



Accelerating Water Reuse Implementation through Regional Partnerships

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Valley Water



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REIMAGINING WATER FOR A CHANGING WORLD

Envirospectives



Accelerating Water Reuse Implementation through Regional Partnerships

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WaterReuse Northern California
December 1, 2023



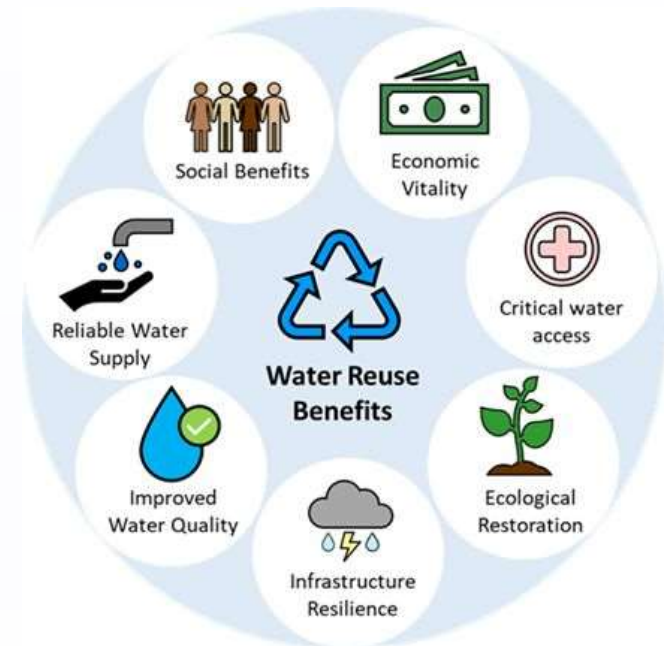
Navigating & Thriving in Uncertain Times



The Multiple Benefits of Water Reuse



Diringer, Sarah, Heather Cooley, Morgan Shimabuku, Sonali Abraham, Madeline Gorchels, Cora Kammeyer, and Robert Wilkinson. 2020. *Incorporating Multiple Benefits into Water Projects: A Guide for Water Managers*. Oakland, Calif.: Pacific Institute.



EPA WRAP 11.3: Case Studies Demonstrate the Multiple Benefits of Water Reuse (<https://lnkd.in/gfjz4PJw>)

Water Reuse: Regionally & Globally

SUSTAINABLE DEVELOPMENT GOALS



THE SUSTAINABLE DEVELOPMENT GOALS REPORT 2023: SPECIAL EDITION—UNSTATS.UN.ORG/SDGS/REPORT/2023/

Of Global Importance: Partnership & Collaboration

Sustainable Development Goal 17, which reads “Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development”, recognizes multi-stakeholder partnerships as important vehicles for mobilizing and sharing knowledge, expertise, technologies and financial resources to support the achievement of the sustainable development goals in all countries, particularly developing countries. Goal 17 further seek to encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships.

<https://sdgs.un.org/topics/multi-stakeholder-partnerships>



A National Perspective: WRAP Action 2.16

WRAP Action 2.16: Support Local and Regional Reuse Projects by Identifying Challenges, Opportunities, and Models for Interagency Collaboration

Authors: Eric Rosenblum, Felicia Marcus, Robert Raucher, Bahman Sheikh, Shannon Spurlock

https://www.epa.gov/system/files/documents/2022-03/multi-agency_water_reuse_programs-lessons_for_successful_collaboration_march_2022.pdf

