

**Meeting Agenda**  
**February 8, 2022**  
**11:30 a.m. – 1:00 p.m.**



**Location:           Zoom registration link**

<https://us02web.zoom.us/join/zoom-join-link>

*The mission of Los Angeles Chapter of the WaterReuse Association is to enhance the resiliency and sustainability of Los Angeles County by increasing the safe, beneficial use of recycled water. Its objectives shall be to promote water reclamation and recycling as a sustainable supplemental source of water for the state; to work for the adoption of legislation and regulations that allow the safe use of recycled water; to facilitate the development of technology aimed at improving water recycling; to promote legislation that would increase funding for water recycling projects; to provide mutual assistance and support between and among Chapter members involved with water recycling projects; and to increase public awareness and understanding of related water problems and solutions.*

Welcome and Instructions..... 11:30 a.m.

1. Host presentation: Recycled Water in the City of Burbank (*Jared Lee, Burbank Water and Power*)
2. Technical Topic: Pilot Testing Water Recovery from RO Concentrate Generated During Potable Reuse: Research Experience at Orange County Water District (*Megan Plumlee*)
3. Water Recycling Legislative/Regulatory Updates (*Raymond Jay*)
4. Regulatory Agency Update
  - a. SWRCB Division of Drinking Water (*Scott Miller*)
  - b. Los Angeles Regional Water Quality Control Board (*Steven Webb*)
  - c. LA County Department of Public Health
5. California State Section Update (*Rafael Villegas*)
6. Chapter Updates (*Judi Miller*)
  - a. October 2021 Member Meeting Summary
  - b. Volunteer Opportunities
  - c. Emerging Professionals Committee Update (*Alex Waite*)
7. Membership Roundtable (*Jared Lee*)
8. Next Meetings
  - April 12, 2022 – Host: TBD; Sponsor (if hybrid): TBD
  - June 14, 2022 – Host: TBD; Sponsor (if hybrid): TBD
9. Adjournment ..... 1:00 p.m.

**Los Angeles Chapter Officers for 2020/2022**

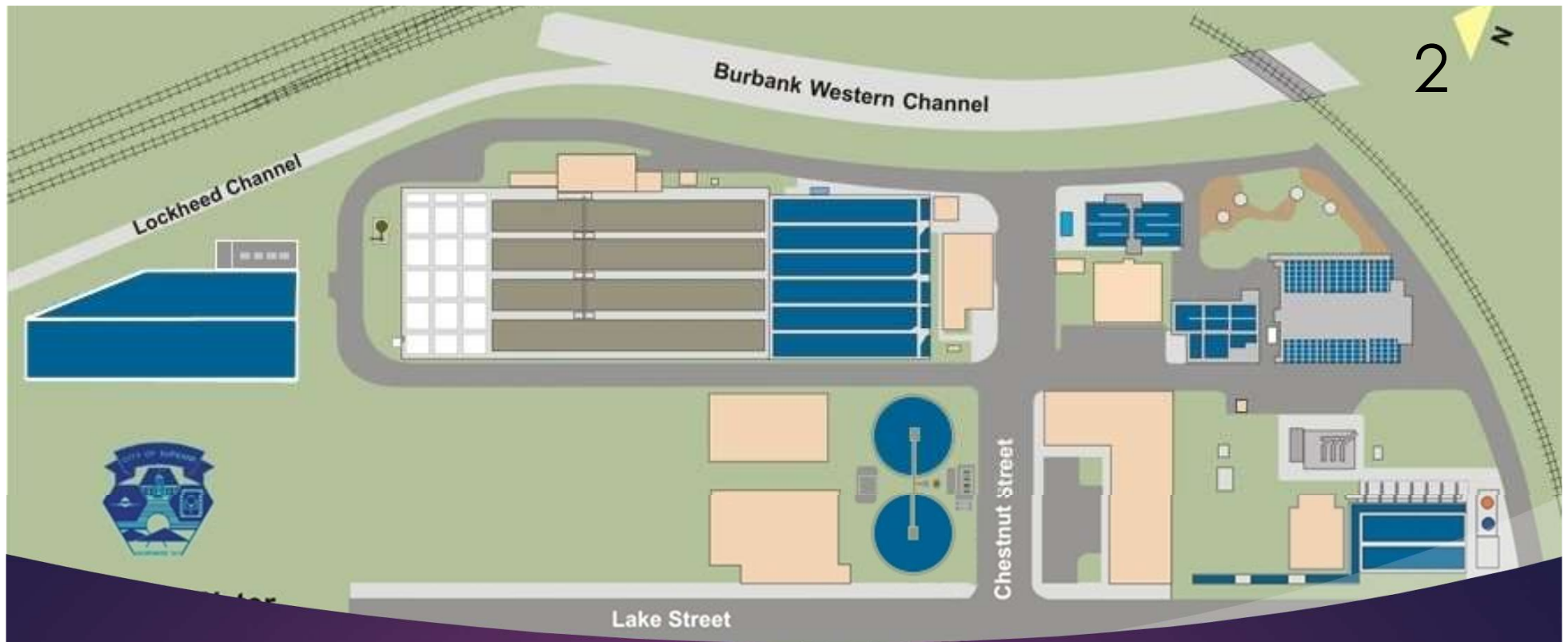
Fred Gerringer, President	626-319-1107
Jared Lee, Vice President	626-379-8443
Judi Miller, Secretary/Treasurer	213-228-8236
Rafael Villegas, Chapter Trustee	213-367-1289
Raymond Jay, Past-President	213-217-5777

[fgerringer@hazenandsawyer.com](mailto:fgerringer@hazenandsawyer.com)  
[JLee@burbankca.gov](mailto:JLee@burbankca.gov)  
[judi.miller@jacobs.com](mailto:judi.miller@jacobs.com)  
[rafael.villegas@ladwp.com](mailto:rafael.villegas@ladwp.com)  
[rjay@mwdh2o.com](mailto:rjay@mwdh2o.com)



# City of Burbank Recycled Water

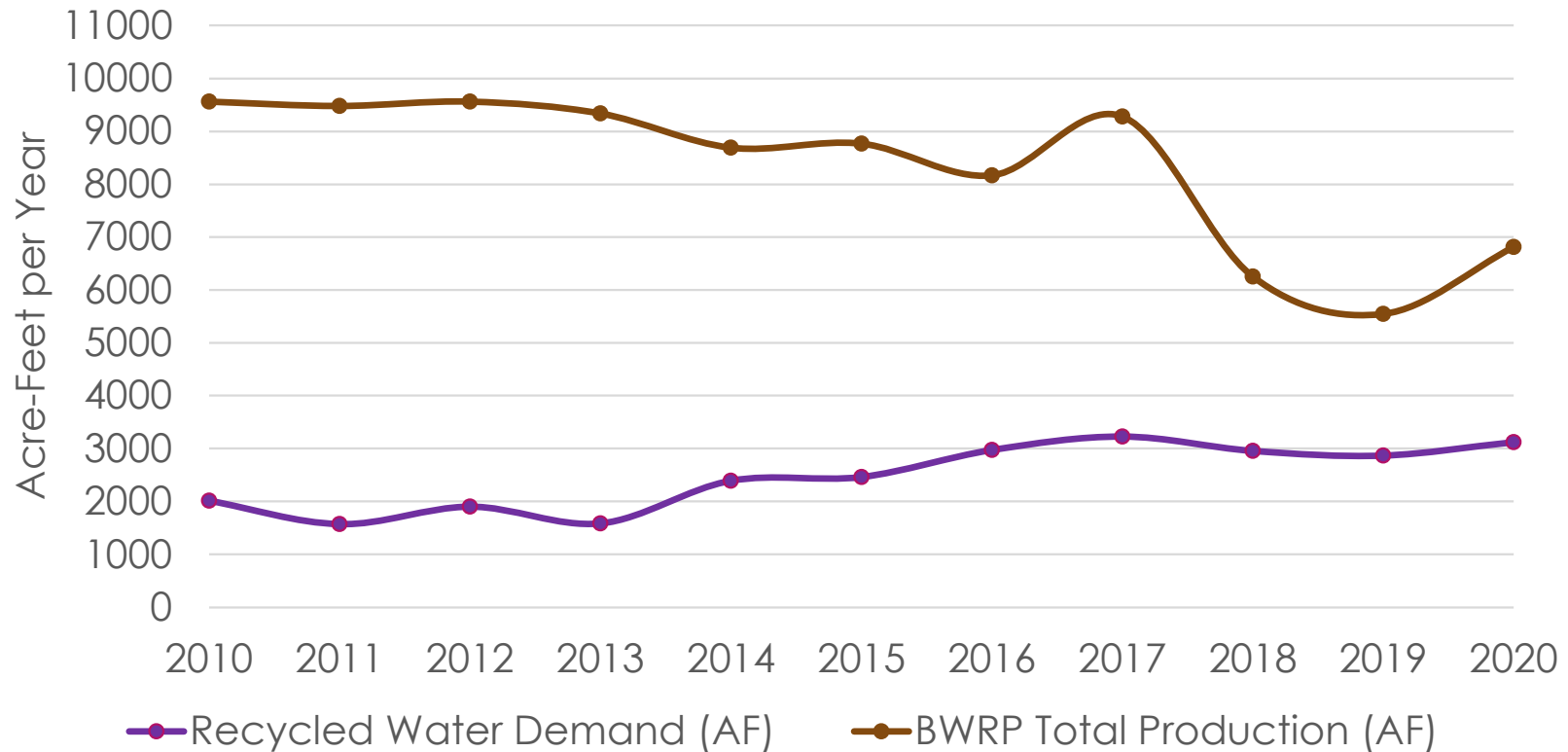
FEBRUARY 8, 2022



# Burbank's Recycled Water

- ▶ Produced at the Burbank Water Reclamation Plant (BWRP)
  - In use since 1967
  - Treats 8.5 MGD of wastewater
  - Not for human consumption
  - Rate is 15% cheaper than potable water, on average

