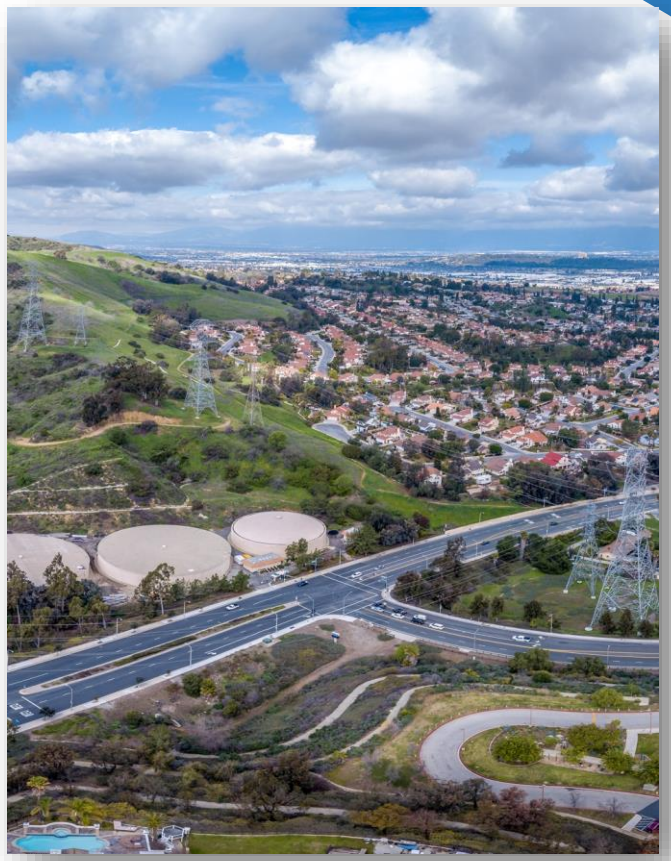
ROWLAND WATER DISTRICT
RECYCLED WATER SYSTEM

ROWLAND WATER DISTRICT

- **Established 1953**
- **17.2-Square-Mile Service Area in L.A. County**
- **Delivers Drinking Water to 59,000 Customers**
  - 13,800 service connections – commercial, light industrial, and residential
- **Leader in Recycled Water Use**
  - Impaired groundwater
  - Treated wastewater (up to 13,000 GPM)



Recycled Water Source of Supply

- **Multi-Agency Agreements**
  - City of Industry
  - Los Angeles County Sanitation District
- **Extraction and Utilization of Groundwater Rights Held in Local Basins**
- **Non-Potable Effluent from EPA Superfund Site**

Recycled Water Expansion

- **8 Original Recycled Water Service Connections**
- **2014 Expansion of Recycled Water System**
  - $20M Bond
- **Developed Master Plan (Future phases)**
- **Currently 152 Recycled Water Service Connections**

Recycled Water Customers

- **The District's Plan Targets Retrofitting Customers with Larger Irrigation Systems**
  - Parks, Schools, Nurseries, Commercial Properties
- **New Developments and Projects**
  - Mandatory Use if Readily Available
- **One of our Largest Customer, is a Peaker Plant**
  - Recycled Water for Cooling Towers

Converting Customers to Recycled Water

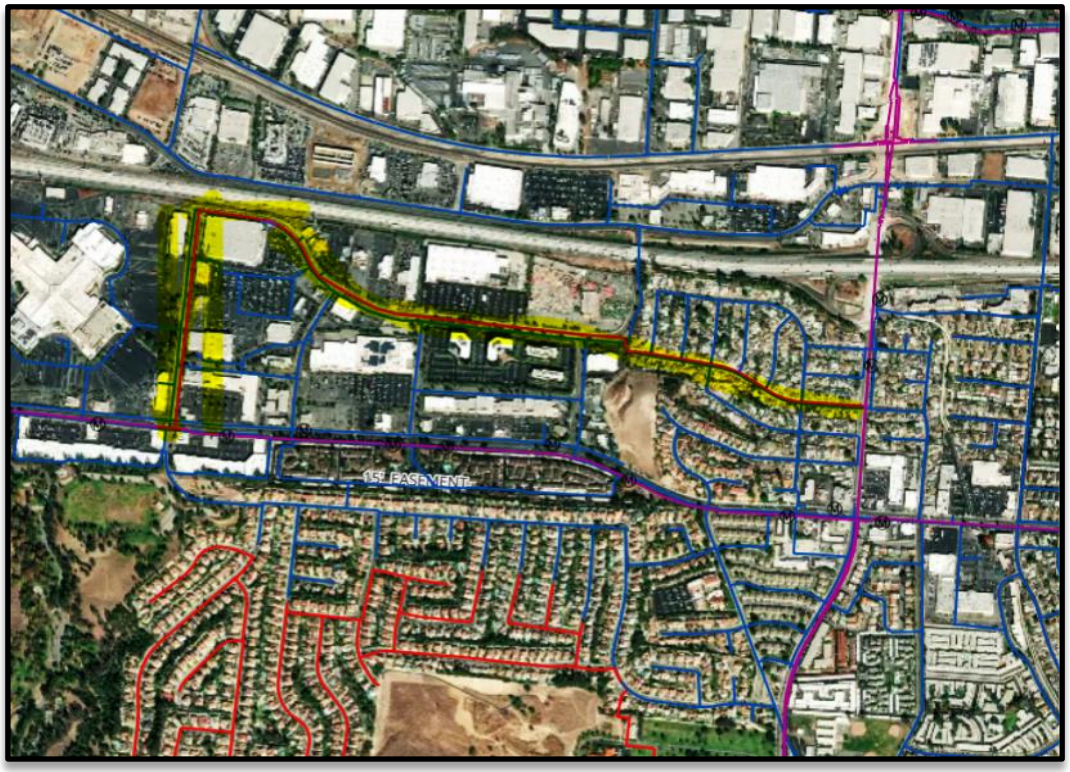
- Pre-Construction Surveys
- Connecting with Customers
- Plan Approvals & Permit Applications
- Construction
- Final Inspections and Closing of Permits with Different Agencies

