



American Water Works Association
California-Nevada Section

CONFLUENCE 2019

Where Policy, Operations and Management Converge

CONFERENCE PROGRAM



MARCH 25-28, 2019

SPRING CONFERENCE

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Welcome from the Chair



Kate Nutting

CA-NV AWWA
Section Chair

Golden State Water Company
#CANVSC2019

WELCOME Section Friends to our Annual Spring Conference! Thank you for being a part of the American Water Works Association California-Nevada Section's conference. Conferences are a great way to learn about what's new and hot in the water industry, catch up with old friends, make new ones, and have fun doing it! I look forward to catching up with you in the halls between technical sessions, in the Exhibit Hall, or at one of the many social events happening throughout the week.

The Spring Conference's theme is CONFLUENCE 2019: Where Policy, Operations and Management Converge. This represents the vast diversity of our membership, including regulators, policymakers, scientists, engineers, communications and public affairs professionals, accountants, and of course operators. The Section is a one-stop shop when it comes to water, and the Spring Conference illustrates this perfectly.

The week is packed with opportunities for learning, networking, and just plain fun. Highlights include our Opening Session Keynote speaker, Wade Crowfoot the newly appointed California Secretary for Natural Resources. Additionally we have Keynote Luncheon speaker, Ellen Hanak, Director of the PPIC Water Policy Center, who will speak with us about natural resource management in California. Another highlight is the "Back to the Basics" session, designed to give smaller utilities ideas on how to address a multitude of water quality challenges, though it is full of good information for utilities of all sizes. This session will be recorded so that small systems unable to attend can still benefit from the content.

The Section celebrates operators at the Spring Conference, and our competitions highlight this. The Top Op's, Pipe Tapping, Hydrant Hysteria, Meter Madness and Hot Flare competitions display the challenge of being an operator. Though you do not have to be an operator to enter! After watching the competitions, you just may be inspired to compete in Spring 2020.

When not in technical sessions, don't forget to visit our Exhibit Hall. With 120 exhibitors, you are sure to hear about at least one new product or technology to help you with your work. The Exhibit Hall is also a great place meet with vendors who you already know and network with colleagues. With a reception on Tuesday evening, breakfast and lunch served on Wednesday, and prize drawings throughout the conference, the Exhibit Hall is the place to be.

When the work day ends, you can have some fun at the Membership Mixer on Monday evening, and you can't miss the Water For People event on Tuesday evening. This is always a conference favorite - with live music, dancing, and refreshments, you will have lots of fun while raising money for an amazing cause.

There is so much more at the Spring Conference, too. With committee meetings, technical tours, a Women's Leadership event, and a student poster competition, there is never a dull moment. Thanks again for attending, and have a great time!

Table of Contents

Conference Schedule	6
Committee Meetings	9
Sessions By Committee	10
Conference Maps	10
Technical Sessions: Tuesday, March 26	12
Technical Sessions: Wednesday Morning, March 27	13
Technical Sessions: Wednesday Afternoon, March 27	14
Technical Sessions: Thursday, March 28	15
Technical Programs	16
Thank You	34
Local Arrangements Committee	36
Fall Awards	36
Exhibitors List	37
Index to Advertisers	38

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Conference Schedule

Sunday, March 24

Governing Board Meeting 12:00 PM – 4:30PM
Gardenia Room – Sheraton Grand Hotel

Monday, March 25

REGISTRATION 7:00AM – 4:30PM
East Lobby in Sacramento Convention Center
Attendees may pick up their badge or register on-site.

**SECTION LEADERS MEETING
(LEADERSHIP TRAINING)** 8:00AM – 9:45AM
Room 312

Section Governing Board Members and all Committee Officers are invited to attend this meeting for Section updates. Sponsored by Murraysmith.



COMMITTEE MEETINGS 10:00AM – 6:30PM
See page 9 for full listing

Committees bring together a variety of Water Professionals and their expertise to lead and guide Section programs and tasks. All Water Professionals are welcome to attend Committee Meetings.

MEMBERSHIP WELCOME RECEPTION . . . 5:30PM – 7:00PM
Glides Market – Sheraton Grand Hotel

We would love for you to join us in welcoming all attendees to another great Conference! Come network with other industry professionals and enjoy our reception. Attendees will receive one drink ticket and light appetizers will be served. Sponsored by MeterSYS.



Tuesday, March 26

REGISTRATION 7:00AM – 4:00PM
East Lobby in Sacramento Convention Center
Attendees may pick up their badge or register on-site.

TOP OPS CHALLENGE 7:00AM – 11:00AM
Room 314

The Top-Op's challenge is in a fun, fast-paced game show format. Questions are based on water treatment and distribution knowledge.



HYDRANT HYSTERIA DEMO 7:00AM – 11:00AM
Outside of Exhibit Hall A

Hydrant Hysteria is a fast-paced competition where two-member teams assemble a specified hydrant as quickly as they can.

FIRST TIME ATTENDEE ORIENTATION . . . 7:30AM – 8:30AM
Room 304/305

An important event for the first-time attendee, new member, young professional and student member attending their first CA-NV AWWA conference. As navigating the conference can be overwhelming, the orientation will familiarize attendees with the conference and all it has to offer. The orientation will be presented by various members of the Section's Membership Committee. This is a great opportunity to begin networking and meeting other attendees

TECHNICAL TOUR - Water Reliability . . 8:00AM – 12:00PM
Buses load at 7:30 AM outside of J Street

***Additional Fee \$55**—You can purchase tickets onsite at the registration desk. Join this tour and see the Sacramento City surface water intake and treatment plant. The group will travel a short distance to the SRWTP intake pier to see the intake facility at the Sacramento River. From there, the tour heads to the SRWTP facility. Originally built in 1921, this plant has grown in size and now covers 23 acres and can process 160 MGD of surface water. The plant will be in the maintenance mode which means that equipment that is normally submerged during operation will be exposed. There will be a discussion about the 100% chlorine storage facility and safety protections. Wear comfortable walking shoes.

OPENING SESSION 8:30AM – 11:15AM
Room 315

The Opening Session will feature Wade Crowfoot, California Secretary for Natural Resources. Wade Crowfoot was appointed California Secretary for Natural Resources by Governor Newsom on January 11, 2019. Crowfoot brings more than 20 years of public policy and environmental experience to the office, with expertise in water, climate and sustainability issues. He most recently served as Chief Executive Officer of the Water Foundation and led its transition into an independent organization early in 2017. Prior to joining the foundation, he served in Governor Jerry Brown's Administration as deputy cabinet secretary and senior advisor to the Governor, leading the administration's drought response efforts. He previously served as West Coast regional director for the Environmental Defense Fund and a Senior Environmental Advisor to then-San Francisco Mayor Gavin Newsom.



The Opening Session will feature a panel consisting of Todd Gartner, Director, Natural Infrastructure Initiative at the World Resources Institute and Willie Whittlesey, Project Manager, Lower Yuba River Management Team at Yuba Water Agency. In the presentation titled **Water-Fire-Money**, Todd Gartner and Willie Whittlesey will discuss the partners, investors, mechanics and benefits of the first pilot, key elements of the Forest Resilience Bond mechanism and ways other utilities across CA can explore fighting fire with finance in their watersheds.



The opening session is sponsored by PumpMan.



**VOLUNTEER RECOGNITION
LUNCH & TOP-OP'S FINALE** 11:30AM – 1:30PM
Rooms: 202/203/204

(Ticket required—you may purchase additional tickets at registration for \$50)

The Volunteer Recognition lunch will feature Ellen Hanak, Director of the Water Policy Center at the Public Policy Institute of California. Ellen Hanak is director of the PPIC Water Policy Center and a senior fellow at the Public

Conference Schedule



Policy Institute of California, where she holds the Ellen Hanak Chair in Water Policy. Under her leadership, the center has become a critical source of information and guidance for natural resource management in California. She has authored dozens of reports, articles and books on water policy, including *Managing California's Water*. Her research is frequently profiled in the national media and she participates in briefings, conferences and interviews throughout the nation and around the world. Her other areas of expertise include climate change and infrastructure finance. Previously, she served as Research Director at PPIC. Before joining PPIC, she held positions with the French agricultural research system, the President's Council of Economic Advisers and the World Bank. She holds a PhD in Economics from the University of Maryland.



Volunteer Recognition Lunch sponsored by West Yost Associates

WEST YOST



ASSOCIATES

COMPETITIONS 1:00PM - 5:00PM

Inside the Exhibit Hall

Don't miss out on the Meter Madness Competition. Hot Flare and Pipe Tapping will take place on Wednesday.

TECHNICAL SESSIONS 1:30PM-5:30PM

For complete schedule please refer to pages 16-20.

MANUFACTURERS & ASSOCIATES

COUNCIL COMMITTEE MEETING. 1:30PM - 2:30PM

YOUNG PROFESSIONALS

COMMITTEE MEETING 2:30PM - 3:30PM Room 303

EXHIBIT HALL GRAND OPENING 3:00PM - 4:00PM

Sacramento Convention Center Exhibit Hall A

With over 115 exhibit booths, this networking event is a great opportunity to meet vendors from across California and Nevada. Find the newest trends, innovations, technologies, and best practices available in the drinking water profession.

EXHIBIT HALL HOURS 3:00PM - 7:00PM

Sacramento Convention Center Exhibit Hall A

WOMEN'S LEADERSHIP COMMITTEE

PRESENTS: MAD HOT HYSTERIA 4:00PM - 6:00PM Exhibit Hall A

Come get your hands dirty in a non-competitive environment! Learn the secrets of pipe tapping, hydrant hysteria, and meter madness from the masters themselves in this hands-on workshop.

M.E. SIMPSON, CO., INC.

MEET & GREET RECEPTION 5:30PM - 7:00PM Exhibit Hall A

Join us in the Exhibit Hall to network with service providers and manufacturers that assist water agencies and professionals with new technologies, products and services.



YOUNG PROFESSIONALS

MEETUP (MIXER) 6:30PM - 7:30PM Mix Downtown: 1525 L Street, Sacramento

WATER FOR PEOPLE SOCIAL 7:30PM - 11:00PM

Mix Downtown: 1525 L Street, Sacramento

***Ticket required to attend**—\$35 if purchased in advance at registration or \$40 at the door. Students ½ price with student ID. Ticket includes drinks, appetizers and dessert. Wear your favorite band T-shirt to enjoy a night with games, silent auctions, networking and watch Joe Guistino & Band play live!

Wednesday, March 27

REGISTRATION 7:00AM - 4:00PM

East Lobby in Sacramento Convention Center

Attendees may pick up their badge or register on-site.

TECHNICAL SESSIONS 7:30PM-5:30PM

For complete schedule please refer to pages 20-29.

TECHNICAL TOUR—

Emergency Preparedness 8:00AM - 12:00PM

Buses load at 7:30 AM outside of J Street

***Must have purchased ticket. No on-site registration available for this tour.**

This tour will visit the Sacramento Office of Emergency Services center. SacOES coordinates the overall response to large scale incidents and disasters. Discussions will have an emphasis on utilities.

COMPETITIONS 8:00AM - 3:00PM

Exhibit Hall A

Don't miss out on the Pipe Tapping and Hot Flare competitions!

EXHIBIT HALL HOURS 8:30AM - 4:00PM

Exhibit Hall A

With over 115 exhibit booths, this networking event is a great opportunity to meet vendors from across California and Nevada. Find the newest trends, innovations, technologies, and best practices available in the drinking water profession.

EXHIBIT HALL

CONTINENTAL BREAKFAST 8:30AM - 10:00AM

Exhibit Hall A

With over 115 exhibit booths, this networking event is a great opportunity to meet vendors from across California and Nevada. Find the newest trends, innovations, technologies, and best practices available in the drinking water profession.

COMPETITION LUNCH 12:00PM - 1:30PM

Exhibit Hall A

***Ticket required—you may purchase additional tickets at registration for \$50.**

Join us for a boxed lunch in the exhibit hall and cheer on the competition teams. This is also a great opportunity to meet and network with exhibitors.

Thursday, March 28

REGISTRATION 7:00AM - 11:30AM

Sheraton Grand Hotel by Glides Market

Attendees may pick up their badge or register on-site.

TECHNICAL PROGRAM 7:30AM - 11:30AM

Located in the Sheraton Grand Hotel, 2nd and 3rd floors

Refer to pages 29-33 for complete details.



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Committee Meetings

Monday, March 25, 2019

UTILITY MANAGEMENT DIVISION	FROM	TO	ROOM
Communications & Customer Relations Committee	10:00 AM	10:30 AM	312
Environmental Health & Safety Committee	10:30 AM	11:00 AM	312
Financial Management Committee	11:00 AM	12:30 PM	312
Leadership Development Committee	1:00 PM	2:00 PM	312
New Technology Committee	2:00 PM	3:00 PM	312
Security Emergency Planning Committee	3:00 PM	4:00 PM	312
Utility Management Division	4:00 PM	5:00 PM	312

ENGINEERING DIVISION

Asset Management Committee	10:00 AM	11:00 AM	310
Engineering & Construction Committee	11:00 AM	12:00 PM	310
Materials Performance Committee	1:00 PM	2:00 PM	310
Pipeline Rehabilitation Committee	2:00 PM	3:00 PM	310
Systems Control Technology	3:00 PM	4:00 PM	310
Tanks, Reservoirs, and Structure Committee	4:00 PM	5:00 PM	310
Engineering Division Meeting	5:00 PM	6:00 PM	310

OPERATORS DIVISION

Operators Committee	10:00 AM	11:00 AM	309
Backflow Program Committee	11:00 AM	12:00 PM	309
Competitions Committee	12:00 PM	1:00 PM	309
Top Ops Challenge Committee	1:00 PM	2:00 PM	309
Smaller Utilities Committee	2:00 PM	2:30 PM	309
Meter Committee	2:30 PM	4:00 PM	309
Operators Division	4:00 PM	5:00 PM	309

WATER QUALITY DIVISION

Water Quality Division Kickoff	10:00 AM	10:30 AM	311
Safe Drinking Water Act Committee	10:30 AM	12:00 PM	311
Research Committee	12:00 PM	1:00 PM	311
Source Water Quality Committee	1:00 PM	2:00 PM	311
Distribution System Water Quality	2:15 PM	3:00 PM	311
Water Treatment	3:00 PM	4:00 PM	311
Water Quality Analysis	4:00 PM	4:30 PM	311
Water Quality Division Wrap-up	4:30 PM	5:00 PM	311

WATER RESOURCES DIVISION

Recycled Water & Desalination Committee	10:00 AM	11:00 AM	301
Energy & Sustainability Committee	12:00 PM	1:00 PM	301
Water Management & Efficiency Committee	1:00 PM	2:00 PM	301
Water Well Technology Committee	2:00 PM	3:30 PM	301
Water Resources Division	3:30 PM	4:30 PM	301

CERTIFICATION COMMITTEES

Water Quality Laboratory Analyst Cert. Committee	10:00 AM	11:00 AM	303
Advanced Water Treatment Operator Cert. Committee	11:00 AM	12:00 PM	303
Backflow Cross Connection Cert. Committee	12:00 PM	2:00 PM	303
Water Use Efficiency Certification Committee	2:00 PM	3:00 PM	303
Certification Board	3:00 PM	5:00 PM	303

PHILANTHROPY COUNCIL

Water For People	10:00 AM	11:00 AM	305
Scholarship Committee	11:00 AM	12:00 PM	305
Community Engineering Corps Committee	1:00 PM	2:00 PM	305
Philanthropy Council Meeting	2:00 PM	3:00 PM	305

MEMBERSHIP ENGAGEMENT & DEVELOPMENT COUNCIL

Awards Committee	10:00 AM	11:30 AM	302
Student Chapter Committee	2:00 PM	3:00 PM	302
Woman's Leadership Committee	3:00 PM	4:00 PM	302
Membership Engagement & Development Council	4:00 PM	5:00 PM	302
Ad Hoc Committee on Section Technology	5:00 PM	6:00 PM	302

ADDITIONAL COMMITTEES

Past Chairs Committee	10:00 AM	11:00 AM	304
Water Loss Control Committee	11:00 AM	12:00 PM	304
Advanced Water Treatment Committee	1:00 PM	2:00 PM	304
Government Affairs Committee	2:00 PM	3:00 PM	304
Education Committee	3:00 PM	4:00 PM	304
EH&S BMP Special Meeting	4:00 PM	6:00 PM	304
Technical Programs Committee	6:00 PM	6:30 PM	304

Tuesday, March 26, 2019

Mfg. Associates Council - MAC	1:30 PM	2:30 PM	303
Young Professionals Committee	2:30 PM	3:30 PM	303



Sessions By Committee/Conference Maps

SESSION #.....DIVISION NAME....COMMITTEE PRESENTING.....ROOM

Tuesday Sessions

Session 1	Water Quality	Water Treatment	306
Session 2	Water Quality	Safe Drinking Water Act	307
Session 3A	Engineering	Materials Performance	309
Session 3B	Operator	Backflow Programs	309
Session 4	Engineering	Pipeline Rehabilitation	308
Session 5	Water Resources	Energy and Sustainability	311
Session 6	Water Resources	Water Well Technology	312
Session 7	Operator	Operator	313
Session 8	Utility Management	Communications & Customer Relations	310
Session 9	Utility Management	Environmental, Health & Safety	315
Session 10	Utility Management	Security & Emergency Planning	314

