

THANK YOU FOR JOINING US

**WaterReuse Orange County
Chapter Meeting**

WILL BEGIN SHORTLY

What do you like to do in your spare time?

Be ready to answer this question when you join and introduce yourself!

What is your favorite project that you're working on?

Be ready to answer this question when you join and introduce yourself!

Agenda

- ▶ **Networking & Social Session** – 11:30 AM
- ▶ **Call to order** – 12:00 PM
- ▶ **Welcome:** Scott Lynch, Chapter President
- ▶ **Presentations**
 - **WaterReuse California update**
 - Jennifer West, Managing Director, WRA-CA
 - **DPR Expert Panel update**
 - Kevin Hardy, Executive Director, NWRI
- ▶ **Discussion**
 - **Cross-Connection Policy – Discussion on possible OC Agencies Template**
 - Mark Tettemer, Recycled Water Development Manager, IWRD
- ▶ **Standing Items**
 - State Section Update: Joone Lopez, MNWD
 - Regulatory Updates: DDW/OCHCA
 - Legislative and Regulatory Matters: Alicia Dunkin, OCWD
 - Potential Funding for Projects
- ▶ **Conferences/Webcasts**
- ▶ **Roundtable**
- ▶ **Adjournment**

Q&A

Have a question?

Attendees

Select the “Raise Hand” button or
select *6 on your telephone

We will get to your questions after each presenter.

ORANGE COUNTY CHAPTER

DIRECT POTABLE REUSE REGULATIONS

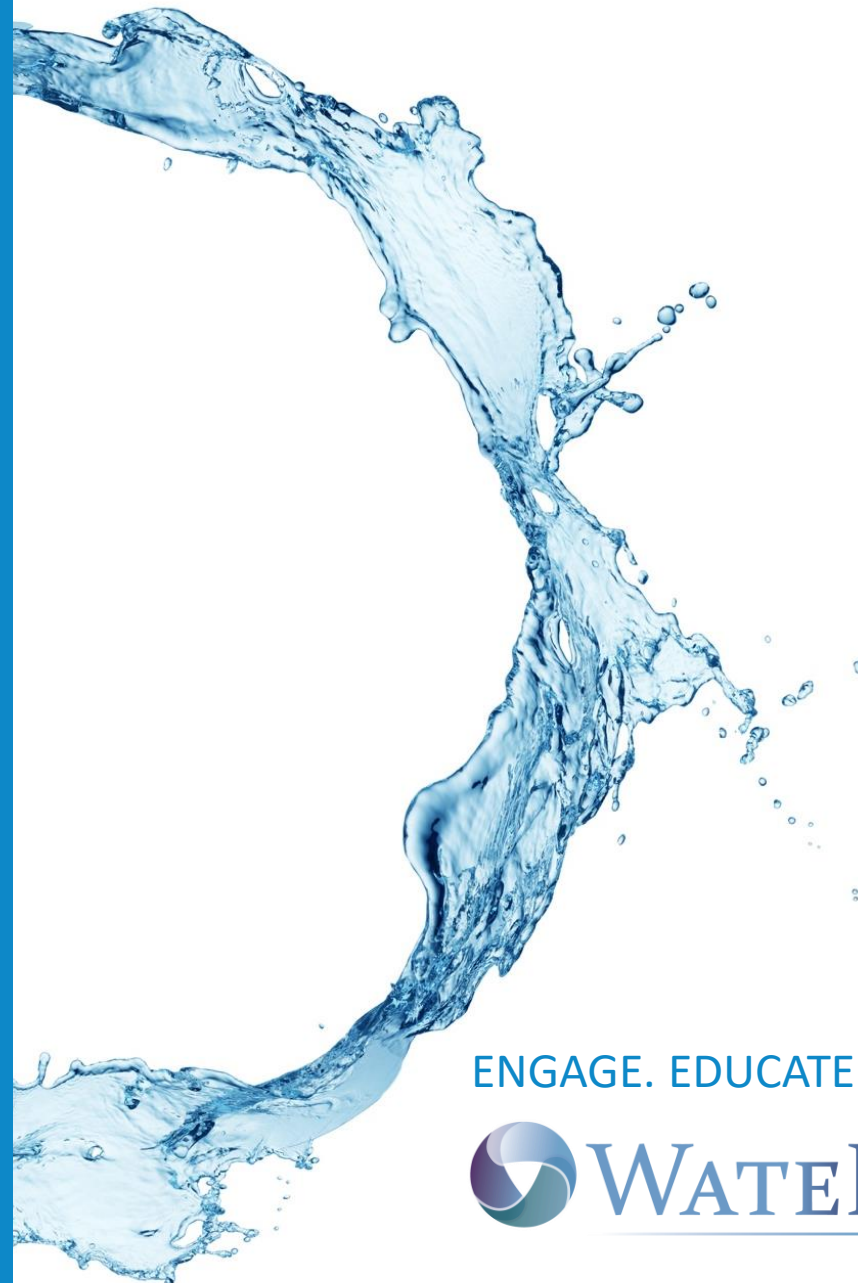
WHAT'S NEXT?

