Science Advisory Panel for CECs in Recycled Water

July 19-21, 2017

Southern California Coastal Water Research Project

http://sccwrp.org/ResearchAreas/Contaminants/RecycledWaterAdvisoryPanel.aspx

HOUSEKEEPING

- **All meetings will be webcast. For best audio quality, please connect via a permanent landline**
  - Please route all questions/comments/issues through moderator (Alvina)

- **The public portions of all meetings will be recorded. To access recordings, go to the project webpage at**

  - http://sccwrp.org/ResearchAreas/Contaminants/
  - RecycledWaterAdvisoryPanel.aspx

- **If you would like to receive project updates, please contact keithm@sccwrp.org**

EXPERT PANEL REVISIT

- **Panel first convened in 2009**
- **CEC monitoring recommendations delivered in 2010 report**
  - Eight (8) CECs for indirect potable reuse (groundwater recharge) uses
  - No individual CECs identified for Title 22 landscape irrigation practices
- **Panel recommendations adopted and incorporated into CA Recycled Water Policy (amended in 2013)**
- **Panel revisit of recommendations every 5 years to incorporate latest science and monitoring data**

CORE QUESTIONS FROM 2010

- What are the appropriate constituents to be monitored, including analytical methods and MDLs?
- What is the known toxicological information for the above constituents?
- Would the above lists change based on level of treatment and uses? If so, how?
- What indicators can be used to represent a suite of CECs?
- What concentrations of CECs should trigger enhanced monitoring?

RECYCLED WATER USES HAVE EXPANDED

- **NON-POTABLE USES ("TITLE 22")**
  - specifies level of treatment and bacterial standards for intended use

- **INDIRECT POTABLE REUSE (IPR)**
  - Surface spreading
  - Subsurface injection
  - Surface water augmentation (new!)

- **DIRECT POTABLE REUSE (DPR)**
  - report on feasibility of regulating DPR released in 2016
  - this Panel will NOT address DPR practices

Source: CADWR (2016) *Municipal recycled water, a resource management strategy of the California Water Plan.*