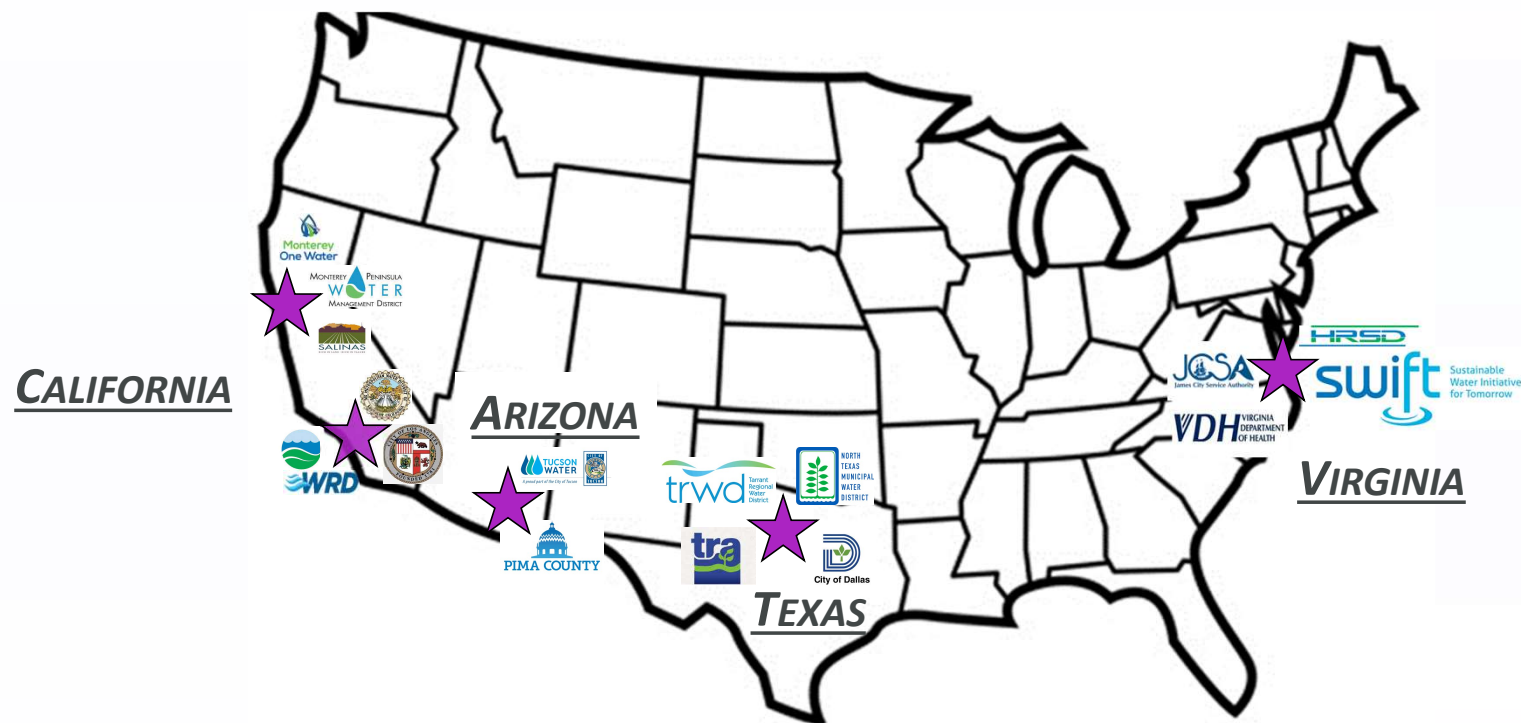


Leadership & Collaboration: Codifying Change

Legal agreements do not create mutual trust, they only codify it.

Denis Qualls, Dallas Water Utilities

Analytical Framework & Case Studies





Thank you!

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www.pacinst.org

Stay informed on important water issues:
<https://pacinst.org/email-sign-up/>

Transformative Disruption: Leadership, OneWater Nevada, and Legitimacy



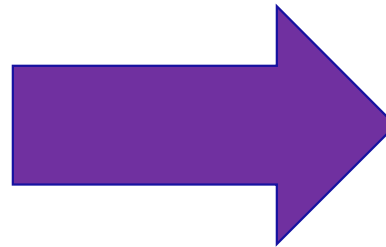
Challenging today.
Reinventing tomorrow.