JENNIFER WEST

MANAGING DIRECTOR

WATEREUSE CALIFORNIA

AUGUST 18, 2022



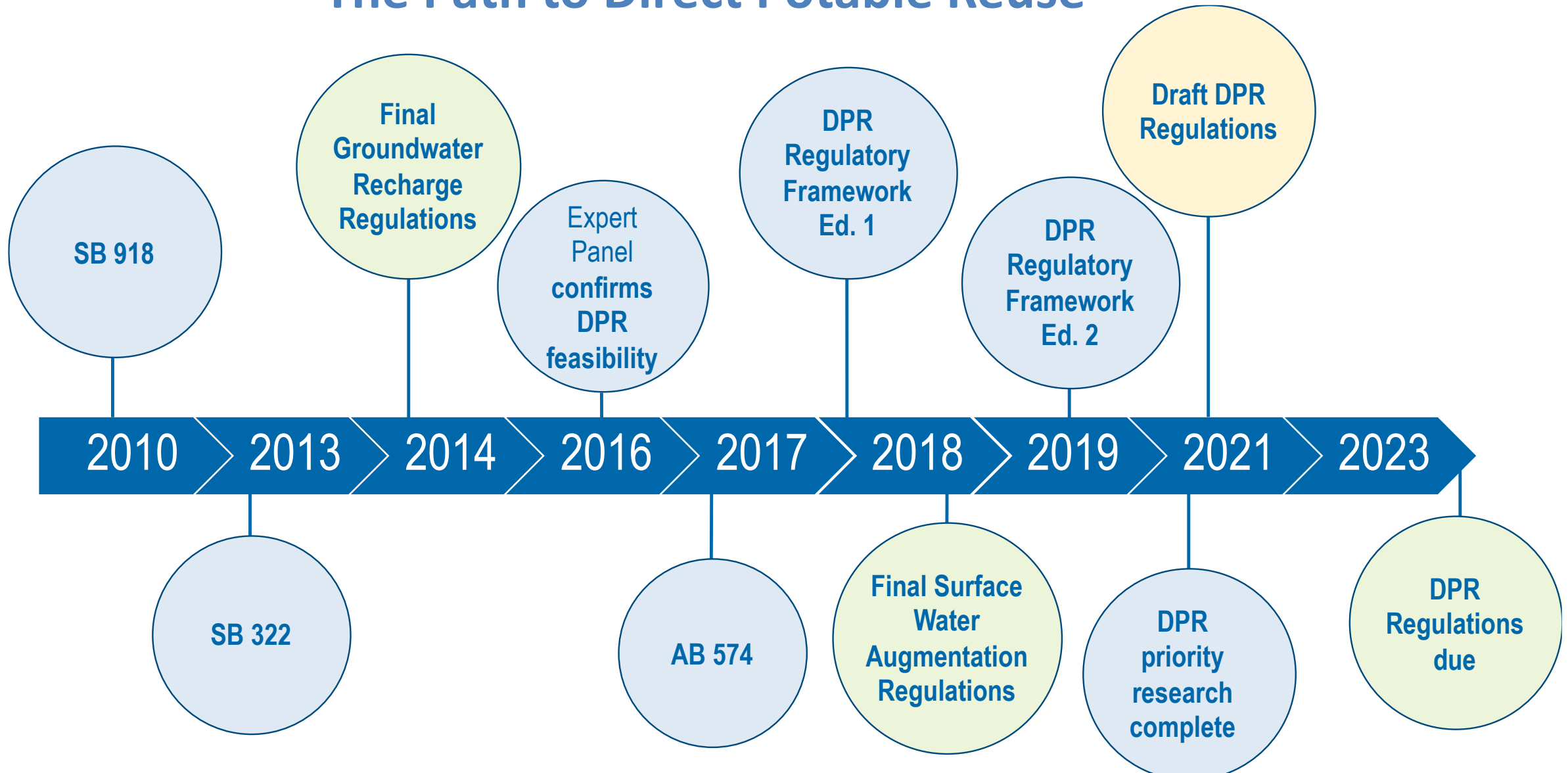
ENGAGE. EDUCATE. ADVOCATE.