Wednesday Sessions

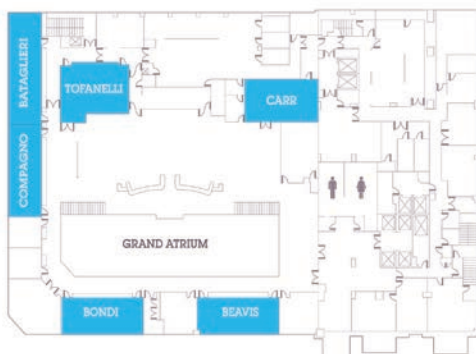
Session 11A	Water Quality	Water Treatment & Smaller Utilities	306
Session 11B	Water Quality	Water Treatment & Financial Management & Smaller Utilities	306
Session 12A	Water Quality	Research	307
Session 12B	Water Quality	Water Treatment & Operators	307
Session 12C	Water Quality	Research & Safe Drinking Water Act	307
Session 12D	Water Quality	Research & Energy and Sustainability	307
Session 13A	Water Quality	Distribution System Water Quality	308
Session 13B	Water Loss Control	Water Loss Control	308
Session 14	Engineering	Systems Controls	309
Session 15A	Engineering	Tanks Reservoirs Structures	310
Session 15B	Utility Management	New Technology	310
Session 16A	Engineering	Asset Management	311
Session 16B	Utility Management	Security & Emergency Planning	311
Session 17A	Water Resources	Water Well Technology	312
Session 17B	Water Resources	Recycled/Desalination	312
Session 18A	Utility Management	New Technology	313
Session 18B	Utility Management	Leadership Development	313
Session 19	Operators	Meter	314
Session 20	Operator	Operator	315

Thursday Sessions

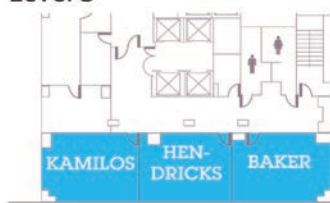
Session 21	Water Quality	Water Treatment	Tofanelli
Session 22	Water Quality	Source Water Quality	Bataglieri
Session 23	Water Quality	Water Quality Analysis	Beavis
Session 24	Engineering	Engineering & Construction	Bondi
Session 25	Water Resources	Water Management & Efficiency	Carr
Session 26	Operator	Operator	Compagno
Session 27A	Operator	Smaller Utility	Hedricks, Kamilos & Baker
Session 27B	Utility Management	Security & Emergency Planning	Hedricks, Kamilos & Baker



Level 2

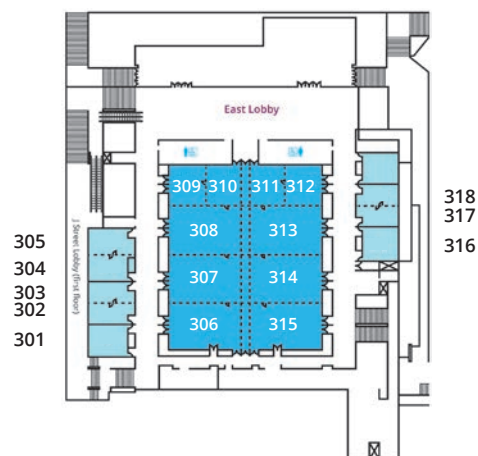


Level 3



Sacramento Convention Center

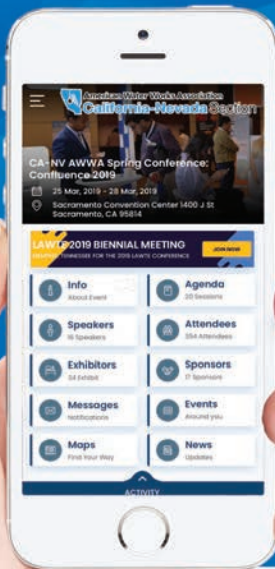
Third Floor



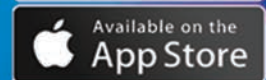


American Water Works Association
California-Nevada Section

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TUESDAY

MARCH 26

Session 1 Water Treatment	Session 2 Safe Drinking Water Act	Session 3A Materials Performance	Session 4 Pipeline Rehabilitation	Session 5 Energy & Sustainability	Session 6 Water Well Technology & Water Management & Efficiency	Session 7 Operator	Session 8 Communications & Customer Relations & New Technology Committee	Session 9 Environmental, Health & Safety	Session 10 Security & Emergency Planning
306	307	309	308	311	312	313	310	315	314
A Tale of Two WTPs: GAC vs PAC for DBP Reduction <i>Alex Page, Kennedy/Jenks Consultants</i>	State and Federal Regulatory Update <i>Darrin Polhemus, CA Division of Drinking Water</i>	Poly-What? Designing with Thermoplastics <i>Alex Gambino, Asahi/America, Inc.</i>	Pipe Bursting Water Mains - Trenchless Replacement and Rehabilitation <i>George Mallakis, TT Technologies, Inc. - "Trenchless Solutions"</i>	Panel Discussion: A New Normal: The Confluence of New Electric Utility Requirements and Water Agency Impacts <i>Patrick Welch, California Municipal Utilities Association</i> <i>Adam Smith, Southern California Edison</i> <i>Clifford Chan, EBMUD</i>	State Update on SGMA Implementation <i>Steven Springhorn, California Department of Water Resources</i> <i>Samuel Boland-Brien, CA State Water Resources Control Board</i>	Program Updates for Drinking Water Operator Certification <i>Alice Webber & David Maurer, State Water Resources Control Board</i>	Engaging Customer's on Leaks: Beyond Customer Engagement Portals <i>Maryana Pinchuk, Valor Water</i> <i>Communications & Customer Relations</i>	Health & Environmental Impacts Caused by Catastrophic Events: The Side-Effects of Wildfires <i>Pearl J. Pereira & Michelle Rosales, Forensic Analytical Consulting Services, Inc.</i>	America's Water Infrastructure Act - What Does S. 3021 Mean for Water Utilities? <i>Kevin Morley, AWWA</i> <i>Lauren Wisniewski, USEPA</i>
Heavy Hitters: Comparing Where DBPs Were Knocked Down in Two Ozone/BAF Pilot Trains <i>Drew Hart, Carollo Engineering</i>	State and Federal Regulatory Update - NEVADA <i>My-Ling Nguyen, State of Nevada</i>	AWWA D102-Inside Coating System 3: Better Corrosion Protection of Welded Steel Tanks <i>Paul Trautmann, Sherwin Williams</i>	Earthquake Resistant Ductile Iron Pipe (ERDIP) Countermeasure Against Tsunamis <i>Naoto Itabashi, Kubota Corporation</i>			Dewatering Facility Placement and Equipment Selection <i>Michael Hether & Bill Ash, City of Napa</i>	Tea Time With the Rafteries Ladies - Can Civility Be Returned to the Water Rates Discussion? <i>Sally Van Etten, Melissa Elliot & Andrea Boehling, Rafteries</i>	Utility Operations, Safety & Health, Emergency Preparedness <i>Gerald Simon, Alexander Williams & Mike Jones, California Water Service</i>	
Improving San Pablo Reservoir Water Quality with Hypolimnetic Oxygenation System to Reduce T&O and DBPs <i>All Shekholesiani & Deborah Russell, EBMUD</i>			Corrosion and its Control for Ductile Iron Pipelines <i>Josh Blount, Ductile Iron Pipe Research Association</i>		DWR Climate Change Guidance & Modeling Tools for SGMA <i>Tyler Hatch, CA Department of Water Resources</i>				
Grand Opening Leadership Development Committee & Young Professional Committee									
Dennison WTP - A Rags to Riches Story <i>Joe Gustino & Sean Donovan, Coastside County Water District</i>	Evaluating Risks to the Water Supply <i>Evan Jacobs, California American Water</i>	3B: Backflow Programs Cross Connection Testing in San Francisco <i>Jim Blue, SFPUC Water Quality Division</i>	Ice Pigging - Cleaning Mains with Ice <i>Paul Treloar, SUEZ Advanced Solutions</i>	Leveraging Energy Efficiency Programs and Processes in Water Sourcing and Distribution Systems to Achieve Optimized Operational Performance <i>Eric Bornstein, The Energy Coalition</i> <i>Brian Collins, United Water Conservation District</i>	Streamflow Depletion Requirements in California's Sustainable Groundwater Management Act: A Proposed Approach for Compliance <i>Sarah Fahredidine, Environmental Defense Fund</i>	Alternatives to Conventional and UDF Hydrant Flushing <i>Jeff Favina, ValveTek Utility Services, Inc.</i>	Flash Mentoring Session <i>Multiple Mentors from Various Agencies</i>	Complying with the Statewide General NPDES Permit for Drinking Water Systems Discharges - Lessons Learned and Best Management Practices <i>Francois Rodigari, San Jose Water Company</i> <i>Mark Bloom, California Water Service</i>	CalWARN: Fire, Earthquake and Regulation: It's Not Just a Website Anymore...But a Tool to Meet Your Needs! <i>Jim Wallbrink, San Jose Water Company</i>
	Federal Perspective on Risk Assessment and Management <i>Bruce MacIer, USEPA</i>	Recycled Water Cross-Connection Test Procedures <i>Ben Bennett, Backflow Prevention Specialists, Inc</i>	Pipeline Rehabilitation vs Replacement, a Panel Discussion Focusing on Installation Methods, Emerging Technologies & Lessons Learned <i>David Kazeev, EBMUD</i> <i>George Mallakis, TT Technologies</i> <i>Katie Miller, San Francisco Public Utilities Commission</i> <i>Laura Johnson, EBMUD</i> <i>& Michael Cade, West Valley Construction</i>		Guidance and Tools for Mapping Groundwater Dependent Ecosystems for SGMA <i>Melissa Rohde, The Nature Conservancy</i>			Statewide General NPDES Permit - A State Water Resources Control Board Perspective <i>Diana Messina, CA State Water Resources Control Board</i>	
Innovative Approach to Lead and Copper Rule (LCR) Customer Site Assessments and Communication <i>Taille Lopez, Cal Water</i>	Communicating Risks to your Customers <i>Susan Teefy, EBMUD</i>			The Groundwater Manager's Dilemma: How to Comply with New California Law without Changing Water Rights <i>Andrew Ayres, Environmental Defense Fund</i>				Panel Discussion: Everything You Wanted to Know About the Statewide General NPDES Permit - But Were Afraid to Ask <i>Diana Messina, CA Water Resources Board</i> <i>Francois Rodigari, San Jose Water Company</i>	



WEDNESDAY

MARCH 27

Session 11A Water Treatment & Smaller Utilities	Session 12A Research	Session 13A Distribution System Water Quality	Session 14 Systems Control	Session 15A Tanks Reservoirs & Structures	Session 16A Asset Management & Pipeline Rehabilitation	Session 17A Water Well Technology	Session 18A New Technology	Session 19 Meter & Asset Management	Session 20 Operator
306	307	308	309	310	311	312	313	314	315
Back to the Basics: Challenges & Solutions for Small Systems/Groundwater Treatment - Introduction <i>Eugene Leung, Division of Drinking Water</i>	Case Study in Non-Regulated Bacterial Testing <i>Sue Murphy & Justin M. Hopkins, Salano Irrigation District & Dr. Rick Blodgett, Water Environmental Testing Laboratory</i>	Lead Testing in California Schools <i>David Kimbrough, Pasadena Water & Power</i>	Getting the Most Out of Your SCADA System <i>Henry Palechek, Helix Water District</i>	Water Storage Tank Coating Systems: Revisions to the AWWA D102 <i>Tony Hobbs, Truemed</i>	Water Network Failure Prediction: Applying Statistics & Machine Learning to Open Data & Continuous Data Acquisition <i>Sergio Coelho, Baseform</i>	Well Screen Performance & Efficiency Optimization <i>Kevin McGillicuddy, Roscoe Moss Company</i>	Cyber Security Guidance Tool <i>Daniel Groves & Andrew Orlt, West Yost Associates</i>	The Evolution of Meter Management Practices: Testing, Replacement & Revenue Protection <i>Carl Sharkey, Valar Water Analytics, Inc.</i>	Jar Testing Made Easy <i>Guy Schott, CA Water Resources Control Board</i>
Back to the Basics: Challenges & Solutions for Small Systems/Groundwater Treatment - Arsenic <i>Lisa Miller, Golden State Water Company & Issam Najm, Water Quality & Treatment Solutions, Inc.</i>	Extraction of Disinfection Byproducts in Potable Drinking Water for Biossays <i>Bioassays Stephanie Lau, Stanford University</i>				Asset Management Selecting the Right CMMS - Case Studies <i>Kathleen Zynda, Bob Munro & Hector Ruiz, GHD</i>	RISD: A New Well Rehabilitation Approach <i>Tom Morris, West Yost Associates</i>			
Back to the Basics: Challenges & Solutions for Small Systems/Groundwater Treatment - 1.2.3 TCP <i>Talle Lopez, Cal Water</i>	12B Water Treatment & Operators Tracer Studies & Delivered Does (CT) - Drinking Water <i>Guy Schott, Department of Drinking Water</i>	Chloramine Disinfection Residual Optimization & Management in Distribution Networks <i>Andy Seidel, UGSI Solutions</i>	SCADA in the New World: The Changing Landscape of IIoT and Mobility <i>Travis Cox, Inductive Automation</i>	What Owners & Engineers Should Know to Eliminate Corrosion Inside Steel Tanks <i>Mark Moore, Pass Robles Tank</i>	Asset Management & Meter An Innovative Optimization Model for Repair/Replacing of Water Meters <i>Patrick J. City of Sacramento</i>	How Groundwater Models Can Help Plan Future Well Projects to Meet Water Needs: A Case Study in Using Groundwater Modeling to Help Design & Locate Wells <i>Lagan Wilks, GEOSCIENCE</i>	18B Leadership Development San Diego County Water Authority's Approach to Attracting New Talent <i>Teresa Penunuri, SDCWA</i>	An Innovative Optimization Model for Repair/Replacing of Water Meters <i>Patrick J. City of Sacramento</i>	Optimizing Polymer Efficiency for Improved Solids Separation <i>Yong Kim, UGSI Solutions, Inc</i>
Back to the Basics: Challenges & Solutions for Small Systems/Groundwater Treatment - Chromium 6 <i>Issam Najm, Water Quality & Treatment Solutions, Inc.</i>		Hydraulic Modeling & Unidirectional Flushing (UDF): A Case Study in Burlingame, CA <i>Wei Zhi Cheng, SRT Consultants</i>		How to Address Infrastructure Replacement Quicker in 2019 <i>Frank Gill, Halman Capital</i>	Asset Management & New Technology Detecting Potable Water Leaks using Remote Satellite Sensing <i>Gadi Kovarsky, Utilis</i>	Gravel Pack Design to Maximize Well Capacity & Minimize Sand Production <i>Lawrence (Larry) Ernst, Wood Rogers, Inc.</i>	Zone 7's Efforts to Retain Staff in Operations <i>Colter Anderson, Zone 7 Water Company</i>	C715-18 Test Bench Compatibility to Support Ultrasonic & Electromagnetic Meter Testing <i>Mike Mastic, Mars Company</i>	
Back to the Basics: Challenges & Solutions for Small Systems/Groundwater Treatment - Multicontaminants/DBPs & Organics <i>Kevin Berryhill, Provost & Pritchard</i>	Circular Raceway Contractors Can Improve Disinfection Credit & Reduce Cost <i>Whitney Sandella, West Yost Associates</i>	The Devil is in the Details - Development & Rollout of an Interactive Water Quality Data Portal <i>Rory Hartkenney, City of Sacramento & Muir Adams, SynSoft Solutions, LLC</i>	What's in a Name? <i>Michael J. Erwin, TJC and Associates, Inc</i>	Conserving Water by Making Data Actionable <i>Dave Twichell & Paul Hauffman, Sedaru</i>	Asset Management 20-Year Anniversary of Tucson Water's Pipeline Protection Program (PPP) <i>Britt Klein, Wachs Water Services & Paul Acosta, Tucson Water</i>	Water Well Applications for Double Spine Lock Fittings <i>Charles Hohard, Roscoe Moss Company</i>	Expert Panel Focused on Enhancing Water Industry Recruitment & Retention <i>Teresa Penunuri, SDCWA</i>	How to Use Portable Meter Testers <i>Kyle Juiden, Sacramento Suburban Water District</i>	Forgotten Assets - A City's Look at Air-Release Valves on the Distribution System <i>Dave Bosa & Megan Thomas, City of Sacramento, Department of Utilities</i>
Back to the Basics: Challenges & Solutions for Small Systems/Groundwater Treatment - Question & Answer Panel Discussion <i>Eugene Leung, Division of Drinking Water</i>	Tracer Studies: the Good, the Bad and the Ugly <i>Craig Thompson, West Yost Associates</i>	Active Control of THM Levels in Drinking Water Distribution Systems <i>Ethan Brooke, UGSI Solutions</i>		System Wide Storage Tank Replacement in Remote California <i>T. Scott Kelly, PE, LACO Associates</i>	Apply EPA's AM Framework to Optimize Your O&M - Case Studies <i>Gage Muckleroy, Mert Mufnigh & Hector Ruiz, GHD</i>	Development of a GIS-Based Methodology for Identifying & Ranking Prospective Sites for Public Wells within a Large Urbanized Area <i>Ken Loy, West Yost Associates & James Arenz, Sacramento Suburban Water District</i>		Factors Affecting Meter Accuracy <i>Dan Baker, Helix Water District</i>	
7:30 AM - 8:00 AM	8:00 AM - 8:30 AM	10:00 AM - 10:30 AM	10:30 AM - 11:00 AM	11:00 AM - 11:30 AM	11:30 AM - 12:00 PM				



