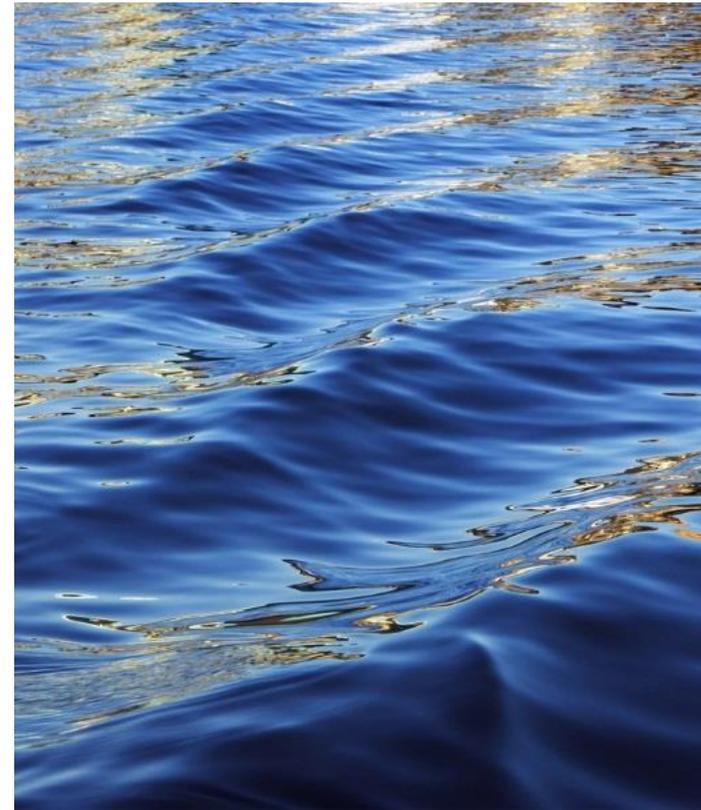




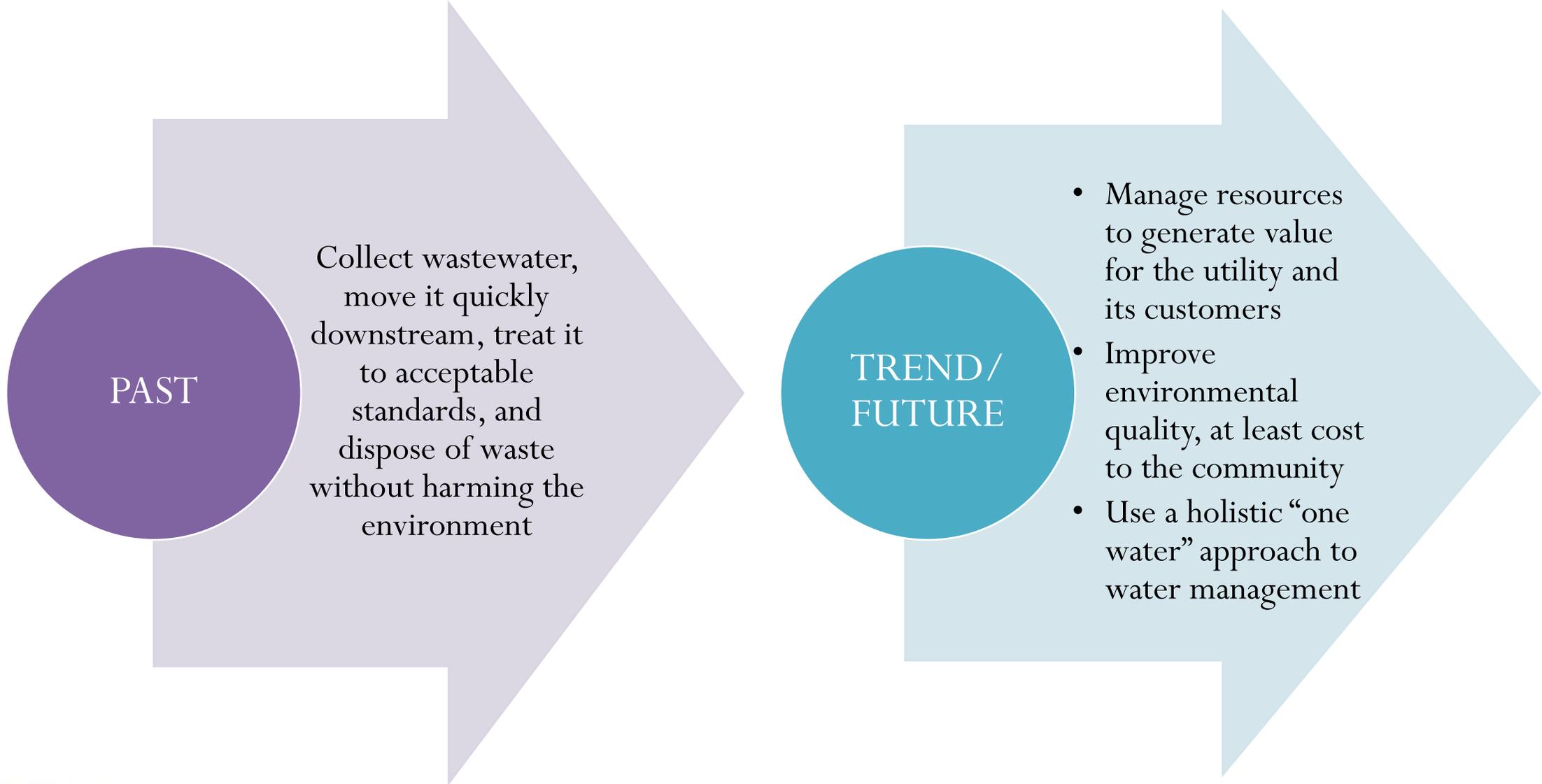
Status of Water Reuse in the Nation

Guy Carpenter
WaterReuse Association
President

May 17, 2017

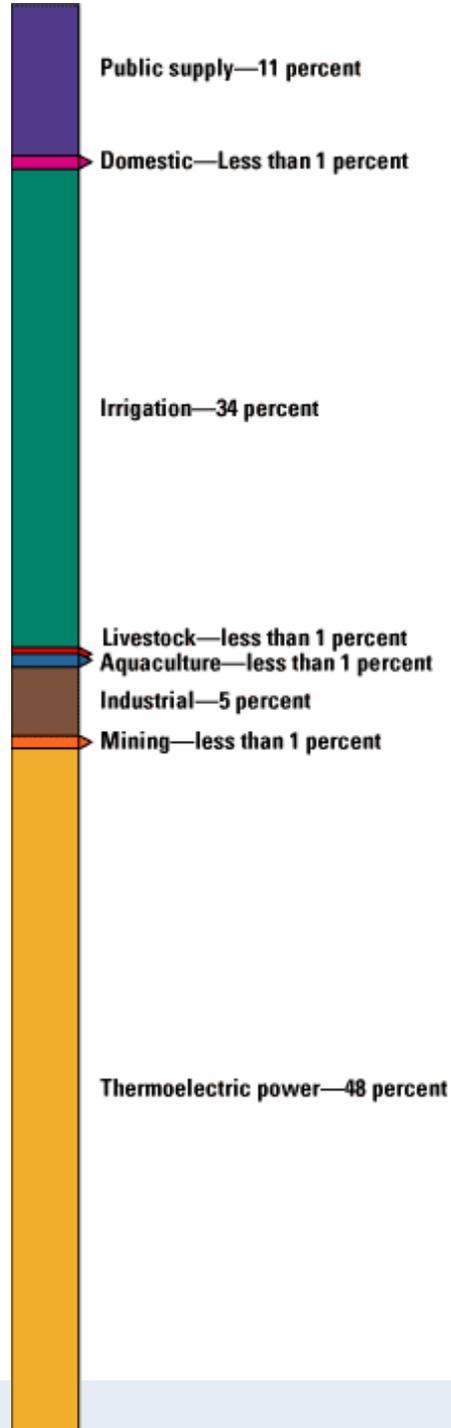


Reuse's Paradigm Shift



How Much is “Reuse-able”?

Next big thing?



- Data from 2000: USGS
- 408 BGD, or 457,000,0000 acre-feet per year
- 12% (48.9 BGD) of withdrawals are for Public Supply & Domestic
- Assume 30% (14.7 BGD) returned to sewer
- Assume 85% (12.5 BGD) of that becomes recycled water
- $12.5 / 408 * 100 = \underline{3.06\%}$ of total US Demand could be met with recycled water
- But, $12.5 / 48.9 * 100 = \underline{25.5\%}$ of Public Supply & Domestic Demand could be met with recycled water

Traditional centralized types of Water Reuse



Non-Potable Reuse (NPR) or
“Direct Reuse” (Purple Pipe)



Fit for Purpose

The right water for the right use

Agricultural Reuse

Great potential for enhanced utilization of recycled water



Ongoing research: WRRF-15-08 - State of Irrigated Agricultural Water Reuse - Impediments and Incentives

Upcoming research to identify existing uses, characterize potential, and develop strategies for overcoming barriers and incentivizing greater use of recycled water