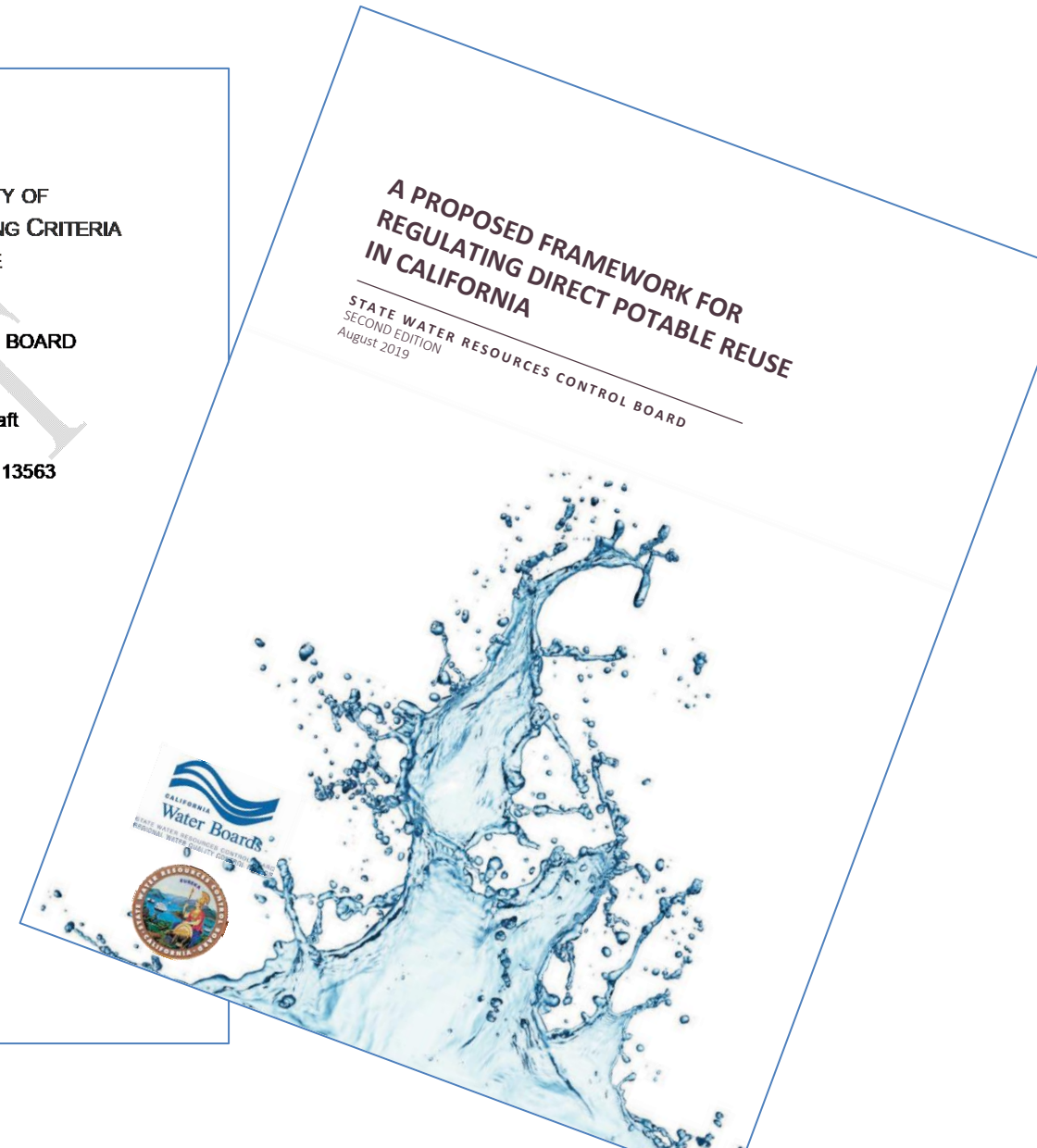
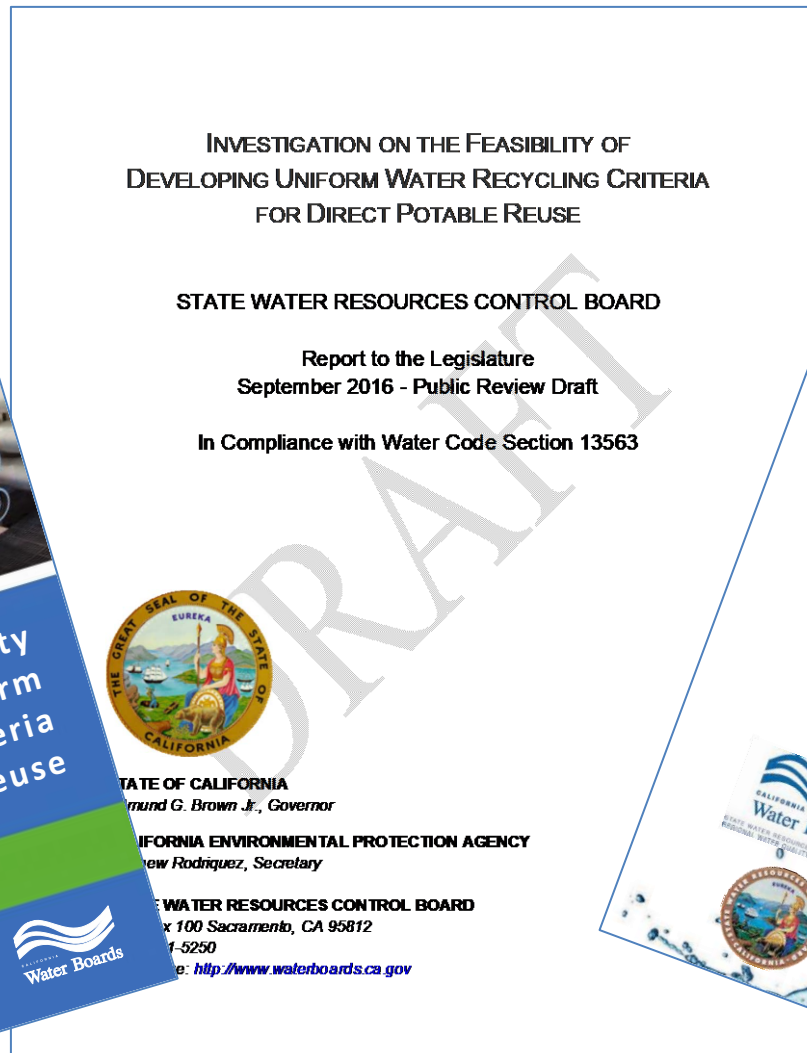


How Did We Get Here?

The Path to Direct Potable Reuse



REGULATIONS BASED ON FRAMEWORKS



AB 574 DPR EXPERT PANEL

*** Co-Chair: James Crook, PhD, PE, Environmental Engineering Consultant**

*** Co-Chair: Adam Olivieri, DrPH, PE, EOA, Inc.**

Richard Bull, PhD, Washington State University (Emeritus)

Jörg E. Drewes, PhD, Technical University of Munich

Charles Gerba, PhD, University of Arizona

Charles Haas, PhD, Drexel University

Amy Pruden, PhD, Virginia Tech

Joan Rose, PhD, Michigan State University

Shane Snyder, PhD, Nanyang Technological University

Jacqueline E. Taylor, REHS, MPA, Director, Environmental Protection Branch, Los Angeles County Department of Public Health (Retired)

George Tchobanoglous, PhD, PE, University of California, Davis (Emeritus)

Michael P. Wehner, MPA, Orange County Water District (Retired)





Major Changes Requested

What is "Protective" Enough?