Transformative Disruption in Practice

Jacobs

**Managing
Strategy
Local
Transactions
Single solution**



**Leading
Vision
Regional
Movements
Multi-benefits**

Claus Homman, Aarhus Vand and Ralph Exton, Grundfos

Transformative Disruption: Origins

Jacobs

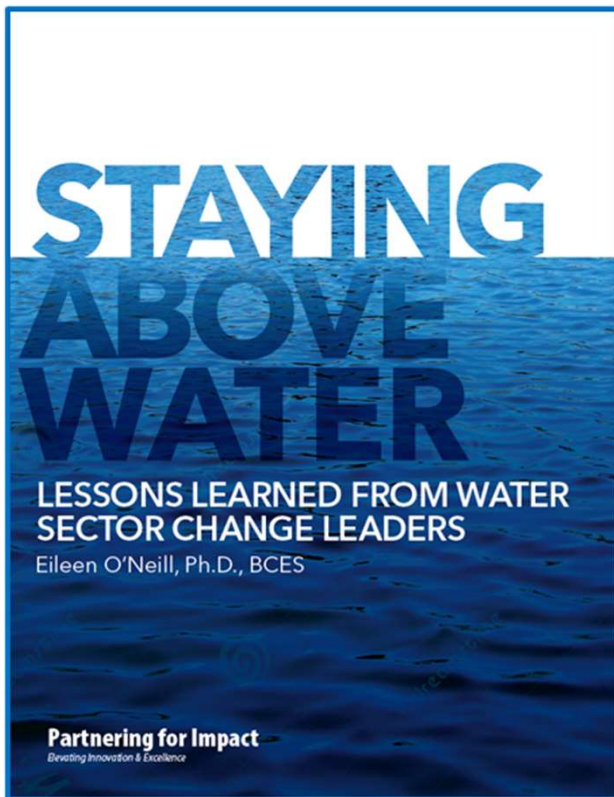


Partnering for Impact!



Adaptive Leadership

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People
Vision
Empathy
Trust
Legitimacy