Latest Project

- **Proposed Development – Rowland Town Center**
  - 120,530-square-foot shopping center and hotels
- **Requires Potable Water Supply Guarantee of 90 AF Per/Year**
- **In 2015 California Drought & Water Scarcity**
- **RWD Could Not Guarantee Water Supply Unless Developer Could Offset Additional Water Demand**

Future 3 Project

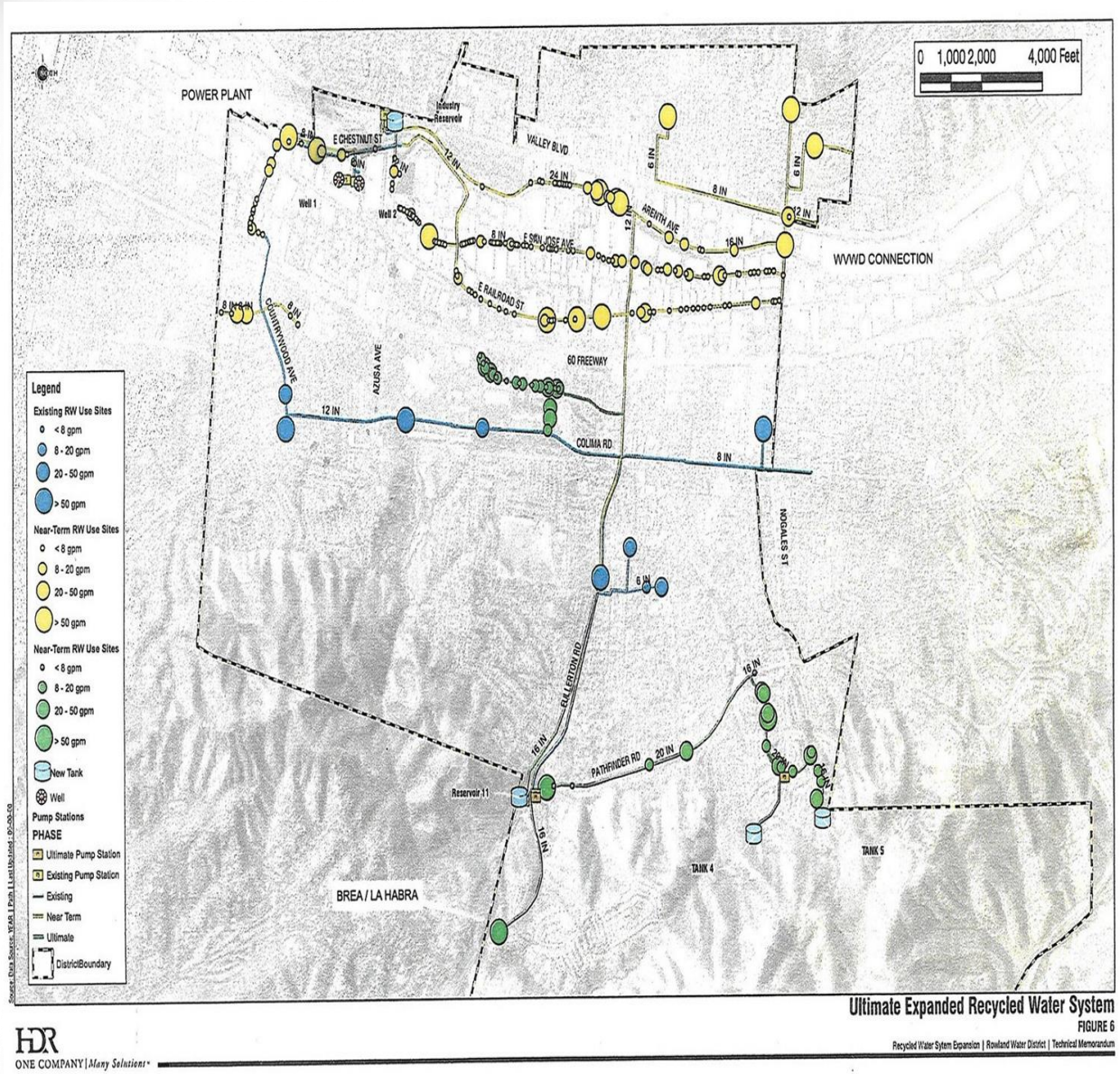
- **2017 - *$2-Million Agreement with Developer to Expand Recycled Water System***
- **RWD Begins Planning and Design**
- **2021 – *1 ½-mile Recycled Water Pipeline Connects Businesses at an Existing Retail Development***



Results

- ✓Offset more than 100 AF Potable Water Demand
- ✓No Capital Cost to District or Customers
- ✓Saves Newly Converted Recycled Water Customers more than $60,000 Per/Year
- ✓$90,000 Returned to Developer through Recycled Water On-Site Retrofit Rebate Incentive Program

Completing the Master Plan



Ultimate Expanded Recycled Water System

FIGURE 6

Recycled Water System Expansion | Rowland Water District | Technical Memorandum

HDR ONE COMPANY | *Many Solutions*

QUESTIONS?

Los Angeles River Flows Project: Development of Decision Support Tools for Flows in the Los Angeles River

Dr. Kris Taniguchi-Quan
Southern California Coastal Water Research Project

SCCWRP Established 1969

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Council for Watershed Health