Will evaluate existing governance frameworks and develop recommendations



New research: Evaluating Economic and Environmental Benefits of Water Reuse for Agriculture

Monterey County Water Recycling Project Monterey, CA

- 20 MGD
- Irrigation for 222 Farm Parcels
- 46 miles of transmission/ distribution pipelines
- 11-year Wastewater Reclamation Study - assess safety/ feasibility of recycled water to irrigate raw vegetable crops
- 5-year demonstration project
- Never experienced human health incidence
- Crops include lettuce, celery, broccoli, cauliflower, artichokes, and strawberries



Traditional centralized types of Water Reuse



Non-Potable Reuse (NPR) or
“Direct Reuse” (Purple Pipe)



Indirect Potable
Reuse - Surface
Water
Augmentation

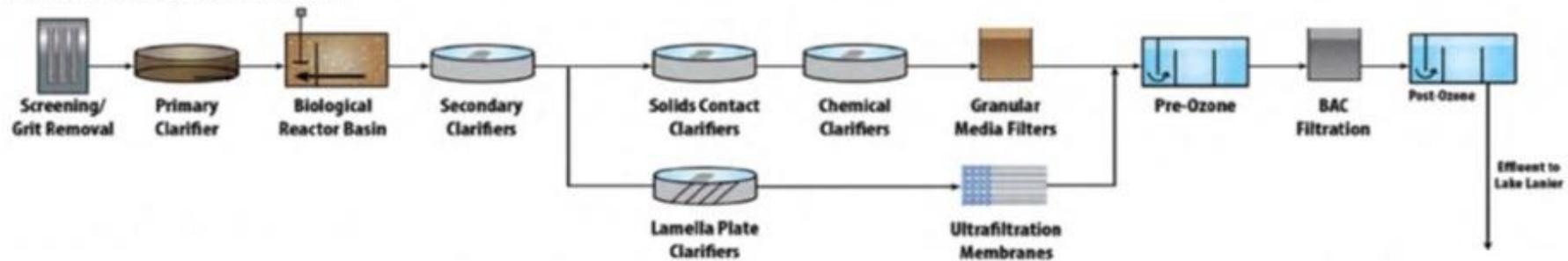


Gwinnett County Department of Water Resources



- Indirect Potable Reuse system
- Ozone-BAC based treatment at the F. Wayne Hill Water Resources Center
- Surface water discharge into Lake Lanier

F. Wayne Hill WRC Liquid Process Flow Diagram



Traditional centralized types of Water Reuse



Non-Potable Reuse (NPR) or
“Direct Reuse” (Purple Pipe)