# BWRP Supply and RW Sales





# BWRP Supply and RW Sales

Calendar Year	BWRP Total Production (AF)	BWP Total System Demand including MPP (AF)	RW Usage % of Total BWRP Production
2011	9477.4	1572.4	17%
2012	9559.8	1903.1	20%
2013	9334.3	1589.1	17%
2014	8689.6	2394.4	28%
2015	8766.6	2465.3	28%
2016	8167.9	2974.1	36%
2017	9278.8	3229.6	35%
2018	6253.7	2955.7	47%
2019	5547.8	2869.5	52%
2020	6810.9	3123.3	46%

# Recycled Water Uses

- ▶ Surface Irrigation
- ▶ Cooling Tower Makeup
- ▶ Industrial Processes
- ▶ Structural/Wildfire Fire Fighting
- ▶ Decorative Fountains
- ▶ Dust Control
- ▶ Sewer Cleaning
- ▶ Cleaning roads, sidewalks, and outdoor areas

5



# What's new since 2019?



Annual sales  
remain  
approximately  
3,000-3,200 AFY



Installed or  
converted  
approximately  
6,000 linear feet  
of recycled  
water mainline



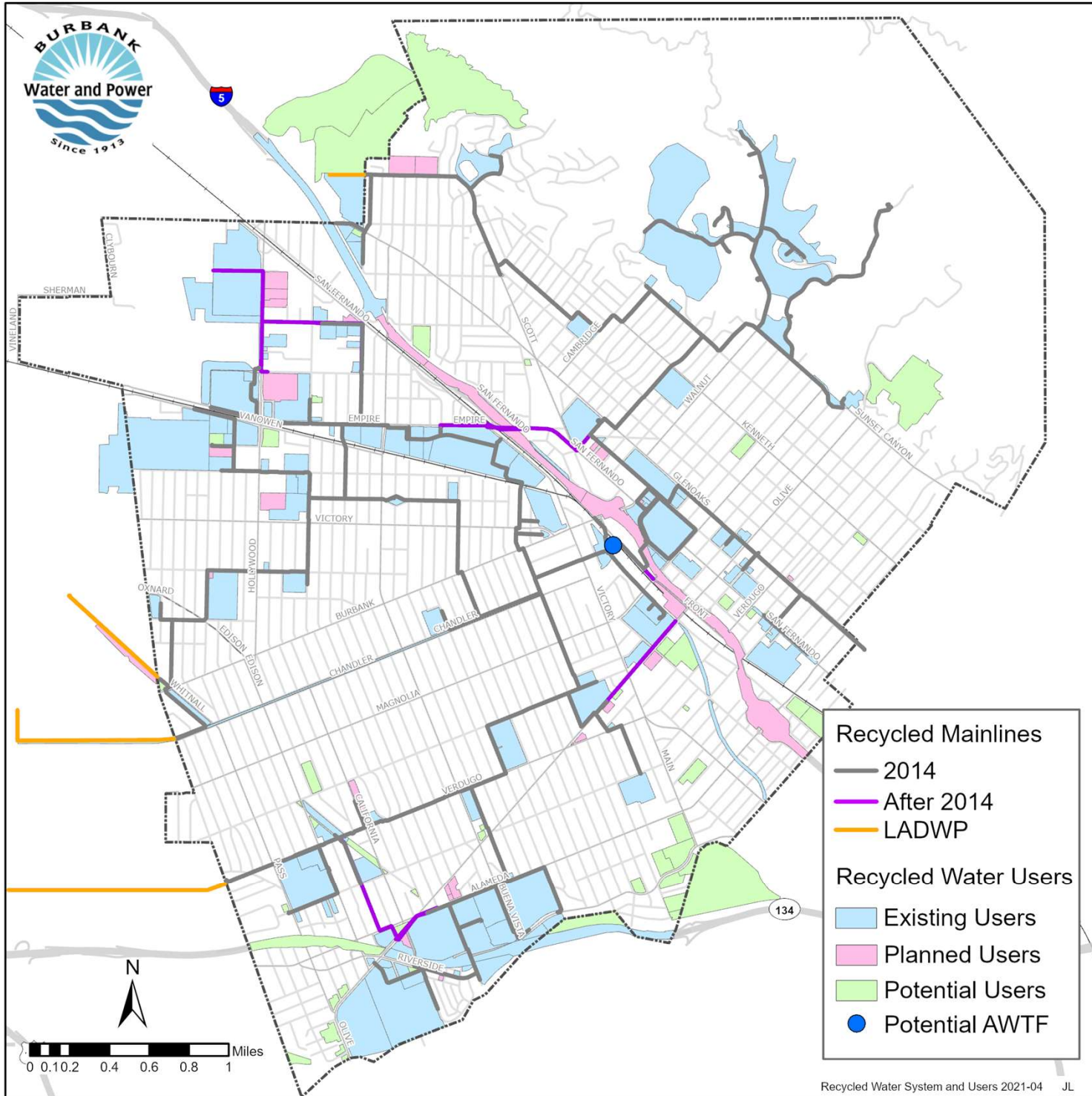
Added over 10  
new customer  
connections



Crossed the  
Burbank  
Channel at  
Cohasset to  
provide service  
to Caltrans  
Interstate 5

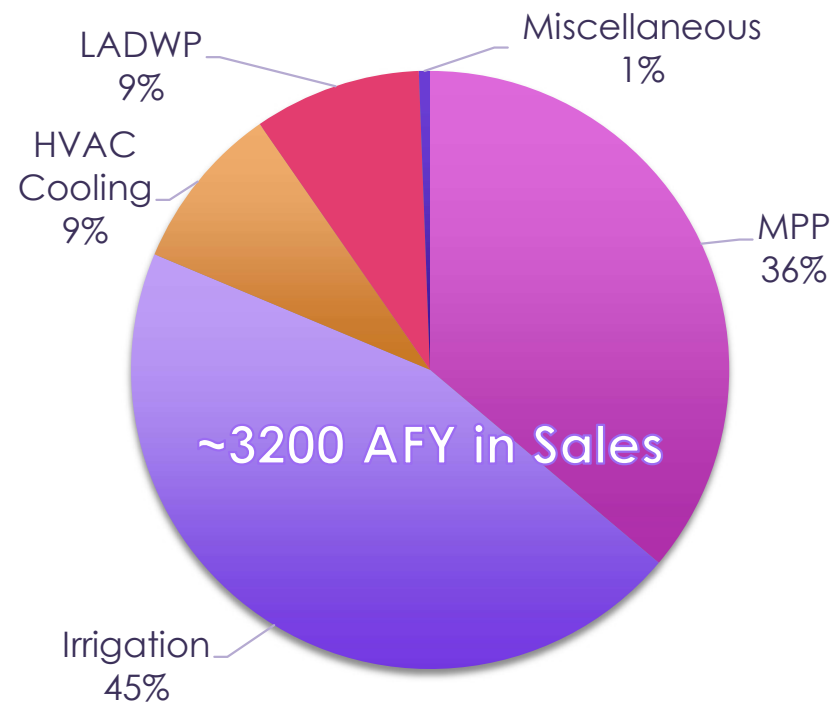


Installed  
Hollywood Way  
Extension



# Burbank Recycled Water System

# Recycled Water Usage



# Wastewater Change Petition



Filed petition with Division of Water Rights to use more RW and discharge less to the LA River



Demonstrated that discharging less RW will have less than significant environmental impacts on the LA River



Secured right to increase usage of RW from 2,705 AFY to 5,027 AFY, reducing discharge to river by approximately 30%



# Future Users Within 5 Years (400+ AFY in Sales)

- ▶ Warner Bros. Second Century Project
- ▶ I-5 Freeway from Empire to Flower
- ▶ Hollywood Burbank Airport Replacement Terminal
- ▶ Burbank Community Garden
- ▶ Marriot Hotel



