



California's Direct Potable Reuse Initiative

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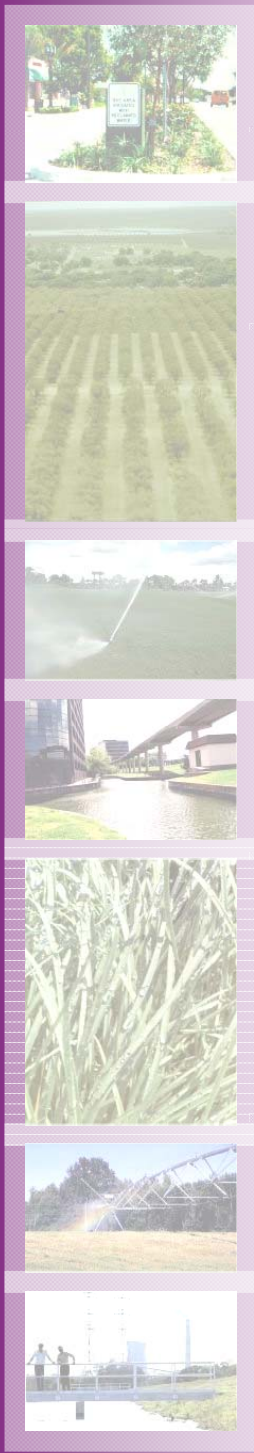


CA Water Use Overview

(all values MGD)

- Total water use (current) 38,000
- Urban water use 8,040
- Agricultural water use 30,370
- Recycled water use 580
- WW Discharge to ocean 3,130
- 2050 incremental demand: $\left\{ \begin{array}{l} -1,790 \text{ to} \\ 7,150^* \end{array} \right.$

*3 growth scenarios in 2009 California Water Plan, including estimated effect of climate change



Why Direct Potable Reuse?

- IPR compliance not feasible for all
 - Wrong geology
 - Insufficient surface storage capacity
 - Poor quality diluent
- Purple pipe systems
 - Expensive
 - Won't achieve 20-year goal of 4X increase in water recycling



DPR Development Process

- WaterReuse CA. establish goal (8/09)
 - Assess barriers to Direct Potable Reuse
 - Eliminate barriers as appropriate
- Funding solicitation
- Workshop to identify barriers (4/10)
- Develop work plan (summer '10)
 - Define research/studies
 - Identify potential funding sources
 - Schedule, roles
- Implement work plan

Funding to date (\$000)

• Nine California members	\$47
• WateReuse Association	\$25
• Calif Urban Water Agencies	\$20
• Nat Water Research Inst	\$25
• WateReuse Foundation	<u>\$25</u>
Total	\$142

April 26-27, 2010 Workshop

- Planned jointly: WRCA, NWRI, CUWA
- Two 'white papers' as foundation
 - Regulatory issues
 - Jim Crook - NWRI
 - Public acceptance
 - Margie Nellor, Mark Millan – WateReuse CA
- 52 invited experts
- Breakout groups: Four topic areas

Workshop Breakout: Four Topic Areas

- Public acceptance
- Regulatory
- Treatment
- Monitoring



Workshop Results: Public Acceptance

1. Develop a message regarding industry standard and status regarding direct potable reuse
2. Broaden internal communication within water industry regarding direct potable reuse
3. Determine whether we need a different name for the water that is produced as direct potable reuse versus indirect potable reuse



Workshop Results: Public Acceptance (cont.)

4. Resolve and/or conform terminology against regulatory framework
5. Survey public for perception of DPR vs IPR and environmental buffer
6. Develop ways to mitigate public perception of the loss of natural/environmental barrier from technical and message perspective



Workshop Results: Public Acceptance (cont.)

7. Propose and determine minimum reliability time barrier and build public acceptance plans based on technical recommendation
8. Ensure direct potable reuse uses best practices learned from indirect potable reuse projects
9. Develop out of the box or new ways to inform public about direct potable reuse that are not project specific



Workshop Results: Regulatory

1. Evaluate California and federal statutes, regulations and policies to:
 - Identify limitations (including water rights, and concentrate/residual management system permit) in implementing DPR, and
 - Investigate regulatory alternatives that are protective and effective.
2. Determine optimum/appropriate regulatory scheme and whether CDPH and Water Board authority may need to be harmonized



Workshop Results: Regulatory (cont.)

3. Expand the scope of the SWCRB “Blue Ribbon Panel” on CECs to include reservoir augmentation and Direct Potable Reuse
4. Determine if available treatment processes reduce/remove constituent and monitoring methodologies are adequate to reduce risks and eliminate need for environmental buffer and retention time. Also consider risk of treatment failure



Workshop Results: Regulatory (cont.)

6. Develop source control to include building on current research on Green Chemistry (extended manufacturer responsibility) and source reduction concepts to address environmental fate and transport for PPCPs, pesticides, etc
7. Develop communication protocol to inform all needed agencies of off-spec water or supply interruption
8. Develop treatment performance standards to be evaluated by surrogates

Workshop Results: Treatment & Monitoring

1. Define or specify the water quality treatment performance goals for potable reuse
2. Define substitute for environmental buffer: treatment, time, monitoring, reliability, and response
3. Define treatment performance monitoring
4. Define public health assurance monitoring
5. Define need for enhanced source control
6. Define direct potable reuse



What's Next?

- Report Workshop Findings (June)
- Work Plan (2010)
- Implementation (2011 and beyond)



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