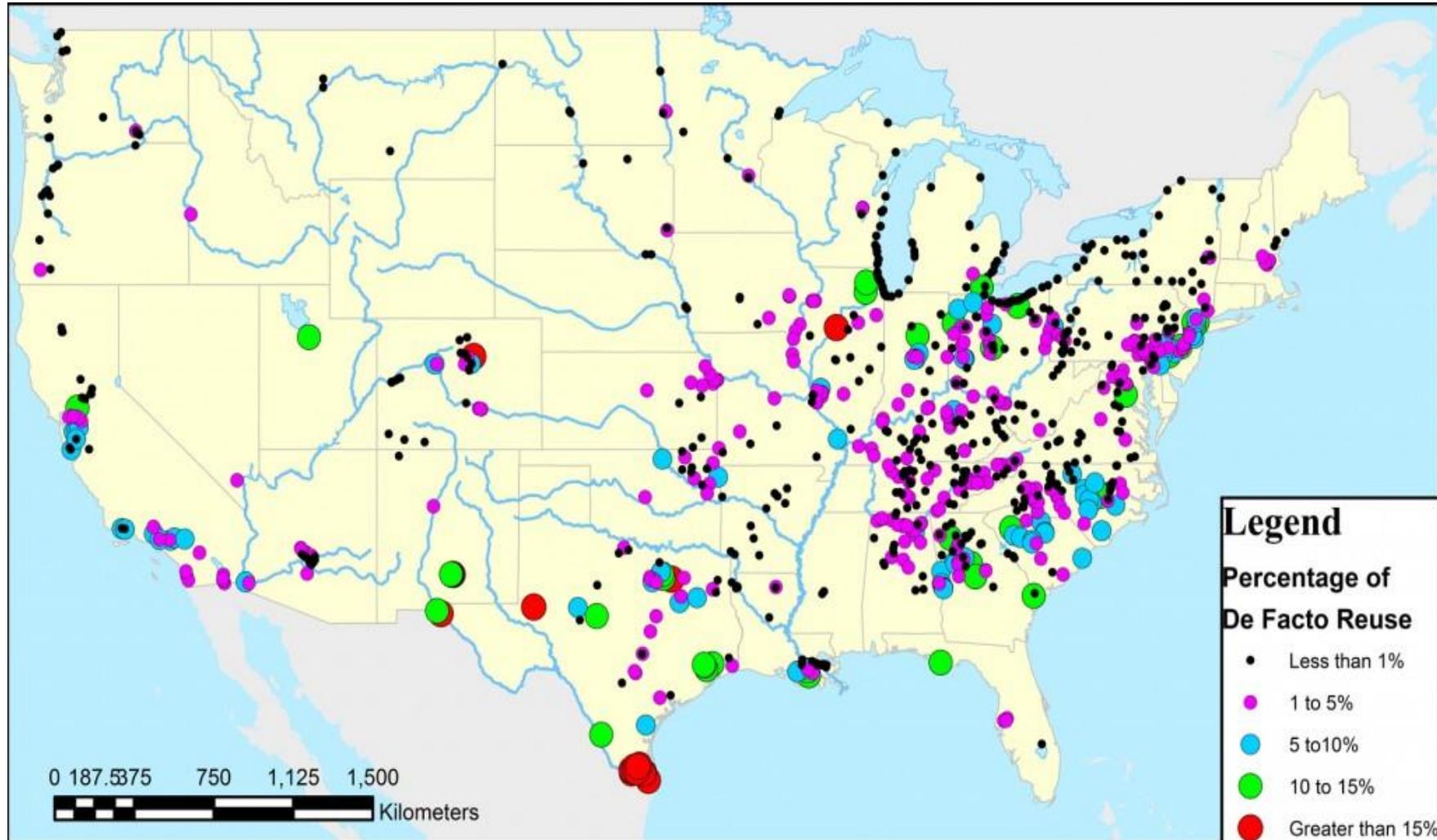
“De Facto”
Potable Reuse

De facto indirect potable reuse is a reality



Courtesy City of San Diego

De Facto Water Reuse in the US



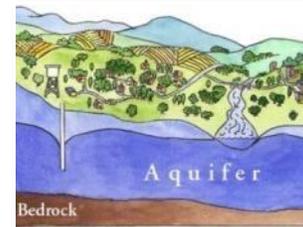
Traditional centralized types of Water Reuse



Non-Potable Reuse (NPR) or
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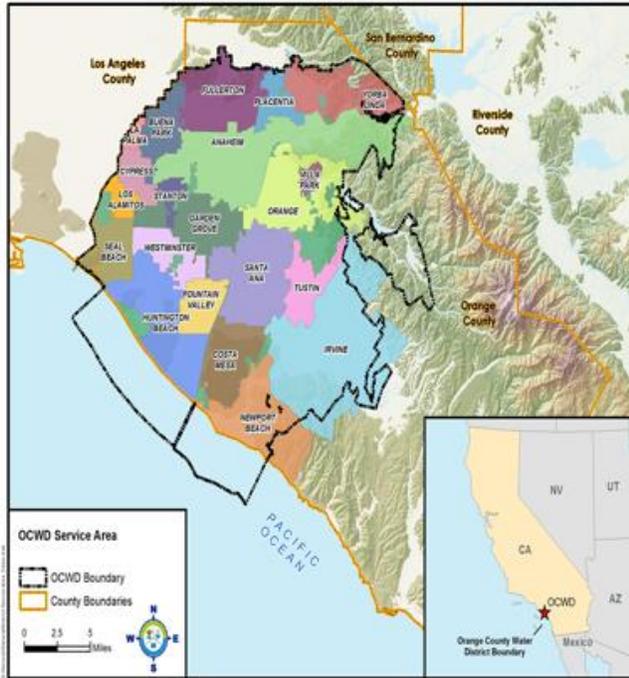
Indirect Potable
Reuse - Surface
Water
Augmentation



Indirect Potable
Reuse -
Groundwater
Recharge

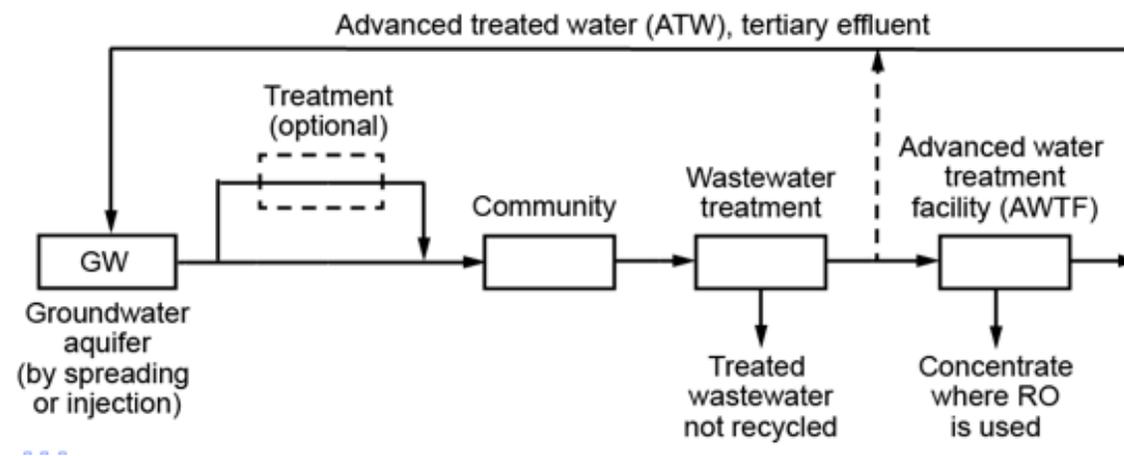


Orange County Water District



Typical injection well - OCWD

- Manage local groundwater basin
- Groundwater = 70% local supply for 2.4 million residents