LA River's Changing Water Use Practices

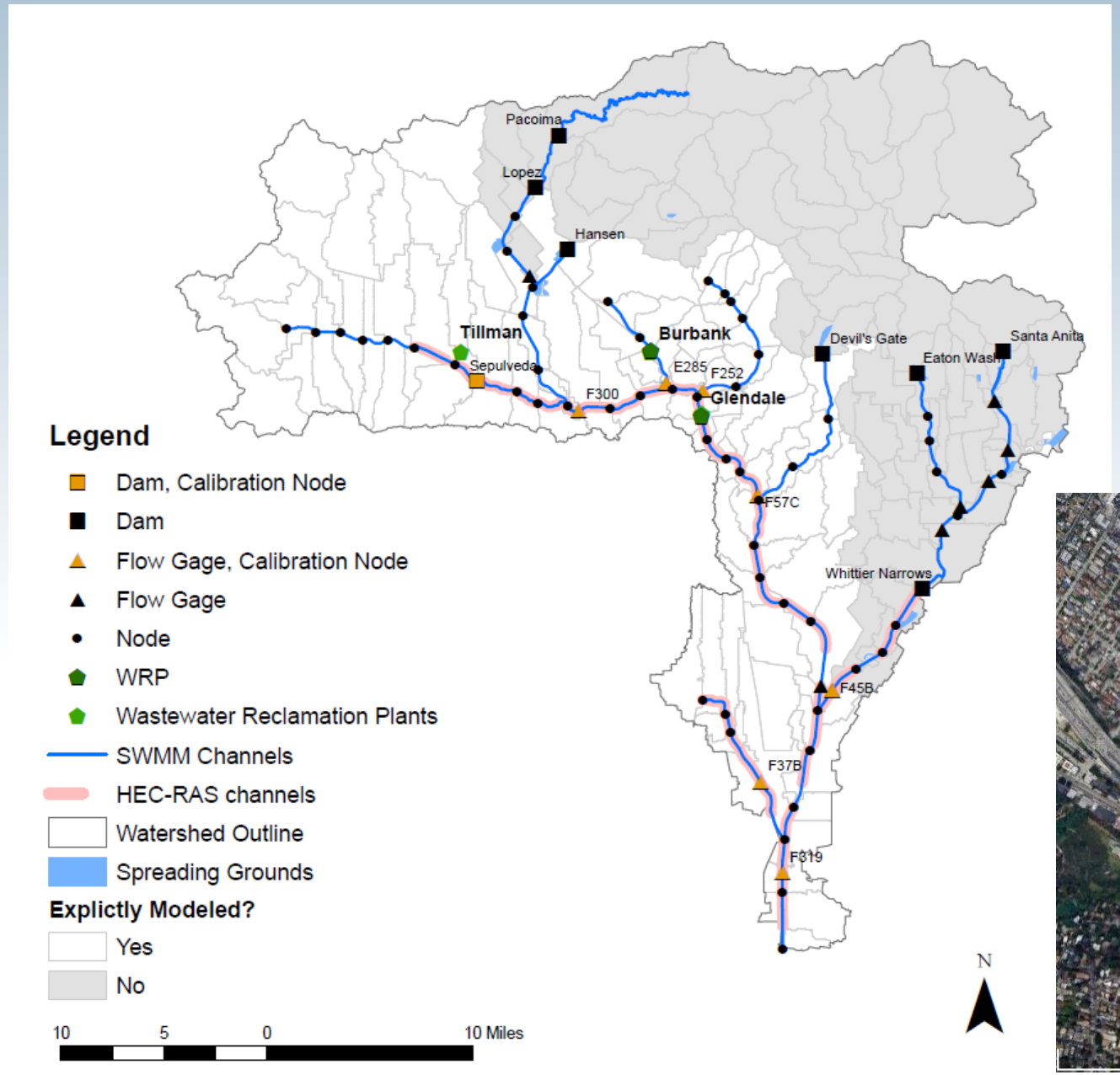
Storm Drain Discharge

Treated Wastewater

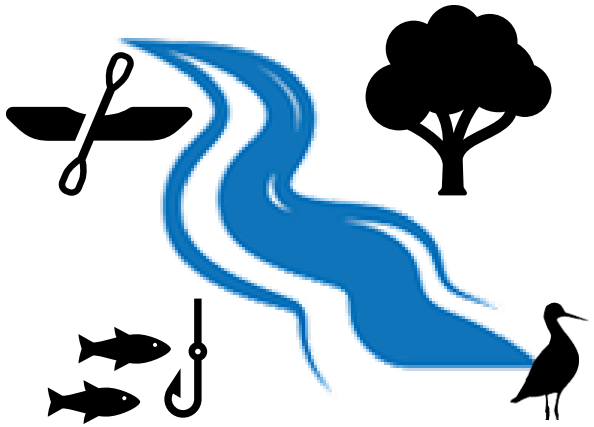
Overall Question

What are the potential impacts (+ or -) to instream beneficial uses in the Los Angeles River caused by reductions of wastewater treatment plant discharges and/or stormwater capture?

Analysis Domain

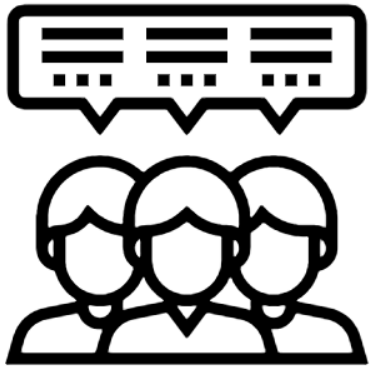


LA River Environmental Flows Project Goals



Quantify relationship between streamflow and beneficial uses in LA River

Provide toolkit to evaluate effects of stormwater management and 1211 wastewater change petitions



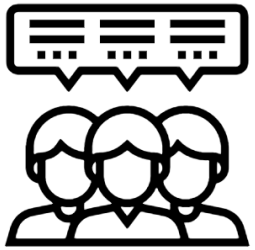
Engage local stakeholders and receive feedback on study and application

Overall Outcomes

- We have developed a set of tools that can be used to inform decisions about establishing flow management targets