- Pathogen Control – LRT 20/14/15
- Does not follow data and science in Water Board's DPR 2 research
- Does not follow Expert Panel recommendations
- Over engineered projects put DPR benefits out of reach for many areas of the state

DPR 2 (Measuring Pathogens in Wastewater for DPR Regs) -- \$1.3 million research funded by Water Board, MWD and water industry with participation from DWA and DDW.



WRCA Requested DPR Reg. Change

- **Adopt Pathogen Log Reduction Targets of 13/10/10**
- Protective of Public Health and Allows Industry to Build DPR Facilities that Achieve a High Degree of Compliance



"Alternative Clause": Narrow Application to Broad Regulations

- DDW chose to develop **RWA and TWA together** as one set of DPR regulations – creates need for greater flexibility as project scenarios are expanded
- Unlike other IPR regs – DDW draft has limited alternative clause that allow permitting alternatives only for chemical control (options to the Ozone/BAC)



WRCA Requested DPR Reg. Change

- **Expand the alternatives clause to allow to modifications across the full set of DPR requirements rather than be restricted to only modifications of the chemical control criteria.**
- Burden still on project applicant to demonstrate the alternatives are protective of public health. (existing process in Title 22)



Online Monitoring of Sewershed: May Not Be Ready for Prime Time

- **Requires online monitoring of the collection system**
- NWRI Enhanced Source Control (ESC) Panel – warned this is may not ready for widespread implementation
- ESC Panel’s report says potential for establishing an online monitoring system be “*evaluated*”



WRCA Requested Reg. Change

- **Monitoring should be conducted at the headworks of the wastewater treatment plant**
- Data collected at this location would still provide multiple hours of advanced notice to AWWPF operators about potential chemical peaks



Quantitative Risk Assessment on Project by Project Basis

- Includes de facto quantitative risk assessment for each DPR project
- (Direct Potable Reuse Responsible Agency): Requires assessment of all chemical compounds in the water and DiPPRA to provide assessment of why they are protective of human health.
- **Recommend State Water Board use Recycled Water CEC Expert Panel to provide uniform guidance on chemical monitoring for DPR projects and *not* require project-specific quantitative risk assessments.**



A dynamic splash of water, rendered in a light blue, glass-like style, forms a large, irregular circular shape on the left side of the slide. The water droplets and ripples are clearly visible, giving it a sense of motion.

Next Steps

WRCA Working Group

- Met Today to Discuss Messages to DDW and Water Board
- Finalize letter and send to WRCA membership and association partners
- DDW In-Person and virtual Meeting in Sacramento 8-29
- Meeting at the WRCA SF Conference to discuss next steps





Advanced Registration Closes September 2!



A dynamic splash of water, captured in mid-air, forms a large, irregular loop on the left side of the slide. The water is a clear, vibrant blue, with numerous droplets and ripples visible, suggesting movement and energy. The splash originates from the bottom left and curves upwards and to the right, then loops back down and to the left.

Questions?

Q&A

Have a question?

Attendees

Select the “Raise Hand” button or
select *6 on your telephone



WaterReuse California Orange County Chapter

Status Briefing:

Expert Panel Review of Preliminary
Uniform Statewide Criteria for Direct
Potable Reuse in California

August 18, 2022



About NWRI

- Leader in the collaborative advancement of water resources science, policy, and technology.
- Independent expert advisory services provider of choice for complex regulatory challenges and multi-benefit regional water supply resilience initiatives.
- Valuable insight and perspectives that enable locally inspired water resources innovation.
- Helping communities create new sources of healthy water since 1991.



Kevin M. Hardy

Executive Director
National Water Research Institute
Fountain Valley, CA

khardy@nwri-usa.org

Acknowledgments



Expert Panel Co-Chairs and Panelists

James Crook, PhD, PE, Expert Panel Co-Chair
Environmental Engineering Consultant

Adam Olivieri, DrPH, PE, Expert Panel Co-Chair
EOA, Inc.

Richard Bull, PhD
Washington State University (Emeritus)

