldwell; Christina Morrison, Southern Nevada Water Authority; Erin Partlan, Water Research Foundation; Eric Wert, Southern Nevada Water Authority; Andrea White, Moleaer  	Off the Roof: Measuring Microbial Characteristics of Roof Runoff Jumana Aljafari, Colorado State University 	Paying for Potable Reuse When Costs Increase Significantly Anna James, Jacobs; David Pedersen, Las Virgenes Municipal Water District 	Funding Harvest Water: Conjunctive Use & Ecological Resilience Work Together Terrie Mitchell, Sacramento Regional County Sanitations District; Dave Richardson, Woodard & Curran; 
	Evaluation of the Key Factors Impacting DPR Treatment & Risk Anya Kaufman and Brian Pecson, Trussell Technologies; Adam Olivieri, EOA, Inc.  			Quantitative Relative Chemical Assessment: Filling the Gap Melanie Holmer, Brown and Caldwell; Christopher Jones, Brown and Caldwell; 	ESG Commitments Create Synergy in New Water Reuse Opportunities Samir Dave, Brown and Caldwell; Jeffrey Steinwinder, Brown and Caldwell 	Pure Water Oceanside: Breaking New Boundaries in Groundwater Recharge Cari Dale and Lindsay Leahy, City of Oceanside; Adam Hoch, Hoch Consulting; Shane Trussell, Trussell Technologies 
10:00 am - 10:30 am	NETWORKING BREAK SPONSOR: NEXTERA ENERGY					

TUESDAY, MARCH 8

	INNOVATION IN POTABLE REUSE SALON AB Moderator: Heather Tugaoen, Stantec	INNOVATIVE APPROACHES TO WATER RECYCLING SALON CD Moderator: Naomi Jones, McCarthy	OPTIMIZING TREATMENT, OPERATIONS, & MORE SALON JK	MONITORING, MODELING, & ASSESSING RISK SALON LM Moderator: Jonathan Vorheis, Jacobs	INNOVATIONS IN PROJECT FINANCE ROOM 1-2 Moderator: Michael Watts, Garver	SUSTAINABILITY & RESILIENCY ROOM 3-4
10:30 am - 12:00 pm	Preliminary Design & Cost Estimate of a Direct Potable Reuse Plant in AZ Alyssa Aligata, Bureau of Reclamation 	Risk-Based Guidance for Onsite Non-Potable Reuse: Progress & Opportunities Jay Garland, EPA; Kerry Hamilton, Arizona State University; Michael Jahne, EPA; Anya Kaufman, Trussell Technologies; Sybil Sharvelle, Colorado State University  	Demonstrating Greater LRVs Across NF & RO Membranes—Results from WRF 4958 Hannah Ray, Southern Nevada Water Authority; Han Gu, Orange County Water District; James Vickers, Separation Processes, Inc.; Jason Assouline, Carollo Engineers; Megan Plumlee, Orange County Water District; Eric Dickenson, Southern Nevada Water Authority; Chris Bellona, Colorado School of Mines; Tom Seacord, Carollo Engineers  	Quantitative Microbial Risk Assessment of Water Reuse Karla Mendez, UTHealth Houston School of Public Health 	Private Funding Can Accelerate Reuse Projects – Water Purchase/Process Agreements William Brennan, Resilient Infrastructure Group; Dan McCarthy, Dan McCarthy Consulting; Paul Schuler, Suez; David Sobek, Carollo Engineers; Ben Vitale, Resilient Infrastructure Group 	WORKSHOP REUSE IN UNEXPECTED WAYS & PLACES Sponsored by Brown and Caldwell Facilitator: Melanie Holmer, Brown & Caldwell Rene Heflin, Metropolitan Council Environmental Services; Varsha Wylie, Southern Water; City of Boise (invited)
	Los Angeles' Headworks DPR Project: Implementing Direct Potable Reuse Erik Avila and Brianna Plancarte, Los Angeles Department of Water and Power 	Identifying WRRF Impacts on AWT Performance (WRF 4833 Module A) Kelly Landry, Hazen and Sawyer  	Effective Online Microbial Monitoring for Onsite Water Reuse Sheng Chu and Zach Gallagher, Natural Systems Utilities 	Cross-Industry Collaboration Improves Service and Meets Future Demand Dusty Moisio, Rowland Water District 	EEM-PARAFAC – Monitoring Organic Matter Through the Potable Water Cycle Katherine Bell, Brown and Caldwell  	Advancing Water Reuse with Property Assessed Clean Energy Dub Taylor, Texas PACE Authority; Katherine Jashinski, Austin Water; Sharlene Leurig, Texas Water Trade; Jennifer Walker, National Wildlife Foundation 