WEDNESDAY

MARCH 27

Session 11A Water Treatment & Smaller Utilities	Session 12C Research & Safe Drinking Water Act	Session 13B Water Loss Control	Session 14 Systems Control	Session 15A Tanks Reservoirs & Structures	Session 16B Security & Emergency Planning	Session 17B Recycled/Desalination Committee	Session 18B Leadership Development	Session 19 Meter	Session 20 Operator
306 Low Tech TTHM Removal <i>Ethan Brooks, Pox Water Technologies</i>	307 Microplastics: Overview & California Legislation <i>Jessica Gauger, California Association of Sanitation Agencies</i>	308 Customer Meter Testing: Matching a Testing Program to Your Goals <i>Kris Williams, Water Systems Optimization</i>	309 Implementation of Automation Projects Using a SCADA Master Plan <i>Jeffrey A. Martin, Carolla Engineers</i>	310 Economic Analysis of Water Quality Management Alternatives for Palo Alto's Foothills Emergency Storage System <i>Mark Quady & Nina Mao, SRT Consultants</i>	311 Wildfire Destruction in 2018: Lessons Learned from Paradise Irrigation District <i>Kevin Phillips, Paradise Irrigation District</i>	312 Ozone/Biofiltration Application in Potable Reuse <i>Giridhar Upadhyaya, Carolla Engineers</i>	313 BAYWORK - The Opportunities & Challenges Collaborative Approaches to Candidate Development & Outreach in the Water & Wastewater Industry <i>Steven Currie, EBMUD</i>	314 AMI Customer Service Panel <i>Michel Harvey, Meter Committee</i>	315 Operators Round Table <i>Colter Andersen, Zone 7 Water Agency</i> <i>Chris Kania, City of West Sacramento</i> <i>Stewart Cole, City of Vallejo</i> <i>John Struazel, CA State Water Resources Control Board</i>
306 Designing & Implementing Sustainable Water Treatment Solutions with Small, Low Income Communities in the US <i>Sara Glade, UC Berkeley</i>	307 Occurrence & Removal of Micro-Plastics During Drinking Water Treatment on the Great Lakes <i>Robert C. Andrews, University of Toronto, St. George</i>	308 California Energy Commission Funded Case Study in Leakage Reduction Technologies - Acoustic Monitoring, Satellite Imagery, & Smart PRVs <i>Tori Yokoyama, Hazen & Sawyer</i>	309 SCADA Panel Discussion <i>Henry Palechek, Helix Water District</i>	310 A Systems Approach for Improving Water Quality <i>Dave Summerfield, Medora Corp. - SolareBee</i>	311 Addressing Potable Reuse Operator Certification Needs - The AWWO Certification Program - A Joint Effort Between CA-NV AWWA & CWEA <i>Erin Mackey, Brown and Caldwell</i>	312 Maximizing Groundwater Use in the Central & West Coast Basins through Recycled Water from Hyperion <i>Chris Repp, LADWP</i>	313 Succession Planning in Operations <i>Elinor Buchen, San Francisco Public Utilities Commission</i>	314 Got Meter & AMR Transmitter Scrap? Trash or Treasure? What is it Telling You? <i>Kenneth Moll, Veolia North American</i>	315 AMI Compatible Meter Pit Lids <i>Gary Khanjian, Armarcast</i>
306 Fostering Community - Driven Solutions: Policy Tools & Implementation Strategies for the Human Right to Water in California <i>Heather Lukacs & Laurel Firestone, Community Water Center</i>	307 Microplastics: Exposure and Health Effects <i>Anna-Marie Cook, ORD - Office of Science & Policy</i>	308 Two Years & Counting: A Review of the Water Loss Audit Reports in California <i>Todd Thompson, Department of Water Resources</i>	309 The Future of Automation in the Water Industry <i>Paul Sagues, XIO, Inc.</i>	310 Evolution of GIS - The Journey from Map Books to Tough Books <i>Michael J. Hether, P.E., City of Napa</i>	311 Power Resilience and Black Sky Planning for Water Utilities <i>Lauren Wisniewski and Bruce Macder, US Environmental Protection Agency</i>	312 Evaluating the Integration of Purified Water Into Existing Distribution Systems <i>Anya Kaufmann, Trussell Technologies, Inc.</i>	313 Preparing for 2025: MWD's Succession Plan for Engineering <i>David Clark, Metropolitan Water District of Southern California</i>	314 Meter & New Technology Lessons Learned in Sacramento on DMA Implementation <i>Julie Friedman, City of Sacramento, Department of Utilities</i>	315 Keep it Out! Operator Tools and Resources for Watershed Spills <i>Elissa Callinan, Amy Kral & Elise Cheung-Sutton, City of Sacramento, Department of Utilities</i>
306 Water Treatment & Financial Management & Smaller Utilities <i>Robert Baucher, Corona Environmental Consulting & Jeannie Darby, UC Davis</i>	307 Research & Energy & Sustainability Planning Considerations in the Face of Change <i>Juliet Christian-Smith, Water Foundation</i>	308 The Process of Performing and Validating an AWWA Water Audit <i>Rick Relyea, MC Engineering, Inc.</i>	309 The Future of Automation in the Water Industry <i>Paul Sagues, XIO, Inc.</i>	310 Evolution of GIS - The Journey from Map Books to Tough Books <i>Michael J. Hether, P.E., City of Napa</i>	311 Power Resilience and Black Sky Planning for Water Utilities <i>Lauren Wisniewski and Bruce Macder, US Environmental Protection Agency</i>	312 Evaluating the Integration of Purified Water Into Existing Distribution Systems <i>Anya Kaufmann, Trussell Technologies, Inc.</i>	313 Preparing for 2025: MWD's Succession Plan for Engineering <i>David Clark, Metropolitan Water District of Southern California</i>	314 Meter & New Technology Lessons Learned in Sacramento on DMA Implementation <i>Julie Friedman, City of Sacramento, Department of Utilities</i>	315 Keep it Out! Operator Tools and Resources for Watershed Spills <i>Elissa Callinan, Amy Kral & Elise Cheung-Sutton, City of Sacramento, Department of Utilities</i>
306 Nitrate Treatment Affordability in California: Three Case Studies <i>Tarah Henrie, Corona Environmental Consulting & Jeannie Darby, UC Davis</i>	307 California's Fourth Climate Change Assessment <i>John Andrew, CA Department of Water Resources</i>	308 Understanding Non-Revenue Water Loss with Powerful Analytics <i>Jonas Rugs, ESRI</i>	309 MODBUS: Capturing Real Time Production Meter Reads with Your PLC <i>Hannah Dunrud, Doug Cater & Greg Bundesen, Sacramento Suburban Water District</i>	310 Right Keys, No Problem (New Lock & Key Control Technology) <i>Jim Wallbrink, San Jose Water</i>	311 Power Resilience and Black Sky Planning for Water Utilities <i>Lauren Wisniewski and Bruce Macder, US Environmental Protection Agency</i>	312 Tracer Studies & Delivered Dose (CT) - Disinfected Tertiary Recycled Water <i>Guy Schott, SWRCB - Division of Drinking Water</i>	313 Expert Panel Focused on Developing Effective Succession Planning Strategies <i>Elinor Buchen, SFPUC</i> <i>Andrew Linard, LADWP</i> <i>David Clark, MWD</i>	314 AMI Panel - Everything That You Ever Wanted to Ask a Utility About Advanced Metering Infrastructure <i>Todd Artrip, Sacramento Suburban Water District</i>	315 Keep it Out! Operator Tools and Resources for Watershed Spills <i>Elissa Callinan, Amy Kral & Elise Cheung-Sutton, City of Sacramento, Department of Utilities</i>
306 Nitrate Treatment: It's Never Easy <i>Craig Gorman, Corona Environmental Consulting & Jeannie Darby, UC Davis</i>	307 Local Climate Change in Pasadena, CA <i>David Kimbrough, Pasadena Water & Power</i>	308 Understanding Non-Revenue Water Loss with Powerful Analytics <i>Jonas Rugs, ESRI</i>	309 MODBUS: Capturing Real Time Production Meter Reads with Your PLC <i>Hannah Dunrud, Doug Cater & Greg Bundesen, Sacramento Suburban Water District</i>	310 Right Keys, No Problem (New Lock & Key Control Technology) <i>Jim Wallbrink, San Jose Water</i>	311 Power Resilience and Black Sky Planning for Water Utilities <i>Lauren Wisniewski and Bruce Macder, US Environmental Protection Agency</i>	312 Tracer Studies & Delivered Dose (CT) - Disinfected Tertiary Recycled Water <i>Guy Schott, SWRCB - Division of Drinking Water</i>	313 Expert Panel Focused on Developing Effective Succession Planning Strategies <i>Elinor Buchen, SFPUC</i> <i>Andrew Linard, LADWP</i> <i>David Clark, MWD</i>	314 AMI Panel - Everything That You Ever Wanted to Ask a Utility About Advanced Metering Infrastructure <i>Todd Artrip, Sacramento Suburban Water District</i>	315 Keep it Out! Operator Tools and Resources for Watershed Spills <i>Elissa Callinan, Amy Kral & Elise Cheung-Sutton, City of Sacramento, Department of Utilities</i>

1:30 PM - 2:00 PM

2:00 PM - 2:30 PM

2:30 PM - 3:00 PM

4:00 PM - 4:30 PM

4:30 PM - 5:00 PM

5:00 PM - 5:30 PM



THURSDAY

MARCH 28

Session 21
Water Treatment

Session 22
Source Water Quality

Session 23
Water Quality Analysis

Session 24
Engineering & Construction

Session 25
Asset Management & Water Management & Efficiency

Session 26
Operator

Session 27A
Smaller Utility

Tofanelli	Bataglieri	Beavis	Bondi	Carr	Compagno	Hedricks, Kamilos & Baker
<p>What's Up With PFAS? Introduction to the Challenges & Solutions for Perfluorinated Compounds <i>Erin Mackey, Brown and Caldwell</i></p> <p>Determination of the Effectiveness of Granular Activated Carbon for the Removal of PFAS Precursor Compounds <i>Adam Redding, Calgon Carbon Corporation</i></p> <p>Resin Treatment Technology for PFAS - How it Worked in Southern Colorado <i>Stephanie Schwenke, JDS-Hydro Consultants, Inc.</i></p>	<p>Monitoring Tools to Help Save Time & Money While Managing Changing Water Sources <i>Steve Mungari, Suez Water Technologies and Solutions Analytical Instruments</i></p> <p>Maximizing Resource Efficiency Via Controlled Raw Water Withdrawal <i>Kelly McCurry, Ixom Watercare</i></p> <p>Water Planning for the Capital City - The Fastest Growing Big City in California <i>Chris Cleveland, Corallo Engineering & Brett Ewart, City of Sacramento, Department of Utilities</i></p> <p>Are We Ready for Cyanotoxins? Evaluating Reservoir & Treatment Plant Options to Manage Cyanotoxins & Related Water Quality Challenges <i>Margaret Keatins, Corana Environmental Consulting</i></p>	<p>History & Evolution of Turbidity Measurement <i>Randy Turner, SWAN Analytical USA</i></p> <p>Particle Counters: Size Calibration & Count Verification <i>Rudy Plaza-Plante, Isarog Water Consultants</i></p> <p>Slow Progress With Quicksilver: Methymercury Reduction in Reservoirs Contaminated by Large-Scale Mercury Mining <i>Mark Seelos, Santa Clara Valley Water</i></p> <p>Sample Integrity - A Guide to Sample Bottles, Preservatives, Hold Times & Collections <i>Andy Smith & Logan Greenwood, Western Environmental Testing Laboratory</i></p>	<p>How Can Hydraulic Models Solve Operational & Design Challenges in Water Distribution Systems? <i>Amy Kwong & Nathaniel Homan, West Yost Associates</i></p> <p>Canal Replacement Project - Innovative Approaches to Unique Challenges <i>Colin Dudley, Brown and Caldwell</i></p> <p>Fastest Ever Aquifer Storage & Recovery Project - City of Woodland ASR Project <i>Michael Ducker, Corallo Engineers Ed Wisniewski, City of Woodland</i></p> <p>Stopping "Hammer Time" - A Unique Hydraulic Model Calibration Story to Evaluate Hydraulic Transient Events <i>Bobby Vera, West Yost Associates & Justin Waples, Central San</i></p> <p>An Integrated Approach Toward Groundwater Banking in the Southern Central Valley, California <i>Mehdi Gosemizade, GEI Consultants, Inc.</i></p> <p>Start With the End in Mind - Designing Ductile Iron Pipe for Seismic Survivability <i>Dan Brauch, US Pipe</i></p> <p>What Keeps You Up at Night? <i>Karah Kingsbury, Helix Water District</i></p>	<p>California's New Water Efficiency Laws: Keep Calm & Comply (with our help!) <i>Tia Lebrer & Mary Ann Dickinson, California Water Efficiency Partnership</i></p> <p>James Nachbaur, CA State Water Resources Control Board</p> <p>Greg Bundesen, Sacramento Suburban Water District</p> <p>TBD, CA Department of Water Resources</p> <p>Water Management & Efficiency Looking to the Past to Guide the Future: Strategic Planning for Water Use Efficiency <i>Kat Wuelfing, EKI Environment & Water and Gus Meza, West Basin Municipal Water District</i></p> <p>We're in the Money: Scaling Up Investments in Distributed Water Innovations <i>Cynthia Koehler, WaterNow Alliance</i></p> <p>Self-Service Solutions - Improving Satisfaction & Saving Staff Time with AMI Data <i>Jeff Lipton, WaterSmart</i></p>	<p>Particle Analyzers: Size Calibration & Count Verification <i>Rudy Plaza-Plante, Isarog Consulting Company</i></p> <p>Aeration Versus TOC Reduction for DBP Compliance: What is the Right Tool for Your Municipal Plant? <i>Ellen Gaby Buhr, Ixom Watercare, Inc.</i></p> <p>Benefits of Water Tank Mixing <i>Dan Richards, Red Valve</i></p>	<p>O&M Manual Updates: How to Better Optimize Operations & Maintenance Efficiency & Consistency <i>Kristen Whitley, West Yost Associates</i></p> <p>The Challenges of Staying Local - How small water Systems Maintain Control & Increase Reliability <i>Jaimie Lefkowitz & Lisa Pizzillo, SRT Consultants</i></p> <p>Perseverance Pays Off: Building a New Community Water System in California <i>Lara Egeola-Martini, SRT Consultants & Chad Plantenberg, Redwood Glen</i></p> <p>Innovative Design & Operations to Provide Cost-Effective Treatment of Iron, Manganese, & TDS for a Small Community Production Well <i>Nelson Schlatter, EKI Environment & Water and Jeffrey Taranino, Fryer & Laureta, Inc.</i></p> <p>27B Security & Emergency Planning Ensuring Drinking Water Resiliency: Redding's Response to the 2018 Carr Fire <i>Conrad Tona, City of Redding</i></p>
<p>Wildfire Impacts on Water Quality & Treatment <i>Amanda Hahner, Washington State University</i></p> <p>Multicontaminant Removal - Simultaneous Removal of Nitrate & Arsenic <i>Chris Cleveland, Corallo Engineers</i></p> <p>Water Treatment & Research Biological Selenium Removal: Total System Optimization <i>Miguel Arias-Palc, Bureau of Reclamation</i></p> <p>Optimizing Polymer Efficiency for Improved Solids Separation <i>Yong Kim, UGSI Solutions, Inc.</i></p>	<p>#ReddingStrong - City of Redding Water Utility's Outstanding Response to the 2018 Carr Fire <i>Josh Watkins & Conrad Tona, City of Redding</i></p> <p>Aquifer Storage & Recovery (ASR) in Sonoma County, California <i>Rodney Fricke, Chris Petersen & Trevor Kent, GEI Consultants, Inc.</i></p> <p>Robert Marks, Pueblo Water Resources, Marcus Troatto, Sonoma Water and Steve MacCarthy, City of Sonoma</p> <p>Responding to an Extreme Source Water Quality Event - Challenges & Lessons Learned in Clear Lake <i>Bryan Rinde & Keith Short, Golden State Water Company</i></p> <p>Characterizing Groundwater Quality for SGMA Planning <i>Stephanie Hearn, GEI Consultants, Inc.</i></p>					

7:30 AM - 8:00 AM

8:00 AM - 8:30 AM

8:30 AM - 9:00 AM

9:00 AM - 9:30 AM

10:00 AM - 10:30 AM

10:30 AM - 11:00 AM

11:00 AM - 11:30 AM

11:30 AM - 12:00 PM



Technical Program

A maximum of 26.5 contact hours available for conference.