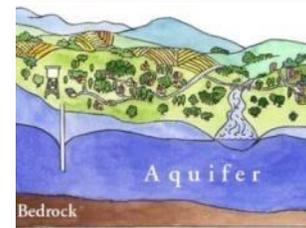
Traditional centralized types of Water Reuse



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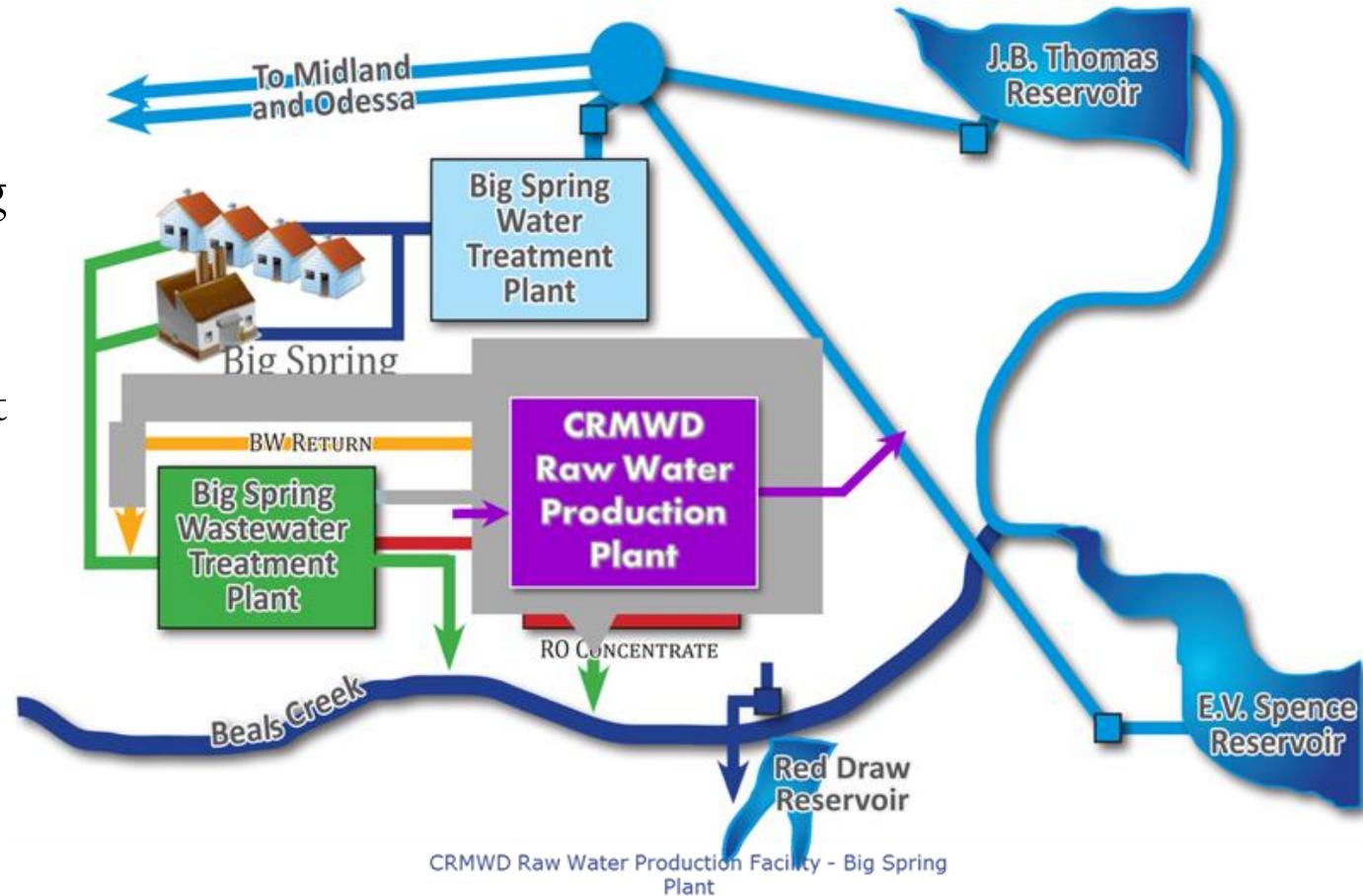