HOLLYWOOD BURBANK AIRPORT  
REPLACEMENT PASSENGER TERMINAL  
CONCEPT VALIDATION





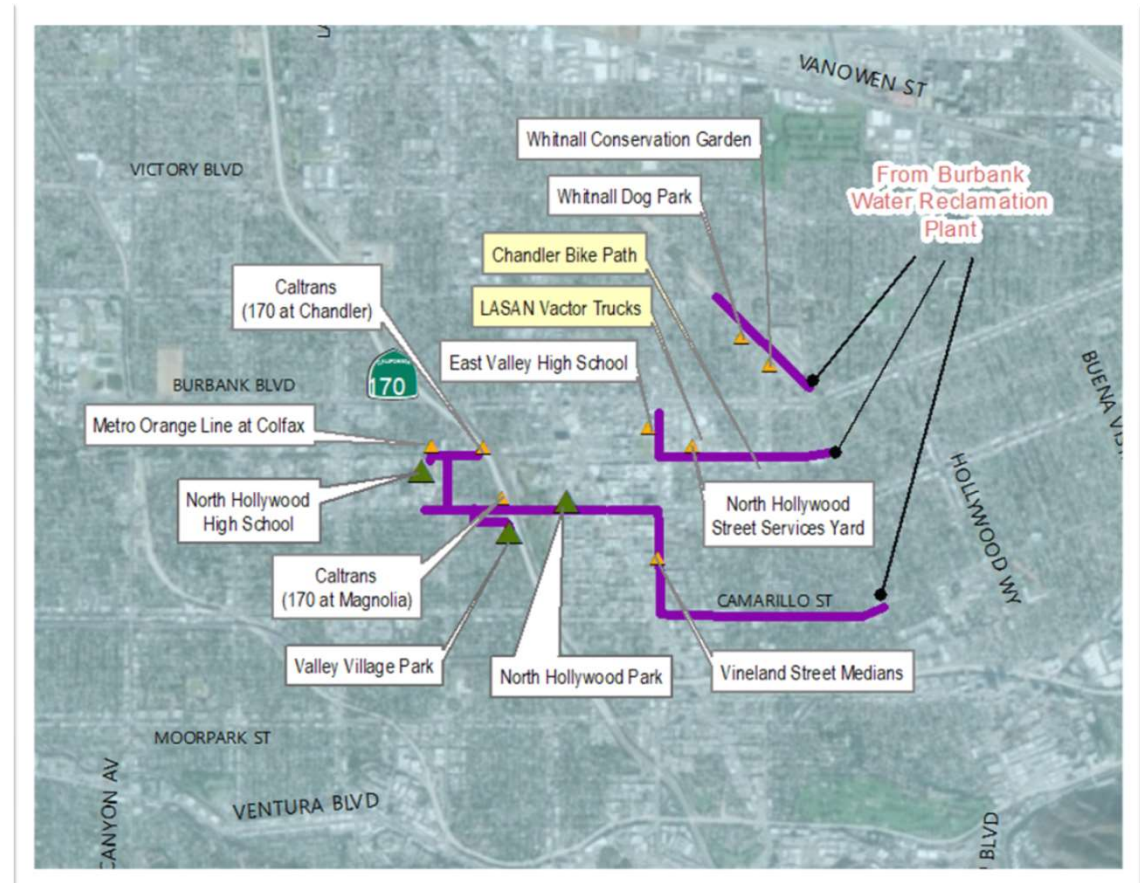
# Glendale Exchange Agreement

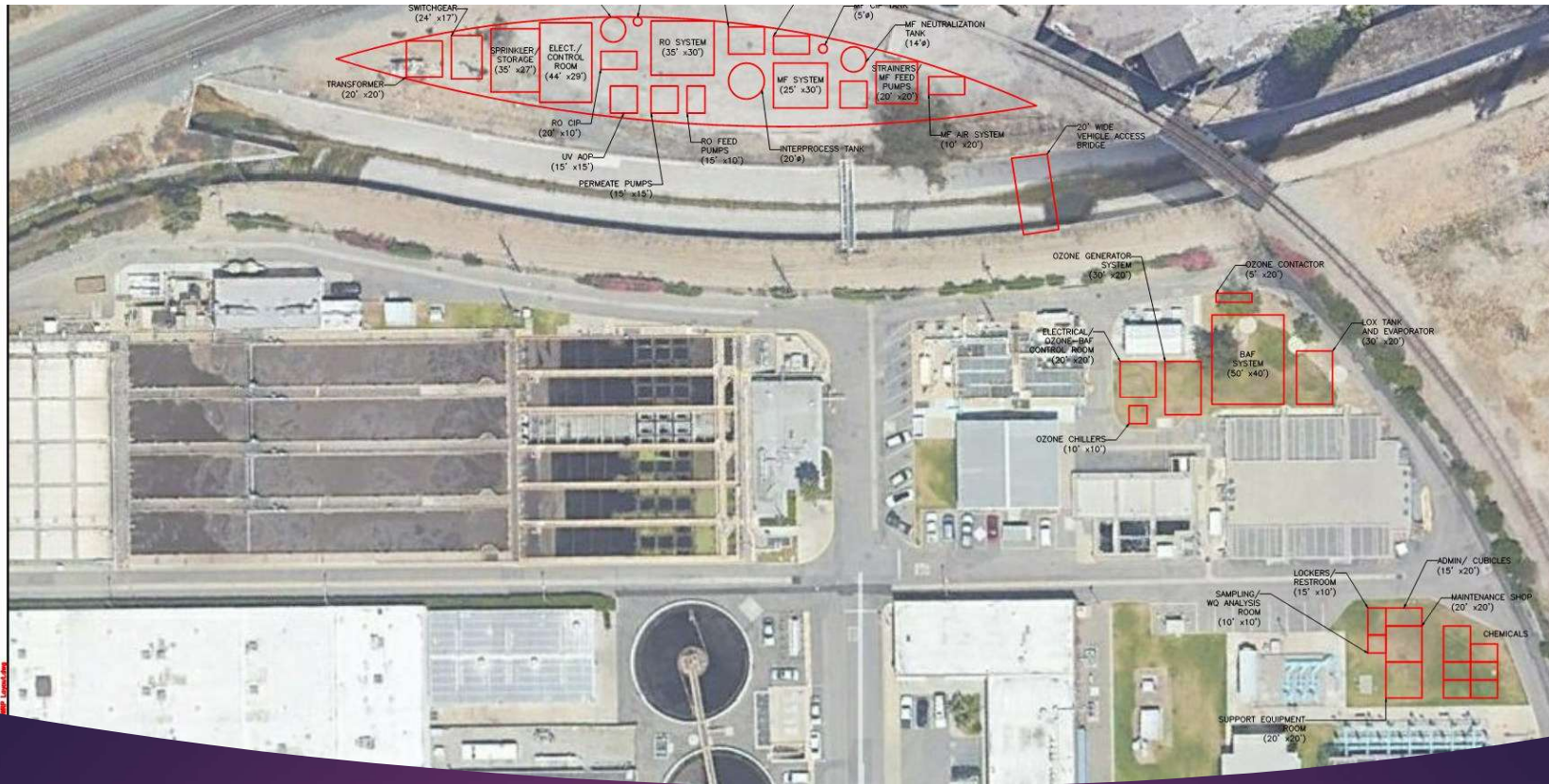
- ▶ Interconnection located on Glenoaks
- ▶ RW can be imported/exported
- ▶ Activated during Beachwood Pump Station Shutdown or when LA-Glendale WRP is offline
- ▶ Exchanged for RW in kind, groundwater pumping credits, or cash value



## LADWP Exchange Agreement

- ▶ Four Interconnections
  - ▶ Scott Road
  - ▶ Verdugo Av
  - ▶ Chandler Blvd
  - ▶ Whitnall Hwy
- ▶ RW is exported to Los Angeles
- ▶ Exchanged 1:1 for groundwater pumping credits
- ▶ 300 AFY of planned RW usage





888 South Figueroa Street, Suite Los Angeles, California 90017 213.222.9460   www.woodard.com		COMMITMENT & INTEGRITY OF 	
and Power Burbank, CA 91502		<b>Recommended Facility          Layout</b>	
Facilities Plan		DESIGNED BY: Sunny Huang	CHECKED BY: Brian Dietrick
		DRAWN BY: Martha de Maria	BMAP LAYOUT.dwg

# Future Potable Reuse

- ▶ Recycled water will become a larger part of Burbank's water portfolio
- ▶ Direct/Indirect Potable Reuse not economically feasible at present



QUESTIONS?



## Pilot Testing Water Recovery From RO Concentrate Generated During Potable Reuse: Research Experience at OCWD

Megan Plumlee, Orange County Water District

02/08/2022





# ACKNOWLEDGEMENTS

- Slide credits – thank you Han Gu (OCWD) and Graham Juby (Carollo)
- On-site operation of pilots and project lead: Han Gu (OCWD)
- OCWD - Mehul Patel, Jason Dadakis, Sandy Scott-Roberts, and Bill Dunivin
- Jacobs - Michael Hwang and Jim Lozier
- Dupont/Desalitech - Michael Boyd and Ran Nadav
- Porifera – Erik Desormeaux (now with Jacobs)
- AdEdge/Chart & ROTEC - Ronit Erlitzki, Auryan Mohseni, and Yair Schnurmacher
- Brown and Caldwell - Adam Zacheis and Jocelyn Lu

Funding Agencies:



—BUREAU OF—  
RECLAMATION



**JACOBS**

**carollo**

**Brown AND Caldwell**



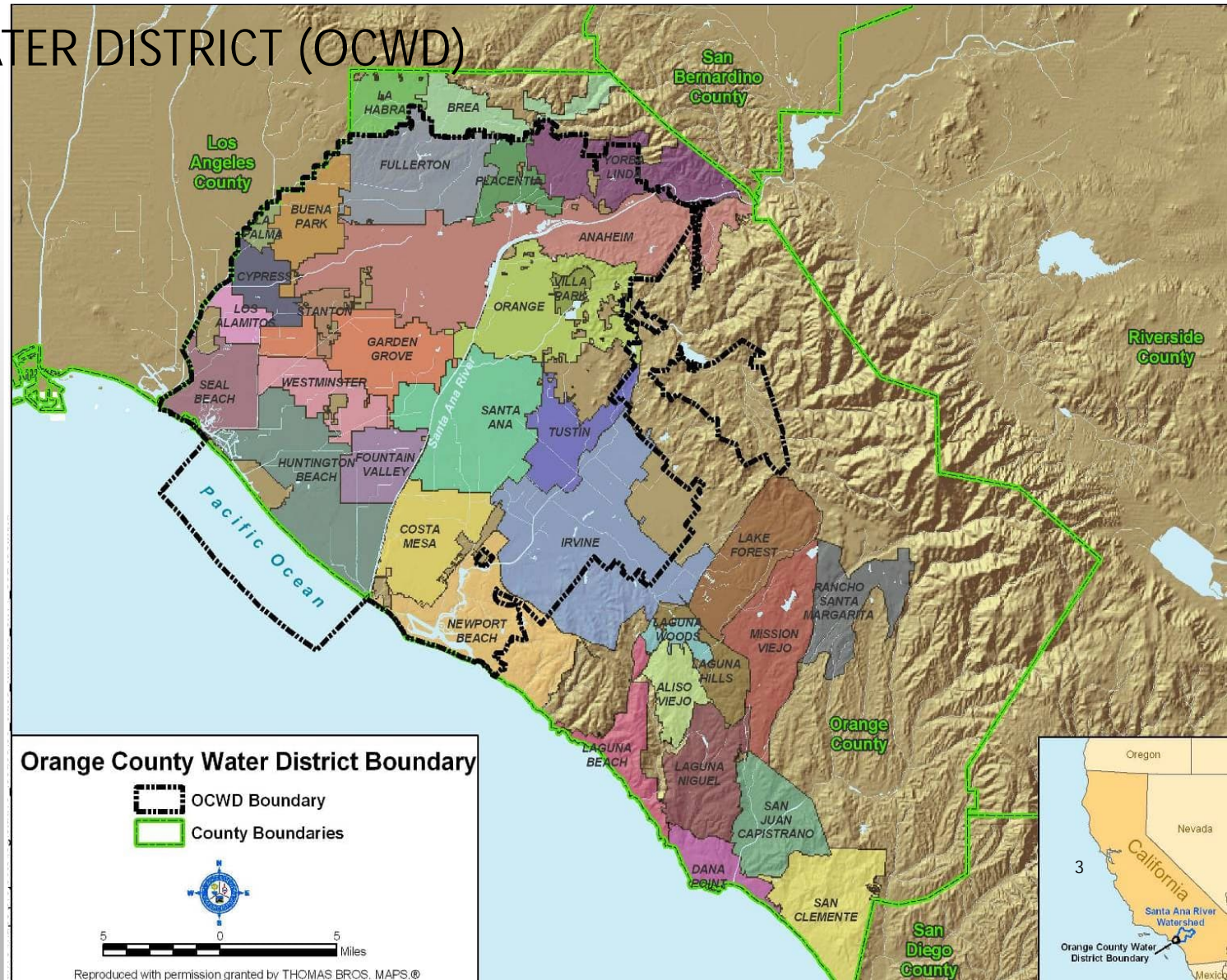
**Desalitech**  
a DuPont brand



**ROTEC**

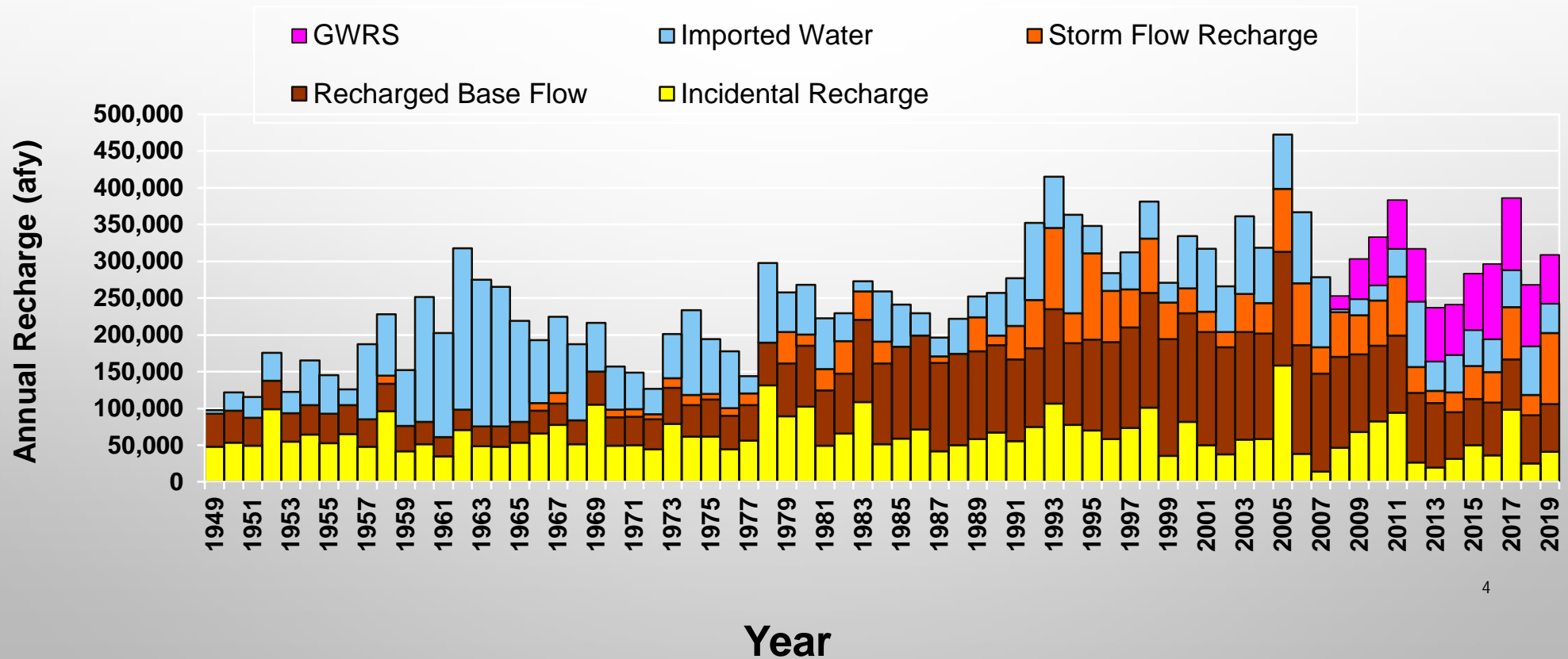
# ORANGE COUNTY WATER DISTRICT (OCWD)

- Manage the OC groundwater basin
- Basin provides groundwater to 19 municipal and special water districts that serve 2.4 million customers in north/central OC
- Basin currently supplies 77% of the water supply for north/ central OC



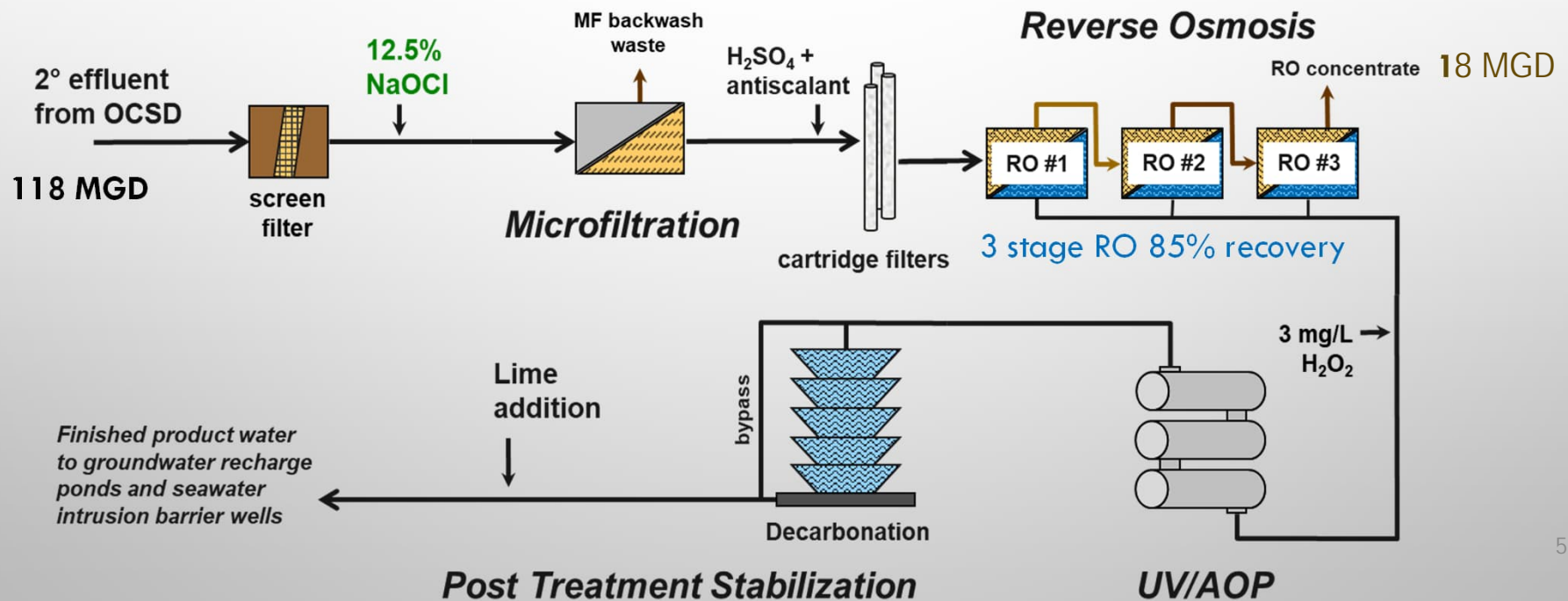
# SOURCES OF WATER FOR GROUNDWATER BASIN

- 1200 acres (450 hectares) of recharge facilities
- ~ 300,000 AFY (370 million m<sup>3</sup> /yr) of recharge into groundwater basin