TUESDAY, MARCH 8

12:15 pm - 1:30 pm	PLENARY LUNCHEON - SALON IG SPONSOR: SUEZ Onsite Water Reuse Systems Showcase: Building-Scale Innovation that Benefits the Entire Community Facilitator: Greta Zornes, Water Reuse Practice Leader, CDM Smith Wendy Broley, Vice President, Brown and Caldwell Kevin Critendon, Assistant Director, Environmental, Planning and Development, Austin Water Zach F. Gallagher, PE, LEED AP, President & COO, Natural Systems Utilities Bob Salvatelli, Director, Water Origination, NextEra Distributed Water (formerly Sustainable Water) Drew Wenzel, Real Estate Development Executive at Google					
	INNOVATIVE APPROACHES TO WATER RECYCLING SALON AB	OPTIMIZING TREATMENT, OPERATIONS, & MORE SALON CD	COLLABORATING IS KEY SALON JK	NAVIGATING EVOLVING REGULATIONS SALON LM		
1:45 pm - 3:15 pm	Advancing Stormwater Capture & Use Policy, Research, & Action Priorities Justin Mattingly, EPA; Dave Smith, Water Innovation Services/US EPA (retired)  	Demonstration of an MBR-RO Based Treatment Train for Regional Reuse Amos Branch, Carollo Engineers; George Di Giovanni, Metropolitan Water District of Southern California; Lysa Gaboudian, Los Angeles County Sanitation District; Zakir Hirani, Stantec; Joyce Lehman, Metropolitan Water District of Southern California 	Increasing Water Resiliency through Collaboration in North Central Texas Glenn Clingenpeel, Trinity River Authority; Ellen McDonald, Plummer; R.J. Muraski, North Texas Municipal Water District; Denis Qualls, City of Dallas Water Utilities; Nicole Rutigliano, Tarrant Regional Water District; Shannon Spurlock, Ochotona  	Comparison of Potable Reuse Regulations and Impacts to Project Implementation Larry Schimmoller, Jacobs 	WORKSHOP ONE WATER - ONE BRIGHT FUTURE ROOM 1-2 Sponsored by Arcadis Moderator: Ufuk Erdal, Arcadis David Pedersen, Las Virgenes Municipal Water District; Sharon Citino, Houston Water; Hubertus Cox, Los Angeles Sanitation & Environment; Lauren Zuravnsky, SWIFT at Hampton Roads Sanitation District	WORKSHOP WATER REUSE 101 – BOOTCAMP (RUN 2) ROOM 3-4 Sponsored by Carollo What is Reuse? Eva Steinle-Darling, Carollo Determining Need Juan Gomez, San Antonio Water Systems Paying for Reuse Collins Balcombe, BOR Reuse Regulations Ellen McDonald, Plummer Case Studies Tracy Clinton, Carollo Building Public Support Christina Montoya, El Paso Water
3:15 pm - 3:45 pm	NETWORKING BREAK SPONSOR: ATKINS					