Direct Potable
Reuse

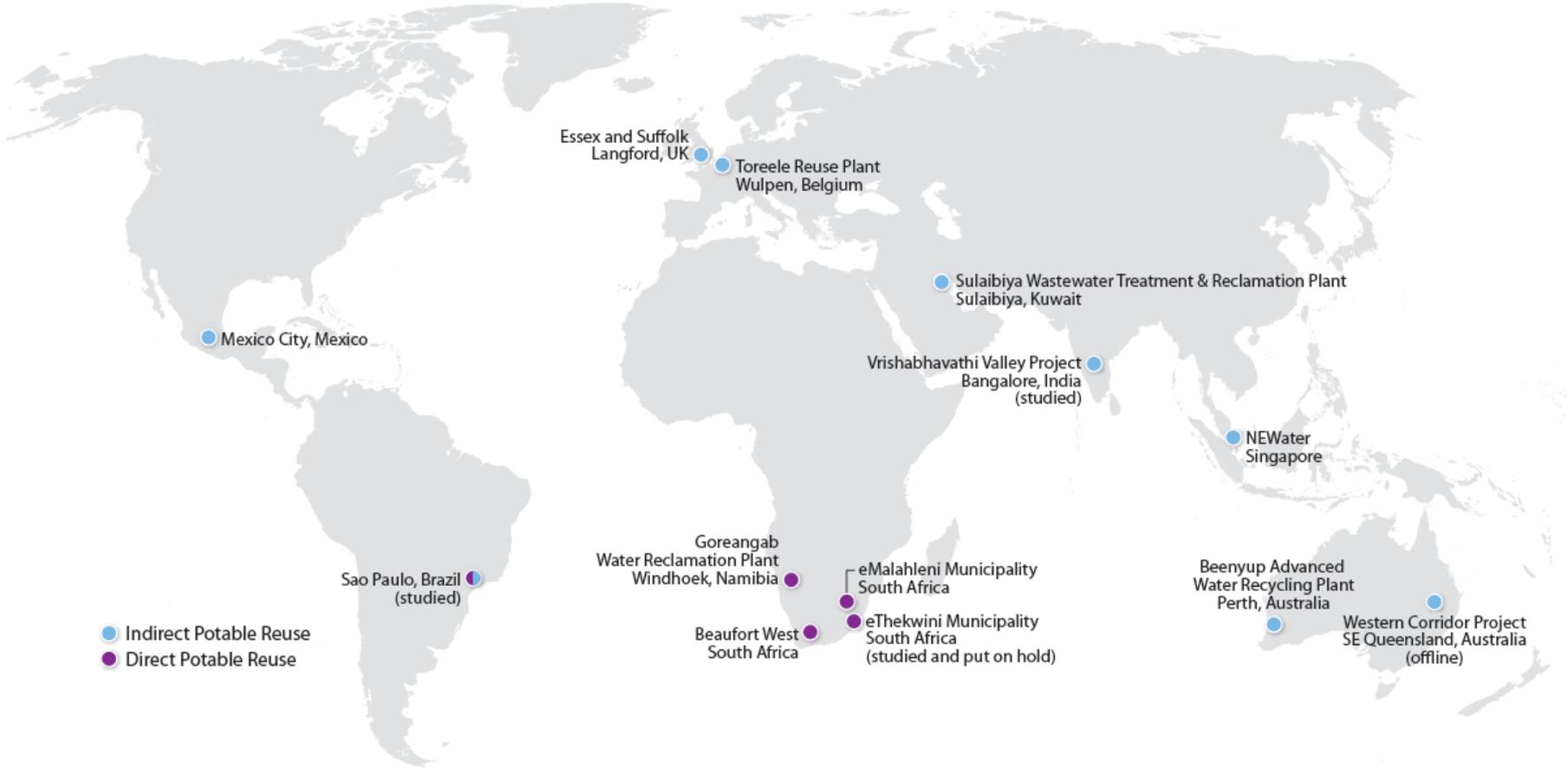


Big Spring Water Supply Augmentation

- Blends advanced treated reclaimed water with lakes to produce a high-quality drinking water.
- 16 MGD with microfiltration, reverse osmosis, and ultraviolet disinfection.
- Blends advanced treated water with 21 MGD of traditional sources.

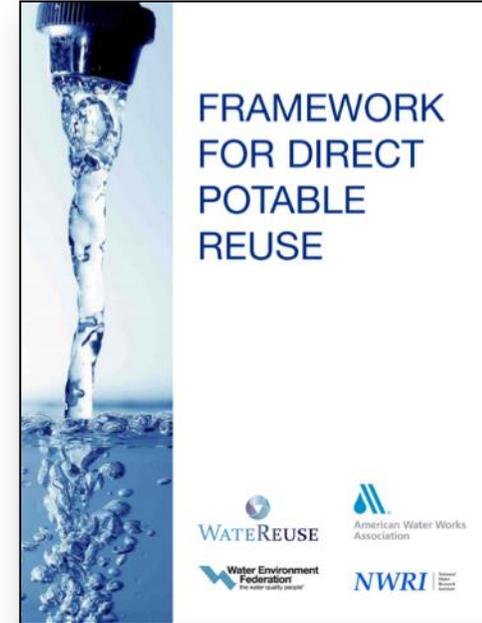


Potable Reuse around the World



Overview of selected planned and constructed IPR and DPR projects worldwide (not intended to be a complete survey)

Framework for Direct Potable Reuse



Purpose: To provide an overview of the key elements that make up a DPR program and a framework for assessing the specific topics and issues that need to be addressed in the development of future DPR Guidelines.

WaterReuse Association

Delivering Value to Our Members



National Advocacy



State Support



Communications



Conferences



Networking

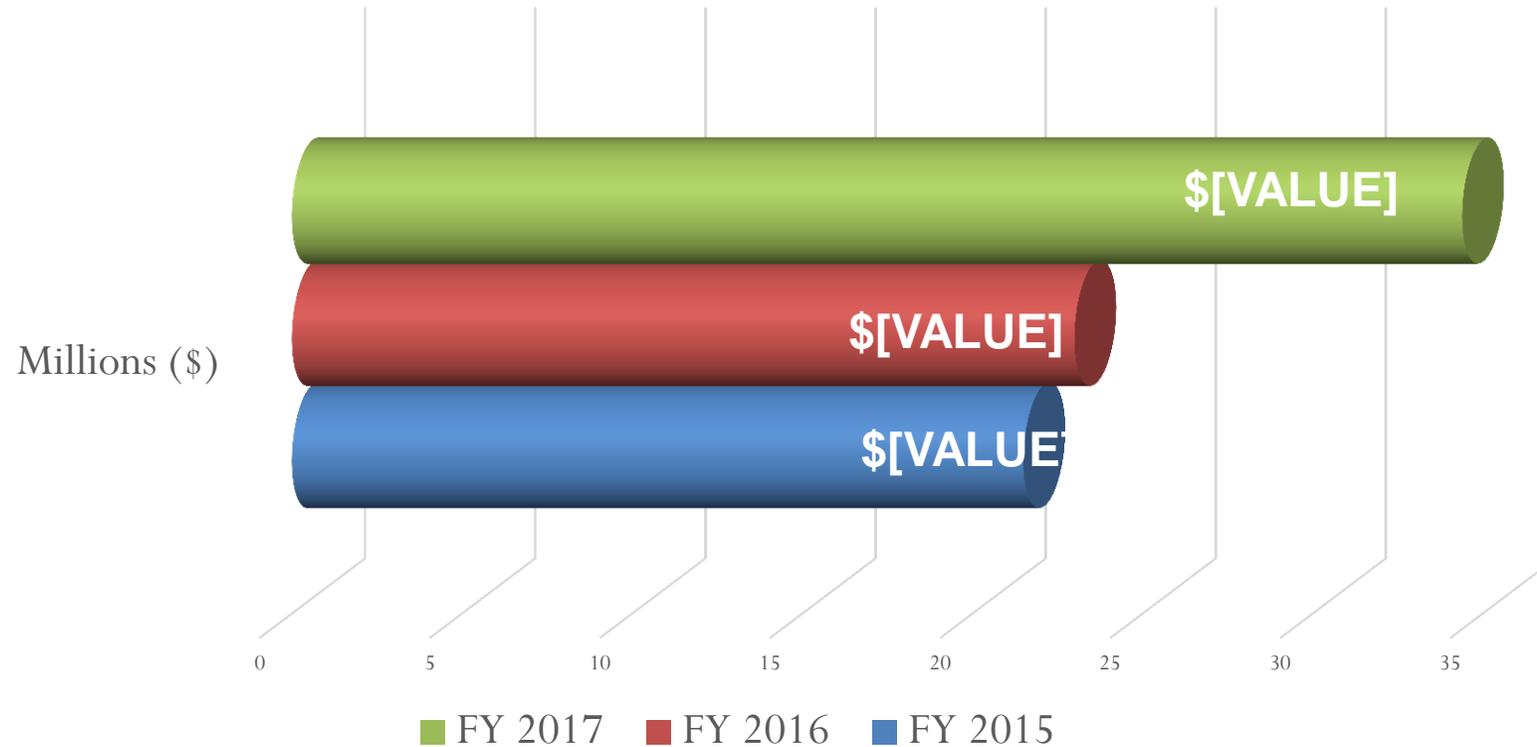


Membership



WaterReuse Advocacy — Title XVI

- Modernized into a merit-based competitive grant program
- Funding increased to \$34.4 million for FY 2017