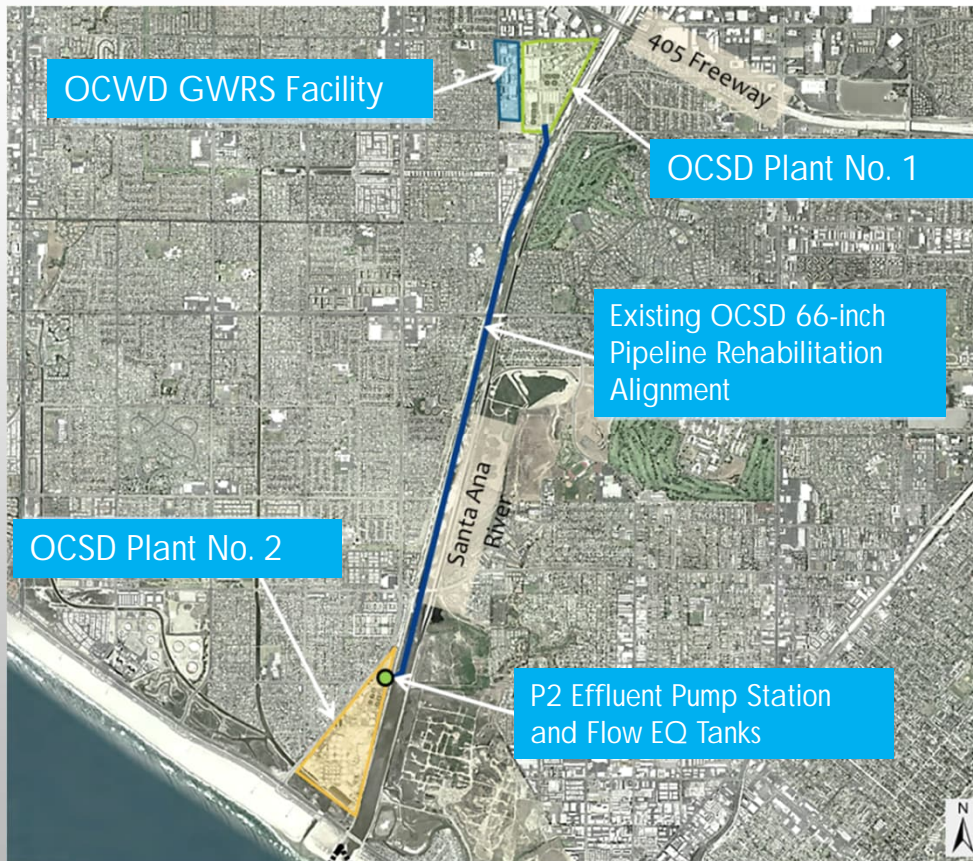
# ADVANCED WATER PURIFICATION FACILITY (AWPF) AT OCWD GROUNDWATER REPLENISHMENT SYSTEM (GWRS)

GWRS is the largest potable reuse facility in the world, producing 100 MGD of high purity water.





# GWRS IS UNDERGOING ITS FINAL EXPANSION

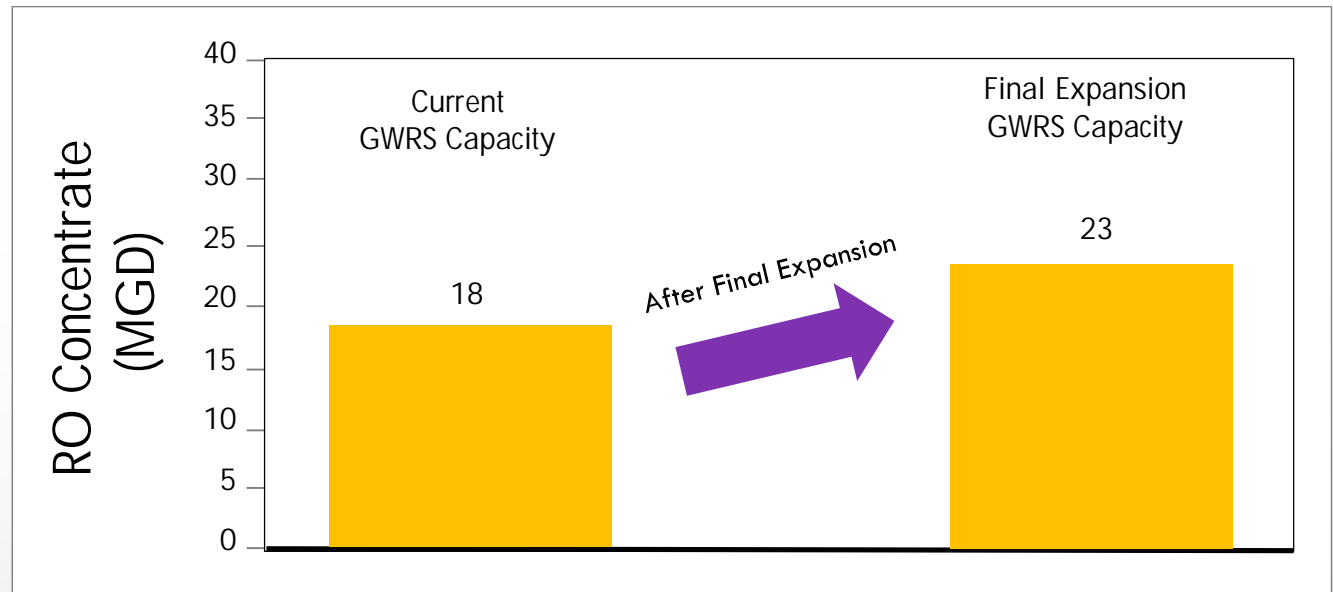


- RO permeate: 4.4 m<sup>3</sup>/s to 5.7 m<sup>3</sup>/s (100 to 130 mgd) by 2023
- RO concentrate: 0.81 m<sup>3</sup>/s to 1.04 m<sup>3</sup>/s (18 to 23 mgd)



Two 7.5 million gallons secondary effluent tanks

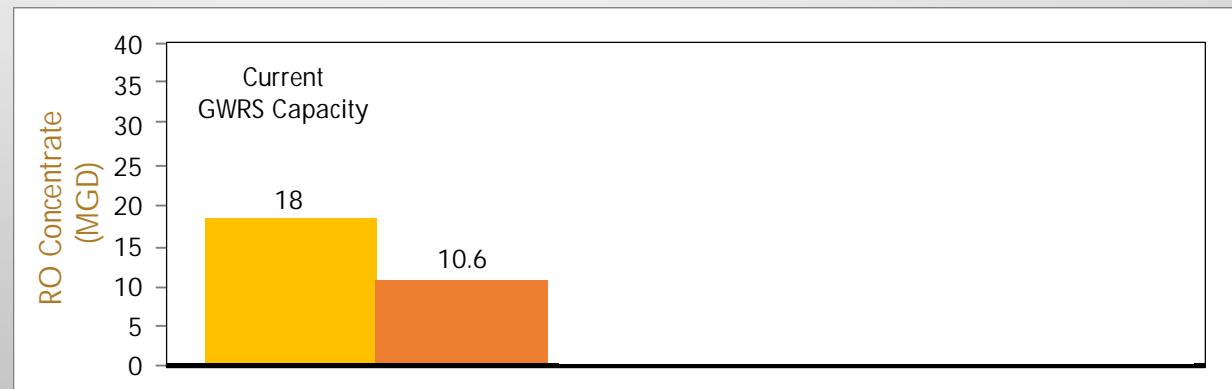
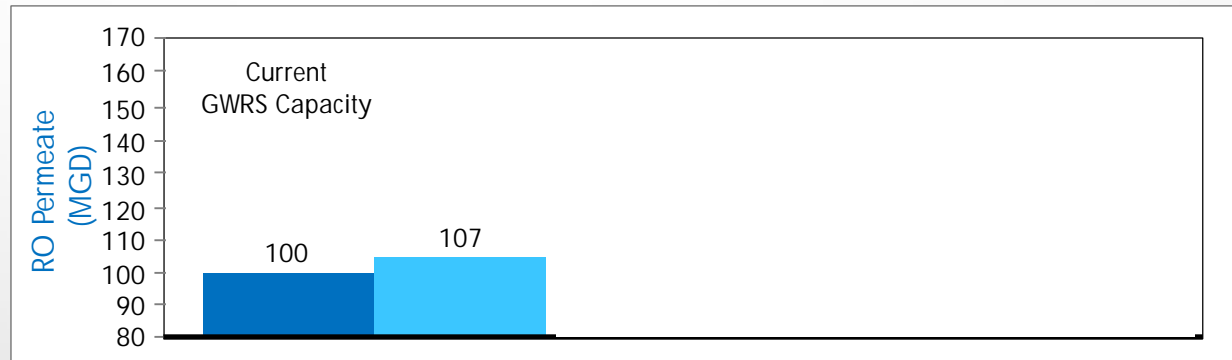
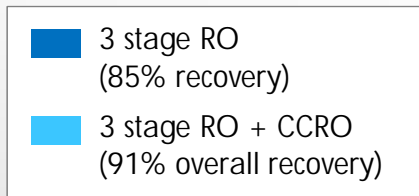
## RO CONCENTRATE AS A FUTURE SOURCE FOR GWRS



- Almost every drop of wastewater flowing to OC San is spoken for
- After final expansion 1.04 m<sup>3</sup>/s (23 mgd) RO concentrate will go to ocean
- Presents opportunity as future source of additional water for GWRS
- Pilot testing needed