TUESDAY, MARCH 8

	INNOVATIVE APPROACHES TO WATER RECYCLING SALON AB	OPTIMIZING TREATMENT, OPERATIONS, & MORE SALON CD	COLLABORATING IS KEY SALON JK	NAVIGATING EVOLVING REGULATIONS SALON LM Moderator: Roshan Aflaki, CDM	RETHINKING WATER'S FOOTPRINT ROOM 1-2 Moderator: Matthew Shroll, Stantec	
3:45 pm - 5:15 pm	Evidence from Consumer Willingness-to-Pay Studies: New Approaches to Water Reuse Sara Katz, Katz and Associates; Maik Kecinski, University of Delaware; Kent Messer, University of Delaware; Mark Millan, Data Instincts 	Operational Considerations & Insights for Reliable CBAT Robert Angelotti, Upper Occoquan Service Authority; Gayathri Ram Mohan, Gwinnett County DWR; Germano Salazar-Benites, Hampton Roads Sanitation District; Vijay Sundaram, AECOM; Lydia Teel, Truckee Meadows Water Authority	Multi-Agency Reuse Programs: Lessons for Successful Collaboration Felicia Marcus, Stanford University; Eric Rosenblum, Envirospespectives; David Smith, Water Innovation Services/USEPA (retired); Shannon Spurlock, Ochotona	Making Reuse Work – NPDES Permit Case Studies for EPA WRAP Action Item 2.2.6 Melanie Holmer, Brown and Caldwell; Emily Rimmel, NACWA; Patricia Whitby, Brown and Caldwell 	Potential Synergy of Nutrient Reduction, Reuse, & Credit Trading Sharon Waller, Sustainable Systems LLC – Consulting	WORKSHOP WATER REUSE 101 – BOOTCAMP (RUN 2) ROOM 3-4 Sponsored by Carollo What is Reuse? Eva Steinle-Darling, Carollo Determining Need Juan Gomez, San Antonio Water Systems Paying for Reuse Collins Balcombe, BOR Reuse Regulations Ellen McDonald, Plummer Case Studies Tracy Clinton, Carollo Building Public Support Christina Montoya, El Paso Water
			Produced Water Reuse Efforts in Support of the National Water Reuse Action Plan Mike Hightower, New Mexico Produced Water Research Consortium 	Giving Membranes the Virus Removal Credit They Deserve Using Field qPCR Testing David MacNevin, CDM Smith; Anna Ness, CDM Smith; Ali Zarei-Baygi, CDM Smith		
			Regulatory Challenges for Reuse of Produced Water via Land Application Amy Hardberger, Texas Tech University; Nichole Saunders, Environmental Defense Fund 	The Rise of UV/Chlorine and the Fall of UV/Peroxide in Water Reuse Christine Cotton, Arcadis 		
6:30 pm - 9:00 pm	AN EVENING AT KNIBBE RANCH VENUE SPONSOR: XYLEM FIREWORKS SPONSOR: MCCARTHY BUS SPONSOR: SUNDT MUSIC SPONSOR: NACWA					

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WEDNESDAY, MARCH 9

8:00 am - 8:45 am **BREAKFAST PLENARY SESSION - SALON IG**

Welcome

Bart Weiss, Chief Officer, Innovation and Resiliency, Hillsborough County Public Utilities (Florida), and Vice President, WaterReuse Board of Directors (invited)

The Federal Government's Role in Promoting Reuse

Sharon Nappier, National Program Leader for Water Reuse, U.S. Environmental Protection Agency
Yuliana Porras-Mendoza, Advanced Water Treatment Research Coordinator, Bureau of Reclamation
Johnathan Yoder, Water Preparedness and Response, Centers for Disease Control and Prevention
Clinton Williams, US Arid-Land Agricultural Research Center, Department of Agriculture
Kenneth Kort, Technology Manager, Department of Energy (invited)
Martin Page, Operational Water Research Team Leader, Department of Defense (invited)

8:50 am - 9:00 am **REPORT OUT: WRAP ACTION 2.2, REGULATOR STATE SUMMIT PLANNING - SALON IG**

9:05 am - 11:45 am **CLOSING SESSION - SALON IG**

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Reuse in the One Water Research Portfolio

Peter Grevatt, Chief Executive Officer, The Water Research Foundation

Running Towards the Hard Topics: Capturing and Communicating the Resiliency and Equity Value of Water Reuse

Facilitator: H.G. Chissell, Founder and Chief Executive Officer, Advanced Energy Group
Steven Clouse, Senior Vice President & Chief Operating Officer, San Antonio Water System
Sharon Nappier, National Program Leader for Water Reuse, U.S. Environmental Protection Agency
Deven Upadhyay, Chief Operating Officer and Assistant General Manager, Metropolitan Water District of Southern California

Closing Remarks

Craig W. Lichty P.E., Vice President, Client Director, Black & Veatch, WaterReuse President



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- The trees that provide shade and produce oxygen we breathe
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...recycled water is there, reliably supporting these keys to the quality of our lives – even when other water supplies are strained.



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As the lead design engineers for Pure Water Monterey, Kennedy Jenks congratulates **Monterey One Water** on implementing **Northern California's 1st Indirect Potable Reuse Program**, which purifies industrial/agricultural wastewater, agricultural drainage water, urban stormwater and municipal effluent for reuse.