WaterReuse Washington Alert

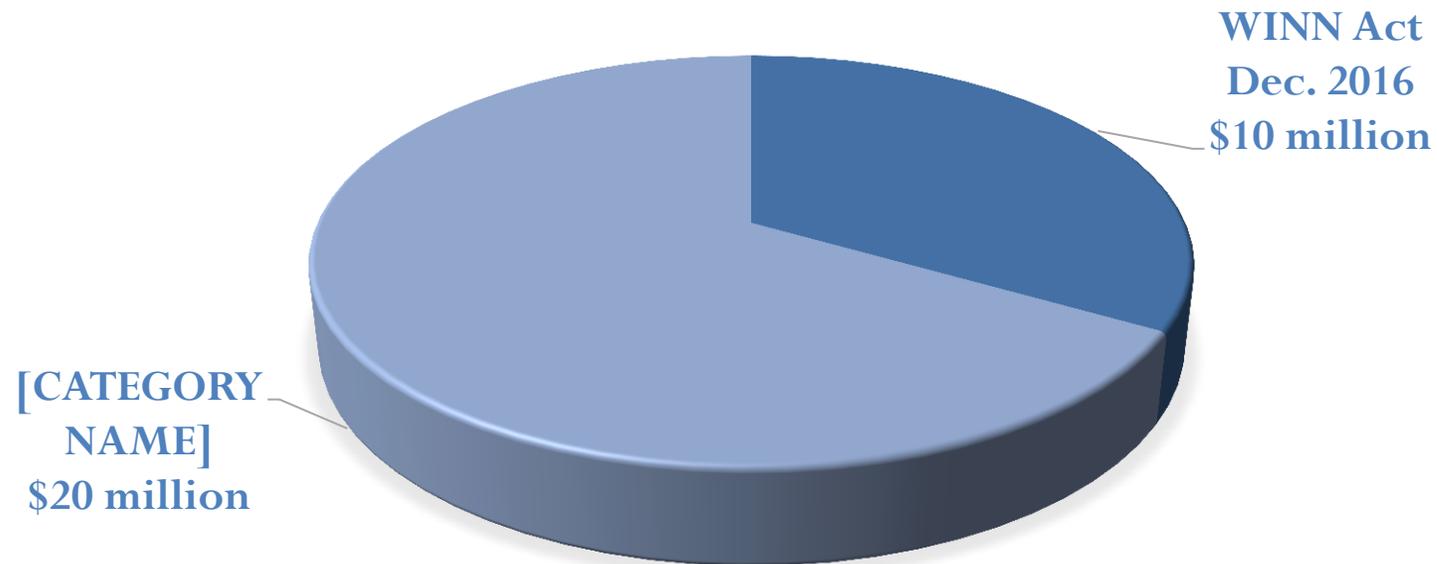
Department of Interior Announces \$23.6 Million for Water Reuse Projects and Studies

Last Friday, U.S. Secretary of the Interior Ryan Zinke announced that the Bureau of Reclamation awarded \$23.6 million in [Title XVI](#) funding to communities in seven states for planning, designing and constructing water reuse projects, developing feasibility studies, and researching desalination and water reuse projects.

The Title XVI Water Reclamation and Reuse program is the only federal program that provides funding specifically for water reuse projects in 17 western states and Hawaii. The latest Bureau of Reclamation funding goes to six authorized projects, thirteen feasibility studies and four research studies in California, Kansas, Nevada, Oklahoma, Texas, Utah and Washington.