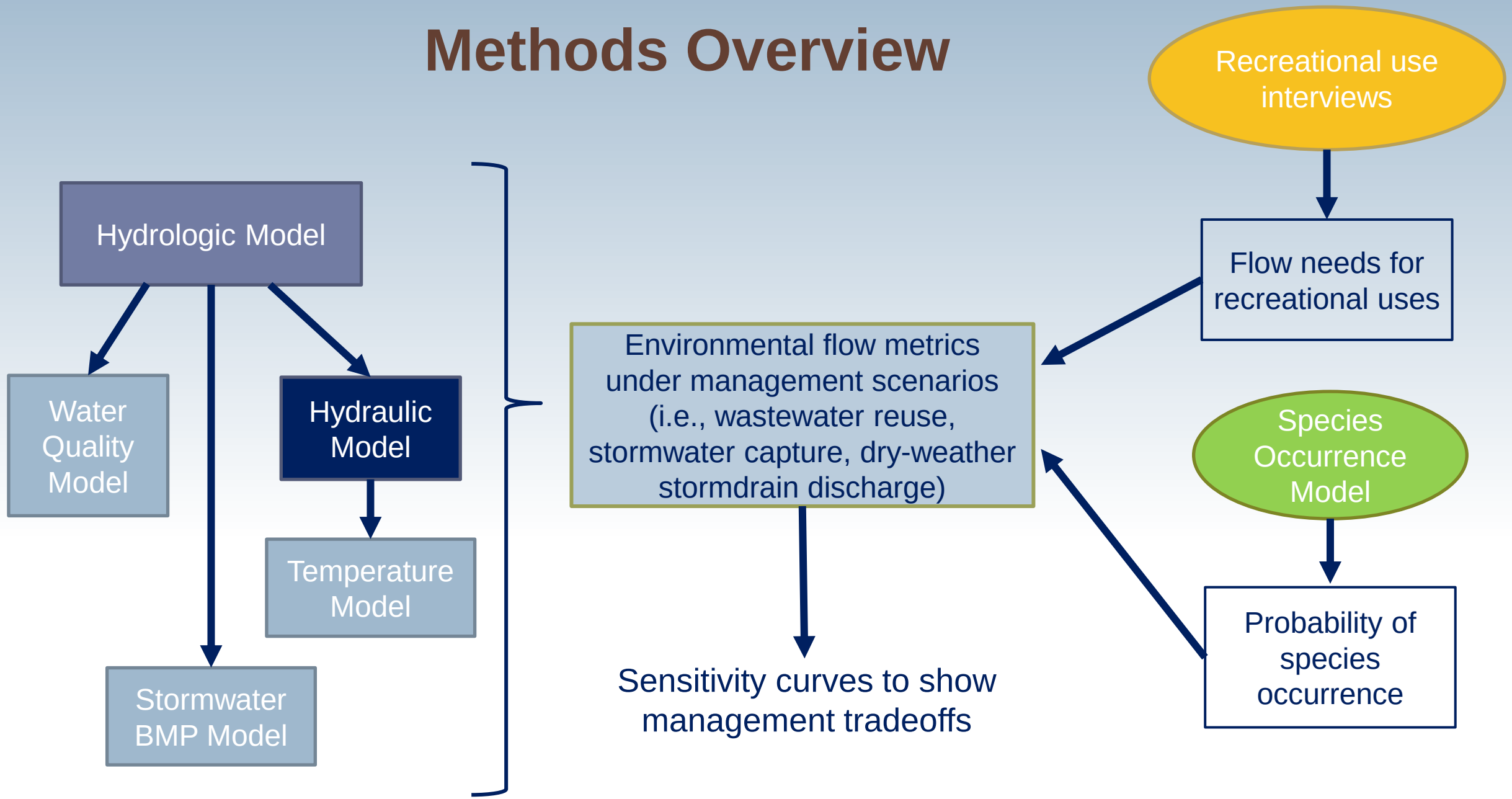
- We have developed tools that can easily be used to evaluate potential effects of a broad range of potential management scenarios on in-river flows

- The tools are highly flexible and transferable
  - https://sccwrp.shinyapps.io/lar_eflows_shinyapp/



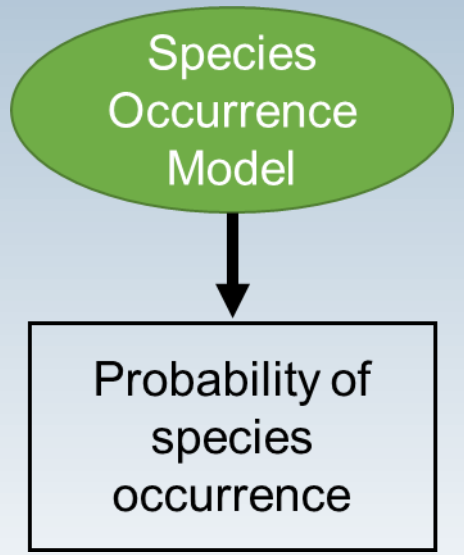
- There is broad agreement among stakeholders on the application and utility of these tools

Methods Overview

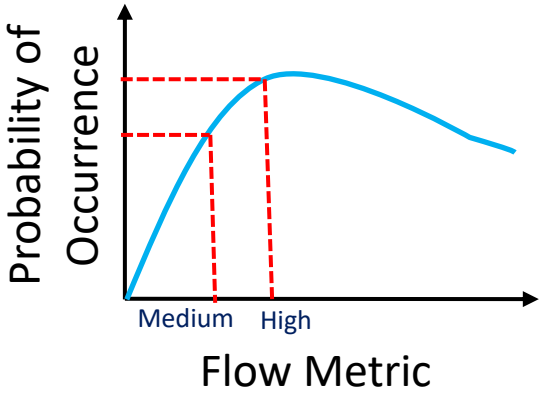


Species Occurrence Models

- **Not associated with currently designated beneficial uses**
- **Not currently observed in LA River**