Tuesday, March 26, 2019

Session 1 - Water Treatment Room: 306

1:30 PM - 2:00 PM

A TALE OF TWO WTPS: GAC VS PAC FOR DBP REDUCTION

Alex Page, Kennedy/Jenks Consultants

Attendees in this session will learn about the operational differences, advantages and disadvantages of GAC and PAC from full scale operational data and Operator interviews. Two plants treating the same source water and operated by the same staff use different treatment approaches to reduce disinfection byproducts (DBPs): one uses roughing filters, Granular Activated Carbon (GAC), and membranes, and the other uses Powered Activated Carbon (PAC), ballasted clarification and media filtration.

2:00 PM - 2:30 PM

HEAVY HITTERS: COMPARING WHERE DBPS WERE KNOCKED DOWN IN TWO OZONE/BAF PILOT TRAINS

Drew Hart, Carollo Engineering

Participants will learn about DBP formation and reduction pathways evaluated using two parallel pilot treatment trains, one with pre-ozone, one with post-ozone. This work was completed to evaluate process improvement options for two of the City of Nashville's 80 mgd WTPs.

2:30 PM - 3:00 PM

IMPROVING SAN PABLO RESERVOIR WATER QUALITY WITH HYPOLIMNETIC OXYGENATION SYSTEM TO REDUCE T&O AND DBPS

Ali Sheikholeslami & Deborah Russell, East Bay Municipal Utility District

The participants of this presentation will learn about the water quality study that led East Bay Municipal Utility District to select the HOS, the system's layout, design criteria, design challenges, and HOS's performance monitoring plan.

4:00 PM - 5:00 PM

DENNISTON WTP - A RAGS TO RICHES STORY

Joe Gustino & Sean Donovan, Coastside County Water District

Participants in this session will learn how Coastside County Water District overcame short CT, high THMs and unreliable productivity by making some innovative changes to Denniston WTP and the distribution system.

5:00 PM - 5:30 PM

INNOVATIVE APPROACH TO LEAD AND COPPER RULE (LCR) CUSTOMER SITE ASSESSMENTS AND COMMUNICATION

Talle Lopez, Cal Water

Participants in this session will learn about how to implement a data-driven customer-facing approach to Lead and Copper rule monitoring intended to be scalable and applicable to other Districts and water utilities. The presentation will share the results and lessons learned from the pilot program that utilities can utilize to enhance their LCR sampling programs.

Session 2 - Safe Drinking Water Act Room: 307

1:30 PM - 2:15 PM

STATE AND FEDERAL REGULATORY UPDATE

Darrin Polhemus, CA Division of Drinking Water

Participants in this session will hear the latest updates from state and federal regulators.

2:15 PM - 3:00 PM

STATE AND FEDERAL REGULATORY UPDATE

My-Linh Nguyen, State of Nevada

Participants in this session will hear the latest updates from state and federal regulators (Nevada focused).

4:00 PM - 4:30 PM

EVALUATING RISKS TO THE WATER SUPPLY

Evan Jacobs, California American Water

Attendees in this session will hear from a water utility about their process for assessing water supply/quality risks in the distribution system and how they address evolving issues such as microplastics and PFOS/PFOA. The identification and management of risks is fundamental to ensuring a safe and reliable drinking water supply.

4:30 PM - 5:00 PM

FEDERAL PERSPECTIVE ON RISK ASSESSMENT AND MANAGEMENT

Bruce Macler, USEPA

In this session, participants will hear about the United States Environmental Protection Agency's approach to risk assessment and management and the implications for California and Nevada water agencies.

5:00 PM - 5:30 PM

COMMUNICATING RISKS TO YOUR CUSTOMERS

Susan Teefy, East Bay Municipal Utility District (EBMUD)

As the public becomes more aware of potential hazards in our society, the more important it is to effectively communicate to your customers about those risks. This is especially the case when it is related to public health and the water supply. In this session, participants will learn strategies for connecting with customers and explaining the how, what, why, when and where they may be affected, both in an emergency situation and an ongoing basis.

Session 3A - Materials Performance Room: 309

1:30 PM - 2:30 PM

POLY-WHAT? DESIGNING WITH THERMOPLASTICS

Alex Gambino, Asahi/America, Inc.

Participants in this session will learn about thermoplastic options. Starting with foundation knowledge, the attendee will learn the basic differences of thermoplastics and installation methods. This presentation is geared toward maintenance personnel or in-house engineering staff.

2:30 PM - 3:00 PM

AWWA D102-INSIDE COATING SYSTEM 3: BETTER CORROSION PROTECTION OF WELDED STEEL TANKS

Paul Trautmann, Sherwin Williams

Participants in this session will learn about 100% volume solids coatings for welded steel potable water storage tanks including installation and total expected service life.

Session 3B - Backflow Programs Room: 309

4:00 PM - 4:30 PM

CROSS CONNECTION TESTING IN SAN FRANCISCO

Jim Blue, SFPUC Water Quality Division

Participants in this session will learn about Cross Connection testing in San Francisco; methods and procedures for performing cross connection shut-down tests in dual plumbed buildings in San Francisco.

4:30 PM - 5:30 PM

RECYCLED WATER CROSS-CONNECTION TEST PROCEDURES

Ben Bennett, Backflow Prevention Specialists, Inc

Participants in this session will discuss various methods and procedures for performing recycled water cross-connection testing and the positive and negative aspects of each method.

Session 4 - Pipeline Rehabilitation Room: 308

1:30 PM - 2:00 PM

PIPE BURSTING WATER MAINS - TRENCHLESS REPLACEMENT AND REHABILITATION

George Mallakis, TT Technologies, Inc. - "Trenchless Solutions"

Participants in this session will learn about pipe bursting of water mains, trenchless replacement and process & case studies.

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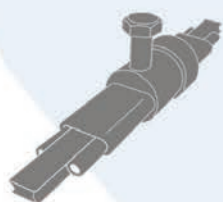
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Pipeline
Condition
Assessment



Pro-Maps™ /
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Asset Management
Technology



Leak Survey /
Leak Pinpointing

Steve Dennis
steve.dennis@mesimpson.com

800.255.1521
mesimpson.com

Technical Program

2:00 PM - 2:30 PM

EARTHQUAKE RESISTANT DUCTILE IRON PIPE (ERDIP) AS A COUNTERMEASURE AGAINST TSUNAMIS

Naoto Itabashi, Kubota Corporation

Participants in this session will learn about another aspect of Earthquake Resistant Ductile Iron Pipe (ERDIP) that was developed in Japan back in 1974. ERDIP is not only highly effective against large earthquakes, but it is also effective against tsunamis.

2:30 PM - 3:00 PM

CORROSION AND ITS CONTROL FOR DUCTILE IRON PIPELINES

Josh Blount, Ductile Iron Pipe Research Association

Participants in this session will learn the criteria to identify corrosive soil environments and how to protect ductile iron pipe from corrosion in these environments with polyethylene and V-Bio Enhanced Polyethylene Encasement.

4:00 PM - 4:30 PM

ICE PIGGING - CLEANING MAINS WITH ICE

Paul Treloar, SUEZ Advanced Solutions

Participants in this session will learn the science behind Ice Pigging – how ice has been proven to clean more effectively than water and more easily than traditional pigging.

4:30 PM - 5:30 PM

PIPELINE REHABILITATION VS. REPLACEMENT, A PANEL DISCUSSION FOCUSING ON INSTALLATION METHODS, EMERGING TECHNOLOGIES, AND LESSONS LEARNED

David Katzev, East Bay Municipal Utility District, George Mallakis, TT Technologies, Katie Miller, San Francisco Public Utilities Commission, Laura Johnson, East Bay Municipal Utility District and Michael Cadei, West Valley Construction

Participants will hear and learn from several pipeline design and construction experts on the advantages, challenges, and opportunities of pipeline rehabilitation and replacement technologies, suitable conditions for different approaches, and lessons learned; Participants will also have the opportunities to discuss their questions and concerns about rehab vs. replacement.

Session 5 - Energy and Sustainability Room: 311

1:30 PM - 3:00 PM

PANEL DISCUSSION: A NEW NORMAL: THE CONFLUENCE OF NEW ELECTRIC UTILITY REQUIREMENTS AND WATER AGENCY IMPACTS

Patrick Welch, California Municipal Utilities Association, Adam Smith, Southern California Edison and Clifford Chan, East Bay Municipal Utility District

Electric utilities are facing a multitude of new goals and requirements to develop renewable energy projects, enhance energy efficiency and even de-energize power lines in time of increased fire danger, all of which can impact water agency operations. This panel will explore the new mandates and how water agencies can optimize their systems to address them.

4:00 PM - 5:00 PM

LEVERAGING ENERGY EFFICIENCY PROGRAMS AND PROCESSES IN WATER SOURCING AND DISTRIBUTION SYSTEMS TO ACHIEVE OPTIMIZED OPERATIONAL PERFORMANCE

Eric Bornstein, The Energy Coalition and Brian Collins, United Water Conservation District

Participants in this session will learn about energy efficiency opportunities utilizing two-way SCADA controls and automated water quality monitoring. United Water Conservation District worked with a third party implementer to create an innovative pump sequencing approach that achieved an estimated annual energy savings of over 1.85 million kWh.

5:00 PM - 5:30 PM

WATER/ENERGY BANK "PROOF-OF-CONCEPT" (EPC-16-029)

Mark Beuhler, Antelope Valley Water Storage

Participants in this session will learn about the potential to shift the operation of State Water Project water delivery, from summer high energy-demand periods into spring/fall lower energy-demand periods. If the imported water delivers can be shifted seasonally, it enables a reduction in the state's peak hour electric load.



Technical Program

Session 6 - Water Well Technology & Water Management and Efficiency Room: 312

1:30 PM - 2:30 PM

STATE UPDATE ON SGMA IMPLEMENTATION

Steven Springhorn, CA Department of Water Resources & Samuel Boland-Brien, CA State Water Resources Control Board

Participants in this session will learn about DWR's basin boundary modifications, basin prioritization, evaluations of alternative submittals, best management practices, and financial assistance programs for the Sustainable Groundwater Management Act (SGMA). Participants will also receive an update from SWRCB on its implementation of SGMA.

2:30 PM - 3:00 PM

DWR CLIMATE CHANGE GUIDANCE AND MODELING TOOLS FOR SGMA

Tyler Hatch, CA Department of Water Resources

Participants in this session will learn about DWR's guidance for evaluating future climate in Groundwater Sustainability Plans (GSPs) and available modeling tools provided by DWR available for use in GSPs.

4:00 PM - 4:30 PM

STREAMFLOW DEPLETION REQUIREMENTS IN CALIFORNIA'S SUSTAINABLE GROUNDWATER MANAGEMENT ACT: A PROPOSED APPROACH FOR COMPLIANCE

Sarah Fakhreddine, Environmental Defense Fund

Participants in this session will learn about the complex groundwater management challenges associated with addressing depletions of interconnected surface water. While avoiding depletions of interconnected surface water is necessary under California's Sustainable Groundwater Management Act, there is currently a lack of established mechanisms for meeting this requirement. We present a proposed management approach for addressing this objective and limiting impairments to groundwater dependent streams and rivers.

4:30 PM - 5:00 PM

GUIDANCE AND TOOLS FOR MAPPING GROUNDWATER DEPENDENT ECOSYSTEMS FOR SGMA

Melissa Rohde, The Nature Conservancy

Participants in this session will learn a suite of tools and resources available to map, monitor, and manage groundwater dependent ecosystems when developing sustainable groundwater management plans. This presentation will introduce California's GDE mapping database, provide an overview of a five-step process for considering groundwater impacts to GDEs when preparing groundwater sustainability plans, and provide case study examples on how these tools are currently being used in California.

5:00 PM - 5:30 PM

THE GROUNDWATER MANAGER'S DILEMMA: HOW TO COMPLY WITH NEW CALIFORNIA LAW WITHOUT CHANGING WATER RIGHTS

Andrew Ayres, Environmental Defense Fund

Participants in this session will learn about the role of groundwater pumping allocations under California's Sustainable Groundwater Management Act (SGMA). Under SGMA, local agencies are tasked with managing groundwater with the goal of bringing groundwater conditions into balance and stopping further depletions and other undesirable impacts, yet they do not have the authority to change or modify groundwater rights. This presentation will focus on considerations for local agencies as they work to devise groundwater allocation schemes, including a discussion of potential methods for establishing baseline groundwater pumping allocations.

Session 7 - Operator Room: 313

1:30 PM - 2:30 PM

PROGRAM UPDATES FOR DRINKING WATER OPERATOR CERTIFICATION

Alice Webber & David Maurer, State Water Resources Control Board

Participants in this session will learn about important program changes and

updates regarding Drinking Water Distribution and Treatment Certification.

2:30 PM - 3:00 PM

DEWATERING FACILITY PLACEMENT AND EQUIPMENT SELECTION

Michael Hether & Bill Ash, City of Napa

Participants in this session will learn about the approach and challenges faced by the City of Napa's Water Division in selecting the appropriate technology and on-site location for a new dewatering facility at the EIB Jamieson Canyon Water Treatment Plant.

4:00 PM - 5:00 PM

ALTERNATIVES TO CONVENTIONAL AND UDF HYDRANT FLUSHING

Jeff Favina, ValveTek Utility Services, Inc.

Participants in this session will learn about alternative solutions available to the industry for flushing water main pipelines without discharging water to waste.

Session 8 - Communications and Customer Relations & New Technology Committee Room: 310

1:30 PM - 2:00 PM

ENGAGING CUSTOMERS ON LEAKS: BEYOND CUSTOMER ENGAGEMENT PORTALS

Maryana Pinchuk, Valor Water

Participants in this session will learn about the efficacy of current customer leaks solutions, utility customer behaviors and preferences, and how utilities can change their approach to leak management to more effectively resolve leaks and improve customer satisfaction.

Session 8 - Communications and Customer Relations Room: 310

2:00 PM - 3:00 PM

TEA TIME WITH THE RAFTELIS LADIES - CAN CIVILITY BE RETURNED TO THE WATER RATES DISCUSSION?

Sally Van Etten, Melissa Elliot & Andrea Boehling, Raftelis

Participants in this session will learn how other local agencies have tried different approaches to communicating and enlisting community acceptance and support of water rate increases. What has and has not worked and why and what are some suggestions for better communication with rate payers?

Session 8 - Leadership Development Committee & Young Professional Committee Room: 310

4:00 PM - 5:00 PM

FLASH MENTORING SESSION

Multiple Mentors from various agencies

Participants in the Flash Mentoring Session will have an opportunity to learn and seek guidance from several highly experienced water industry professionals during this interactive mentoring session aimed at helping Young Professionals become more valuable employees and find greater success in their careers.

Session 9 - Environmental, Health & Safety Room: 315

1:30 PM - 2:00 PM

HEALTH & ENVIRONMENTAL IMPACTS CAUSED BY CATASTROPHIC EVENTS: THE SIDE-EFFECTS OF WILDFIRES

Pearl J. Pereira & Michelle Rosales, Forensic Analytical Consulting Services, Inc.

Participants in this session will learn proactive ways to attempt to reduce impact during a fire event, what to do during a fire event to reduce impact, and what to do after a fire event to reduce impact.



Technical Program

A maximum of 26.5 contact hours available for conference.

2:00 PM - 3:00 PM

UTILITY OPERATIONS, SAFETY & HEALTH, EMERGENCY PREPAREDNESS

Gerald Simon, Alexander Williams & Mike Jones, California Water Service

This course provides an overview of the essentials necessary to be an effective Essential Responder in the time of Disaster and assisting from a health and safety standpoint.

4:00 PM - 4:30 PM

COMPLYING WITH THE STATEWIDE GENERAL NPDES PERMIT FOR DRINKING WATER SYSTEMS DISCHARGES—LESSONS LEARNED AND BEST MANAGEMENT PRACTICES.

Francois Rodigari, San Jose Water Company & Mark Bloom, California Water Service

Participants in this session will learn about practices that have been developed since the issuance of the Statewide Permit for Drinking Water Discharges. Participants will also be provided with an update on the effort to revise the CA-NV BMP Manual.

4:30 PM - 5:00 PM

STATEWIDE GENERAL NPDES PERMIT—A STATE WATER RESOURCES CONTROL BOARD PERSPECTIVE

Diana Messina, CA State Water Resources Control Board

Participants in this session will be provided an update on the implementation of the CA Statewide General NPDES permit including issues ranging from enrollment status to enforcement.

5:00 PM - 5:30 PM

PANEL DISCUSSION: EVERYTHING YOU WANTED TO KNOW ABOUT THE STATEWIDE GENERAL NPDES PERMIT—BUT WERE AFRAID TO ASK

Diana Messina, CA Water Resources Board & Francois Rodigari, San Jose Water Company

Participants in this session will gain insight on the CA Statewide General NPDES permit during an interactive discussion between the regulated community and the regulator. Participants will also have the opportunity to have their water discharge questions answered by the experts in the field.