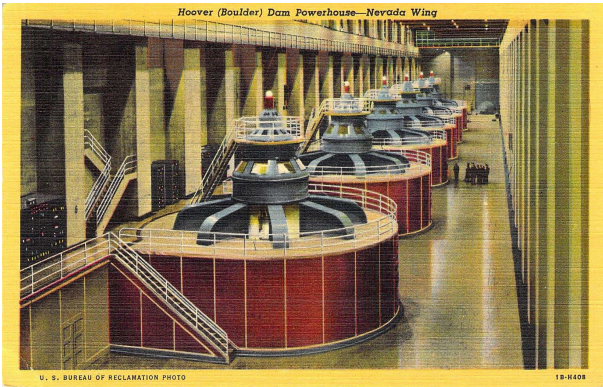


Eileen O'Neill



Nevada Water Management Drivers

Jacobs




switch



Regional Transformation

Jacobs



Municipal Partnerships

Jacobs

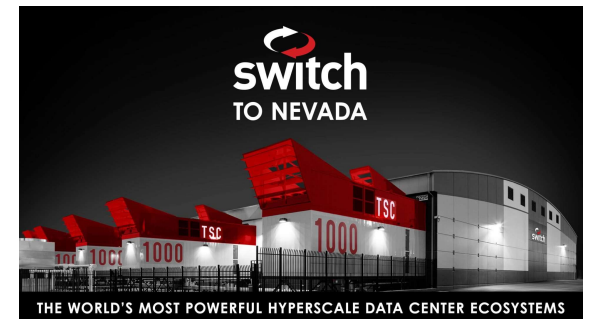
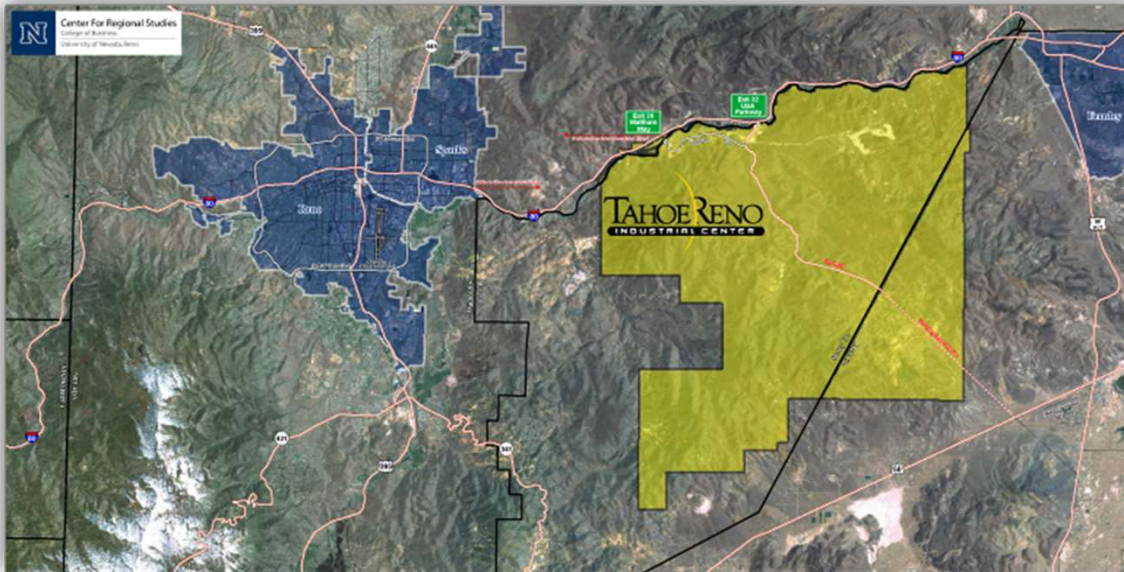
- **NV's 1st Potable Reuse Project**
 - \$150 million
 - Public Engagement Center
 - Started in 2015
- **Advanced Water Treatment**
 - 2 MGD
 - Ozone/BAC/GAC/UV
- **Groundwater Augmentation**
 - Permitted “new” water resource
 - ASR
 - 2,000 AFA



Courtesy
Lydia Teel, PE, PhD
Truckee Meadows Water Authority

Industrial Partnerships

Jacobs



Agricultural Partnerships

Jacobs



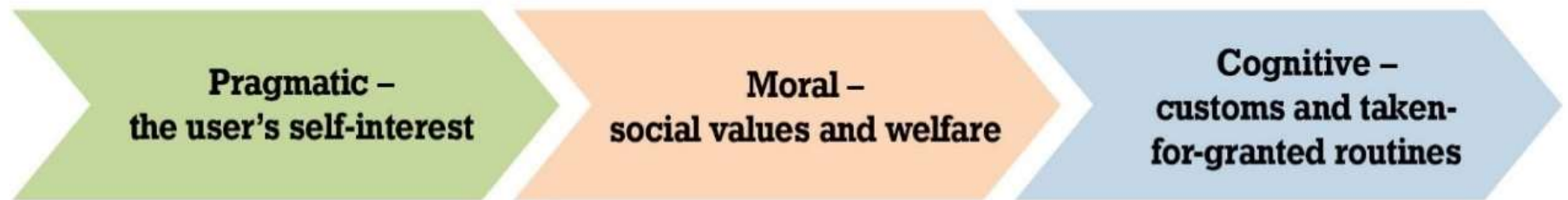
- Non potable reuse water for farmland irrigation
- Potable water storage
- Potential AWT ASR
- Preserve farmland and open space