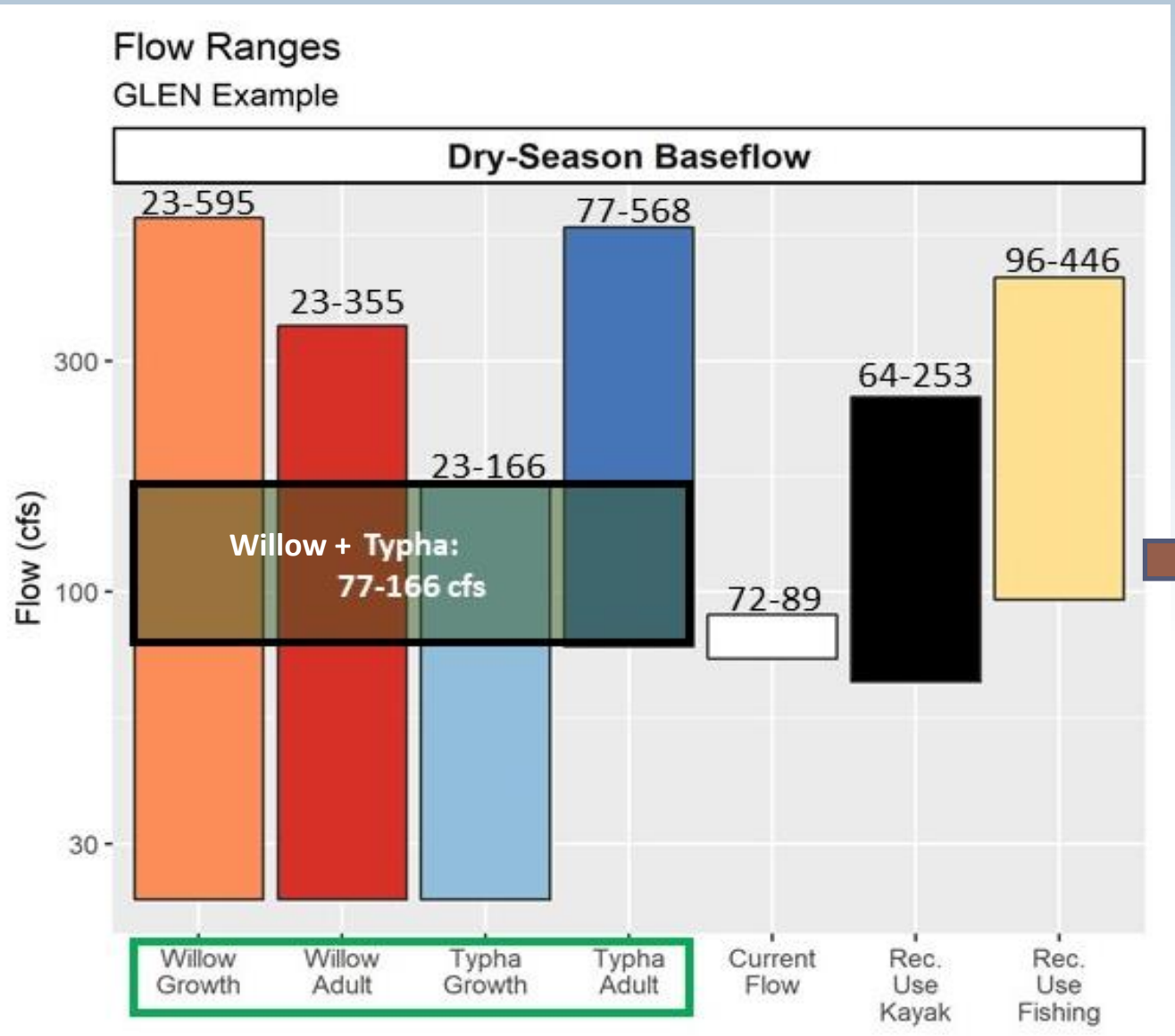


Indicator species and habitats



Habitat	End member species
Cold water habitat	Santa Ana Sucker
	Unarmored threespine stickleback
Migration habitat	Steelhead/Rainbow trout
Wading shorebird habitat	Cladophora spp
Freshwater marsh habitat	Typha
	Duckweed
Riparian habitat	Black Willow
Warm water habitat	African clawed frog
	Mosquitofish

Overall Flow Management Targets



Example In-River Flow Management Targets

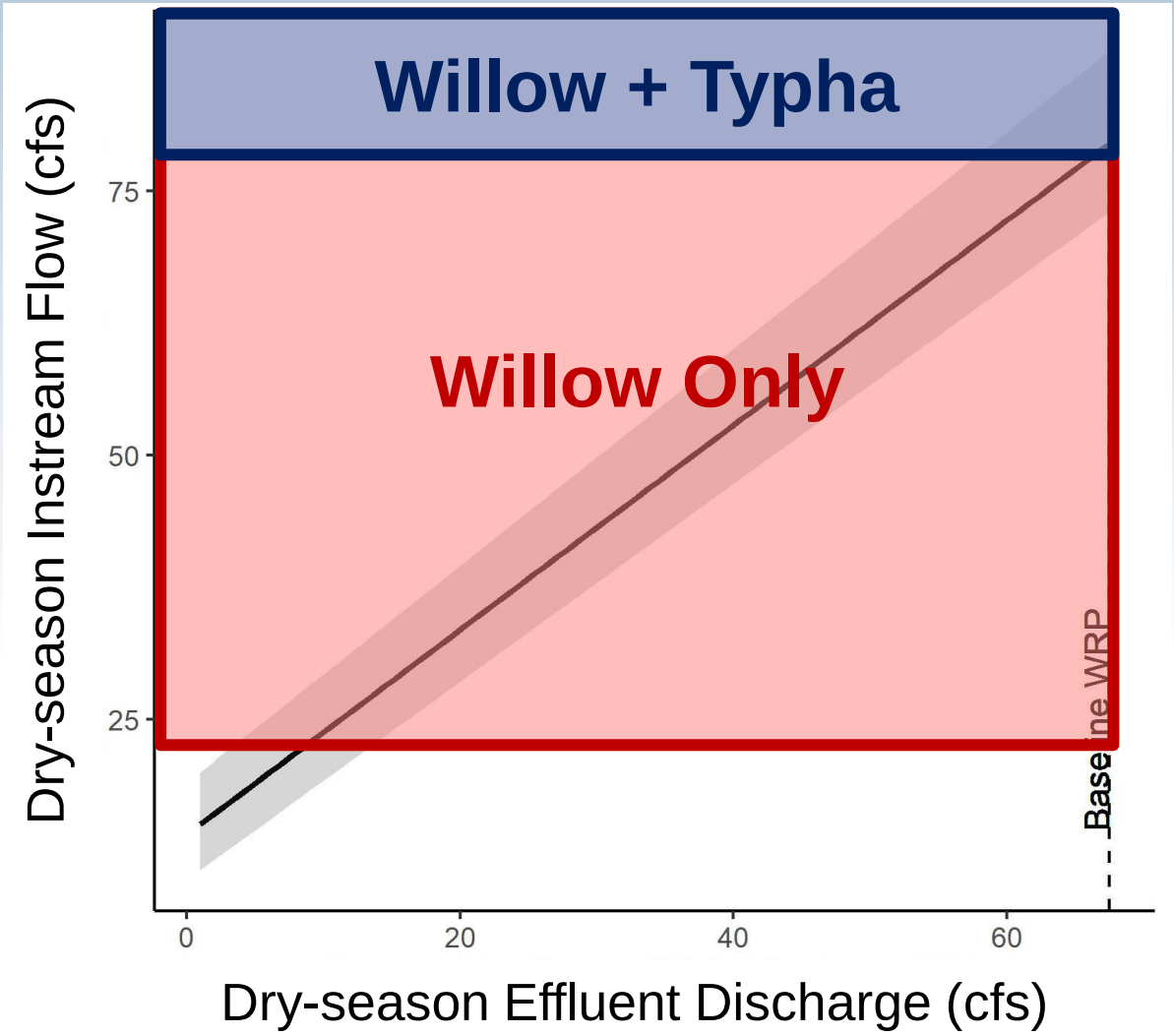
Location: GLEN
Beneficial Use: Existing, WILD
Synthesis: Multiple Species (Willow, Typha)
Probability: Medium (50%)