Session 10 - Security and Emergency Planning Room: 314

2:00 PM - 3:00 PM

AMERICA'S WATER INFRASTRUCTURE ACT—WHAT DOES S. 3021 MEAN FOR WATER UTILITIES?

Kevin Morley, AWWA & Lauren Wisniewski, US Environmental Protection Agency

During this session, USEPA's Water Security Division will provide utilities with information on the requirements of the risk and resilience assessments and ERPs, tools that will assist utilities with developing their assessments and ERPs and how to certify that they have completed each by the applicable deadlines. In addition, the American Water Works Association will discuss the impression of the legislation as a whole, and will review AWWA standards and tools to assist utilities in their compliance with the provisions of the Act.

4:00 PM - 5:30 PM

CALWARN: FIRE, EARTHQUAKE AND REGULATION; IT'S NOT JUST A WEBSITE ANYMORE . . . BUT A TOOL TO MEET YOUR NEEDS!

Jim Wollbrinck, San Jose Water Company

Please join our annual California and Nevada Water/Wastewater Agency Response Network meeting! This session will be split into two sections. The first half will review the latest changes to the CalWARN website and have a chance to learn how to log into the system to start using this tool. The website was used extensively during the last fire season, and new components are being added to make handling the next big earthquake with more data-intelligence! The second half of the meeting will be a working session to start the sharing of "best practices" to prepare for, and conduct the work needed to comply with the new AWIA legislation (S. 3021). Together we can meet this challenge and many others.

Wednesday, March 27, 2019

Session 11A - Water Treatment & Smaller Utilities Room: 306

7:30 AM - 8:00 AM

BACK TO THE BASICS: CHALLENGES AND SOLUTIONS FOR SMALL SYSTEMS/GROUNDWATER TREATMENT—INTRODUCTION

Eugene Leung, Division of Drinking Water

This presentation will provide an overview of public water systems that rely solely on groundwater sources, water system sizes, population served and water quality challenges faced by these systems.

8:00 AM - 8:30 AM

BACK TO THE BASICS: CHALLENGES AND SOLUTIONS FOR SMALL SYSTEMS/GROUNDWATER TREATMENT—ARSENIC

Lisa Miller, Golden State Water Company and Issam Najm, Water Quality & Treatment Solutions, Inc.

Participants in this session will learn the challenges and solutions for treating Arsenic in small systems/groundwater.

10:00 AM - 10:30 AM

BACK TO THE BASICS: CHALLENGES AND SOLUTIONS FOR SMALL SYSTEMS/GROUNDWATER TREATMENT - 1,2,3-TCP

Talle Lopez, Cal Water

Participants in this session will learn the challenges and solutions for treating 1,2,3-TCP in small systems/groundwater.

10:30 AM - 11:00 AM

BACK TO THE BASICS: CHALLENGES AND SOLUTIONS FOR SMALL SYSTEMS/GROUNDWATER TREATMENT—CHROME 6

Issam Najm, Water Quality & Treatment Solutions, Inc.

Participants in this session will learn about the challenges and solutions for treating Chrome 6 in small systems/groundwater.

11:00 AM - 11:30 AM

BACK TO THE BASICS: CHALLENGES AND SOLUTIONS FOR SMALL SYSTEMS/GROUNDWATER TREATMENT—MULTICONTAMINANTS/DBPs AND ORGANICS

Kevin Berryhill, Provost & Pritchard

Participants in this session will learn about the challenges and solutions for treating organics and DBPs in small systems/groundwater.

11:30 AM - 12:00 PM

BACK TO THE BASICS: CHALLENGES AND SOLUTIONS FOR SMALL SYSTEMS/GROUNDWATER TREATMENT - QUESTIONS & ANSWER PANEL DISCUSSION

Eugene Leung, Division of Drinking Water

Question and answer panel discussion on the challenges and solutions for small systems/groundwater treatment.

1:30 PM - 2:00 PM

LOW TECH TTHM REMOVAL

Ethan Brooke, Pax Water Technologies

Participants in this session will learn how to remove THMs after they form using low-tech solutions.

2:00 PM - 2:30 PM

DESIGNING AND IMPLEMENTING SUSTAINABLE WATER TREATMENT SOLUTIONS WITH SMALL, LOW-INCOME COMMUNITIES IN THE US: FIELD TRIAL OF ELECTROCHEMICAL ARSENIC REMEDIATION (ECAR) ON A FARM IN ALLENSWORTH, CA

Sara Glade, UC Berkeley

Participants in this session will learn about water quality and capacity issues facing small, low-income communities in the US, the design process of a field trial of a novel arsenic treatment technology, ElectroChemical Arsenic Remediation (ECAR), in Allensworth, CA, and results from field trial implementation and/or project updates we have by the presentation date.

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2:30 PM - 3:00 PM

FOSTERING COMMUNITY-DRIVEN SOLUTIONS: POLICY TOOLS AND IMPLEMENTATION STRATEGIES FOR THE HUMAN RIGHT TO WATER IN CALIFORNIA

Heather Lukacs & Laurel Firestone, Community Water Center

To address the California water crisis, the Community Water Center acts as a catalyst for community-driven water solutions through organizing, education, and advocacy in California's San Joaquin Valley and Central Coast. Participants in this session will learn about current policy tools and implementation approaches that are a result of more than 12 years working alongside impacted communities.

Session 11B - Water Treatment and Financial Management & Smaller Utilities Room: 306

4:00 PM - 4:30 PM

ECONOMIC FEASIBILITY, AFFORDABILITY & MCL SETTING

Robert Raucher, Corona Environmental Consulting & Jeannie Darby, UC Davis

This session will clarify what the CA SDWA requires in MCL setting with respect to economic feasibility, and how the May 2017 Court ruling on the Cr(6) MCL signifies how the SWQCB reconsiders its approach economic feasibility analyses. Participants in this session will be able to define "affordability" in the context of MCL setting, and how to address the issue.

4:30 PM - 5:00 PM

NITRATE TREATMENT AFFORDABILITY IN CALIFORNIA; THREE CASE STUDIES

Tarrah Henrie, Corona Environmental Consulting & Jeannie Darby, UC Davis

Participants in this session will learn about water affordability in small systems with nitrate contamination.

5:00 PM - 5:30 PM

NITRATE TREATMENT: IT'S NEVER EASY

Craig Gorman, Corona Environmental Consulting & Jeannie Darby, UC Davis

Participants in this session will learn the challenges and solutions that water utilities may encounter when their supplies are impacted by nitrate. The presentation will address capital and operational considerations that can have significant impacts.

Session 12A - Research Room: 307

7:30 AM - 8:00 AM

CASE STUDY IN NON-REGULATED BACTERIAL TESTING

Sue Murphy & Justin M. Hopkins, Solano Irrigation District and Dr. Rick Blodgett, Water Environmental Testing Laboratory

Participants in this study will learn the benefits from evaluating the ENTIRE bacterial environment affecting their systems, when to go beyond regulated coliform and e. coli testing and new information about the contribution of non-regulated bacteria to existing challenges.

8:00 AM - 8:30 AM

EXTRACTION OF DISINFECTION BYPRODUCTS IN POTABLE REUSE AND CONVENTIONAL DRINKING WATERS FOR BIOASSAYS

Stephanie Lau, Stanford University

Participants in this session will learn about our novel approach to capturing and concentrating disinfection byproducts in real waters and the relative toxicities of different disinfection byproducts.

Session 12B - Water Treatment & Operators Room: 307

10:00 AM - 11:00 AM

TRACER STUDIES & DELIVERED DOSE (CT)—DRINKING WATER

Guy Schott, Department of Drinking Water

Participants in this session will learn about tracer studies and methods for determining the disinfection exposure time (t10) for pathogen inactivation and how to use those results to calculate the pathogen delivered dose for CT compliance.



Technical Program

11:00 AM - 11:30 AM

CIRCULAR RACEWAY CONTACTORS CAN IMPROVE DISINFECTION CREDIT AND REDUCE COST

Whitney Sandelin, West Yost Associates

Participants in this session will learn how a circular disinfection "raceway" contactor can be integrated into a tank design to provide a higher T10 to hydraulic detention time ratio than serpentine baffled contactors typically achieve, thereby resulting in a more efficient disinfection contactor configuration.

11:30 AM - 12:00 PM

TRACER STUDIES: THE GOOD, THE BAD, AND THE UGLY.

Craig Thompson, West Yost Associates

Participants in this session will learn about issues that should be considered when planning and conducting a tracer study, and how a tracer test can accurately simulate or fail to determine a contactor's T10 to HDT ratio.

Session 12C - Research & Safe Drinking Water Act Room: 307

1:30 PM - 2:00 PM

MICROPLASTICS: OVERVIEW & CALIFORNIA LEGISLATION

Jessica Gauger, California Association of Sanitation Agencies

Participants in this session will learn an overview and details of the legislative process that took place to develop two senate bills (SBs 1422 and 1263) to establish a statewide microplastics strategy and to regulate microplastics in drinking water.

2:00 PM - 2:30 PM

OCCURRENCE AND REMOVAL OF MICRO-PLASTICS DURING DRINKING WATER TREATMENT ON THE GREAT LAKES

Robert C. Andrews, University of Toronto, St. George

Recent news reports have indicated that municipally treated drinking water may contain microplastics. These materials have been observed in untreated water supplies around the world, including North America, however their removal during drinking water treatment has not been reported. As health risks associated with the consumption of plastics are currently unknown, it is important to quantify their occurrence and the impact of drinking water treatment processes.

2:30 PM - 3:00 PM

MICROPLASTICS: EXPOSURE AND HEALTH EFFECTS

Anna-Marie Cook, ORD - Office of Science and Policy

Participants in this session will learn how humans are exposed to microplastics and the effects on health. This research summary will also identify a framework for understanding, describing, and communicating microplastics health effects that would be useful for drinking water agencies, the public, and regulators.

Session 12D - Research & Energy and Sustainability Room: 307

4:00 PM - 4:30 PM

PLANNING CONSIDERATIONS IN THE FACE OF CHANGE

Juliet Christian-Smith, Water Foundation

Climate change is increasingly affecting water agency operations, from water supply concerns to water quality challenges. Participants in this session will learn about the importance of planning activities and programs in light of the "new normal."

4:30 PM - 5:00 PM

CALIFORNIA'S FOURTH CLIMATE CHANGE ASSESSMENT

John Andrew, CA Department of Water Resources

California's Climate Change Assessments contribute to the scientific foundation for understanding climate-related vulnerability at the local scale and informing resilience actions, while also directly informing State policies, plans, programs, and guidance, to promote effective and integrated action to safeguard California from climate change. Participants will learn about the state's most recent effort and how the assessment can inform short and long-term actions by their water agency.

5:00 PM - 5:30 PM

LOCAL CLIMATE CHANGE IN PASADENA, CA

David Kimbrough, Pasadena Water & Power

Participants in this session will learn how local climate change impact a surface water source for a California public water system.

Session 13A - Distribution System Water Quality Room: 308

7:30 AM - 8:30 AM

LEAD TESTING IN CALIFORNIA SCHOOL

David Kimbrough, Pasadena Water & Power

Participants in this session will learn about the latest results from lead testing in schools, lead and copper rule, lead service line inventory reporting, and childhood blood lead testing.

10:00 AM - 10:30 AM

CHLORAMINE DISINFECTANT RESIDUAL OPTIMIZATION AND MANAGEMENT IN DISTRIBUTION NETWORKS

Andy Seidel, UGSI Solutions

Participants in this session will learn how Chloramination is a successful disinfectant strategy in potable water systems and provides benefits such as a lower potential for disinfection byproduct formation (THMs) and improved disinfectant persistence in distribution systems. We will discuss case studies that demonstrate the importance of maintaining chemical equilibrium between ammonia, chlorine and chloramines.

10:30 AM - 11:00 AM

HYDRAULIC MODELING AND UNIDIRECTIONAL FLUSHING (UDF): A CASE STUDY IN BURLINGAME, CA DEMONSTRATES HOW UDF MODELING TOOLS CAN HELP REDUCE FLUSHING VOLUMES AND SIMPLIFY FLUSHING OPERATIONS

Weizhi Cheng, SRT Consultants

Participants in this session will learn about how effective planning for a unidirectional flushing program can be achieved by combining hydraulic modeling analysis with operational strategies. The end results are significant savings in flushing water volumes and simplified operations.

11:00 AM - 11:30 AM

THE DEVIL IS IN THE DETAILS—DEVELOPMENT AND ROLLOUT OF AN INTERACTIVE WATER QUALITY DATA PORTAL

Rory Hartkemeyer, City of Sacramento & Muir Adams, SymSoft Solutions, LLC

Participants in this session will learn the challenges encountered during the design and implementation of the data portal and the strategies that were developed to overcome them. The presentation will also include a hands-on opportunity for participants to explore the data portal. It will highlight the challenges encountered during the design and rollout of the project, the implementation strategies that were developed, and will highlight some of the benefits realized. It will also discuss the lessons learned in managing complex datasets and the online data-viewing system developed to present water quality data in an understandable and useful format.

11:30 AM - 12:00 PM

ACTIVE CONTROL OF THM LEVELS IN DRINKING WATER DISTRIBUTION SYSTEMS

Ethan Brooke, UGSI Solutions

This presentation will highlight the approaches taken by multiple utilities within the section to mitigate their THM levels. One example covered will be the work undertaken by the San Jose Water Company in 2014. SJWC installed a large-scale THM reduction system in a 12 MG reservoir. The combination of an energy-optimized aeration system design with active feedback control based on real-time measurements allowed San Jose Water to maximize energy efficiency for their THM removal system. By modulating aeration as a function of THM concentration, and optimizing power usage, the utility will potentially save about \$100K annually in energy while still achieving rigorous compliance goals.



Technical Program

A maximum of 26.5 contact hours available for conference.

Session 13B - Water Loss Control Room: 308

1:30 PM - 2:00 PM

CUSTOMER METER TESTING: MATCHING A TESTING PROGRAM TO YOUR GOALS

Kris Williams, Water Systems Optimization

Participants in this session will learn about the goals that can guide customer meter testing programs and the testing programs that can meet those goals. This session will also discuss the challenges or shortcomings of customer meter testing so that you can embark on customer meter testing fully informed.

2:00 PM - 2:30 PM

CALIFORNIA ENERGY COMMISSION FUNDED CASE STUDY IN LEAKAGE REDUCTION TECHNOLOGIES – ACOUSTIC MONITORING, SATELLITE IMAGERY, AND SMART PRVS

Tori Yokoyama, Hazen & Sawyer

Participants in this session will learn from a California Energy Commission research project implemented in California American Water systems about the deployment and evaluation of three (3) leakage control technologies: acoustic monitoring by Echologics, satellite imagery leak detection by Utilis, and flow-sensitive PRVs by Stream Control.

2:30 PM - 3:00 PM

TWO YEARS AND COUNTING: A REVIEW OF THE WATER LOSS AUDIT REPORTS IN CALIFORNIA

Todd Thompson, Department of Water Resources

Participants in this session will learn further about the use of Water Loss Audits as a tool for bettering water management practices related to audit methodology.

4:00 PM - 5:00 PM

THE PROCESS OF PERFORMING AND VALIDATING AN AWWA WATER AUDIT

Rick Relyea, MC Engineering, Inc.

Participants in this session will learn the data collection process, the process of filling out the water audit, and the validation process as required by SB555.

5:00 PM - 5:30 PM

UNDERSTANDING NON-REVENUE WATER LOSS WITH POWERFUL ANALYTICS

Jonas Rugys, ESRI

Participants in this session will learn about new analytical tools and methods to better understand water loss, discover patterns and trends in historical data, and make better decisions when it comes to water main repair and replacement.

Session 14 - Systems Controls Room: 309

7:30 AM - 8:30 AM

GETTING THE MOST OUT OF YOUR SCADA SYSTEM

Henry Palechek, Helix Water District

Participants in this session will learn how to optimize their SCADA system to get the most out of it. The talk will be looking at continuous SCADA improvements, SCADA screen optimization, operator training, and knowledge transfer to technical staff to make your SCADA system more useful and long lasting for water utilities.

10:00 AM - 11:00 AM

SCADA IN THE NEW WORLD: THE CHANGING LANDSCAPE OF IIOT AND MOBILITY

Travis Cox, Inductive Automation

Participants in this session will learn about necessary steps and best practices for navigating the changing landscape of IIoT and Mobility. This session will discuss practical tools you can leverage today.

11:00 AM - 12:00 PM

"WHAT'S IN A NAME?"

Michael J. Erwin, TJC and Associates, Inc

Participants in this session will learn how device tag names, software variable names, and tagging schemes can impact a treatment and distribution system.

1:30 PM - 2:30 PM

IMPLEMENTATION OF AUTOMATION PROJECTS USING A SCADA MASTER PLAN

Jeffrey A. Martin, Carollo Engineers

Participants in this session will learn about SCADA Master Planning and how to mitigate inconsistencies in automation design and utilization.

2:30 PM - 3:00 PM

SCADA PANEL DISCUSSION

Henry Palechek, Helix Water District

Participants in this session will share lessons learned and problem solving related to today's SCADA industry.

4:00 PM - 5:00 PM

THE FUTURE OF AUTOMATION IN THE WATER INDUSTRY

Paul Sagues, XiO, Inc.