Transformative Disruption: Legitimacy

Jacobs

A Legitimacy Framework for Water Reuse in California

Three Levels of Legitimacy



David Sedlak, UC Berkeley, ReNUWIt

Christian Binz, Eawag

Michael Kirparsky, Wheeler Institute, UC Berkeley

Sasha Harris-Lovett, SF Estuary Partnership



Legitimacy in Practice

Jacobs



Nevada Water Innovation Institute

Innovative partnership
creating water
management solutions



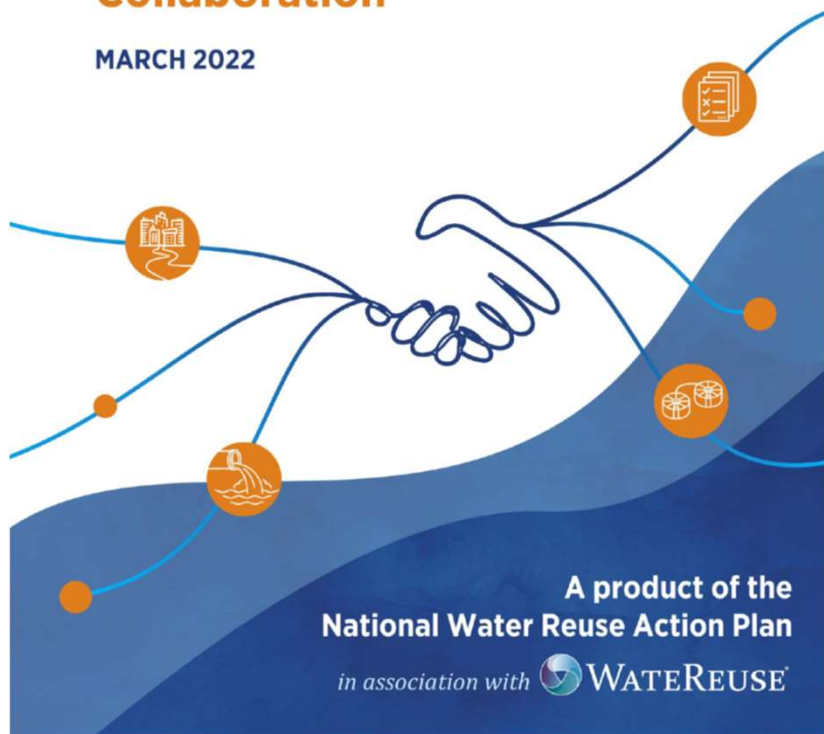
University of Nevada, Reno



MULTI-AGENCY WATER REUSE PROGRAMS:

Lessons for Successful Collaboration

MARCH 2022



Analytical Framework

Governance
Regulations
Economics
Management
Leadership



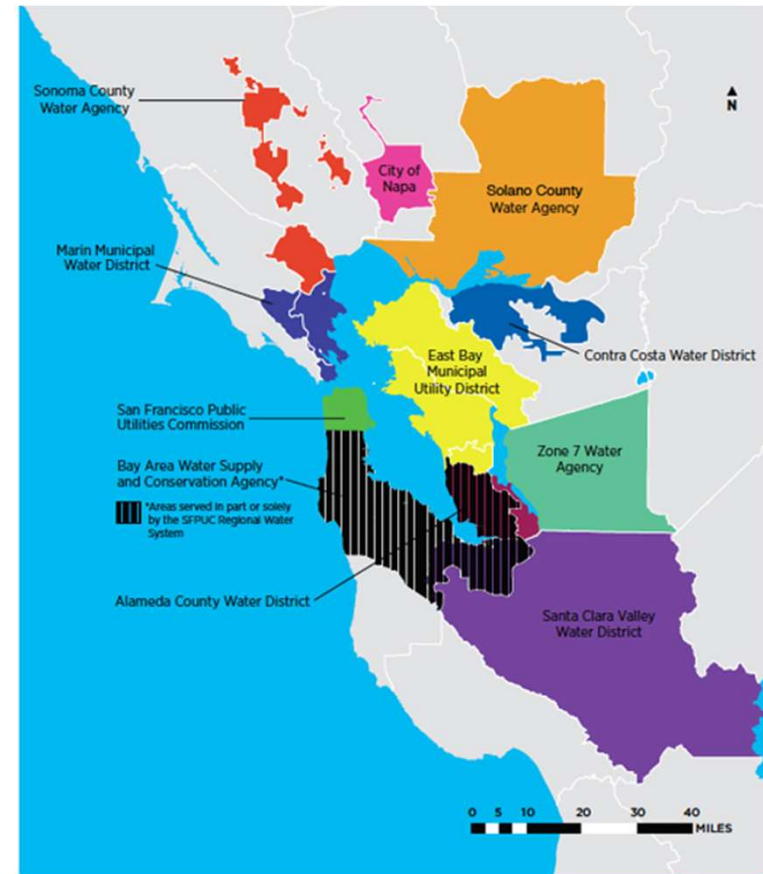
B A C W A
BAY AREA
CLEAN WATER
AGENCIES

Advancing Water Reuse in the Bay Area: Exploring Opportunities and Challenges for Interagency Collaboration (9/20/23)