Dry-Season Baseflow			Wet-Season Baseflow			Wet-Season Peak Flow	
Current flow range (cfs)	Optimal flow range (cfs)	Duration	Current flow range (cfs)	Optimal flow range (cfs)	Duration	Current Annual Peak Q range[1] (cfs)	Optimal flow range (cfs)
72-89	77-166	April - September	82-130	77-355	October - March	8,188-32,608	< 568

[1] Current annual peak Q range represents the 10th and 90th percentile of annual peak discharge calculated from the hourly f
timeseries period of record (WY 2011-2017)

Targets can be developed for every reach of the river

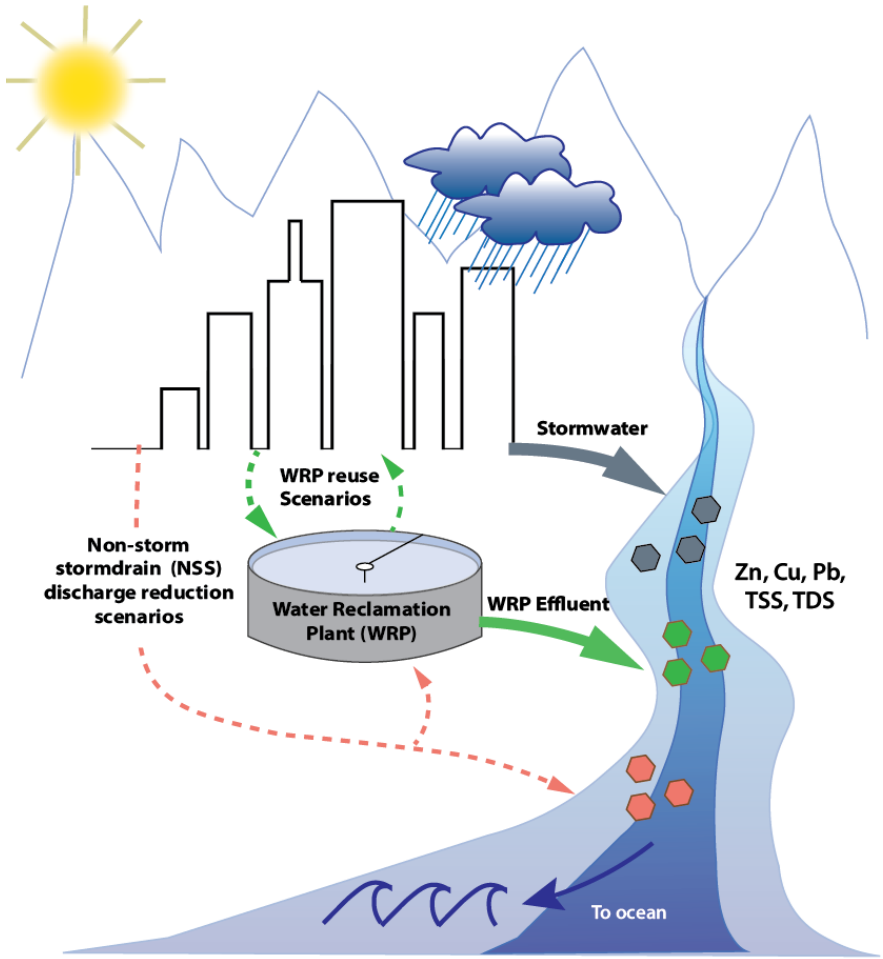
Sensitivity Curves to Assess Effects of Water Reuse



Curves allow for consideration of a virtually unlimited number of scenarios

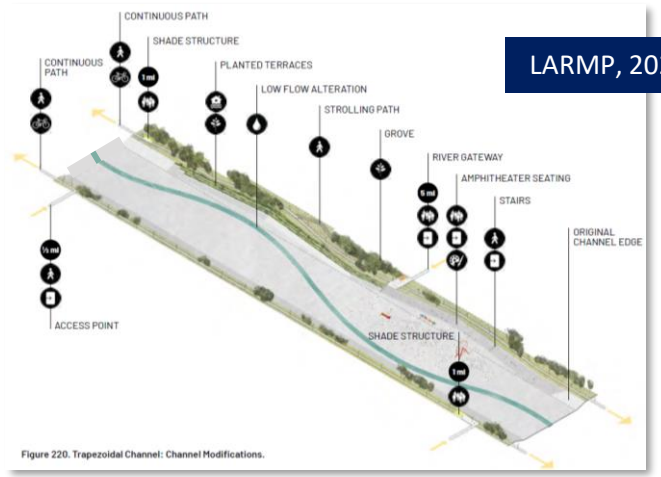
Water Quality & Restoration Analyses

How might management scenarios affect water quality?

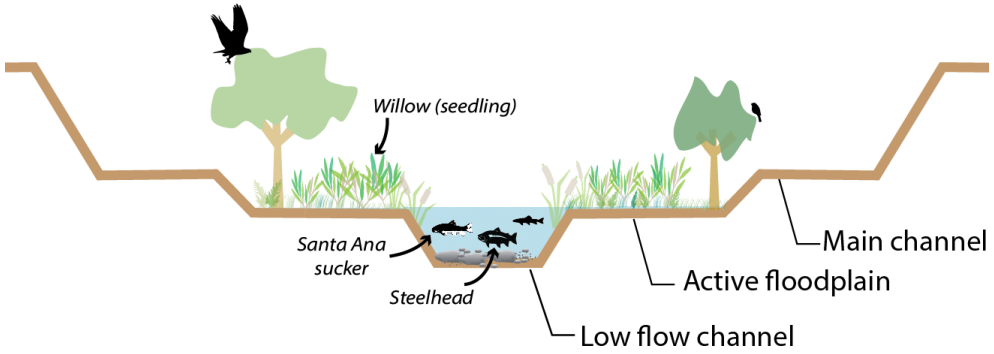


Wolfand et al., 2022, *ACS EST Water*

What changes to channel design can accommodate altered flows to support ecological beneficial uses?