Participants in this session will learn how to tackle the challenges facing the industry today with modern control solutions. Discuss considerations when choosing or upgrading a control system, technological advancements in the industry, and methods of ensuring security (cyber & physical).

5:00 PM - 5:30 PM

MODBUS: CAPTURING REAL TIME PRODUCTION METER READS WITH YOUR PLC

Hannah Dunrud, Doug Cater & Greg Bundesen, Sacramento Suburban Water District

Participants in this session will learn the benefits of by-passing pulse reads from a production meter and reading straight from the meter head with a PLC.

Session 15A - Tanks Reservoirs & Structures Room: 310

7:30 AM - 8:30 AM

WATER STORAGE TANK COATING SYSTEMS: REVISIONS TO THE AWWA D102

Tony Hobbs, Tnemec

Participants in this session will learn what updates and changes have been made to the AWWA D102 standards.

10:00 AM - 10:30 AM

WHAT OWNERS AND ENGINEERS SHOULD KNOW TO ELIMINATE CORROSION INSIDE STEEL TANKS

Mark Moore, Paso Robles Tank

Participants in this session will learn various options available to them to lower corrosion opportunities and make their coatings last much longer.

10:30 AM - 11:00 AM

HOW TO ADDRESS INFRASTRUCTURE REPLACEMENT QUICKER IN 2019

Frank Gill, Holman Capital

Participants in this session will learn about financing options and how to evaluate how to justify the cost for implementing solutions.

11:00 AM - 11:30 AM

CONSERVING WATER BY MAKING DATA ACTIONABLE

Dave Twichell and Paul Hauffen, Sedaru

Participants in this session will learn how data that is already available to them can be used to better manage the way they run their system for increased optimization.

Technical Program

11:30 AM - 12:00 PM

SYSTEM WIDE STORAGE TANK REPLACEMENT IN REMOTE CALIFORNIA

T. Scott Kelly, PE, LACO Associates

Participants in this session will learn about the project, hydraulic considerations made and timing of the tank replacement to continue service to Shelter Cove, as well as the challenges of completing the project in such a remote part of the state, the condition of the original redwood construction tanks, and funding challenges and constraints.

1:30 PM - 2:00 PM

ECONOMIC ANALYSIS OF WATER QUALITY MANAGEMENT ALTERNATIVES FOR PALO ALTO'S FOOTHILLS EMERGENCY STORAGE SYSTEM

Mark Quady & Nina Mao, SRT Consultants

Participants in this session will learn the pros and cons of various water tank mixers and chlorine residual control systems; how economic analysis can help to inform decision-making.

2:00 PM - 3:00 PM

A SYSTEMS APPROACH FOR IMPROVING WATER QUALITY

Dave Summerfield, Medora Corp.-SolarBee

By utilizing the latest advances in potable water tank mixing, Trihalomethane (THM) removal and residual monitoring and boosting, an operator can have improved water quality at less cost today than what was previously attainable.

Session 15B - New Technology Room: 310

4:00 PM - 5:00 PM

EVOLUTION OF GIS - THE JOURNEY FROM MAP BOOKS TO TOUGH BOOKS

Michael J. Hether, P.E., City of Napa

Participants in this session will have the opportunity to share and learn from the City's experience. Learning outcomes will include, but not be limited to the following:

- How development of the Water Division's computerized maintenance management system helped/hurt the development of the City's GIS;
- Considerations to determining how best to get started with development of GIS and how best to manage expectations;
- Better understanding of how long the transition takes to manage expectations.

5:00 PM - 5:30 PM

RIGHT KEYS, NO KEYS...NO PROBLEM (NEW LOCK AND KEY CONTROL TECHNOLOGY)

Jim Wollbrinck, San Jose Water

Participants in this session will learn about new technologies that San Jose Water has found and tested, that improved the efficiency of station access management and, key management & security.

Session 16A - Asset Management & Pipeline Rehabilitation Room: 311

7:30 AM - 8:00 AM

WATER NETWORK FAILURE PREDICTION: APPLYING STATISTICS AND MACHINE LEARNING TO OPEN DATA AND CONTINUOUS DATA ACQUISITION

Sergio Coelho, Baseform

Participants in this session will learn how to use software to perform real time failure prediction analysis on entire water or wastewater networks using the utility's own data and have this capability available real-time as new data is continually acquired.



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Technical Program

A maximum of 26.5 contact hours available for conference.

Session 16A - Asset Management Room: 311

8:00 AM - 8:30 AM

SELECTING THE RIGHT CMMS- CASE STUDIES

Kathleen Zynda, Bob Munro & Hector Ruiz, GHD

Participants in this session will learn the steps towards identifying and procuring a new CMMS that can meet the diverse business needs of their agency such as staff, budget, and most importantly their assets.

Session 16A - Asset Management & Meter Room: 311

10:00 AM - 10:30 AM

AN INNOVATIVE OPTIMIZATION MODEL FOR REPAIR/REPLACING OF WATER METERS

Patrick Ji, City of Sacramento

Like all mechanical devices, water meters always degrade in accuracy over time, resulting in an increasing amount of lost revenue. Unlike the conventional approaches to determine the time of replacing meters, this presentation provides information on a optimization model to calculate the optimal replacement age based on main four factors.

Session 16A - Asset Management & New Technology Committee Room: 311

10:30 AM - 11:00 AM

DETECTING POTABLE WATER LEAKS USING REMOTE SATELLITE SENSING

Gadi Kovarsky, Utilis

This session will provide details on the Utilis satellite radar technology and how the data collected can be analyzed to accurately and cost effectively detect leaks. Value proposition and performance metrics of multiple case studies will be discussed.

Session 16A - Asset Management Room: 311

11:00 AM - 11:30 AM

20-YEAR ANNIVERSARY OF TUCSON WATER'S PIPELINE PROTECTION PROGRAM (PPP)

Britt Klein, Wachs Water Services & Paul Acosta, Tucson Water

Participants in this session will learn how one water utility recovered from a critical water pipeline catastrophic failure.

11:30 AM - 12:00 PM

APPLY EPA'S AM FRAMEWORK TO OPTIMIZE YOUR O&M - CASE STUDIES

Gage Muckleroy, Mert Muftugil & Hector Ruiz, GHD

Participants in this session will learn from recent case studies on how application of the EPA's AM Framework puts to the test the principles/practices of asset management. The right approach to managing assets is critical when you want to optimize O&M work, provide adequate staffing, and make the right decisions.

Session 16B - Security and Emergency Planning Room: 311

1:30 PM - 3:00 PM

WILDFIRE DESTRUCTION IN 2018: LESSONS LEARNED FROM PARADISE IRRIGATION DISTRICT

Kevin Phillips, Paradise Irrigation District

In November 2018, the Camp Fire ignited and became the deadliest and most destructive wildfire in California history. Participants in this session will learn about the effects of the Camp Fire on local utilities from the Paradise Irrigation District.



Technical Program

4:00 PM - 5:30 PM

POWER RESILIENCE AND BLACK SKY PLANNING FOR WATER UTILITIES

Lauren Wisniewski & Bruce Macler, US Environmental Protection Agency

Drinking water and wastewater utilities require reliable power to provide uninterrupted services. An extended loss of grid power to a drinking water treatment plant or critical pumping stations can lead to communities and critical facilities without potable water. Natural disasters such as earthquakes and intentional acts such as a cyber attack have the potential to cause long-duration, widespread power outages. This presentation will provide information on ways water utilities can sustain operations without grid power using generators or distributed energy resources such as wind turbines and solar panels.

Session 17A - Water Well Technology Room: 312

7:30 AM - 8:00 AM

WELL SCREEN PERFORMANCE AND EFFICIENCY OPTIMIZATION

Kevin McGillicuddy, Roscoe Moss Company

The evolution of manufactured ground water production well screens combined with improvements in gravel envelope design and well development techniques has led to higher expectations in well performance. Laboratory and field comparison studies have provided valuable results that reveal the primary factors that influence the efficiency of the screen and the completed well structure. The presentation will provide a brief summary of the comparative studies and their findings.

8:00 AM - 8:30 AM

RISD: A NEW WELL REHABILITATION APPROACH

Tom Morris, West Yost Associates

Participants in this session will learn how injection development methods adopted for the ASR industry have been successfully applied to potable production wells to restore and even improve performance.

10:00 AM - 10:30 AM

HOW GROUNDWATER MODELS CAN HELP PLAN FUTURE WELL PROJECTS TO MEET WATER NEEDS: A CASE STUDY IN USING GROUNDWATER MODELING TO HELP DESIGN AND LOCATE WELLS

Logan Wicks, GEOSCIENCE

Groundwater modeling allows managers to identify potential project locations and detect key areas where additional information may be required. Field investigations can then be planned to maximize hydrogeologic understanding and minimize data costs. Follow-up investigations designed for model refinement enhance the ability of groundwater models to simulate local project effects.

10:30 AM - 11:00 AM

GRAVEL PACK DESIGN TO MAXIMIZE WELL CAPACITY AND MINIMIZE SAND PRODUCTION

Lawrence (Larry) Ernst, Wood Rodgers, Inc.

Participants in this session will learn how to compare gravel pack design alternatives and installation methods. The goal of this talk is to illustrate how to improve well efficiency and reduce sand production.

11:00 AM - 11:30 AM

WATER WELL APPLICATIONS FOR DOUBLE SPLINE LOCK FITTINGS

Charles Hoherd, Roscoe Moss Company

Attendees in this session will learn about different end fittings used for water well casing and pump column. Specifically, this track will introduce the Double Spline Lock fitting as another option for well designers and contractors to consider when constructing a well. Examples of successful installations in both municipal and mining water well projects will be highlighted.

11:30 AM - 12:00 PM

DEVELOPMENT OF A GIS-BASED METHODOLOGY FOR IDENTIFYING AND RANKING PROSPECTIVE SITES FOR PUBLIC SUPPLY WELLS WITHIN A LARGE URBANIZED AREA

Ken Loy, West Yost Associates & James Arenz, Sacramento Suburban Water District

Participants in this session will learn about the application of industry-standard GIS-based techniques that facilitate the site screening process to identify the most viable public supply well sites for further evaluation.

Session 17B - Recycled/Desalination Committee Room: 312

1:30 PM - 2:00 PM

OZONE/BIOFILTRATION APPLICATION IN POTABLE REUSE

Giridhar Upadhyaya, Carollo Engineers

This presentation will discuss optimization of O3/BAF system used in potable water reuse. To help assess the system performance and rapidly identify performance anomalies, a performance tracking tool (i.e., Proformance) was used, which allowed timely identifying and addressing performance issue(s), and re-establishing system performance. The presentation will also discuss the key features of the tool.

2:00 PM - 2:30 PM

MAXIMIZING GROUNDWATER USE IN THE CENTRAL AND WEST COAST BASINS THROUGH RECYCLED WATER FROM HYPERION

Chris Repp, Los Angeles Department of Water and Power

Participants in this session will learn: The efforts currently underway by the City of Los Angeles to maximize reuse of recycled water and create a sustainable local water supply. These efforts include a Nitrification-Denitrification Membrane Bioreactor Pilot Study for advanced treatment, groundwater recharge/extraction studies, and forming regional partnerships to leverage infrastructure and capital resources.

2:30 PM - 3:00 PM

ADDRESSING POTABLE REUSE OPERATOR CERTIFICATION NEEDS - THE AWTG CERTIFICATION PROGRAM - A JOINT EFFORT BETWEEN CA-NV AWWA AND CWEA

Erin Mackey, Brown and Caldwell

CA-NV Section AWWA and CWEA have developed a program to address the absence of significant testing on advanced water treatment topics in the existing Operator Certification Program for water and wastewater operators. This presentation will give an overview of the program development, the exams being offered, training and preparation needs, and program next steps.

4:00 PM - 4:30 PM

EVALUATING THE INTEGRATION OF PURIFIED WATER INTO EXISTING DISTRIBUTION SYSTEMS

Anya Kaufmann, Trussell Technologies, Inc.

The East County Advanced Water Purification Program will augment Lake Jennings, a drinking water reservoir, with purified water to create a new source of local sustainable water supply. Helix Water District is performing an integration study to determine the effects of this new source water on their existing distribution system.

4:30 PM - 5:30 PM

TRACER STUDIES & DELIVERED DOSE (CT) - DISINFECTED TERTIARY RECYCLED WATER

Guy Schott, CA Water Resources Control Board - Division of Drinking Water

Participants in this session will learn about tracer studies for determining the modal contact time for disinfected tertiary recycled waters and to use those results to calculate the pathogen delivered dose for CT compliance.

Session 18A - New Technology Room: 313

7:30 AM - 8:30 AM

CYBER SECURITY GUIDANCE TOOL

Daniel Groves & Andrew Ohrt, West Yost Associates

The AWWA Process Control System Security Guidance for the Water Sector (Cybersecurity Guidance Tool) provides utility owners in the water sector with the ability to quickly review their control system architecture and use against the national standards, guidelines and best practices for the secure operation of their control systems and technology assets.



Technical Program

A maximum of 26.5 contact hours available for conference.

Session 18B - Leadership Development Committee Room: 313

10:00 AM - 10:30 AM

SAN DIEGO COUNTY WATER AUTHORITY'S APPROACH TO ATTRACTING NEW TALENT

Teresa Penunuri, San Diego County Water Authority

Participants in this session will learn about the SDCWA efforts to use their innovation and education programs to attract and hire new staff. This includes using social media, industry and community events to showcase innovative technologies and programs, and the diverse staff implementing them, to attract talent in a competitive technology and biotech community.

10:30 AM - 11:00 AM

ZONE 7'S EFFORTS TO RETAIN STAFF IN OPERATIONS

Colter Anderson, Zone 7 Water Company

The Operator's job market in California is very aggressive. As a water utility manager you not only have to think about wages and shift differentials, but also commutes, the cost of living and the fact that the majority of the operator staff is on the verge of retirement. Zone 7 has worked very hard to enhance their success rate at recruiting operators and keeping them from going elsewhere. In this half hour presentation you will learn some of the pitfalls and successful strategies for keeping your workforce at an appropriate level so that service to the public can be maintained and thus the public's trust with the product that we are delivering: clean drinking water.

11:00 AM - 12:00 PM

EXPERT PANEL FOCUSED ON ENHANCING WATER INDUSTRY RECRUITMENT AND RETENTION

Teresa Penunuri, San Diego County Water Authority, Colter Anderson, Zone 7 Water Company & Steven Currie, East Bay Municipal Utility Water District

Participants will be able to ask the expert panel specific questions about outreach and marketing strategies in order to develop effective recruitment and retention programs for their own agencies.

1:30 PM - 2:00 PM

BAYWORK—THE OPPORTUNITIES AND CHALLENGES OF COLLABORATIVE APPROACHES TO CANDIDATE DEVELOPMENT AND OUTREACH IN THE WATER AND WASTEWATER INDUSTRY

Steven Currie, East Bay Municipal Utility District

In this session, participants will learn about the successes and challenges that San Francisco Bay Area water and wastewater utilities have encountered in their efforts over the past decade to coordinate regional approaches to candidate development and outreach.

2:00 PM - 2:30 PM

SUCCESSION PLANNING IN OPERATIONS

Elinor Buchen, San Francisco Public Utilities Commission

Participants in this session will learn about the challenges and opportunities in shifting operations-focused workgroups to longer-term succession planning and knowledge transfer. The presentation will cover the risk management-based, workgroup-focused approach to succession planning that the Water Enterprise at SFPUC has been piloting.

2:30 PM - 3:00 PM

EFFECTIVE LEADERSHIP DEVELOPMENT FOR LADWP'S WATER DISTRIBUTION DIVISION

Breonia Lindsey, Los Angeles Department of Water and Power

Participants in this session will learn how the LADWP structures and runs an effective management and leadership development program for its large and diverse water distribution workforce. The multiple avenues the Water Distribution Division uses for transitioning the training and development of construction, operations, and maintenance personnel from technical, hands-on work to supervision and management will be highlighted.

4:00 PM - 4:30 PM

PREPARING FOR 2025: MWD'S SUCCESSION

PLAN FOR ENGINEERING

David Clark, Metropolitan Water District of Southern California

Participants in this session will learn about specific succession planning strategies that can guide organizations undergoing large amounts of employee turnover. The presentation will cover Engineering Services' current orientation programs that help bring new employees up to speed quickly and current workforce development programs aimed at increasing the depth of technical and managerial skill sets to meet future needs. The presentation will also cover lessons learned from Metropolitan's 2012 Succession Plan.

4:30 PM - 5:30 PM

EXPERT PANEL FOCUSED ON DEVELOPING EFFECTIVE SUCCESSION PLANNING STRATEGIES

Elinor Buchen, San Francisco Public Utilities Commission, Andrew Linard, Los Angeles Department of Water and Power & David Clark, Metropolitan Water District of Southern CA

Participants will be able to ask the expert panel specific questions about succession planning and mentoring strategies in order to develop effective programs for their own agencies.

Session 19 - Meter & Asset Management Room: 314

7:30 AM - 8:30 AM

THE EVOLUTION OF METER MANAGEMENT PRACTICES: TESTING, REPLACEMENT AND REVENUE PROTECTION

Carl Sharkey, Valor Water Analytics, Inc.