Jörg E. Drewes, PhD
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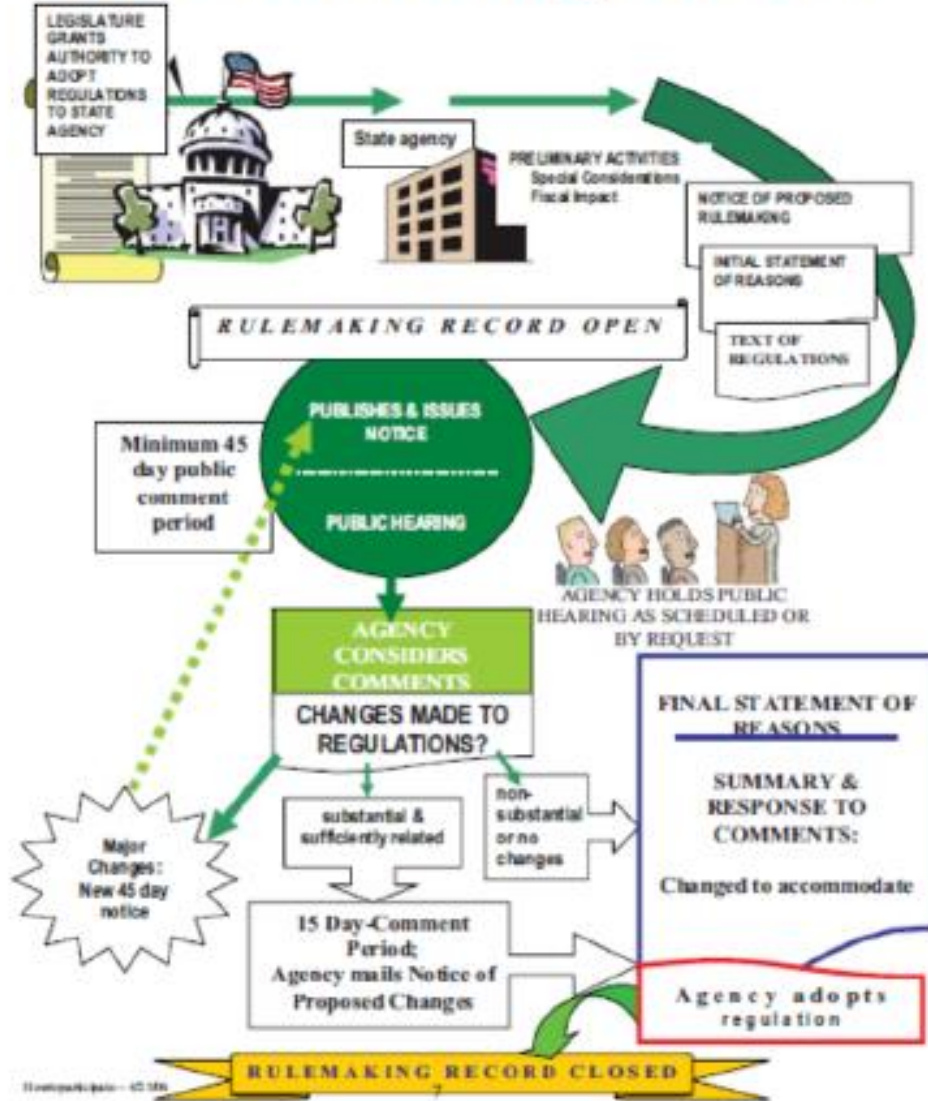
Michael P. Wehner, MPA
Orange County Water District (Retired)



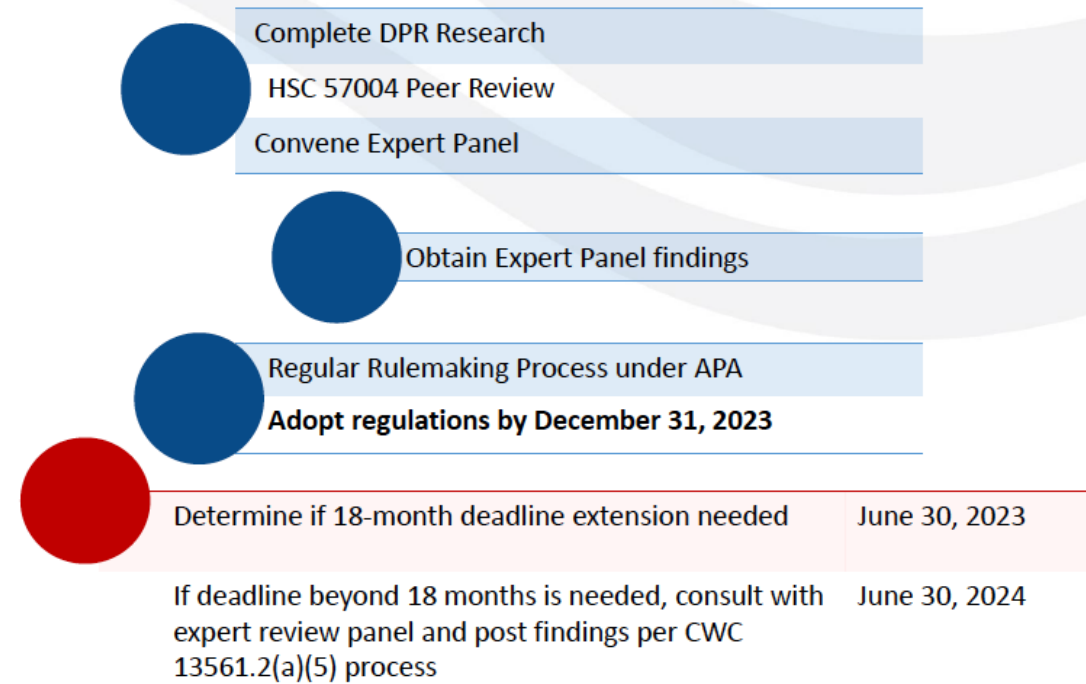
Briefing Objectives

- Provide an update on the status of the Expert Panel's review of the August 2021 Draft Criteria.
- Provide an opportunity for Q&A.