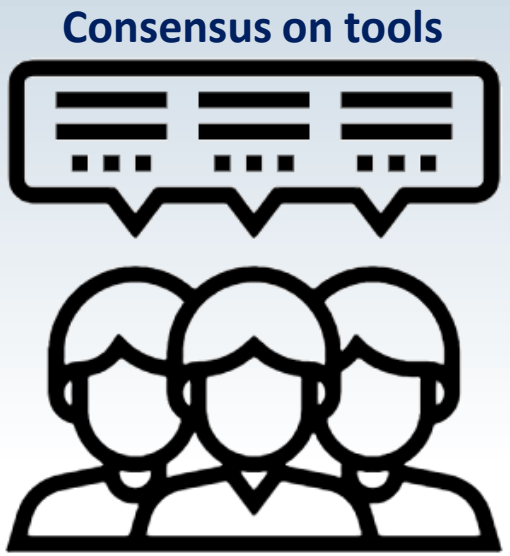
LARMP, 2021



Systema et al., in review

Summary of Coordination and Outreach

- Year-long scoping process – 4 stakeholder meetings
- Seven TAC meetings since January 2019
- Four stakeholder workgroup meetings
- Two workshops on recreational uses
- Numerous briefings and presentations to community groups and associated LA River programs



Los Angeles River Environmental Flows Project

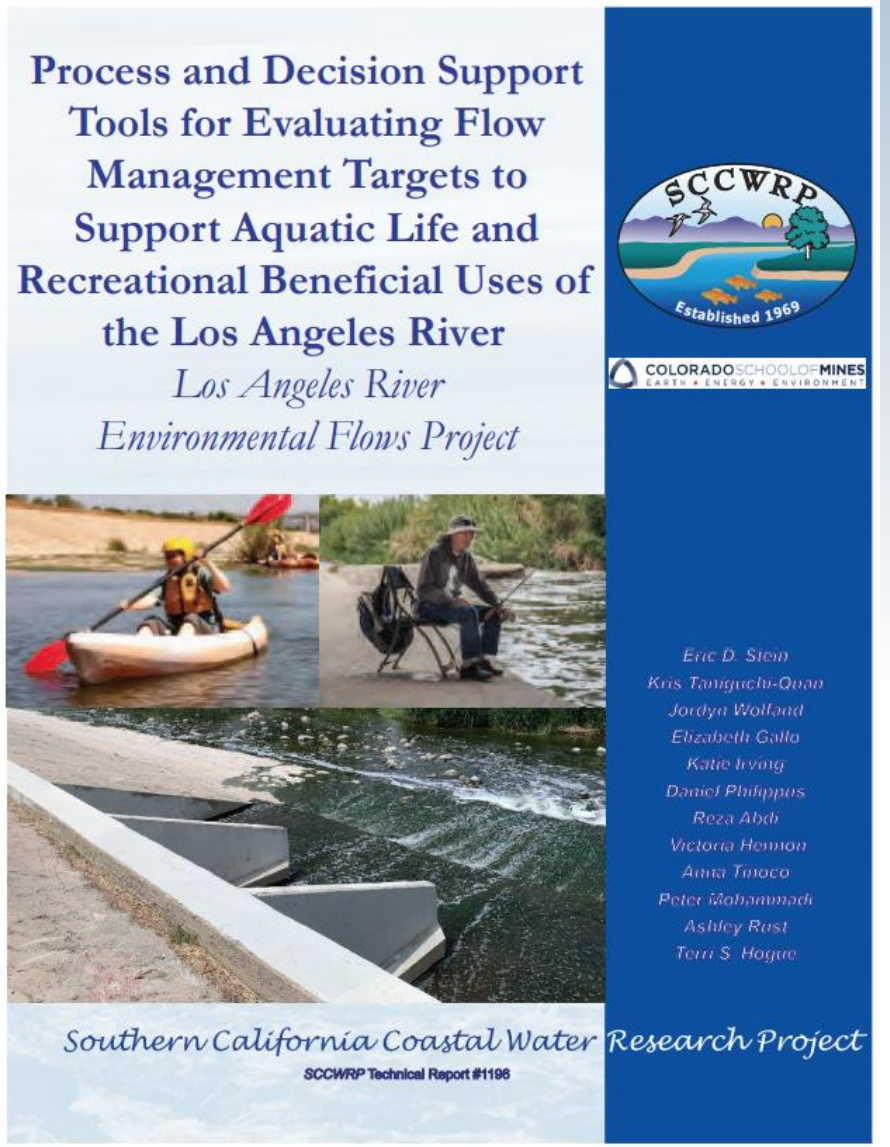
SCCWRP is working with the State Water Resources Control Board and the Los Angeles Regional Water Quality Control Board, in cooperation with local municipalities (including City of LA Bureau of Sanitation, City of LA Department of Water and Power, LA County Department of Public Works, and LA County Sanitation Districts), to conduct the Los Angeles River Environmental Flows Project (Project). The goals of the project are to develop a process for establishing flow criteria, to apply the process to provide recommendations for flow criteria in the LA River, and to produce tools and approaches to evaluate management scenarios necessary to achieve recommended flow criteria. The project also serves as an important pilot application of the California Environmental Flows Framework (CEFF) by demonstrating how CEFF can be applied in a highly urbanized watershed where flow alteration is primarily caused by wastewater and stormwater discharges. The outcomes of this project may also serve as a model for assessing similar situations in other river systems.

For more information about this project, go to the Background and History of the Los Angeles River Flows Project on the State Water Board's website.

