




Regulatory Status of Direct Potable Reuse

Kurt Souza, P.E.
Assistant Deputy Director
Division of Drinking Water
State Water Resources Control Board

Legislative Mandate

Task	Deadline	Status
IPR - Adopt Groundwater Recharge Regulations	Dec. 31, 2013	
IPR - Adopt Surface Water Augmentation Regulations	Dec. 31, 2016	Progress
DPR - Prepare Draft Report on Expert Panel Research Recommendations	June 30, 2016	
DPR - Release Public Review Draft Report (45-day public comment period)	Sept. 1, 2016	
DPR - Submit Final Report to the Legislature	Dec. 31, 2016	On track

Legislative Mandate

Investigate the *feasibility* of developing *uniform* water recycling criteria for direct potable reuse

- (Per CWC §13563) Investigation must examine :
 - Reliability of treatment to protect public health.
 - Multiple barriers that may be appropriate.
 - Health effects.
 - Mechanisms to protect public health if problems occur.
 - Monitoring needed to ensure protection of public health.
 - Any other scientific or technical issues, including the need for additional research.

Investigation must consider

1. Recommendations of an expert panel;
2. Recommendations of an advisory group;
3. Regulations and guidelines on DPR from jurisdictions in other states, federal government, and other countries;
4. Research by the State Water Board regarding unregulated pollutants (Recycled Water Policy);
5. Water quality and health risk assessments associated with existing potable water supplies subject to discharge from municipal wastewater, storm water, and agricultural runoff;
6. Results of the State Water Board's investigations pursuant to CWC §13563

Report to Legislature

- Expert Panel
 - Technically feasible to develop uniform criteria for DPR
 - Key public health research needs that could inform criteria development
 - Critical aspects of criteria
- Advisory Group
 - Operator training and certification
 - Source Control
 - Wastewater treatment plant optimization
 - Technical, Managerial, and Financial Capacity (TMF)

Report to Legislature

From Safe Practice to Criteria

- Expert Panel, Advisory Group, WaterReuse DPR research initiative, Water Research Foundation studies and other research, and industry and DDW experience with IPR have provided an understanding of how DPR might be done safely.
- DDW experience with the development of IPR criteria has shown that it is a sizable step, however,
 - from being confident that something can be safe
 - to producing criteria that assure that it will be accomplished safely, in every case, all the time.

Research Needs

- Source control and monitoring (CECs)
- Confirm LRV with new pathogen data
- Confirm worst case pathogen levels (outbreak and seasonal variation)
- Probabilistic QMRA
- Evaluate options to reduce chemical spikes
- Analytical methods for unknown 'low molecular weight' chemicals

Knowledge Gaps

- How much *additional LRV capacity* is necessary for DPR in order for criteria to be health protective?
- Diversity of independent treatment barriers: how should DPR criteria specify “treatment diversity” and the degree of “diversity” necessary to be health protective?
- Control of chemical spikes: how should criteria specify “averaging” and what is the degree of “averaging” necessary?

Crafting Effective Criteria

Criteria Objectives

- Must be enforceable (enable an objective compliance determination);
- Must be unambiguous regarding the critical protective features; and
- Must assure that any proposal that can comply will actually produce safe water continuously.

Challenge draft criteria with all imaginable proposals to make sure they will always assure safe DPR projects

Implementation

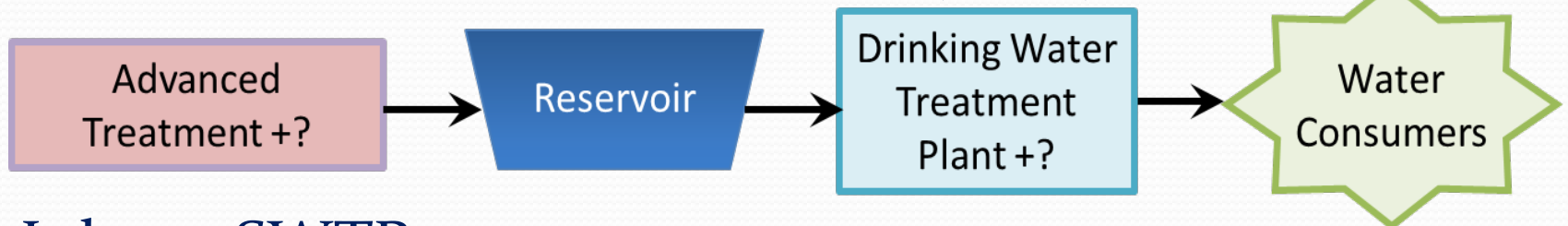
- Develop uniform water recycling criteria for DPR *concurrently* with public health research identified by Expert Panel, such that the findings from research can be used to inform criteria development
- Implementation Plan
 - Address Research Needs
 - Address Knowledge Gaps
 - Program Development to support DPR
 - Development of criteria