The Rulemaking Process



Timeline



Division of Drinking Water

Link to Expert Panel & DDW Documents:

https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/direct_potable_reuse.html

Panel Meetings

Meeting 1: August 24-25, 2021

Meeting 2: December 1, 2021

Meeting 3: January 26, 2022

Meeting 4: February 28, 2022

- Panel Preliminary Findings (Draft March 16, 2022) Final June 23, 2022
- DDW Response/Comment to Panel Preliminary Findings
- Panel Response to DDW comments – July 13, 2022

Background

- The Panel appreciates the collaborative and collegial working relationship with the DDW staff.
- The body of work by DDW and WRF is extremely important for California's development of a reliable and resilient water supply.
- The Panel's review is based on the review of each criterion and a comprehensive review of the draft criteria, dated August 17, 2021.
- The Panel has taken a holistic approach to public health protection.
- The Panel evaluated the Draft criteria based on best available scientific knowledge as well as issues related to uncertainty, engineering practice, and guaranteeing compliance of DPR treatment trains as well as unintended consequences, particularly those related to excessive energy consumption and carbon footprint.

Summary of Expert Panel Preliminary Findings, Key Comments, and Recommendations

- While the focus of the Panel review is to determine if the proposed regulation provides **adequate public health protection** relative to the risk posed by the water being produced, the Panel noted significant concern about unintended consequences—particularly related to over-engineering (e.g. excessive energy consumption and CF).
- The Panel noted that a responsive, sustainable, and cost-effective approach to developing these regulations includes recognition by the State Water Board of potentially over-engineered treatment barriers
- The Panel recommended that the State Water Board address the above concerns through a “holistic risk” analysis.

Status

- At this time, DDW staff and Expert Panel viewpoints appear to diverge on the need for holistic risk analysis and potential unintended consequences.

Summary of Expert Panel Preliminary Findings, Key Comments, and Recommendations

The Panel's Preliminary Finding – June 23, 2022

- The draft DPR regulation **adequately protects public health.**

Status

- The Panel's preliminary finding assumes that the SWB-DDW will fully consider and address the Panel's comments and recommendations when developing a revised draft of the DPR criteria.
- The Panel assumes that revised draft will be shared with the Panel for final review and it's Final Finding before being considered for adoption by SWB.

Overview of Expert Panel Preliminary Key Comments, and Recommendations

Define RWA in Criteria

- The Panel recommended that the criteria clearly acknowledging raw water augmentation (RWA)
- For example, inserting clear acknowledgement on how the draft criteria would apply to an RWA project relying on a small reservoir with an existing SWTP is necessary.

Status

- DDW is considering responsive language.

Summary of Expert Panel Preliminary Findings, Key Comments, and Recommendations

Chemical Control Criteria Recommendations

- Recommend that ozone and biological activated carbon (BAC) processes be located appropriately before the reverse osmosis (RO) process to manage low molecular weight (LMW) compounds as well as other CECs.
- Recommend using carbamazepine and sulfamethoxazole as ozone performance indicators.
- Recommend using acetone and formaldehyde as BAC performance indicators.

Status

- At this time, the Expert Panel and DDW appear to agree.

Summary of Expert Panel Preliminary Findings, Key Comments, and Recommendations

Chemical Control Criteria Recommendations (Continued)

- Delete the applied ozone/total organic carbon (O₃/TOC) dosage language and include a requirement to develop a project-specific dosage as part of the engineering report clause.
- Recommend online nitrite monitoring for ozone feedwater.

Status

- At this time, the Expert Panel and DDW appear to agree.

Summary of Expert Panel Preliminary Findings, Key Comments, and Recommendations

Pathogen Control Criteria Summary

- Reflecting an abundance of caution, DDW erred on the side of caution to protect public health; however, compounding numerous conservative assumptions may result in unrealistic and impracticable results.
- While the current DDW **LRV criteria** can be considered protective of public health, additional analysis is **recommended** to address potential overengineering of treatment barriers
- The Panel **recommends a probabilistic analysis (DPR-1 Tools) using the DPR-2 report dataset** rather than the *static maximum point estimate* approach for development of the LRVs.

Status

- At this time, DDW staff and Expert Panel viewpoints appear to diverge somewhat on the feasibility of online collection system monitoring.

Summary of Expert Panel Preliminary Findings, Key Comments, and Recommendations

Pathogen Control Criteria (Continued)

- The Panel suggested DDW consider an alternative approach to address compliance with the log reduction values (LRVs),
- The Panel's probabilistic analysis identified alternative LRVs that adequately protect public health and are based on a superior dataset and cogent scientific assumptions.

Status

- DDW considering alternative compliance approaches.
- At this time, DDW and Expert Panel viewpoints appear to diverge on the consensus approach to LRV calculation.

Summary of Expert Panel Preliminary Findings, Key Comments, and Recommendations

Communication and Notification

- All notifications to the public and public agencies need to be consistent with those currently required as part of the California potable water regulations and the SDWA, and references to existing potable water notification regulations should be included in the DPR criteria.
- The focus on developing a program of close communication and coordination with local and state public health agencies as well as major hospitals within DiPRRA service area is an important element of the draft criteria.

Status

- DDW has provided responsive clarifications.