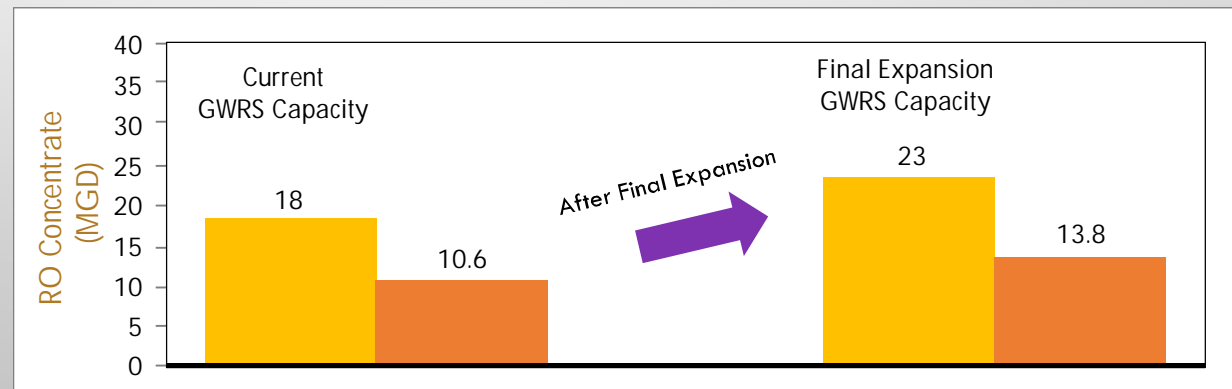
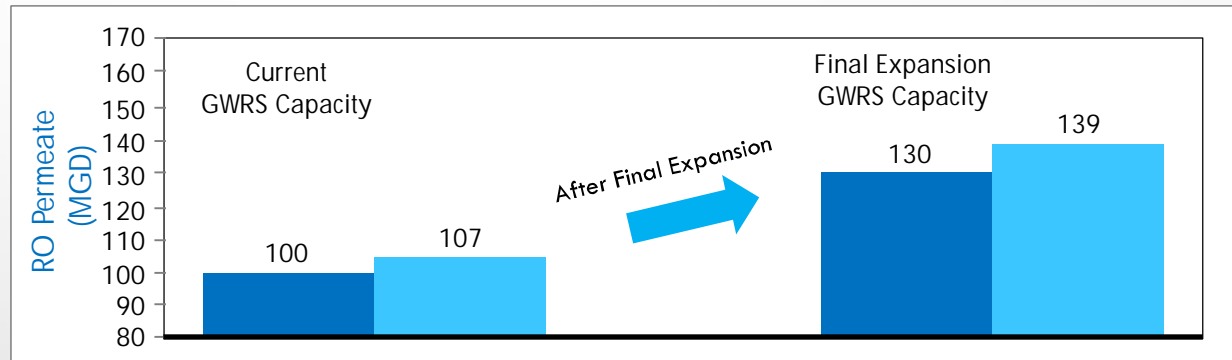
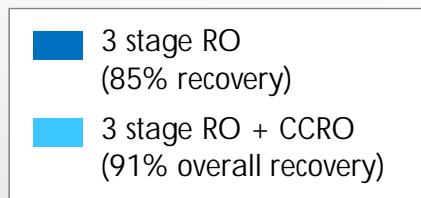
# BENEFIT OF RO CONCENTRATE RECOVERY FOR GWRS

Adding RO concentrate treatment facility could increase overall GWRS production and lower volume of reject water (currently discharged to ocean outfall)



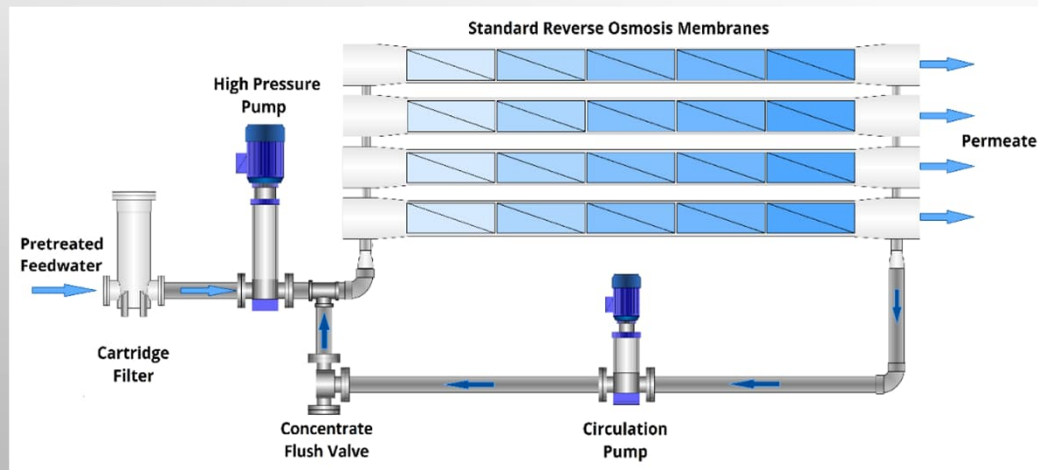
# BENEFIT OF RO CONCENTRATE RECOVERY FOR GWRS

Adding RO concentrate treatment facility could increase overall GWRS production and lower volume of reject water (currently discharged to ocean outfall)

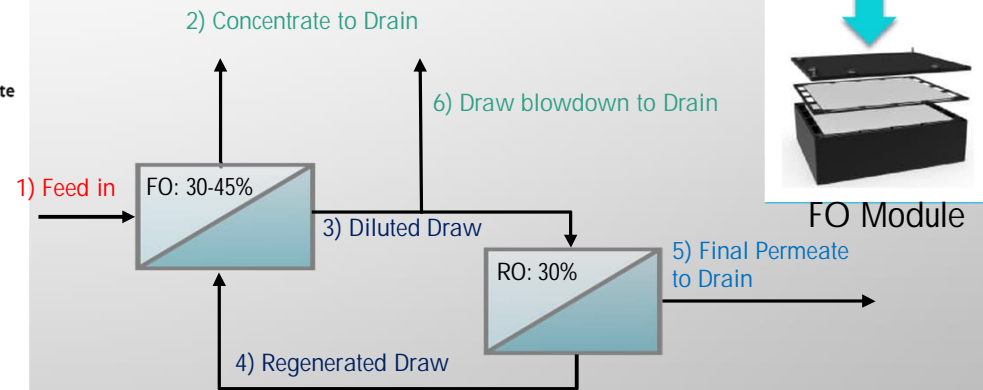


# PILOTING TESTING OF CCRO AND FO-RO

- ~18 months of pilot testing completed at OCWD
  - Closed Circuit Reverse Osmosis (CCRO) Phase I funded by OCWD
  - Forward Osmosis RO (FO-RO) funded by California Energy Commission
  - Phase II (Pilot Performance) fund by USBR (for CCRO and FO-RO)



Desalitech Closed Circuit Reverse Osmosis (CCRO)



Porifera DPRShield Forward Osmosis (FO-RO)

## SUMMARY OF PILOT STUDY

- CCRO pilot treatment of GWRS AWPf RO concentrate was shown to be technically feasible at recovery range 57-61% (which corresponds to overall theoretical GWRS recovery of 90-91%)
- CCRO: achieved ~ 2 months interval between chemical cleaning
- The FO-RO pilot achieved a recovery of 30-35%, corresponding to approximately 89.5-90.3% overall theoretical recovery at full-scale
- FO-RO: achieved 3-4 weeks cleaning interval
- Both CCRO and FO-RO pilots produced water of a very high quality (inorganic, organic and microbiological) that could be blended with the existing primary RO permeate to increase overall production



## PLACING THE COSTS IN CONTEXT WITH COST OF IMPORTED WATER



- RO concentrate treatment:  
\$1,100 – 1,400 / AF
- Imported Water: \$1,104 /  
AF (2021)

# FLOW-REVERSAL REVERSE OSMOSIS (FR-RO) PILOT STUDY – NOW IN PROGRESS



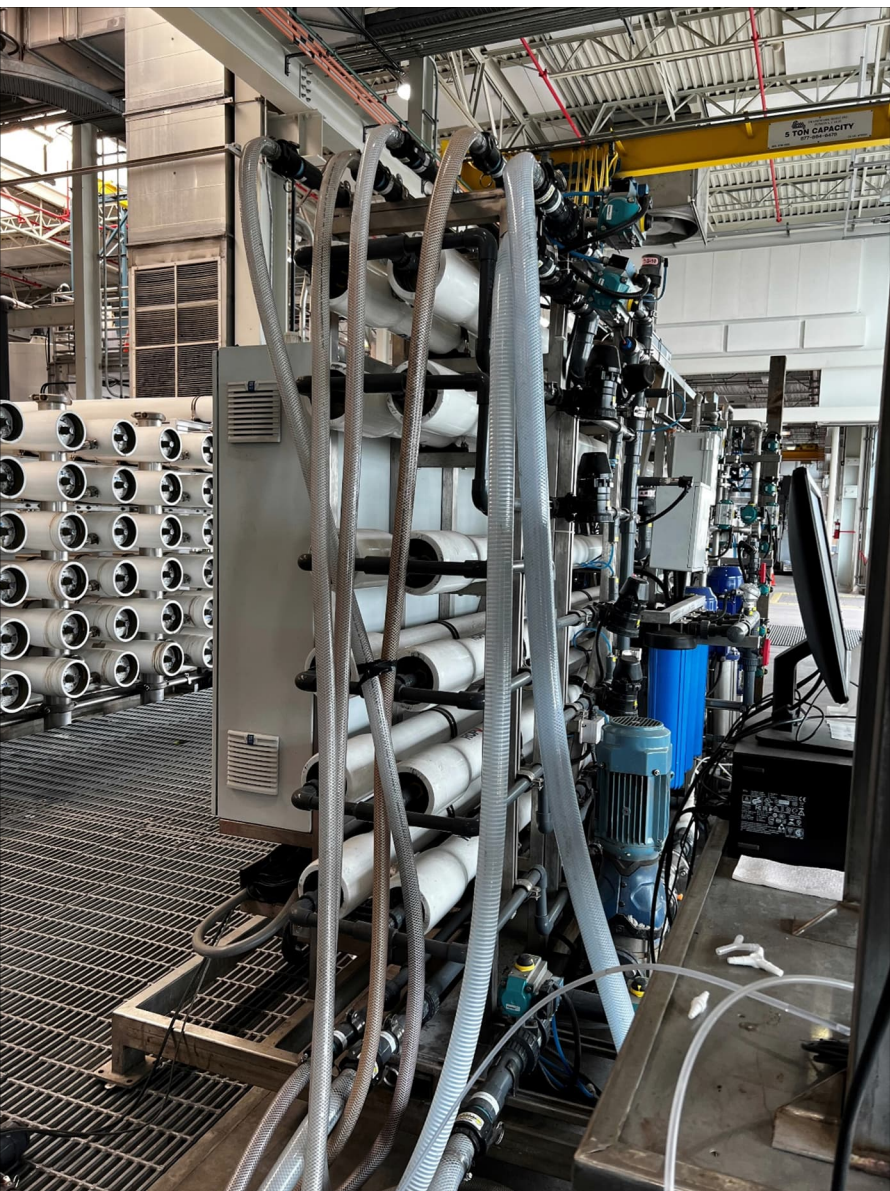
- Pilot located in the OCWD RO building and commissioned in September 2021
- Brown & Caldwell providing additional advisory support (data monitoring- Power BI dashboard)
- Phase I (treating GWRS MF effluent)
  - Initial control phase (no flow reversal) trial completed Nov. 2021
  - Now flow reversal/block rotation test ongoing