Participants in this session will learn about apparent water loss, why it matters to utilities, current and future water loss regulations, eight forms of apparent loss and unbilled water, apply learned concepts to a specific utility, create a prioritized meter replacement program.

Session 19 - Meter Room: 314

10:00 AM - 10:30 AM

AN INNOVATIVE OPTIMIZATION MODEL FOR REPAIR/REPLACING OF WATER METERS

Patrick Ji, City of Sacramento

Like all mechanical devices, water meters always degrade in accuracy over time, resulting in an increasing amount of lost revenue. Unlike the conventional approaches to determine the time of replacing meters, this presentation provides information on an optimization model to calculate the optimal replacement age based on main four factors.

10:30 AM - 11:00 AM

C715-18 TEST BENCH COMPATIBILITY TO SUPPORT ULTRASONIC & ELECTROMAGNETIC METER TESTING

Mike Mastic, Mars Company

Electronic meters measure much lower flow than mechanical meters. Testing this low flow, requires updates to your test benches. Presenters will learn why this is the case and what updates are needed.

11:00 AM - 11:30 AM

HOW TO USE PORTABLE METER TESTERS

Kyle Jividen, Sacramento Suburban

Participants in this presentation will learn the importance of large meter testing and hands-on, how to use a portable large meter tester.

11:30 AM - 12:00 PM

FACTORS AFFECTING METER ACCURACY

Dan Baker, Helix Water District

Participants in this presentation will learn what factors affect meter accuracy in order to make smart meter choices and to help determine meter testing program parameters.



Technical Program

1:30 PM - 2:00 PM

AMI CUSTOMER SERVICE PANEL

Michele Harvey, Meter Committee

Panel of utilities who have deployed fixed network meter reading systems with customer portals and smart phone applications. Your opportunity to ask how the technology has been implemented, changed management practices as well as lessons learned.

2:00 PM - 2:30 PM

GOT METER & AMR TRANSMITTER SCRAP? TRASH OR TREASURE? WHAT IS IT TELLING YOU?

Kenneth Molli, Veolia North America

Participants in this session will learn the value of periodically checking meter and AMR/AMI scrap pile.

2:30 PM - 3:00 PM

AMI COMPATIBLE METER PIT LIDS

Gary Khanjian, Armorcast

Participants in this session will learn which types of meter pit lids provide the best radio frequency propagation and why; sizes and load ratings available for retrofits in various applications/conditions; and features that should be considered when choosing an AMI compatible meter pit lid.

Session 19 - Meter & New Technology Committee Room: 314

4:00 PM - 4:30 PM

LESSONS LEARNED IN SACRAMENTO ON DMA IMPLEMENTATION

Julie Friedman, City of Sacramento Department of Utilities

Sacramento designed and implemented pilot District Metered Areas (DMAs) to evaluate its Water Loss Control program. Learn about tools that support real-time data-viewing and reporting, providing greater transparency, improved resource allocation and aide in identifying areas for improvement.

Session 19 - Meter Room: 314

4:30 PM - 5:30 PM

AMI PANEL – EVERYTHING THAT YOU EVER WANTED TO ASK A UTILITY ABOUT ADVANCED METERING INFRASTRUCTURE

Todd Artrip, Sacramento Suburban Water District

Panel of utilities who have deployed fixed network meter reading systems. Your opportunity to ask questions regarding how the technology has been implemented, changed management practices as well as lessons learned.

Session 20 - Operator & Room: 315

7:30 AM - 8:30 AM

JAR TESTING MADE EASY

Guy Schott, CA Water Resources Control Board

Participants in this session will learn about practical jar testing procedures in obtaining meaningful results.

10:00 AM - 11:00 AM

OPTIMIZING POLYMER EFFICIENCY FOR IMPROVED SOLIDS SEPARATION

Yong Kim, UGSI Solutions, Inc.

Despite the wide-spread use of polymers in water and wastewater treatment and their high recurring expense, there are very limited technical resources readily available to the many interested engineers and operators. With many equipment options available to operators, it makes sense to start with the basics of polymer chemistry. This discussion will review the basics of polymer chemistry, goals of activation, the development of polymer mixing equipment and equipment configuration basics.

11:00 AM - 11:30 AM

FORGOTTEN ASSETS – A CITY'S LOOK AT AIR-RELEASE VALVES ON THE DISTRIBUTION SYSTEM

Dave Boisa & Megan Thomas, City of Sacramento, Dept. of Utilities

Participants in this session will learn perspectives of air-release valve installations within a flood way, resizing undersized facilities, finding hidden assets, actual cost of maintaining non-standard locations, working with customers on visual impacts, things to consider during design, common misunderstandings of air-release valves, creating a maintenance program, and things to look for when maintaining devices.

1:30 PM - 3:00 PM

OPERATORS ROUND TABLE

Colter Andersen, Zone 7 Water Agency, Chris Kania, City of West Sacramento, Stewart Cole, City of Vallejo & John Strutzel, CA State Water Resources Control Board
Water treatment professionals share experience with each others successes and failures. Come with your industry problems and solutions.

4:00 PM - 5:00 PM

KEEP IT OUT! OPERATOR TOOLS AND RESOURCES FOR WATERSHED SPILLS

Elissa Callman, Amy Kral & Elyse Cheung-Sutton, City of Sacramento, Department of Utilities

Since watershed spills/discharges have the potential to impact source water quality and water treatment plant operations, notification is the first line of defense. This presentation will provide information on a local water utilities voluntary notification program, as well as information and resources developed to support water treatment plant operations planning and response to address the risk from watershed spills.

Thursday, March 28, 2019

**ALL THURSDAY SESSIONS ARE LOCATED
INSIDE THE SHERATON HOTEL**

Session 21 - Water Treatment Room: Tofanelli

8:00 AM - 8:30 AM

WHAT'S UP WITH PFAS? INTRODUCTION TO THE CHALLENGES AND SOLUTIONS FOR PERFLUORINATED COMPOUNDS

Erin Mackey, Brown and Caldwell

Participants in this session will learn about new developments in PFAS and PFOA toxicological evaluations and subsequent current and potential future regulatory activities with respect to perfluorinated compound treatment requirements.

8:30 AM - 9:00 AM

DETERMINATION OF THE EFFECTIVENESS OF GRANULAR ACTIVATED CARBON FOR THE REMOVAL OF PFAS PRECURSOR COMPOUNDS

Adam Redding, Calgon Carbon Corporation

Participants in this session will learn about the effectiveness of activated carbon for removing PFAS precursor compounds.

9:00 AM - 9:30 AM

RESIN TREATMENT TECHNOLOGY FOR PFAS—HOW IT WORKED IN SOUTHERN COLORADO

Stephanie Schwenke, JDS-Hydro Consultants, Inc.

PFAS is an emerging contaminant affecting many water districts. This presentation will show ion exchange can be a viable treatment method for the removal of PFAS.



Technical Program

A maximum of 26.5 contact hours available for conference.

10:00 AM - 10:30 AM

WILDFIRE IMPACTS ON WATER QUALITY & TREATMENT

Amanda Hohner, Washington State University

The audience will learn about changes in source water quality that might occur following a wildfire, and the consequences for treatment process performance. Results from several Water Research Foundation projects will be discussed, including recommendations and guidance for utilities to plan and prepare for a wildfire.

10:30 AM - 11:00 AM

MULTICONTAMINANT REMOVAL—SIMULTANEOUS REMOVAL OF NITRATE AND ARSENIC

Chris Cleaveland, Carollo Engineers

Participants in this session will learn about simultaneous removal of nitrate and arsenic in a biological system that combines biological and physical-chemical contaminant removal mechanisms.

Session 21 - Water Treatment & Research Room: Tofanelli

11:00 AM - 11:30 AM

BIOLOGICAL SELENIUM REMOVAL: TOTAL SYSTEM OPTIMIZATION

Miguel Arias-Paiz, Bureau of Reclamation

The San Luis Demonstration Plant was constructed in 2014 to determine the best 'in-valley' solution to agricultural drainage management, implementing biological treatment for selenium removal. The selenium removal process biologically reduces oxidized selenium into insoluble elemental selenium under anaerobic conditions. The first stage of ABMet removes oxygen and nitrate, and selenium reduction occurs primarily in the second stage where excess nutrient can lead to formation of hydrogen sulfide. An external carbon source is added due to lack of an electron donor in the feed water and optimal nutrient dosage was based on nitrate and dissolved oxygen concentrations.

11:30 AM - 12:00 PM

OPTIMIZING POLYMER EFFICIENCY FOR IMPROVED SOLIDS SEPARATION YONG KIM, UGSI SOLUTIONS, INC.

Participants in this session will learn about factors such as charge site exposure, uncoiling of polymer molecules, application of mixing energy and the effects of dilution water as they influence proper polymer activation.

Session 22 - Source Water Quality Room: Bataglieri

7:30 AM - 8:00 AM

MONITORING TOOLS TO HELP SAVE TIME & MONEY WHILE MANAGING CHANGING WATER SOURCES

Steve Mungari, Suez Water Technologies and Solutions Analytical Instruments

Participants will learn how drinking water systems and water treatment plants all face unique water quality challenges that affect treatment decisions, operational costs, and regulation compliance. In addition, water quality can change seasonally, with storms, with industrial effluents, and with location. For example, two plants nearby one another both sourcing from the same river could have different water quality challenges. Two water systems were analyzed in this study for their management of two separate plants with different source waters and how they use monitoring tools to stay in regulation compliance for disinfection byproducts (DBPs) rules and optimize treatment processes to save costs.

8:00 AM - 8:30 AM

MAXIMIZING RESOURCE EFFICIENCY VIA CONTROLLED RAW WATER WITHDRAWAL

Winn Short, Ixom Watercare

Water quality parameters vary widely throughout a reservoir, but most have limited options, if any, when it comes to choosing the point of withdrawal. This presentation explores our solution to that problem: allowing water treatment plants to identify and select that ideal albeit dynamic layer of better source water in real time. The presentation also details an ongoing full-scale trial at

a Georgia surface water treatment facility, which is evaluating the importance of understanding reservoir depth profile data set and demonstrating the value proposition associated with applying whole profile raw water selection capabilities.

8:30 AM - 9:00 AM

WATER PLANNING FOR THE CAPITAL CITY—THE FASTEST GROWING BIG CITY IN CALIFORNIA

Chris Cleveland, Carollo Engineering & Brett Ewart, City of Sacramento, Department of Utilities

In this presentation, attendees will learn about the alternatives that were developed to meet the forecasted 2050 water demands, the challenges and costs associated with each, the decision criteria used to select a direction forward, the planned phasing, and the status of the Phase II Project implementation.

9:00 AM - 9:30 AM

ARE WE READY FOR CYANOTOXINS? EVALUATING RESERVOIR AND TREATMENT PLANT OPTIONS TO MANAGE CYANOTOXINS AND RELATED WATER QUALITY CHALLENGES

Margaret Kearns, Corona Environmental Consulting

Given the increasing occurrence of cyanotoxins in surface water supplies, and USEPA's release of health advisories for two cyanotoxins, surface water utilities are actively pursuing management strategies for mitigation of harmful algal blooms (HABs) and cyanotoxins in their water supplies. This presentation will be instructive for both large and small water system operators, engineers, and managers that are currently engaged in evaluation, selection, and implementation of HAB mitigation strategies in their source waters and treatment plants.

10:00 AM - 10:30 AM

#REDDINGSTRONG—CITY OF REDDING WATER UTILITY'S OUTSTANDING RESPONSE TO THE 2018 CARR FIRE

Josh Watkins & Conrad Tona, City of Redding

The City of Redding Public Works Department – Water Utility worked tirelessly to keep the water system operational and pressurized to deliver the water necessary for life safety and fire suppression. Through power outages and a 30% increase in peak daily demand, the water system never failed.

10:30 AM - 11:00 AM

AQUIFER STORAGE AND RECOVERY (ASR) IN SONOMA COUNTY, CALIFORNIA

Rodney Fricke, Chris Petersen & Trevor Kent, GEI Consultants, Inc

Robert Marks, Pueblo Water Resources, Marcus Trotta, Sonoma Water and Steve MacCarthy, City of Sonoma

Participants in this session will learn how Sonoma Water recognized the potential limits on water resources prior to SGMA and initiated a feasibility study in 2010 for a groundwater banking program where Russian River water would be diverted through Sonoma Water's riverbank filtration/treatment system during the wet season and conveyed to depleted aquifers in neighboring groundwater basins for storage and use in the dry season.

11:00 AM - 11:30 AM

RESPONDING TO AN EXTREME SOURCE WATER QUALITY EVENT—CHALLENGES AND LESSONS LEARNED IN CLEAR LAKE

Bryan Rinde & Keith Ahart, Golden State Water Company

The objective of this presentation will be to describe Golden State Water Company's experience with treating surface water in Clear Lake in 2017 where environmental conditions created a two-week extreme event with severely decreased dissolved oxygen and elevated ammonia, iron, and manganese. Lake conditions were so poor for short periods that treating the water was not feasible. This presentation will also describe Golden State Water's staff effort to collect water quality data that confirmed lake conditions, aided in treatment adjustments, and supported procurement of additional capital equipment. The presentation will also describe Golden State Water's experience with working in collaboration with regulators, consultants, the community, and neighboring utilities, during and after the event, as well as long-term efforts with multiple stakeholders to improve the source water quality in Clear Lake.

Technical Program

11:30 AM - 12:00 PM

CHARACTERIZING GROUNDWATER QUALITY FOR SGMA PLANNING

Stephanie Hearn, GEI Consultants, Inc

This presentation will give insight towards using publicly available data to characterize groundwater and the approach used in the Kern and Kaweah Subbasins. Specific water quality trends will be presented to demonstrate the correlation between constituent concentrations and water levels, to show how water levels directly influence changing trends. Trending differences will be discussed with context to well construction, depth of the groundwater basin and aquifer materials (hydrogeology). Following the groundwater characterization, we'll discuss how the Groundwater Sustainability Agencies (GSAs) used this data to establish minimum thresholds for degraded water quality; how the contaminants were identified; data that was most valuable in characterizing water quality; and trends that correlate to water levels.

Session 23 - Water Quality Analysis Room: Beavis

8:00 AM - 9:00 AM

HISTORY AND EVOLUTION OF TURBIDITY MEASUREMENT

Randy Turner, SWAN Analytical USA

Turbidity is a principal physical characteristic of water and is an expression of the optical property that causes light to be scattered and absorbed by particles and molecules rather than transmitted in straight lines through a water sample. It is caused by suspended matter or impurities that interfere with the clarity of the water. Participants in this session will learn the history and evolution of turbidity measurement.

9:00 AM - 9:30 AM

PARTICLE COUNTERS: SIZE CALIBRATION & COUNT VERIFICATION

Rudy Plaza-Plante, Isarog Water Consultants

Participants in this session will learn about several sources of errors in the ELISA analysis and how to prepare independent standard solutions. The analysis of Total Microcystin by ELISA is very challenging as there are times that the calibration step fails even if the Lab Analyst is very careful in following the SOP.

10:00 AM - 11:00 AM

SLOW PROGRESS WITH QUICKSILVER: METHYLMERCURY REDUCTION IN RESERVOIRS CONTAMINATED BY LARGE-SCALE MERCURY MINING

Mark Seelos, Santa Clara Valley Water District

Participants in this session will learn about the mercury transformations occurring in aquatic ecosystems that regulate the metal's toxicity and bioavailability. Mark will then detail results of the Santa Clara Valley Water District's 10-year studies aimed to reduce methylmercury concentrations in mining-contaminated reservoirs and fish.

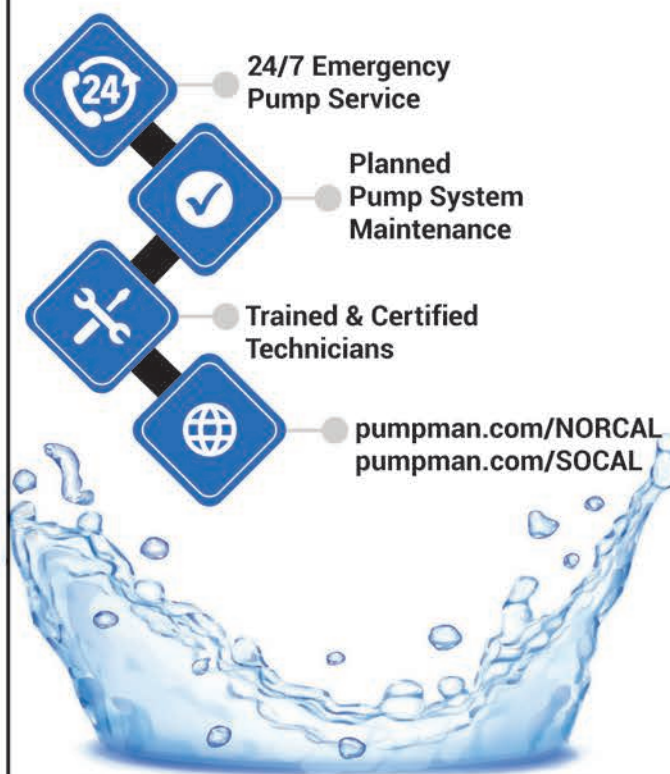
11:00 AM - 11:30 AM

SAMPLE INTEGRITY - A GUIDE TO SAMPLE BOTTLES, PRESERVATIVES, HOLD TIMES AND COLLECTIONS

Andy Smith & Logan Greenwood, Western Environmental Testing Laboratory

During the presentation attendees will learn: What does a preservative do? Why do I need specific bottles? What happens if I don't preserve my sample? We'll discuss hold times, what they mean, why they matter and what happens if analysis is performed passed the EPA prescribed hold time. Finally, we'll examine sample collection and help attendees set themselves up for success by following the correct collections protocols and using the correct containers.