Summary of Expert Panel Preliminary Findings, Key Comments, and Recommendations

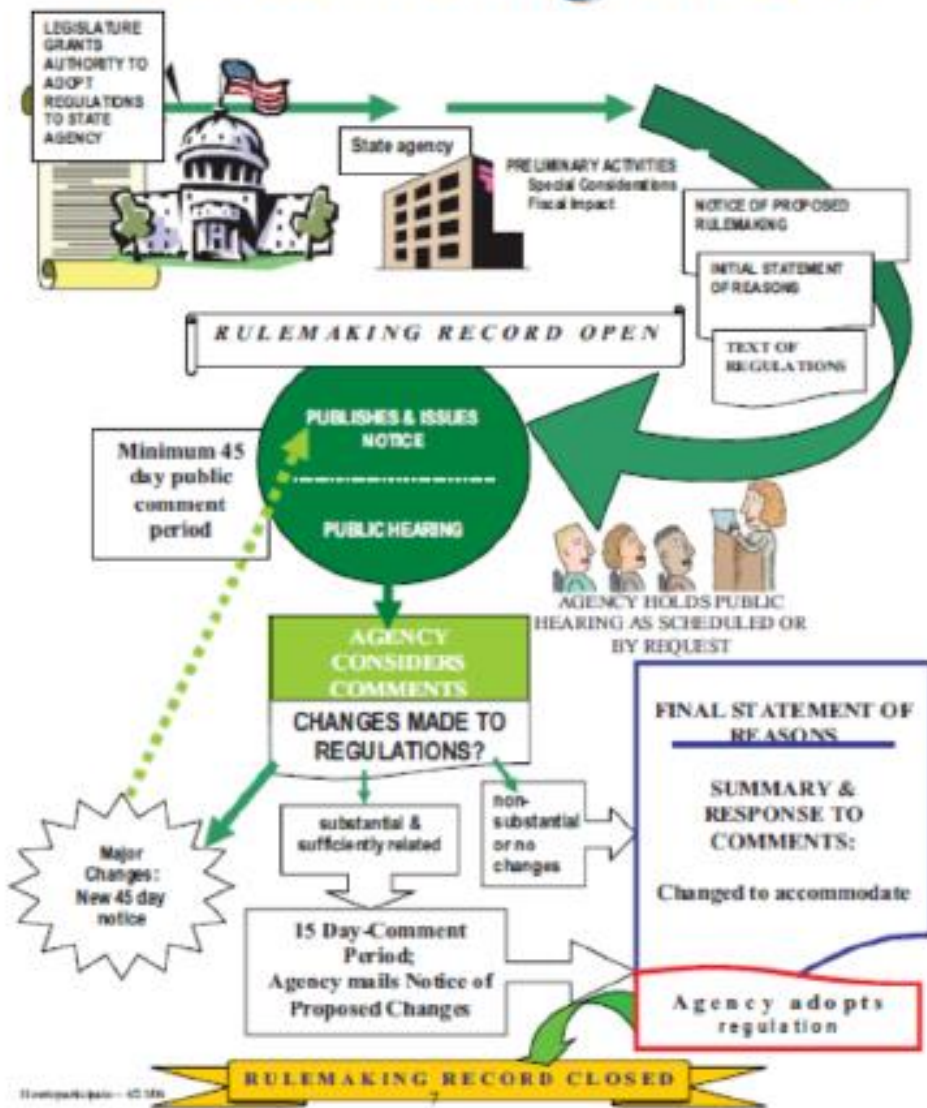
Technical, Managerial, and Financial (TMF) Capability

- The Panel recommends utilizing independent third-party review of the TMF plan.

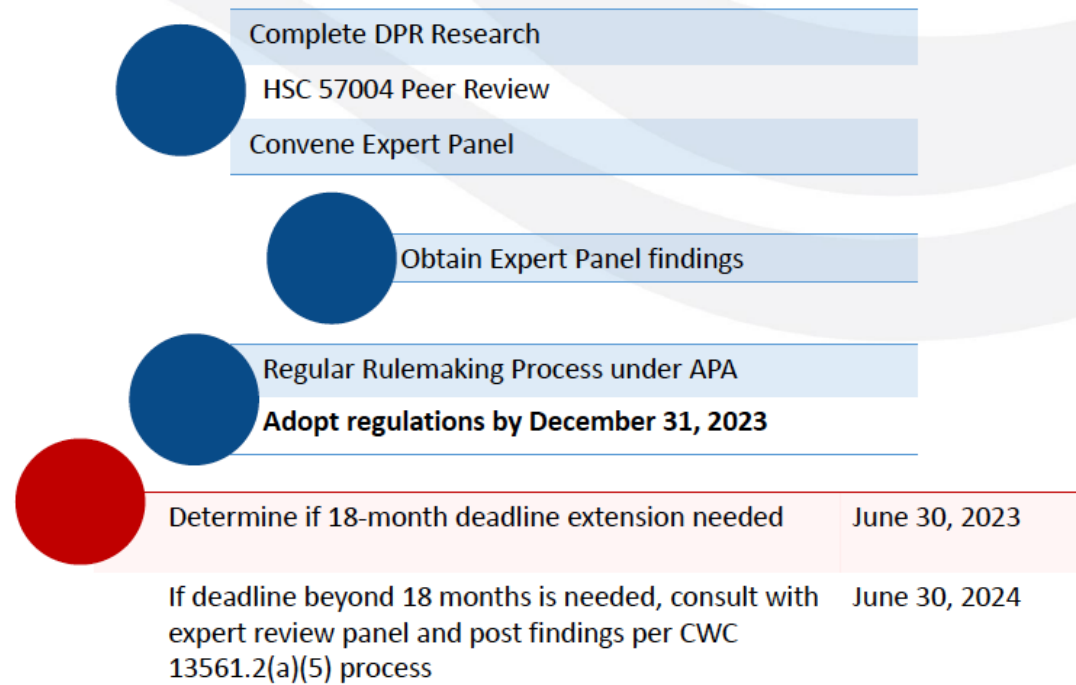
Status

- At this time, DDW appears to agree with 3rd party review of technical design.
- Consensus that additional discussion and clarification is necessary regarding the 3rd party review of managerial and financial capability