—BUREAU OF—  
RECLAMATION







- Current update as of February 2022:  
now operating at 91% recovery

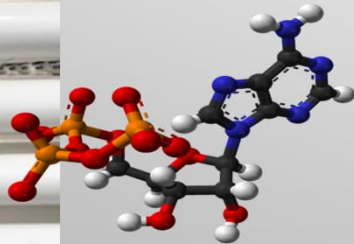




# PROPOSED RO INTEGRITY MONITORING METHODS FOR ACHIEVING HIGHER LOG REMOVAL CREDIT

- Install online ATP (adenosine triphosphate) analyzer and Submersible Fluorometer
- Purpose: determine LRV of virus integrity surrogates during “normal” flow direction vs. reverse flow / block rotation mode, to confirm no reduction over time; compared to main plant (conventional RO)
- Sampling from each PV’s permeate EC at certain intervals during normal flow and reverse flow periods, which tells us if a certain element has an issue (“conductivity profiling”)
- Periodic Sulfate and Strontium grab sampling

AppliTek EZ-ATP™



Turner Cyclops C3 Submersible Sensor





# THANK YOU

[mplumlee@ocwd.com](mailto:mplumlee@ocwd.com)

(714) 378-3270

# WateReuse California Los Angeles Chapter Meeting



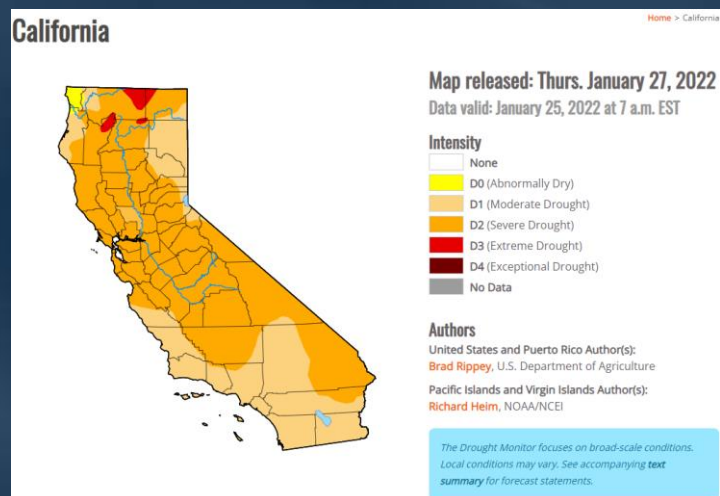
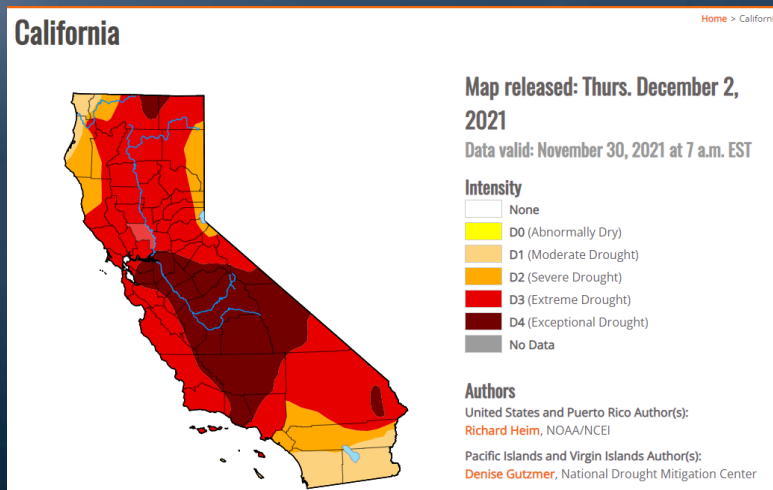
February 8, 2022

Legislation & Regulation Update

Raymond Jay  
Metropolitan Water District of Southern California  
(213) 217-5777 or [rjay@mwdh2o.com](mailto:rjay@mwdh2o.com)

# Drought

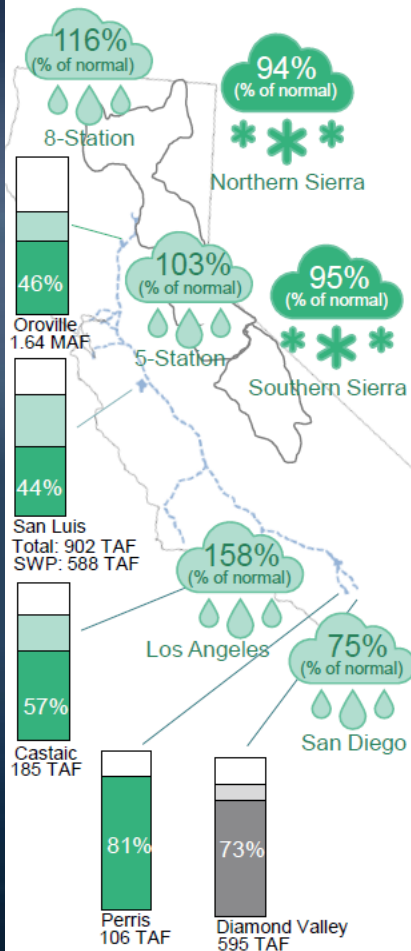
- Drought conditions in all 58 counties
- California enacted 15% voluntary conservation
- Metropolitan Water Supply Alert – local agencies implement Drought Contingency Plans
- Water Supply Conditions Report  
[https://www.bewaterwise.com/water\\_supply\\_conditions/water\\_supply\\_conditions.pdf](https://www.bewaterwise.com/water_supply_conditions/water_supply_conditions.pdf)
- SWP allocation increase to 15% for 2022



# 2022 Water Supply Conditions

## State Water Project Resources

SWP Table A – 15% - 286,725 AF



## WATER SUPPLY CONDITIONS REPORT

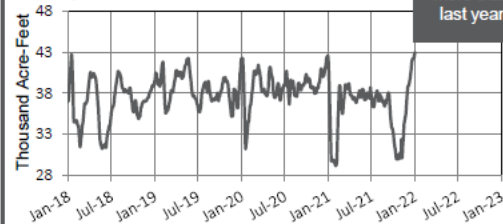
Water Year  
2021-2022  
As of: January 31, 2022

## Metropolitan Resources

### Lake Skinner Storage

Capacity: 44 TAF

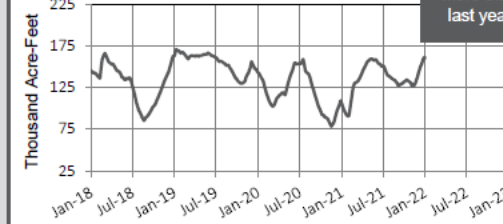
1.8 TAF  
more than  
last year



### Lake Mathews Storage

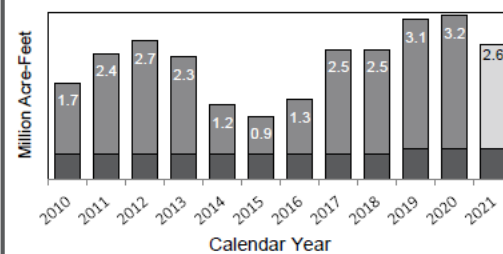
Capacity: 182 TAF

54 TAF  
more than  
last year



### MWD Storage Reserve Levels

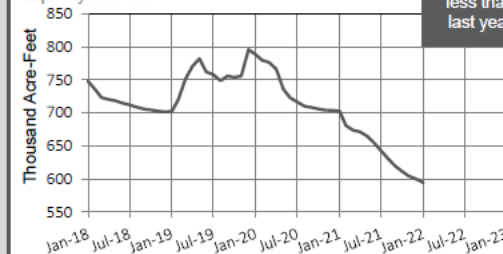
Estimated Balance Storage Balance Emergency Storage



### Diamond Valley Lake Storage

Capacity: 810 TAF

106 TAF  
less than  
last year



## Highlights

- 5 Station Index received zero inches of precipitation in January 2022
- Snow water equivalent in both Northern Sierra and Upper Colorado River Basin remained constant during January 2022

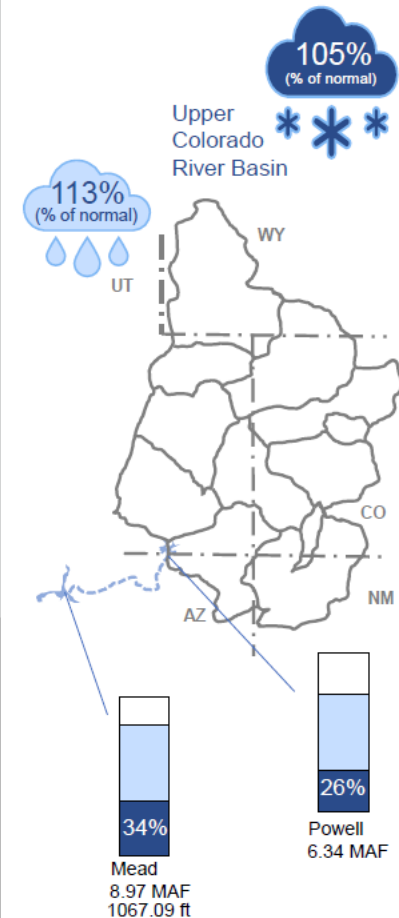


This report is produced by the Water Resource Management Group and contains information from various federal, state, and local agencies. The Metropolitan Water District of Southern California cannot guarantee the accuracy or completeness of this information. Readers should refer to the relevant state, federal, and local agencies for additional or for the most up to date water supply information. Reservoirs, lakes, aqueducts, maps, watersheds, and all other visual representations on this report are not drawn to scale. Questions? Email [mferreira@mwdh2o.com](mailto:mferreira@mwdh2o.com)