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UTILITY OF THE FUTURE TODAY

The Utility of the Future Today Recognition Program honors forward-thinking, innovative water utilities that are providing resilient value-added service to communities, particularly in community engagement, watershed stewardship, and recovery of resources such as water, energy, and nutrients.

The WaterReuse Association, National Association of Clean Water Agencies, Water Environment Federation, and the Water Research Foundation lead the Utility of the Future Program, with support from the Environmental Protection Agency and the Department of Energy.

For a complete list of winners, please visit watereuse.org/utotf



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[Upper Occoquan Service Authority](#) | Virginia

WATERSHED STEWARDSHIP

[City of Tucson Water Department](#) | Arizona
[Houston Public Works](#) | Texas

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[Monterey One Water](#) | California

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The WaterReuse Association is the nation's only trade association solely dedicated to advancing laws, policy, funding, and public acceptance of recycled water. Our membership includes utilities that recycle water, businesses that support the development of recycled water projects, and customers that use recycled water for operations.

Why Join?

- Impact national and state policymaking
- Engage with your peers
- Connect everyone in your organization with one membership
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Learn more and join: www.watereuse.org/join





Purified Water Replenishment

A Future Local Drinking Water Supply



Tertiary treated recycled water is purified using microfiltration and reverse osmosis



The purified water is blended with additional recycled water prior to being pumped into a replenishment pond



The replenishment pond further purifies the blended water through natural physical and biological filtration in the soil



2022 SYMPOSIUM COMMITTEES

SYMPOSIUM PLANNING COMMITTEE

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- Sanaan Villalobos, Carollo (Co-Chair)
- Stephanie Bache, Black & Veatch
- Sara Katz, Katz and Associates
- Ellen McDonald, Plummer
- Julie Minton, The Water Research Foundation
- Daniel Nix, City of Wichita Falls
- Christine Owen, Hazen and Sawyer
- Chris Phipps, Anne Arundel County Department of Public Works
- Patrick Regan, DuPont
- Ruben Rodriguez, El Paso Water
- Bob Salvatelli, NextEra Distributed Water
- Robert Stefani, Austin Water
- Kristen VandenHeuvel, The Water Tower
- Don Vandertulip, Texas Commission on Environmental Quality
- Jonathan Vorheis, Jacobs

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- Pranjali Kumar, Carollo
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- Robert Beltran, Dewberry | Hydro
- Katherine Bell, Brown and Caldwell
- Paula Kehoe, San Francisco Public Utilities Commission
- Felicia Marcus, Stanford University Water in the West Program
- Wayne Young, JEA

EMWD is proud to join WaterReuse in Shaping Our Past & Charting Our Future with Purified Water Replenishment

This year, we are speaking up for groundwater. Our most valuable and precious resource needs advocates who understand the importance groundwater plays in our lives and community. EMWD's Groundwater Reliability Plus (GWR Plus) initiative encompasses EMWD's actions and investments to improve the quality and quantity of water in our local groundwater basins.

EMWD's groundwater supply management has included enhancing water supplies through its recycled water program, desalination program, water use efficiency programs and, most recently, its healthy sewers program.

GWR Plus includes a Water Banking project and in the future a Purified Water Replenishment project that combines advanced water purification and natural filtration.

Learn more by visiting emwd.org/gwr-plus



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Building a Sustainable Water Future

El Paso's Water Reuse Journey

1963 Water Reclamation Started

EPWater supplies golf courses, city parks, school grounds, apartment landscapes, construction, and industrial sites with over 5.83 mgd of reclaimed water.

1985 Aquifer Recharge Began

The Fred Hervey Water Reclamation Plant treats wastewater to drinking water standards and injects up to 3 mgd back into the aquifer.

2007 Desalination Plant Opened

The Kay Bailey Hutchison Desalination Plant treats brackish water and can produce up to 27.5 mgd for the water supply.