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Resilience/Emergency Planning

Treatment Systems

and more...



Technical Program

A maximum of 26.5 contact hours available for conference.

Session 24 - Engineering & Construction Room: Bondi

8:00 AM - 8:30 AM

HOW CAN HYDRAULIC MODELS SOLVE OPERATIONAL AND DESIGN CHALLENGES IN WATER DISTRIBUTION SYSTEMS?

Amy Kwong & Nathaniel Homan, West Yost Associates

Participants in this session will learn of several case studies where a water distribution system hydraulic model was successfully used to address various operational and design challenges.

8:30 AM - 9:00 AM

CANAL REPLACEMENT PROJECT—INNOVATE APPROACHES TO UNIQUE CHALLENGES

Colin Dudley, Brown and Caldwell

Participants in this session will learn about the challenges and innovative design approaches applied to the Canal Replacement Project to install a 10-foot diameter concrete pipe with the presence of high salinity groundwater and multiple creek/drainage crossings, the use of soil cement to reduce imported bedding and other design approaches will also be described.

9:00 AM - 9:30 AM

FASTEST EVER AQUIFER STORAGE AND RECOVERY PROJECT - CITY OF WOODLAND ASR PROJECT

Michael Ducker, Carollo Ed Wisniewski City of Woodland

Participants in this session will learn about a creative water supply approach that can provide a solution to many common challenges utilities in California and Nevada are currently dealing with.

10:00 AM - 10:30 AM

STOPPING "HAMMER TIME" – A UNIQUE HYDRAULIC MODEL CALIBRATION STORY TO EVALUATE HYDRAULIC TRANSIENT EVENTS

Bobby Vera, West Yost and Justin Waples, Central San

Participants in this session will learn about a detailed and operationally focused hydraulic model calibration and data collection effort to refine model use for operations and transient evaluations.

10:30 AM - 11:00 AM

AN INTEGRATED APPROACH TOWARD GROUNDWATER BANKING IN THE SOUTHERN CENTRAL VALLEY, CALIFORNIA

Mehdi Gasemizade, GEI

Participants in this session will learn how regional Ag-MAR projects can influence stream flows and surface diversions using an integrated - management model.

11:00 AM - 11:30 AM

START WITH THE END IN MIND - DESIGNING DUCTILE IRON PIPE FOR SEISMIC SURVIVABILITY

Dan Brauch, US Pipe

Participants in this session will learn what design parameters should be considered when designing for seismic pipelines.

11:30 AM - 12:00 PM

WHAT KEEPS YOU UP AT NIGHT?

Karah Kingsbury, Helix Water District

Participants in this session will learn a strategic approach to evaluating risk from inaccessible piping networks within your distribution system.

Technical Program



Session 25 - Asset Management and Water Management & Efficiency

Room: Carr

8:00 AM - 9:30 AM

CALIFORNIA'S NEW WATER EFFICIENCY LAWS: KEEP CALM AND COMPLY (WITH OUR HELP!)

Tia Lebherz & Mary Ann Dickinson, California Water Efficiency Partnership

James Nachbaur, CA State Water Resources Control Board

Greg Bundesen, Sacramento Suburban Water District

TBD, CA Department of Water Resources

Participants in this session will learn what California's new water efficiency laws will mean for water providers along with the latest updates on the new regulations straight from the source. Participants will also explore tools and resources available to help them implement these new regulations and comply.

Session 25 - Water Management & Efficiency

Room: Carr

10:00 AM - 10:30 AM

LOOKING TO THE PAST TO GUIDE THE FUTURE: STRATEGIC PLANNING FOR WATER USE EFFICIENCY

Kat Wuelfing, EKI Environment & Water

Gus Meza, West Basin Municipal Water District

Participants in this session will learn how West Basin, a southern California wholesale water agency, is approaching strategic planning to transition its Water Use Efficiency program into the Making Water Conservation a California Way of Life era.

10:30 AM - 11:00 AM

WE'RE IN THE MONEY: SCALING UP INVESTMENTS IN DISTRIBUTED WATER INNOVATIONS

Cynthia Koehler, WaterNow Alliance

Participants in this session will learn how water efficiency tech, reuse systems, green infrastructure, and other "distributed infrastructure" are helping cities across the West address water supply, quality and stormwater management challenges. Attendees will gain understanding of an innovative new opportunity for financing distributed systems at scale in their own communities.

11:00 AM - 12:00 PM

SELF-SERVICE SOLUTIONS - IMPROVING SATISFACTION AND SAVING STAFF TIME WITH AMI DATA

Jeff Lipton, WaterSmart

The attendees in this session will be informed on how they can get their customers to engage with the utility for a working relationship in understanding their water bills.

Session 26 - Operator

Room: Compagno

8:00 AM - 8:30 AM

PARTICLE ANALYZERS: SIZE CALIBRATION AND COUNT VERIFICATION

Rudy Plaza-Pante, Isarog Consulting Company

Participants in this session will learn how to properly calibrate portable and on-line particle size analyzers using NIST traceable standard solutions.

8:30 AM - 9:30 AM

AERATION VERSUS TOC REDUCTION FOR DBP COMPLIANCE: WHAT IS THE RIGHT TOOL FOR YOUR MUNICIPAL WATER TREATMENT PLANT?

Ellen Gaby Buhr, Ixom Watercare, Inc.

Participants in this session will learn when exceeding on DBP's, when aeration is to be considered and when DOC reduction tools are required instead.

10:00 AM - 11:00 AM

BENEFITS OF WATER TANK MIXING

Dan Richards, Red Valve

Water tanks are in place on any water system for pressure, fire flow and storage. Unfortunately, normal system operation for filling/drainage will stratify throughout the year from temperature differences; regardless of style or volume. Participants in this session will learn why every water tank should implement a tank mixing system to improve water quality and avoid temperature stratification.

Session 27A - Smaller Utility

Room: Hedricks, Kamilos & Baker

8:00 AM - 8:30 AM

O&M MANUAL UPDATES: HOW TO BETTER OPTIMIZE OPERATIONS & MAINTENANCE EFFICIENCY AND CONSISTENCY

Kristen Whatley, West Yost Associates

This presentation will review recommended O&M content updates and evaluations and the benefits that may be realized by completing them.

8:30 AM - 9:00 AM

THE CHALLENGE OF STAYING LOCAL - HOW SMALL WATER SYSTEMS MAINTAIN CONTROL AND INCREASE RELIABILITY

Jamie Lefkowitz & Lisa Pezzino, SRT Consultants

Participants in this session will learn key insights that can be applied to small water systems across California and Nevada, where water managers are continuously faced with increasingly unsustainable political, social, and environmental conditions.

9:00 AM - 9:30 AM

PERSEVERANCE PAYS OFF: BUILDING A NEW COMMUNITY WATER SYSTEM IN CALIFORNIA

Lara Egbeola-Martial, SRT Consultants & Chad Plantenberg, Redwood Glen

Participants in this session will learn about the journey of a camp facility to plan, design, permit, construct, and commission a new surface water source and treatment system, and its process to become a new community water system primarily relying on surface water - a rare occurrence in California.

10:00 AM - 10:30 AM

INNOVATIVE DESIGN AND OPERATIONS TO PROVIDE COST-EFFECTIVE TREATMENT OF IRON, MANGANESE, AND TDS FOR A SMALL COMMUNITY PRODUCTION WELL

Nelson Schlater, EKI Environment & Water and Jeffrey Tarantino, Freyer & Laureta, Inc.

Participants will learn about challenges experienced by smaller communities providing drinking water, namely bringing older wells back on line as production wells; design and construction in residential areas with small footprints; innovative approaches like piloting to reduce footprint and overall costs; and smaller project decision making.

Session 27B - Security and Emergency Planning

Room: Hedricks, Kamilos & Baker

10:30 AM - 11:30 AM

ENSURING DRINKING WATER RESILIENCY: REDDING'S RESPONSE TO THE 2018 CARR FIRE

Conrad Tona, City of Redding

Planning and preparing for wildfires and their impact includes identifying resources needed to continue treatment plant operations during the emergencies, as well as the ability to maintain water quality during, immediately after and for several years into the future following a fire that damages a watershed. Attendees will learn about the City of Redding's recent and on-going actions during and after the Carr Fire and how City staff is working with both the Division of Drinking Water and its neighboring water systems to ensure that both the City's and its neighboring water systems' customers have access to safe, potable water.



Thank You!

We would like to sincerely thank all of our committees and hardworking volunteers that developed this technical program and help to support our conferences. Such support from experts and industry professionals is greatly appreciated and essential to the advancement of the drinking water community.

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Tommy Pearce - Helix Water District

Operators Meritorious Service Award

Michael Jimenez - Long Beach Water Department

Walter O. Weight Membership Award

Sue Mosburg - Sweetwater Authority

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Proctor of the Year Award

Susan Lyon - CalPERS

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Issam Najm - Water Quality & Treatment Solutions, Inc.
Brian Gallagher - Water Quality & Treatment Solutions, Inc.
Gurpal Deol - Zone 7 Water Agency
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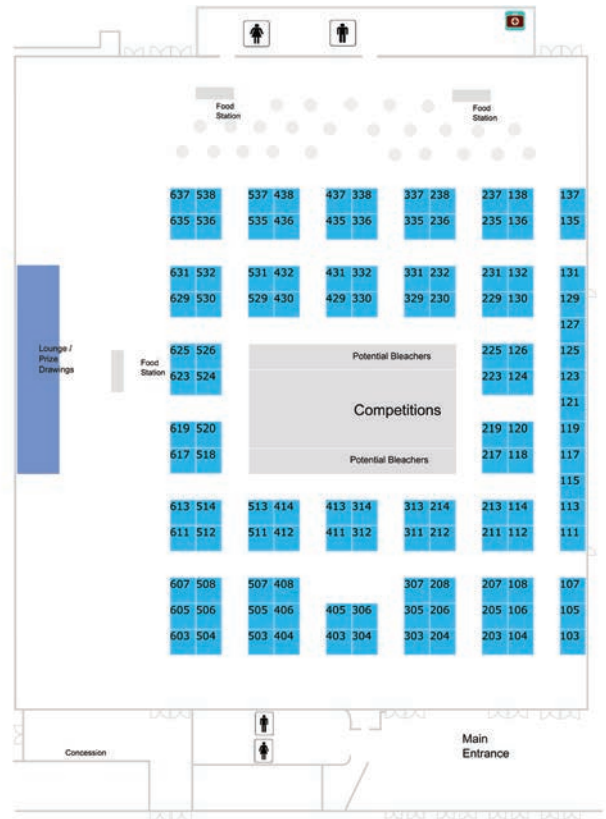
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A.R.I USA INC.	205	LANE COMMUNITY COLLEGE. .	531
ACLARA TECHNOLOGIES.	635	LAYFIELD USA CORP.	631
ADVANCED INFRASTRUCTURE		LOCUS TECHNOLOGIES.	536
TECHNOLOGIES.	127	M&H-KENNEDY VALVE.	219
ADVANCED INFRASTRUCTURE		M.E. SIMPSON CO. INC.	304
TECHNOLOGIES.	129	MASTER METER, INC.	336
ALLIANCE FOR PE PIPE.	338	MCWANE DUCTILE	223
ALLIANCE FOR PE PIPE.	437	MUELLER COMPANY	303
ALLIGATOR		MUELLER COMPANY	305
COMMUNICATIONS.	208	MUELLER COMPANY	306
AMERICAN DUCTILE IRON PIPE	512	NAPCO PIPE & FITTINGS	537
AMERICAN FLOW CONTROL.	514	NICOR, INC.	432
AQUA METROLOGY SYSTEMS .	230	NO-DES, INC.	405
AQUEOUS VETS.	312	NORTHWEST PIPE COMPANY. .	314
ARMORCAST PRODUCTS		OSTI, INC.	335
COMPANY.	107	MARS COMPANY	135
ASAHI/AMERICA, INC.	113	PACIFIC COAST BOLT CORP.	529
ASSOCIATED CONSTRUCTION		PACIFIC CORRUGATED	
AND ENGINEERING.	526	PIPE COMPANY	121
AY MCDONALD	138	PACIFIC-TEK AND PRES-TECH. .	337
B&K VALVES & EQUIPEMENT .	436	PASO ROBLES TANK - BROWN-	
BADGER METER.	408	MINNEAPOLIS TANK, INC. .	313
BLACOH INDUSTRIES	538	PORTABLE PIPELINE SYSTEMS. .	207
CALGON CARBON		PUMPMAN	524
CORPORATION	203	R&M SERVICE SOLUTIONS	311
CALIFORNIA RURAL		RANNEY COLLECTOR	
WATER ASSOCIATION.	103	WELLS - LAYNE.	607
CALTEST ANALYTICAL		ROMAC INDUSTRIES, INC.	136
LABORATORY.	511	SAGE DESIGNS INC.	332
CARBOLINE.	114	SANEXEN WATER.	137
CLARK LAND RESOURCES.	532	SEDARU	105
CLA-VAL.	617	SENSUS.	429
CLOW VALVE COMPANY	217	SPATIAL WAVE	204
CONTINENTAL UTILITY		SPIESS CONSTRUCTION	
SOLUTIONS INC.	330	COMPANY INC.	619
CORE & MAIN.	435	SUEZ - SMART SOLUTIONS	
CROSNO CONSTRUCTION, INC..	225	(DERCETO, INC.)	412
CSI SERVICES, INC.	235	SUEZ ADVANCED SOLUTIONS .	411
CST INDUSTRIES	108	SUPERIOR TANK SOLUTIONS .	431
DFW PLASTICS INC.	611	SWAN ANALYTICAL USA.	111
DIEHL METERING LLC.	229	SYRINIX INC.	236
DN TANKS, INC.	508	TANK INDUSTRY	
DUCTILE IRON PIPE RESEARCH		CONSULTANTS	403
ASSOCIATION.	530	TAP MASTER INC.	438
EARTHTEC.	430	TESCO CONTROLS INC.	518
ELECTRO SCAN, INC.	504	TNEMEC COMPANY INC.	231
ESRI.	603	TRIPAC MARKETING INC.	404
FARWEST CORROSION		TT TECHNOLOGIES, INC.	613
CONTROL COMPANY	605	TYLER TECHNOLOGIES.	120
FRACTA, INC.	115	UGSI SOLUTIONS	413
FRANK OLSEN COMPANY	131	UNDERGROUND SOLUTIONS	
GF PIPING SYSTEMS	520	(AN AEGION COMPANY) .	118
GOLDAK, INC.	513	US EPA WATER SECURITY	
GOLDEN METERS		DIVISION	507
SERVICE INC.	506	UTILIS INC.	212
HACH.	637	UTILITY CRANE	
HENRY PRATT COMPANY.	307	AND EQUIPMENT	629
HIPPO MULTIPOWER	112	UTILIWORKS	
HOLMAN CAPITAL.	119	CONSULTING LLC.	414
HOPKINS TECHNICAL		VALOR WATER ANALYTICS.	104
PRODUCTS, INC.	623	VALOR WATER ANALYTICS.	106
HOPKINS TECHNICAL		VALVETEK UTILITY SERVICES. .	406
PRODUCTS, INC.	625	VTSCADA BY TRIHEDRAL	214
INDUCTIVE AUTOMATION.	503	WACHS UTILITY PRODUCTS .	505
INSTRUMENT TECHNOLOGY .	124	WATERSMART INNOVATIONS. .	232
ITRON.	206	WATERSURPLUS	535
JCM INDUSTRIES, INC.	213	WEBSOFT DEVELOPERS, INC. .	211
JM EAGLE.	132	WETLAB.	123
JT SALES COMPANY.	125	WONDERWARE CALIFORNIA. .	126
KAMSTRUP WATER METERING. .	117	XIO	237
KEN GRADY CO INC.	238	ZENNER USA.	329
KUBOTA CORPORATION	130	ZENNER USA.	331



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Crosno Construction Inc.	crosnoconstruction.com	37
DN Tanks	dntanks.com	Inside Front Cover
Earth Science Labs	earthtecwatertreatment.com	Opposite Inside Front Cover
GEOSCIENCE Support Services Inc	gssiwater.com	22
M.E. Simpson	mesimpson.com	18, 38
Metersys	metersys.com	11
Mueller	muellerwaterproducts.com	17
Murraysmith	murraysmith.us	26
NO-DES, Inc.	no-des.com	8
PumpMan	pumpman.com	31
Sage Designs	sagedesignsinc.com	36
SL Environmental Law Group	slenvironment.com	Opposite Table Of Contents
West Yost Associates	westyost.com	32

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