<http://www.mwdh2o.com/WSCR>

## Colorado River Resources

Projected CRA Diversions – 1,155,000 AF



# 2022 California Legislative Calendar

- Jan. 1 Statutes take effect
- Jan. 4 Legislature reconvenes
- Jan. 10 Governor submits budget to Legislature
- Feb. 18 Last day for bills to be introduced
- Apr. 29 Last day policy comm. to report fiscal bills
- May 6 Last day fiscal comm. to report fiscal bills
- June 4 Last day for bills to pass house of origin
- June 15 Last day to pass budget
- Sept. 10 Last day for any bill to be passed
- Sept. 30 Last day for Governor to sign or veto bills
- See: <http://assembly.ca.gov/legislativedeadlines>



# 2022 Water Legislation

- SB 45 (Portantino): Short-lived climate pollutants: organic waste reduction goals: local jurisdiction assistance – previously climate resiliency bond
- SB 230 (Portantino): State Water Resources Control Board: CECs in Drinking Water Program
- SB 832 (Dodd): Water rights: measurement of diversion
- AB 1001 (C. Garcia): Environment: mitigation measures for air and water quality impacts: environmental justice
- AB 1434 (Friedman): Urban water use objectives: indoor residential water use



# California Budget and RW Funding

- Governor's FY22-23 Budget - proposed
  - \$286 billion
  - \$45.7 billion projected budget surplus
  - \$1.63 B for Drought & Water Resilience
  - Expect updates in May and Final by June 15, 2022
- \$400M for recycled water & groundwater recovery (WRCA expects 50% for RW)
  - \$200M in FY 21-22
  - \$100M in FY 22-23 & FY 23-24
- \$100M for PFAS support
- WRCA request \$750M for RW in FY22/23

# Regulatory Update

- Cross Connection Control Handbook – Title 17
  - Use of Swivel-ell requirements
  - DDW is still evaluating comments (per website)
  - Second public comment, Public Hearing, & Board adoption : TBD
    - [https://www.waterboards.ca.gov/drinking\\_water/certlic/drinkingwater/documents/cccp/cccph\\_draft\\_feb2021.pdf](https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/cccp/cccph_draft_feb2021.pdf)
    - [https://www.waterboards.ca.gov/drinking\\_water/certlic/drinkingwater/cccph.html](https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/cccph.html)
- Water Use Efficiency Implementation
  - RW variances and potable use credit Workshops
  - Potential variances for RW with >1,000 mg/l TDS
  - Accepting comments through 2/11/22
  - Proposed adoption in Spring 2022
- Submittal of RW volumetric report by 4/30/22

# DPR Draft Regulations Update

- Adopt regulations by 2023
- Framework Addendum March 3, 2021
  - [https://www.waterboards.ca.gov/drinking\\_water/certlic/drinkingwater/documents/direct\\_potable\\_reuse/dprframewkaddendum.pdf](https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/direct_potable_reuse/dprframewkaddendum.pdf)
- Comments/concerns submitted June 25, 2021
  - RWA vs TWA requirements
  - Operator requirements
  - Pathogen LRV requirements
  - Treatment flexibility
  - Direct Potable Reuse Responsible Agency (DiPRRA)
  - Technical, Managerial, and Financial (TMF) Capacity
- Expert Panel January 26, 2022
  - [https://www.waterboards.ca.gov/drinking\\_water/certlic/drinkingwater/dpr-criteria-panel.html](https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/dpr-criteria-panel.html)
- Additional info:
  - [https://www.waterboards.ca.gov/drinking\\_water/certlic/drinkingwater/direct\\_potable\\_reuse.html](https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/direct_potable_reuse.html)

# Federal Infrastructure Update

## Infrastructure Investment and Jobs Act (IIJA)

- \$1 billion for western water recycling
  - \$550M over 5 years for Title XVI WIIN program
  - \$450M Large-Scale Water Recycling and Reuse
- \$48 billion for nationwide programs
- Reauthorizes Alternative Water Source Grants
- Establishes federal interagency water reuse group

## **\$1.75B Build Back Better package** – did not pass

- \$125M for Alternative Water Source Grants
- Legislation may be broken up and resubmitted



# Federal Update

- Government operating under continuing resolution at FY 2021 levels through 2/18/22
- FY22 appropriations
- WRDA 2020
- WRA comments on WOTUS revision
- Build America/Buy America requirements

# Questions?

If you have any questions, please contact:

Raymond Jay, Past President



c/o Metropolitan Water District of Southern California  
700 N Alameda Street  
Los Angeles, CA 90054  
(213) 217-5777  
[rjay@mwd.h2o.com](mailto:rjay@mwd.h2o.com)



## Regulatory Agency Updates

- State Water Board Division of Drinking Water  
- *Scott Miller*
- Los Angeles Regional Water Quality Control Board  
- *Steven Webb*
- Los Angeles County Department of Public Health

# Chapter Trustee Updates

## WaterReuse LA Chapter – February 8, 2022



Last WaterReuse CA Board of Trustees Meeting: February 4, 2022

Next WaterReuse CA Board of Trustees Meeting: May 13, 2022

### Financial Report

- 2022 Revised Budget Adopted
- Changes to future conferences to reduce expenses

### Managing Director Report

- Discussed outstanding dues for 2022
- WRCA will be following up with members with outstanding dues





# Chapter Trustee Updates

## WaterReuse LA Chapter – February 8, 2022



### Communications Collaborative Group

- Met December 9<sup>th</sup>
- Panel discussion on LA Region's Water Reuse Future
- Water Research Foundation Study (4832) – CEC Removal by Ozone/BAC

### Executive Director's End of Year Report

- Great wins in funding for California
- Paul Sciuto joined the national board
- Looking to perform tri-annual budgeting
- WRCA providing great support for Symposium in San Antonio



# Chapter Trustee Updates

## WaterReuse LA Chapter – February 8, 2022



### WRA Strategic Planning Session in March – CA Priorities

- Establish Ad Hoc Committee
- Highlight high level priority areas (Outreach, Conference support, revenue enhancement, etc.)
- Eight Board Members volunteered for Ad Hoc

### Recycled Water Statewide Mapping Project Update

- 2022 WRCA Strategic Plan component
- \$15k budgeted in WRCA budget – only \$7k needed to complete (approved)
- Working with California State University Sacramento Geography Department
- Map to be updated annually



# Chapter Trustee Updates

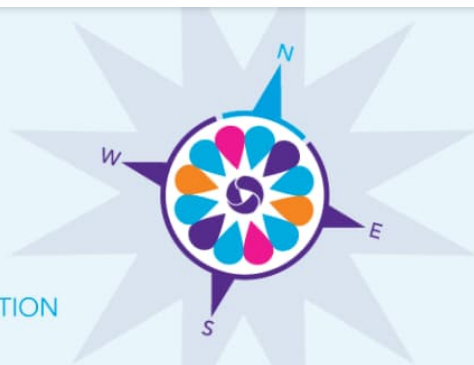
## WaterReuse LA Chapter – February 8, 2022



## 2022 WaterReuse Symposium

### 2022 WaterReuse SYMPOSIUM

IN COLLABORATION WITH THE WATER RESEARCH FOUNDATION



SHAPING OUR PAST &  
CHARTING OUR FUTURE

MARCH 6-9, 2022 • SAN ANTONIO



# Chapter Updates (*Judi Miller*)

- October Meeting Summary Approval
  - Voting by one rep from each member org
- Volunteer Opportunities
  - Chapter Photographer
- Emerging Professionals Committee Update
  - Chair: *Alex Waite*  
[alex.waite@smgov.net](mailto:alex.waite@smgov.net)
- Membership Committee
  - Chair: *Everett Ferguson*  
[eferguson@wrd.org](mailto:eferguson@wrd.org)
- Technical Topics Committee
  - Chair: *Alex Franchi*  
[alex.franchi@aecom.com](mailto:alex.franchi@aecom.com)





# Hollywood Reservoir Guided Tour February 5, 2022

Brought to you by our *Emerging  
Professionals Committee*



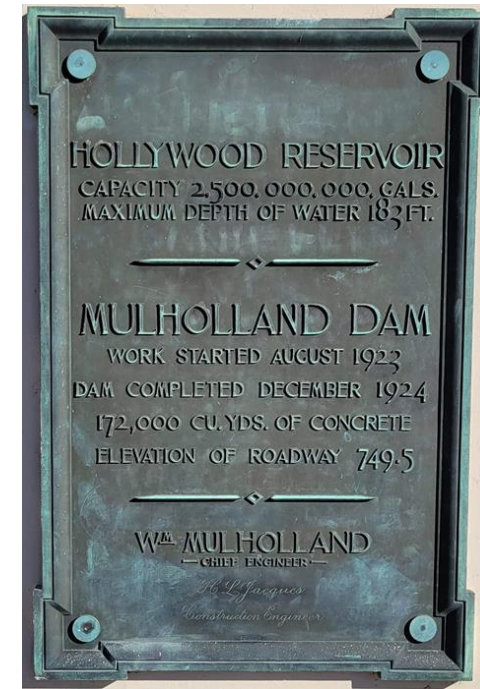
16 of our group of 22 (photo courtesy of the 2 local neighbors who joined us)





Alex Waite –  
Emerging  
Professionals  
Committee Chair  
and Event Organizer

Rafael Villegas –  
Chapter  
Trustee and  
Tour Guide















A close encounter with two of Hollywood's cutest residents

# Membership Roundtable (*Jared Lee*)



## Next Meetings

- Tuesday, April 12, 2022 – Hybrid (in-person + virtual)?
- Tuesday, June 14, 2022 – Hybrid