The Rulemaking Process



Timeline



Division of Drinking Water

Expert Panel Next Tasks

- **Panel** - Review additional documents (revised criteria, Statement of Reasons, environmental documents, etc.) and produce FINAL Panel findings and recommendations memo. - TBD
- **Panel Meeting #5** - TBD

Thank you

National Water Research Institute

18700 Ward St.

Fountain Valley, CA 92708

www.nwri-usa.org





Irvine Ranch
Water District

SWRCB'S *CROSS- CONNECTION CONTROL POLICY HANDBOOK*

ORANGE COUNTY CHAPTER,
WATERUSE CALIFORNIA

AUGUST 18, 2022



BACKGROUND

- Title 17 of the California Code of Regulations addresses backflow protection and cross-connection control
- Domestic Water Supply Permits require compliance with Title 17
- Title 17 includes six elements:
 - Operating Rules
 - Conducting surveys
 - Requiring backflow protection
 - Having trained personnel
 - Testing backflow preventers
 - Recordkeeping

WHAT'S NEW...

- AB 1671 (2017) directed the SWRCB to adopt standards for backflow protection and cross-connection control through adoption of a Cross-Connection Control Policy Handbook (CCCPH)
- CCCPH will replace Title 17
- AB 1671 requires two public hearings

ABOUT THE CCCPH...

- First draft of the CCCPH was released February 26, 2021
- First public hearing held April 27, 2021 (video is posted on-line)
- Second (and final) draft expected August 2022
- Public hearing to follow
- SWRCB expected to approve the CCCPH late 2022/early 2023
- Per the first draft of the CCCPH, water agencies have one-year from SWRCB adoption to prepare and submit a written cross-connection control plan for approval by SWRCB DDW (Santa Ana office)
- CCCPH has ten elements

TITLE 17 VS. CCCPH

Title 17 (7 pages)	CCCPH (82 pages)
1. Operating Rules and Ordinances	1. Operating Rules and Ordinances
2. Conduct surveys	2. Cross-Connection Control Prog. Coordinator
3. Backflow Protection	3. Hazard Assessments
4. Trained Personnel	4. Backflow Prevention
5. Backflow Preventer Testing	5. Certified Backflow Prevention Testers/Specialists
6. Recordkeeping	6. Backflow Preventer Testing
	7. Recordkeeping
	8. Backflow Incident Response, Reporting, etc.
	9. Public Outreach and Education
	10. Local Entity Coordination

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HAZARD ASSESSMENTS (DRAFT CCCPH)

- It appears that sites with “Auxiliary Water” supplies (which includes recycled water per Title 17) are considered “High Hazard”
- Water agency cross-connection control plans will need to address “Hazard Assessments” at High-Hazard sites
 - *Subsequent to the initial hazard assessments....a community water system shall perform follow-up hazard assessment under the following criteria:*
 - *Change of ownership*
 - *New connections*
 - *Potential changes*
 - *Backflow incident*
 - *Periodically, as identified in the PWS’s Cross-Connection Control Plan*

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 - **Periodically**, as identified in the PWS’s Cross-Connection Control Plan

OPPORTUNITY FOR WATER AGENCIES IN O.C. TO COLLABORATE LIKE WITH THE O.C. GUIDELINES

- Possibly address jurisdictional boundaries
- Possibly establish standard approaches
 - One example: one-way vs. two way cross-connection tests
- Possibly incorporate aspects of the O.C. Guidelines into Cross-Connection Control Plan's
 - One example: frequencies for follow-up (on-going) hazard assessments

OPPORTUNITY FOR WATER AGENCIES IN O.C. TO COLLABORATE LIKE WITH THE O.C. GUIDELINES

- Possibly collaborate on “public outreach and education”
- Possibly collaborate on “local entity coordination” elements
 - One example: tester certification
- Possibly develop a standard template for agencies in Orange County to use
 - Standardize county-wide

DISCUSSION

- Thoughts?
- Questions?
- Comments?

INFORMATION

- SWRCB link regarding CCCPH
- https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/cccp.html
- If your agency is interested in being part of the collaborative, please contact:
 - Mark Tettemer, Irvine Ranch Water District
 - tetter@irwd.com
 - (949) 453-5592

Standing Items

► State Section Update

—Joone Lopez (MNWD)

► Regulatory Updates

—DDW

—OCHCA

► Legislative and Regulatory Matters

—Alicia Dunkin (OCWD)

► Potential Funding for Projects

—Funding updates have been transferred to a paid consultant.

<https://watereuse.org/wp-content/uploads/2022/05/Summary-of-Funding-Opportunities-as-of-06-01-22.pdf>

Upcoming Webcasts, Conferences & Meetings

➤ Webcasts & Conferences

- **A New Vision for WaterReuse: Draft Strategic Plan:** August 18 | 11am PT
- **2022 WaterReuse CA Conference:** September 11 – 13
- **2022 WaterReuse Symposium: Atlanta GA:** March 5-8
Proposal deadline: September 30, 2022

➤ Upcoming OC Chapter Meetings

- **October 20** – Joint meeting with LA chapter: SOFI Stadium tour
- **December 15** – SMWD

See www.watereuse.org to register and for more information.

Roundtable: What's going on - All

Attendees

Select the “Raise Hand” button or
select *6 on your telephone

THANK YOU

Meeting Adjourned