Wastewater Agencies	
Bay Area Clean Water Agencies	East Bay Dischargers Authority
Central Contra Costa Sanitary District	East Bay Municipal Utility District
City of American Canyon	Napa Sanitation District
City of Hayward	Oro Loma Sanitary District
City of Palo Alto	Ross Valley Sanitary District
City of Redwood City	San Jose/Santa Clara Regional Wastewater Facility
City of San Leandro	San Francisco Public Utilities Commission
Delta Diablo	West Bay Sanitary District
Dublin-San Ramon Services District	West County Wastewater

Water Agencies	
ACWD	Dublin-San Ramon Services District
Bay Area Water Supply and Conservation Agency	East Bay Municipal Utility District
California Water Service	North Coast County Water District
City of American Canyon	North Marin Water District
City of Petaluma	San Francisco Public Utilities Commission
City of San Jose	Sonoma Water
Coastside County Water District	Valley Water

Bay Area Wastewater Treatment Facilities and Water Service Areas



Wastewater Agency Perspective

Evolution of Wastewater Agency Responsibility

- Reduce **public health risk** from wastewater
- Protect **water in the environment**
- Climate change is forcing them to become **resource recovery** agencies
- Now **nutrient management** is becoming a key directive as agencies will be required to reduce nutrient concentration in discharge

Drivers for Water Reuse

- Recycled water is not the cheapest way to reduce nutrient concentrations
- Traditional upgrades may be cheaper; but recycled water has multiple benefits

Water Agency Perspective

3 Principles of Integrated Water Management

- Optimize use of all available resources
- Diversify water supply sources
- Demand management and conservation

Drivers for Water Reuse

- Regulatory changes that limit availability
- Climate change (increasing frequency, severity of droughts)
- Demographic changes including population, employment, and housing

What are your agency's top two priorities?

- ☆ Solve the issue of RO concentrate, PFAS, CECs
- ☆ Provide a reliable and affordable water supply

Governance Work across jurisdiction boundaries (“boundary busting”)

Regulations Address uncertainty around future regulations

Economics Avoid stranding assets/aging infrastructure; additional funding

Management Create capacity for staff to focus on the future

Leadership Create enduring institutions that will outlast elected officials

What impacts your ability to form partnerships?

Governance What form fits best? Who receives the permit? Who pays?

Regulations Projects often result in a clash of environmental values.

Economics Expectations for reuse are often unrealistic and cost-prohibitive

Management Staffing issues—not just funding—limits capacity for reuse.

Leadership A change in leadership can change the entire organization

Alameda County Regional Water and Wastewater Committee

“Alameda LAFCO should create a **Countywide Regional Water and Wastewater Committee** that includes all affected agencies that provide water, wastewater, stormwater, and flood control services to explore opportunities and to share practices for collaboration on **how the region can recycle water**, or better utilize water that is already imported, so it is not only used once and discarded into the Bay.”

Alameda County Local Area Formation Commission (LAFCO)
Recommendation #1, *Countywide Municipal Services Review on Water, Wastewater, Flood Control and Stormwater Services* (November 2021)



Valley Water's Plans for Water Reuse Implementation through Regional Partnerships

December 1, 2023



Hossein Ashktorab, Ph.D.
Recycled & Purified Water Unit Manager
Valley Water



Water Reuse Regional Partnership Considerations

- Amount of Water Supplied
- Public Acceptance
- Systems Adaptability
- Level of Agency Coordination
- Regulatory Complexities
- Regional Perspectives
- Social & Economic Benefits
- Environmental Benefits



A New Source of Water

A partnership with cities of San José and Santa Clara



ADVANCED WATER PURIFICATION PROCESS

HIGHLY TREATED WASTEWATER

This water originally comes from the drains of homes and businesses and is treated three times at a wastewater facility.