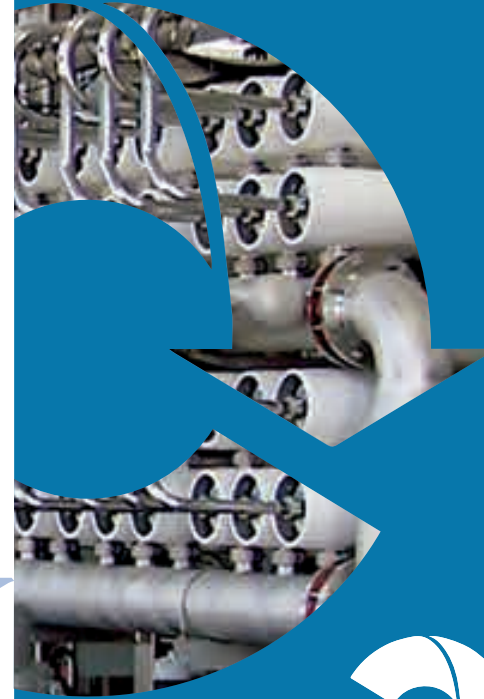
Future Water Supply

Expanded Aquifer Recharge

El Paso will expand aquifer recharge by 4-13 mgd by using a combination of reclaimed water, treated river water and stormwater to replenish the aquifer and support groundwater sustainability.

Advanced Purification

A multi-step treatment process will transform treated wastewater into safe, reliable drinking water and deliver directly to customers. The Advanced Water Purification Facility will produce up to 10 mgd.



INDUSTRY LEADERS IN WATER REUSE SINCE 1950

As an experienced and innovative builder, we excel at solving water reuse challenges for both private and municipal clients.

MUNICIPAL WATER RECLAMATION

BRINE REMOVAL

SEMICONDUCTOR WASTEWATER TREATMENT AND REUSE



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SECURING OUR WATER FUTURE TODAY

WRD manages two of the most utilized urban groundwater basins in the nation. Groundwater from these basins provides nearly 50% of the total water supply for four million residents within WRD's service area, which includes 43 cities.

*Albert Robles Center
for Water Recycling &
Environmental Learning*

*Robert W. Goldsworthy
Groundwater
Desalter*

*Leo J. Vander Lans
Advanced Water
Treatment Facility*



WRD's Albert Robles Center purifies 14 million gallons of water per day for use in groundwater replenishment. This locally sustainable and reliable water source protects the quality and quantity of local groundwater, creating drought-resiliency for the basin.

The Goldsworthy Desalter treats 5 million gallons of brackish (salty) groundwater that is trapped inland due to historical seawater intrusion. The salt is removed using Reverse Osmosis and the fresh drinking water is then delivered through the City of Torrance distribution system.

The Vander Lans Treatment Facility purifies 8 million gallons of water per day for use in coastal injection wells. Water from the facility prevents seawater intrusion and provides supplemental groundwater replenishment.



WRD water treatment facilities help reduce demand for water imported from the Bay Delta and the Colorado River by producing locally sustainable water resources.

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Trusted advisor for water reuse.

Michael Watts knows being a trusted advisor goes beyond the expertise of a few. It involves a committed resource of experts ready to tackle any challenge. And with Michael and Garver, you get the dedication and resources to assist you with any reuse project.

Michael Watts, Ph.D., PE | Water Reuse Practice Leader

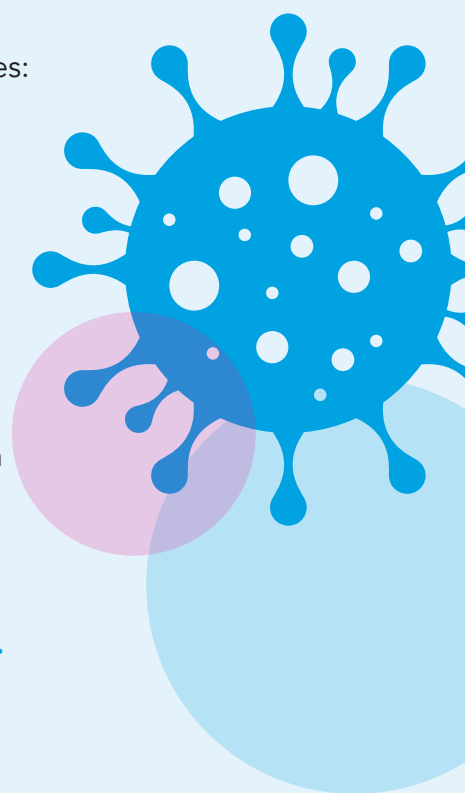
STAYING SAFE AT THE SYMPOSIUM

For the safety of conference attendees, WaterReuse requests that all attendees:

- Wear a facemask when indoors. Attendees may remove their mask while actively eating or drinking. Extra masks are available at the registration desk.
- Be vaccinated or have a negative covid test within 72 hours of attending the conference.
- Complete a waiver.