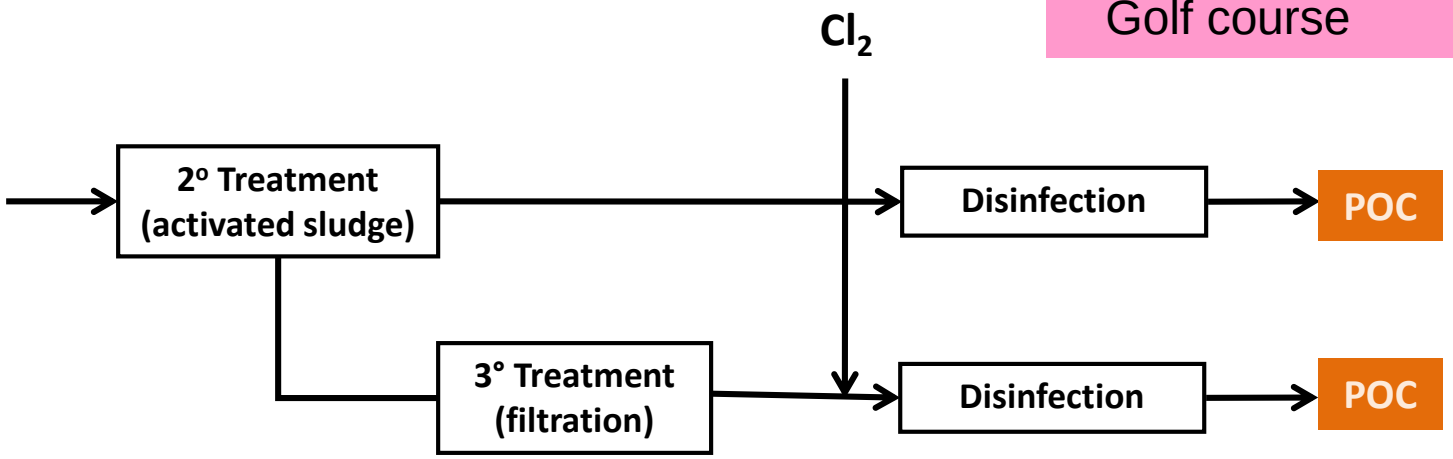
TITLE 22

- **Overarching regulation for recycled water across State**
- **Treated municipal (domestic) wastewater serves as source**
- **Level of treatment, bacteriological standards define allowable uses**
  - (non-disinfected) secondary to disinfected tertiary effluent
  - total, fecal coliform limits
- **Applications have been extended from original Policy, e.g.**
  - food crop irrigation (processed, no contact, contact)
  - dust control (disinfected secondary)
  - industrial (cooling water) (disinfected tertiary)
  - snow making (disinfected tertiary)

Title 22 Landscape Irrigation Practices considered by Panel in 2010

Restricted access:

- Commercial landscape
- Freeway
- Golf course

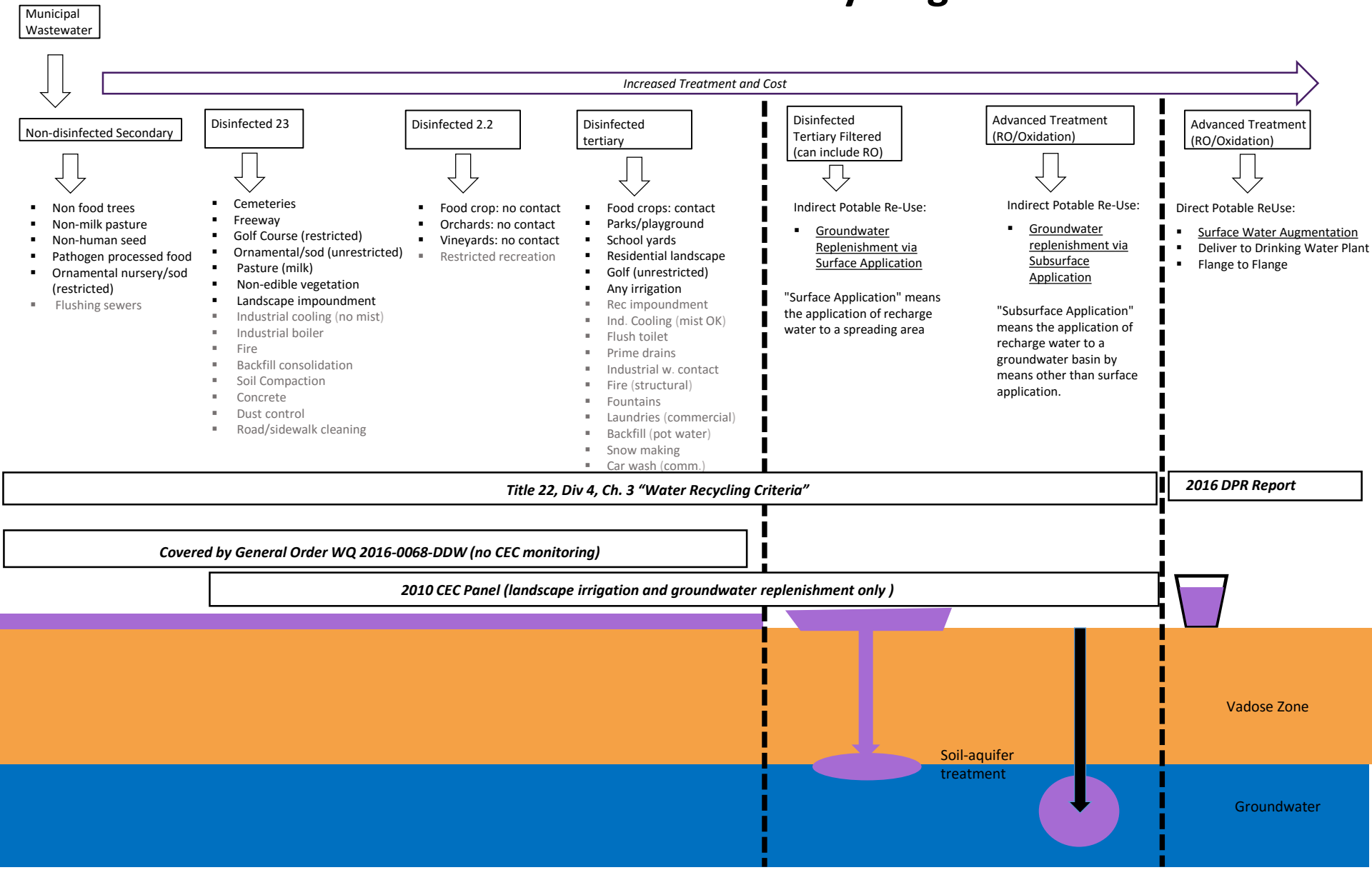


Unrestricted access:

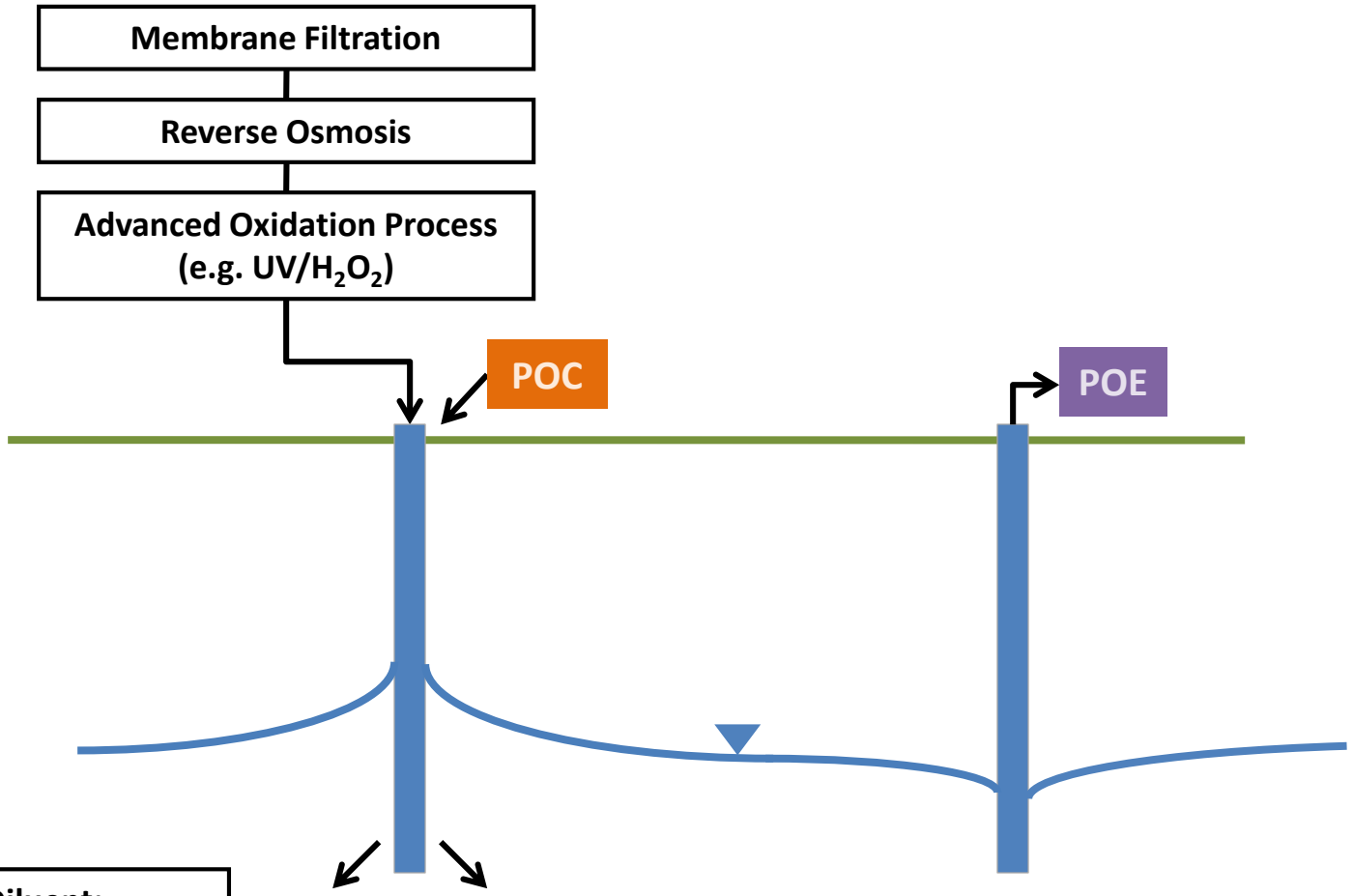
- Residential landscape
- School yards/parks
- Golf Course