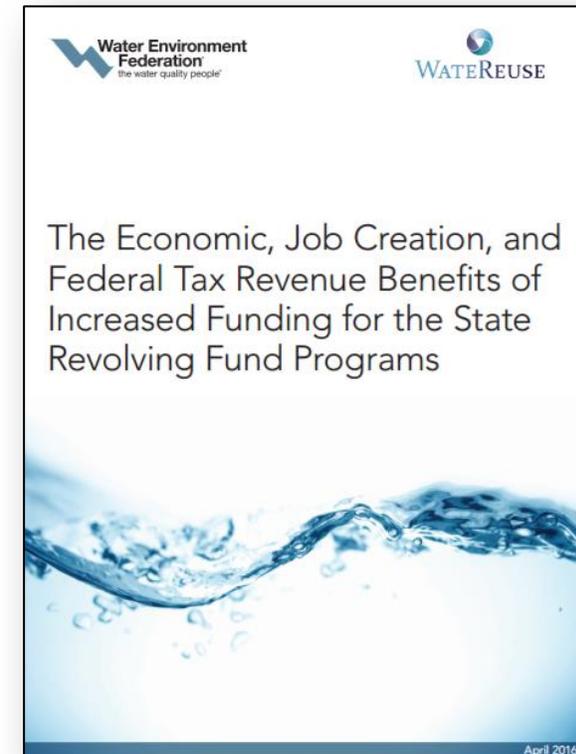
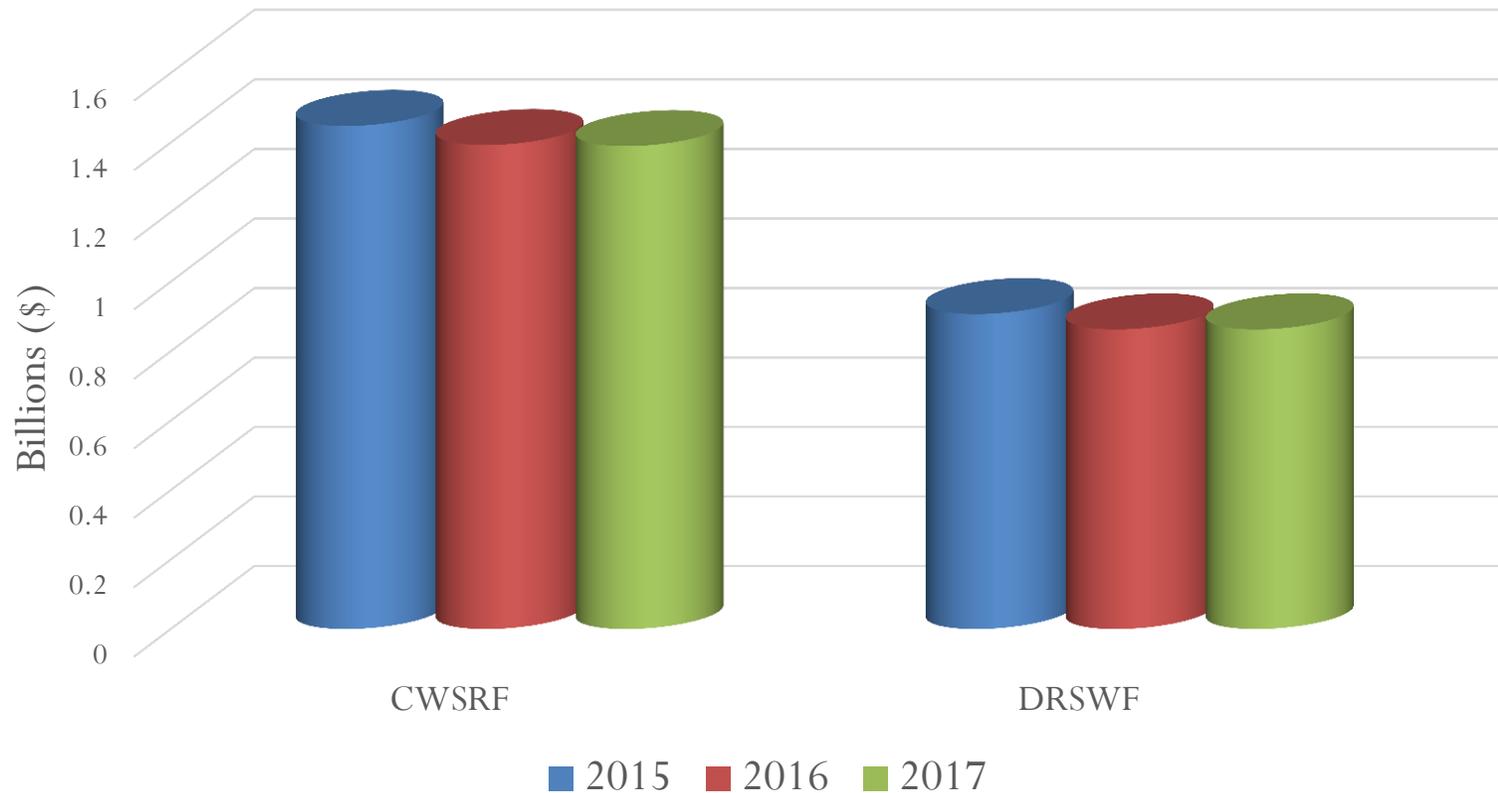
WaterReuse Advocacy — WIFIA

- Congress appropriated \$30 Million for FY 2017
- This marks the first funding for this program originally passed in 2014.



WaterReuse Advocacy – SRFs

Clean Water and Drinking State Revolving Funds



State Support: More Responsive

State Information Exchange Committee

- Established last year to promote communication and knowledge sharing among the state sections
- Adopted a “charter” which establishes mission, goals, objectives to guide the committee
- Building infrastructure to improve communication, collaboration and coordination to support state efforts

Actively Provide Comment Letters on Proposed Regulatory Reform

- Prepare and submitted letters on proposed regulatory reform (Nevada)
- Provide research to help guide comment letters (Nevada and Florida)

Support for State Initiatives

- Staff support for conferences (California), workshops (Oklahoma) and special events (Florida Homebrew Beer Tasting Contest)
- Staff support for communications and membership drives

State Updates



Arizona

- Governor's Recycled Water Committee will recommend allowing direct potable reuse

California

- State Section sponsoring legislation (AB574) to define potable reuse and subcategories

Florida

- 6 IPR or DPR studies
- Established DPR Technical Advisory Committee
- New Water Brew a big hit

Nevada

New regulations enacted in early 2017 to allow indirect potable reuse

Texas

- El Paso moving forward with new potable reuse project

Washington

- Washington released draft reclaimed water rule language for public comment

Total Water Solutions

ALEX GERLING,
COLUMN COORDINATOR

KERRI COPE



Cope

“The use of reclaimed water for beneficial purposes can reduce the quantity of warm, nutrient-rich wastewater being discharged into streams and can be used in place of or supplemental to existing water rights. It can also be used for groundwater recharge, boiler feed water, and for irrigation of crops.”

“The legalization of marijuana and subsequent development of production facilities throughout the state highlighted the need to look beyond traditional methods of obtaining water for commercial purposes. When the voter initiative on marijuana was approved in 2014, OWRD began receiving hundreds of phone calls asking for new water rights.”

Is Reclaimed Water the Future in Oregon?

Changing Minds – One Pint at a Time

- Start a conversation about reuse and the nature of water
- Demystify water purification and the urban water cycle
- Showcase innovative water technology to inform how water can be used



Communication: More Modern & Relevant



New Brand

- Identity Guidelines
- Section Logos



New Website

- Sessions: 119,879
- Users: 69,095
- Pageviews: 334,588
- Pages per Session: 2.79
- Length of Session 2:39



Webinars

- 30 events (including 20 in partnership with Research Foundation)
- 4,520 views

Communication: More Modern & Relevant



Press

- 35 Press Releases
- 5 TV/Radio Interviews
- 4 OpEds (Including New York Times)



Social Media

- 3,209 Twitter followers (2,061 new followers); 952 mentions; 899 retweets
- 2,647 LinkedIn followers, 14,568 post impressions
- 816 Facebook page likes
- 15,199 YouTube views



World Water: Water Reuse & Desalination

- Partnership with WEF
- 24,000 print and digital distribution

Conferences: More Knowledge Sharing

31th Annual Symposium, 2016

- Tampa, FL
- Attendees: 525

2015 Industrial Reuse Conference

- Austin, Texas
- Attendees: 225

2016 Potable Reuse Summit

- Oklahoma City, Oklahoma
- First event of this kind





JULY 23-27, 2017

**11TH IWA INTERNATIONAL CONFERENCE
ON WATER RECLAMATION AND REUSE**

LONG BEACH, CALIFORNIA



www.iwareuse2017.org



IN PARTNERSHIP WITH:



NWRI

Networking: More Services



Job Bank

- Introductory offer of \$30 per job per 30 day job posting



Member Directory

- Members Only Directory



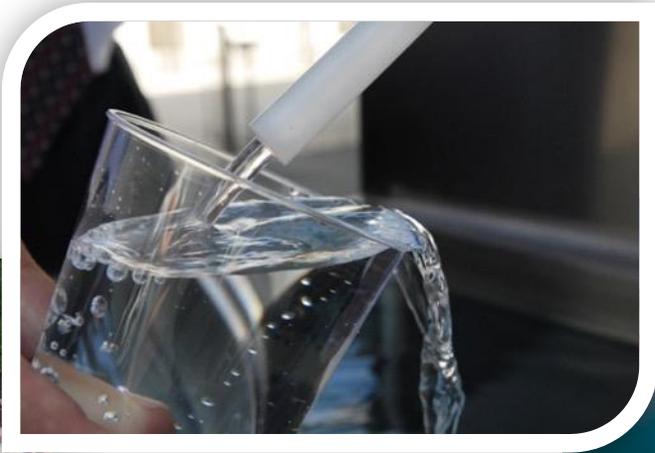
Water Environment & Reuse Foundation

Merger Update

- Successful merger of WaterReuse Research Foundation and Water Environment Research Foundation
- Unanimously approved by both Boards of Directors on May 5, 2016
- Total research portfolio valued at more than \$200 million
- Continued partnership with WaterReuse Association – Melissa Meeker is the Executive Director for both organizations, share space, overlap of many Directors on the Board
- Benefits of partnership include free and discounted research and discounts on the annual research conference



Research for the Full Spectrum

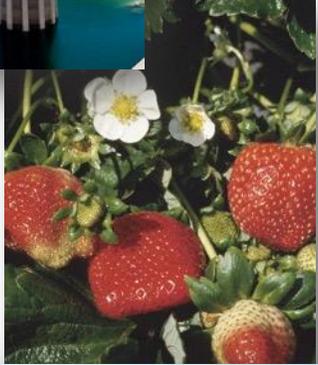


Urban
Irrigation
Industrial
Reuse

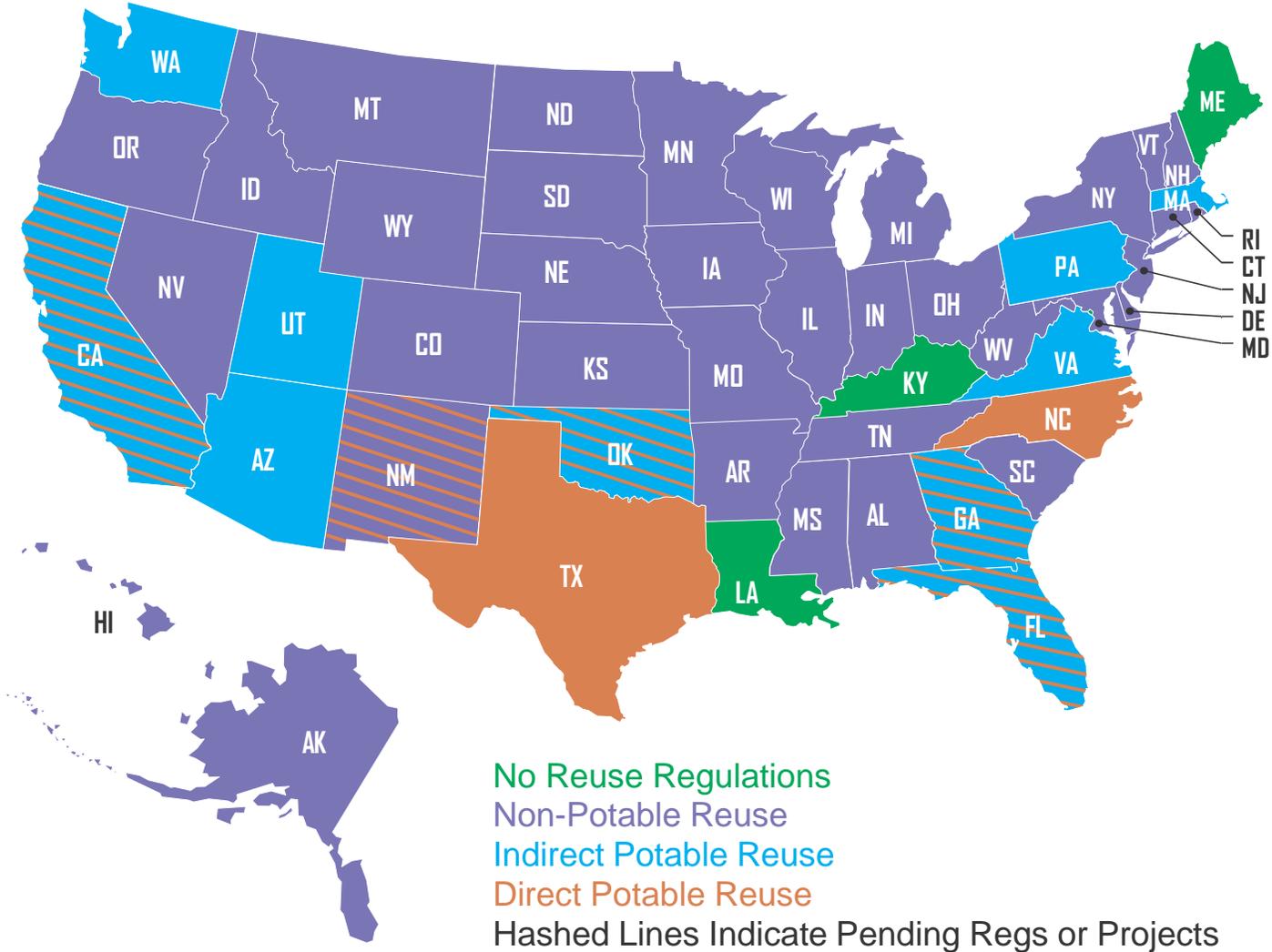


Potable Reuse

Food Crop
Irrigation
Wetland/
Habitat
Restoration



The “State” of Reuse: Developing Consensus on Public Health Protection



Questions?

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602-689-2678