Anyone feeling sick or displaying symptoms of COVID-19, or who has been in contact with someone who has tested positive for COVID-19, should refrain from traveling and attending the conference.

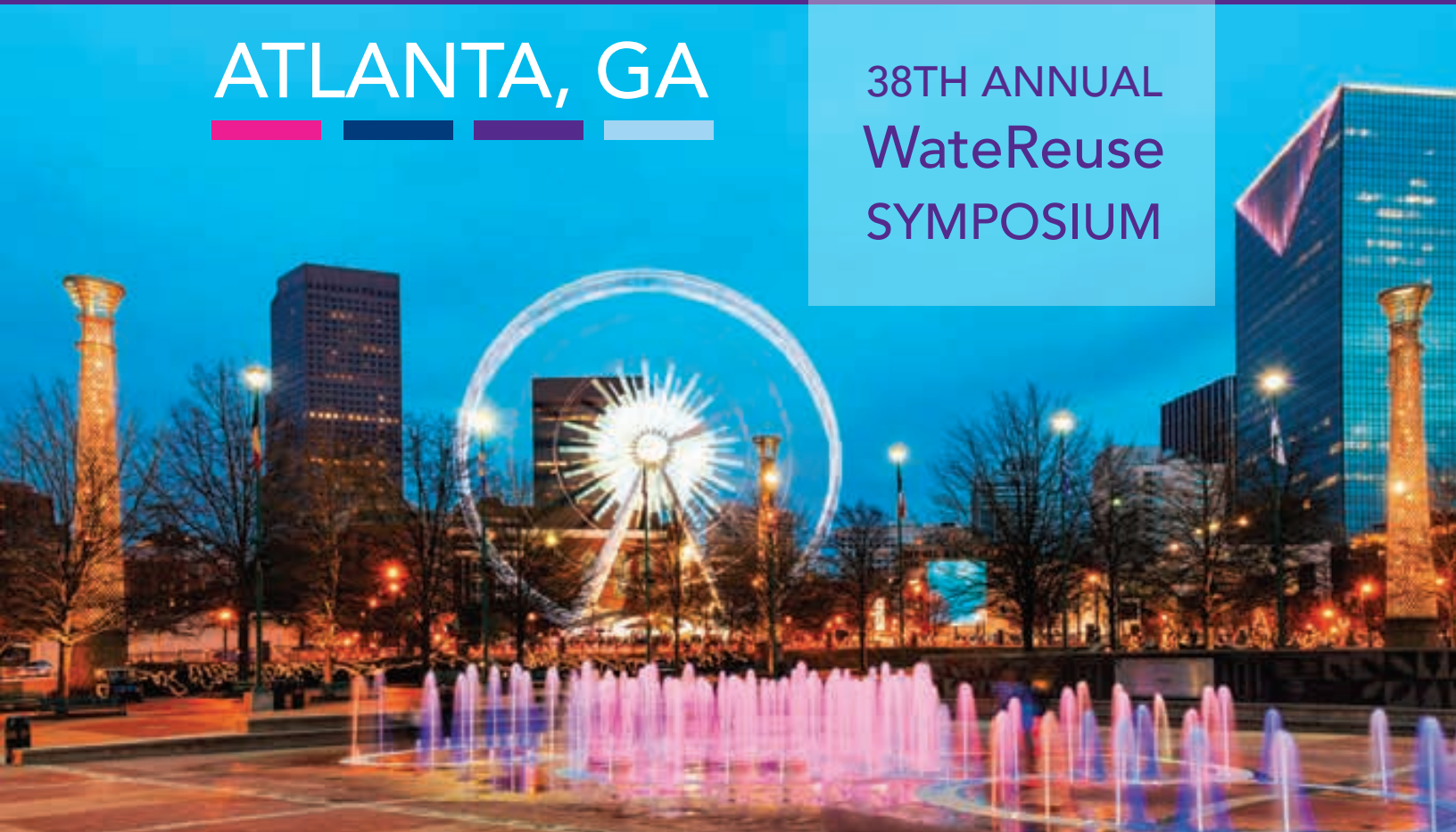
Full COVID-19 protocols are available at watereuse.org/COVID.



SAVE ^{THE} DATE
MARCH 4-8, 2023

ATLANTA, GA

38TH ANNUAL
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