POC = point of compliance (monitoring)

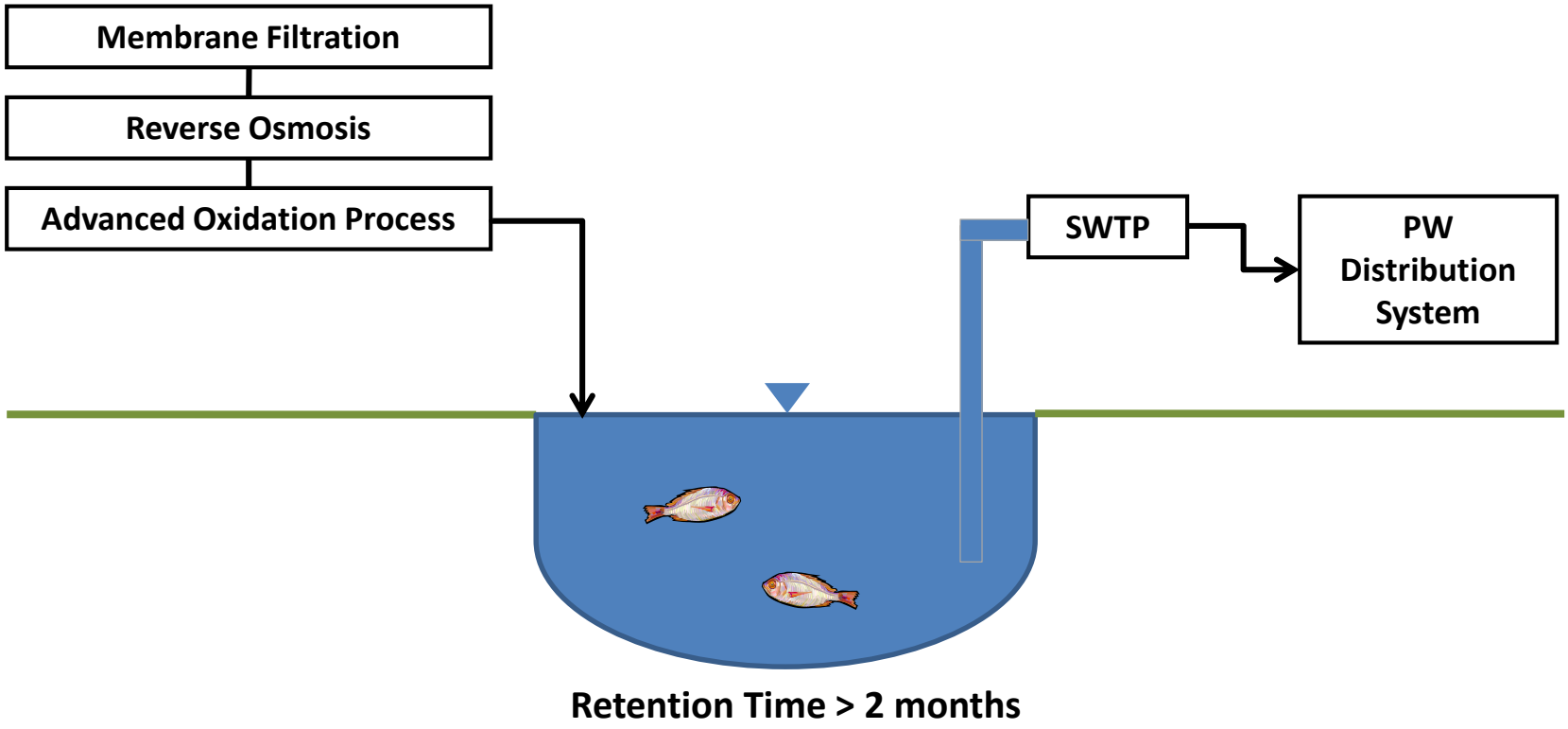
Title 22 Uniform Statewide Recycling Criteria