#1 MICROFILTRATION



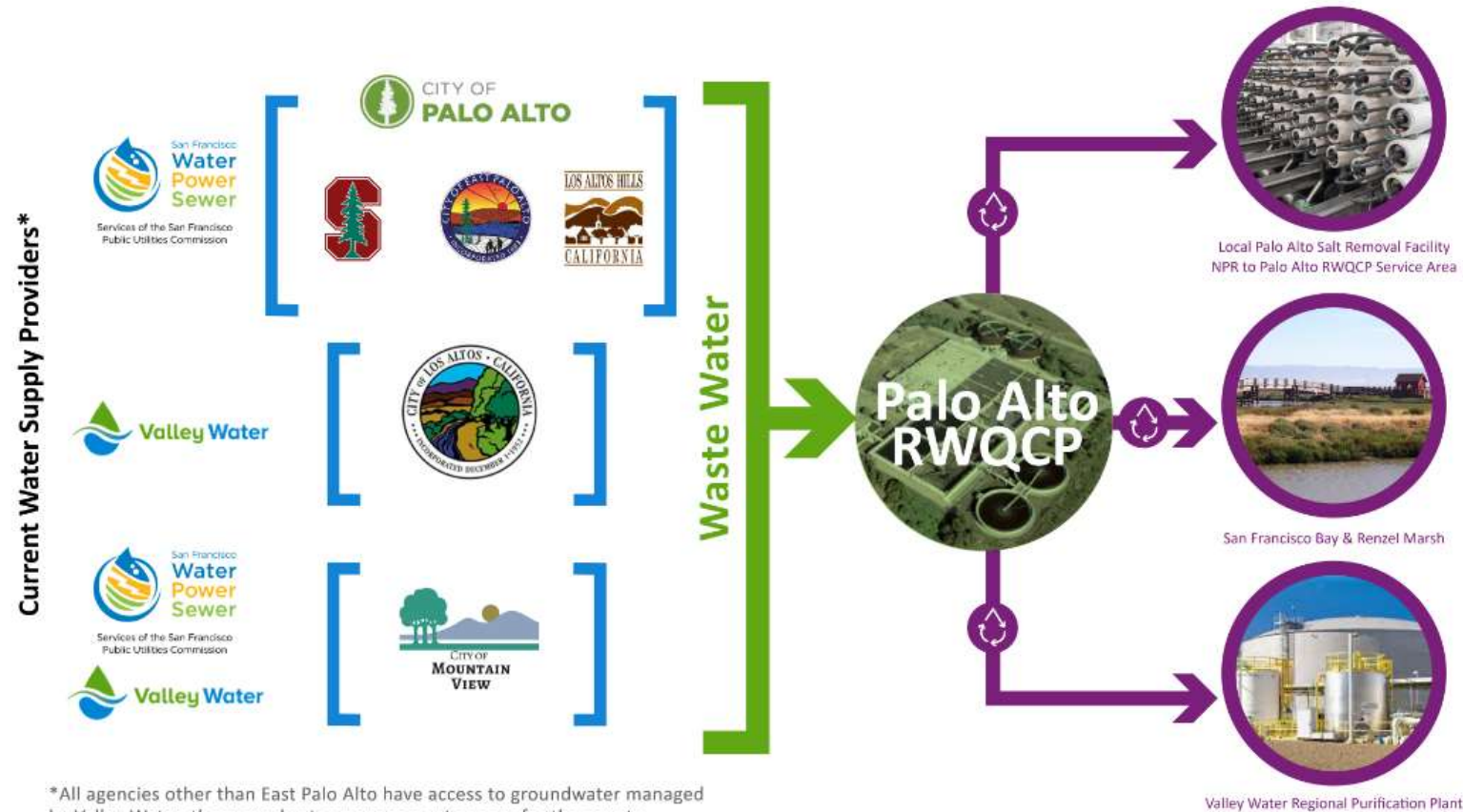
#2 REVERSE OSMOSIS



#3 UV LIGHT DISINFECTION
AND ADVANCED OXIDATION

- Opened in early 2014
- Provides purified water to enhance the quality of SBWR's recycled water
- Largest advanced water purification plant in Northern California, 8MGD
- Produced over 7.3 billion gallons of highly purified water since operation began in 2014

