Water Recycling Overview

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WateReuse Association

- Recycling and desalination advocacy at national and State level
  - Regulations for safety and efficiency
  - Funding for research and projects
  - Influence national & State water policy
- Research (through WateReuse Research Foundation)
- Education & Outreach (Publications, Conferences)
Membership

- Evolved from California to National to International Association
- Total Membership >380
  - ~180 Water Agency Members
  - Major Consulting Engineering Firms
  - Major Equipment Suppliers
Relationship of recycled water to other supplies

Raw Supply
- Surface water
- Groundwater
- Seawater
- Recycled water
- Rainwater
- Greywater

Treatment
- Reverse Osmosis
- Groundwater/Reservoir augmentation
- Drinking water treatment plant

Use
- Potable supply
- Non-potable supply
Recycled Water Uses in California

- Potable supply
- Landscape irrigation
- Dual-plumbed
  - Commercial
  - Indoor residential
- Geothermal power
- Concrete
- Cooling
- Carpet dying
- Composting
- Commercial laundry
- Car Wash
- Dust control
- Fire suppression
Recycled Water Use in California

- GW Recharge: 177 acre-feet = 211 billion gallons
- Agriculture: 241 acre-feet
- Landscape: 114 acre-feet
- Wildlife: 53 acre-feet
- Other: 15 acre-feet

Total = 650,000 acre-feet = 211 billion gallons
From 2009 SWRCB survey of recyclers
Types of Potable Reuse

- Groundwater recharge
- Reservoir augmentation
- Direct
Potable Reuse

SAT/ Environmental Buffer

Water Treatment

Urban Water Use

WW Treatment

AWT = RO + UV
Potable Reuse in California

- 7 major projects
- First project started in 1962
- Over 7 million customers (nearly 20% of California’s population)
- Very high quality supply
- Direct potable
  - Used in Big Spring, Texas – 40% of supply
  - Under development in California
California DPR Initiative

- Develop $8-$10 million
- Conduct research to support CDPH evaluation of DPR feasibility by Dec 2016 per SB 918
- Education and outreach to facilitate DPR project approval at State and local level
  - Regulatory
  - Political
What’s New?

- Groundwater recharge regulations revised – more flexible
- Advanced treatment technology
- Direct potable reuse is State priority
  - Governor Brown
  - Los Angeles and San Diego
- Consolidated permitting and regulatory environment
What are some general limitations with reuse?

- Major limitation to direct potable reuse
  - Protocol for assuring quality still in development

- Potential major limitation to indirect potable reuse
  - Compliance not feasible for all
    - Wrong geology
    - Insufficient surface storage capacity
    - Poor quality diluent or insufficient supply

- Major limitation to purple pipe systems (for irrigation)
  - Expensive
  - Disruptive
Sustainable Solutions
... for a Thirsty Planet.

Communities are finding new and innovative ways to extend the life of our world’s water resources every day.

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For more information: www.athirstyplanet.com