Indirect Potable Reuse – Groundwater Recharge via Subsurface Injection



Indirect Potable Reuse - Surface Water Augmentation (NEW!)



ANTIBIOTIC RESISTANCE

- **Knowledge of ARBs/ARGs in recycled water is incomplete**
  - Most bacteria removed by advanced treatment, but genes can be transferred across species
- **Provide recommendations for research on ARBs/ARGs associated with allowable Title 22 and IPR uses to further understand their potential to impact human health.**
- **Supplement recommendations/findings from Expert Panel for DPR (Olivieri et al. 2016, Chapter 7)**
  - Determine human health risk due to ARBs/ARGs in recycled water
  - Develop standardized tests for ARBs/ARBs
  - Characterize ARB/ARG removal by recycled water treatment processes

CORE QUESTIONS HAVE NOT CHANGED

- **What are the appropriate constituents to be monitored, including analytical methods and MDLs?**
- **What is the known toxicological information for the above constituents?**
- **Would the above lists change based on level of treatment and uses *as specified in Title 22 and for surface water augmentation*? If so, how?**
- **What indicators *or surrogates* can be used to represent a suite of CECs?**
- **What concentrations of CECs should trigger enhanced monitoring?**

GROUND RULES

- **Protection of human health is the focus of this effort**
  - ecological impacts in waters receiving intentional or incidental runoff of recycled water are not under consideration
- **Primary focus will be on updating recommendations from 2010 (i.e. for IPR and Title 22 Landscape Irrigation)**
  - Panel to consider all allowable Title 22 uses
- **Ingestion of food crops irrigated using Title 22 recycled water will NOT be considered by this Panel**
  - Occupational exposure and consumption of potable water produced by IPR practices are to be addressed

SCHEDULE

- **Panel Meeting #1: July 19-21**
  - Day 1 Kickoff (open to public)
  - Day 2 Panel Deliberation (closed session)
  - Day 3 Panel Report Out (open to public)
- **Panel Meeting #2: Dec 11-15**
  - Day 1, 3 and 4 Panel Deliberation (closed session)
  - Day 2 Panel Report Out (open to public)
  - Day 5 Final Panel Recommendations (open to public)
- **Draft Panel Report Release: Jan 2018**
  - 30 day public comment period
- **SWB Staff Recommendations: March 2018**
  - Peer Review
  - Workshop

Meeting #1 Agenda

- **Wed AM: CECs in Recycled Water - State of the Science**
  - *Day 1 Public Meeting - Background presentations*
  - Day 2 Panel Deliberation
  - Day 3 Panel Report Out
- **Wed PM: Stakeholder Perspectives & Public Participation**
  - Impacted communities
  - NGOs
  - Sanitation Agencies
  - Water Supply
  - Recycled Water Research
- **Thursday: Working Session (Panel only)**
- **Friday AM (10:30-noon): Panel Report Out**

We'll be right back!

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