Phased Approach

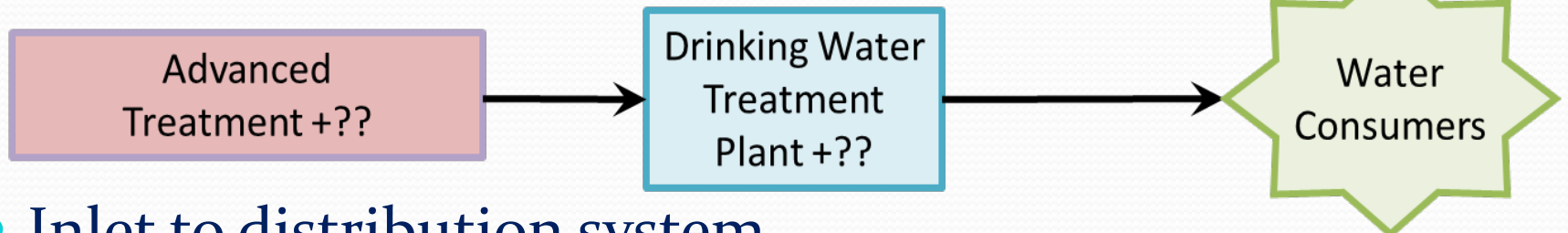
- Develop criteria framework for possible types of DPR
- Criteria should be coordinated (whether or not criteria for all types are developed simultaneously)
- A framework across the various types will avoid discontinuities in the risk assessment/risk management approach (especially if progressively more difficult situations are addressed sequentially)
- Likely begin criteria development with the “least direct” type of DPR
- Likely no case-by-case until we get good set of criteria

DPR Types

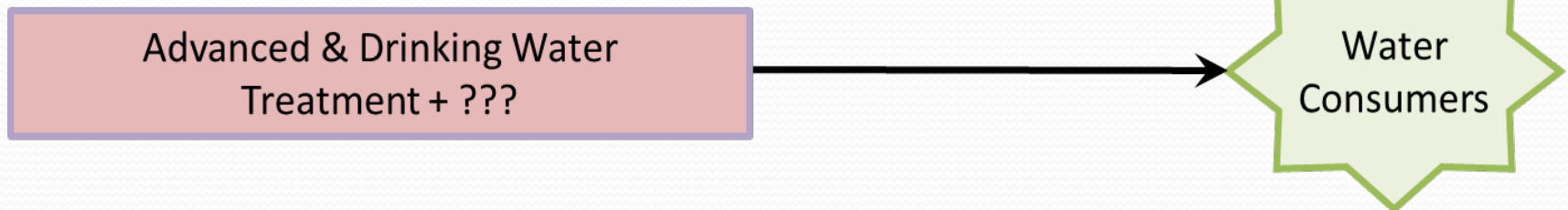
- “Reduced environmental buffer” (<IPR)



- Inlet to SWTP



- Inlet to distribution system



Time Frames

What is a realistic time frame for moving to DPR as an accepted policy and regulatory framework for the various types of surface water augmentation and DPR in California?

- Consider:
 - SWA – criteria expected to be adopted in 2017
 - SWA – 2 projects in the works, San Diego and Padre Dam, expected startup in 2020-2022
 - Public comment letters
 - Refine Implementation Plan
 - Research needs
 - Gather information “knowledge gaps”, basis for criteria
 - Develop criteria, likely for “least direct” DPR
 - Program Development for DPR (TMF, optimization & source control, operator certification)

Stay Tuned...

- Refine Implementation Plan
- Workgroups
- Track Progress

Subscribe to SWRCB Listserve for updates:

http://www.waterboards.ca.gov/resources/email_subscriptions/swrcb_subscribe.shtml

Drinking Water → “Recycled Surface Water Augmentation & Direct Potable Reuse”

DDW Report to the Legislature:

http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/rw_dpr_criteria.shtml

Questions?