Water Reuse Projects in Palo Alto



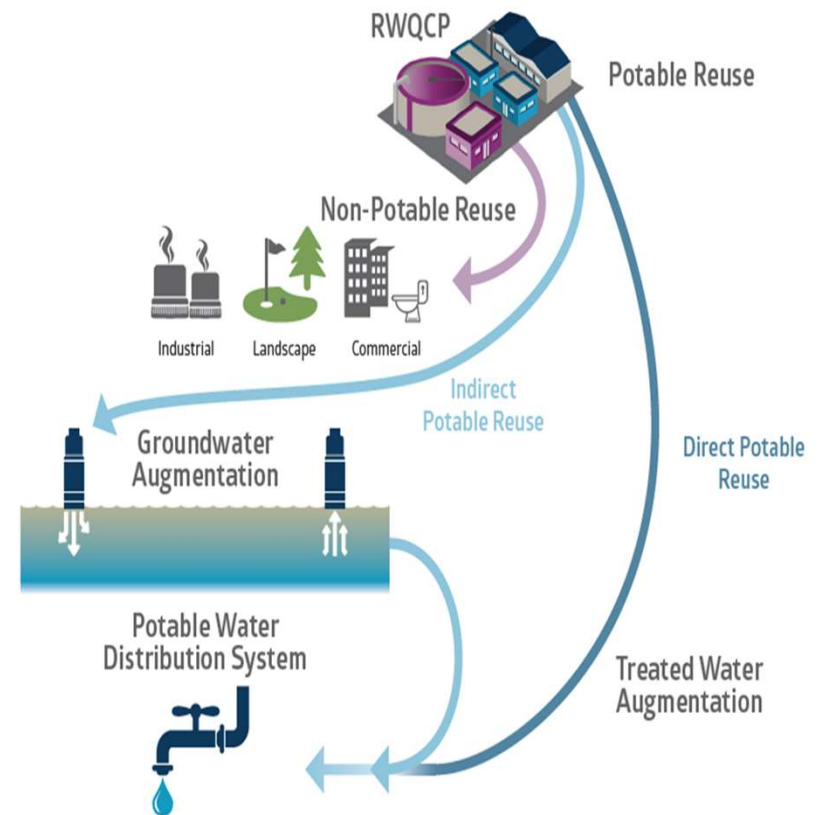
Challenges and Constraints

- Finding common grounds
- Declining flows to POTWs
- Environmental issues
- RO Concentrate Management and side-streams of AWWPFs (e.g., MF Backwash, CIP, etc.)
- Rate impacts
- Funding
- Public support
- Land, Operations & Maintenance, etc.



Regional Benefits of Water Reuse in Palo Alto

- Reduces county-wide reliance on imported water, surface water, and/or groundwater
- Replaces Tuolumne River water used for irrigation with recycled water
- Improves quality of recycled water in Palo Alto & Mountain View for irrigation
- Reduces concentration of salt applied to the soil and, ultimately, the groundwater
- Reduces RWQCP flow & pollutant loading discharged to San Francisco Bay



Addressing the Challenges and Constraints

- Local and Regional benefits and positive impact on water supply
- Technical studies to identify optimum point for treated wastewater availabilities
- Identification of funding sources, grants, and financing vehicles (e.g., P3)
- EIR, CEQA/NEPA, technical/public workshops to engage environmental interest groups and regulatory agencies



Addressing the Challenges and Constraints

- Rigorous and effective outreach programs
- Developing term-sheets and agreements via an effective and comprehensive collaborative process
- Allocating resources to special studies/pilot projects, involving technical experts/IAP, working closely with the project partners, and engaging with the regulatory agencies



Final Thoughts

- Get the Elected Officials involved in the process as soon as practicable
- Establish overlapping interest (i.e., Water Supply Perspectives, etc.)
- Map out a collaborative process to facilitate policy discussions and sharing of technical information (e.g., Joint Committees)
- Develop proposals and agreements (e.g., Term Sheets, Cost-Share, O&M)
- Work closely with regulators, public, and environmental groups





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Thank You

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