Related Pages

Ecohydrology Research Plan
Ecohydrology

- Progress reports
- Technical reports
- Outreach materials
- TAC meeting materials
- Stakeholder meeting materials
- Data and dashboard



https://www.sccwrp.org/about/research-areas/ecohydrology/los-angeles-river-flows-project/

LA River Environmental Flows Dashboard

Overview | Flow Range Determination | Sensitivity Curves | Flow Range Heat Map | Flow Depth Visualizer

Welcome to the Los Angeles (LA) River Environmental Flows Dashboard!

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CALIFORNIA
Water Boards
STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS

Council for Watershed Health

This interactive web page will allow you to explore flow ranges associated with beneficial uses of the LA River (**Flow Range Determination**) and **Sensitivity Curves**, evaluate the relative effects of various WRP discharges on multiple locations of the river (**Flow Range Heat Map**), and visualize flow at multiple cross sections (**Flow Depth Visualizer**). Start by using the menu sections on the top.

https://sccwrp.shinyapps.io/lar_eflows_shinyapp/

Online Dashboard

LA River Environmental Flows Dashboard

Overview | **Flow Range Determination** | Sensitivity Curves | Flow Range Heat Map | Flow Depth Visualizer

Location and Season

Select Location:
- (•) Node
- ( ) Reporting Reach
- ( ) LA River Reach-Master Plan

Specific Location: GLEN

Select Season: All

Beneficial Use Designation

Current Designation:
- (•) Designated
- ( ) Not Designated

Beneficial Use Name(s): All

Designation Type: All

Species

Probability of Occurrence: Medium

Species Synthesis:
- (•) Yes
- ( ) No

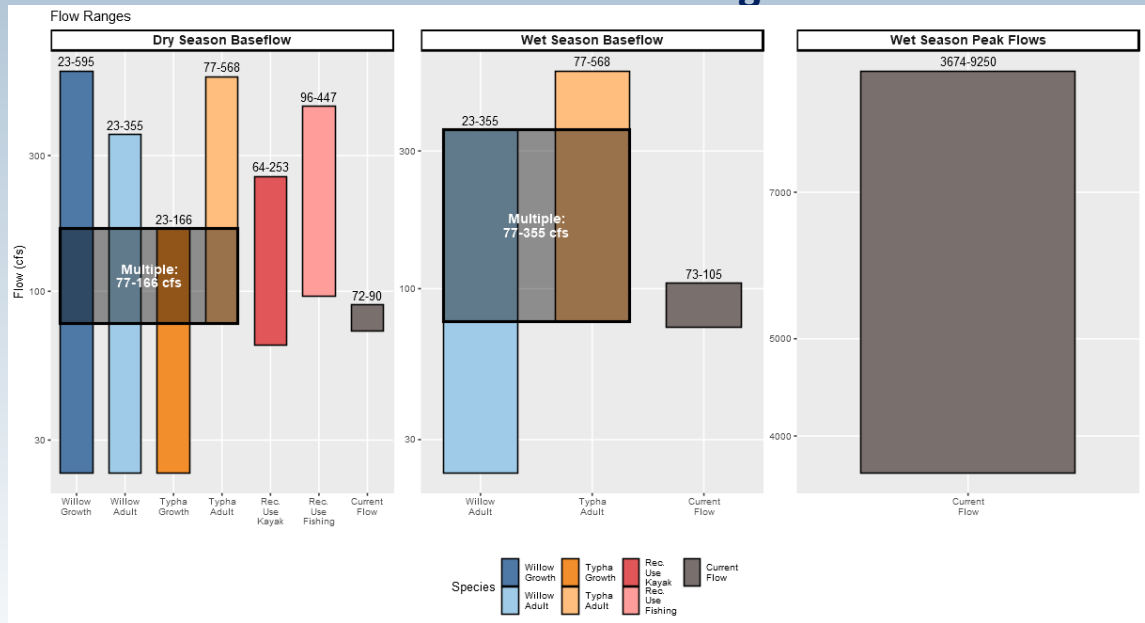
Type of Species Synthesis:
- ( ) Single
- (•) Multiple

If Species Synthesis is Yes - synthesis ruleset applied to get overall flow recommendations

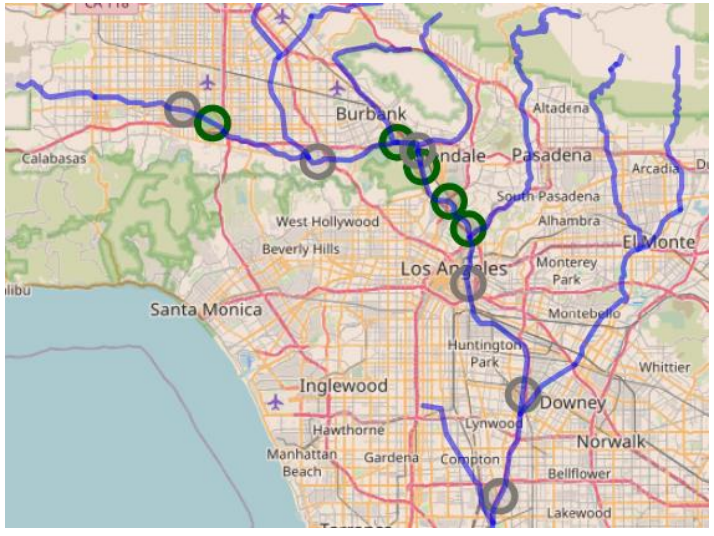
Otherwise, flow recommendations by individual life stages

https://sccwrp.shinyapps.io/lar_eflows_shinyapp/

Visualize Flow Targets



Evaluate Scenarios Spatially



Future Use of Decision Support Tools

- Municipalities to evaluate proposals to regulatory agencies
- Regulatory agencies to evaluate potential flow requirements
- Planning entities to inform restoration and management decisions
- Temperature analysis → climate change + reduced effluent discharge

Figure 3.4-10. Configuration 3 Conceptual Layout – Soft-Bottom River with Relief Drain

Questions

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Yareli Sanchez[1], Terri Hogue[2], Jordyn Wolfand[3], Anneliese Systema[4], Daniel Philippus[2], Reza Abdi[4], Liz Gallo[2], Victoria Hennon[2]

[1]Council for Watershed Health

[2]Colorado School of Mines

[3]University of Portland

[4]Brown and Caldwell

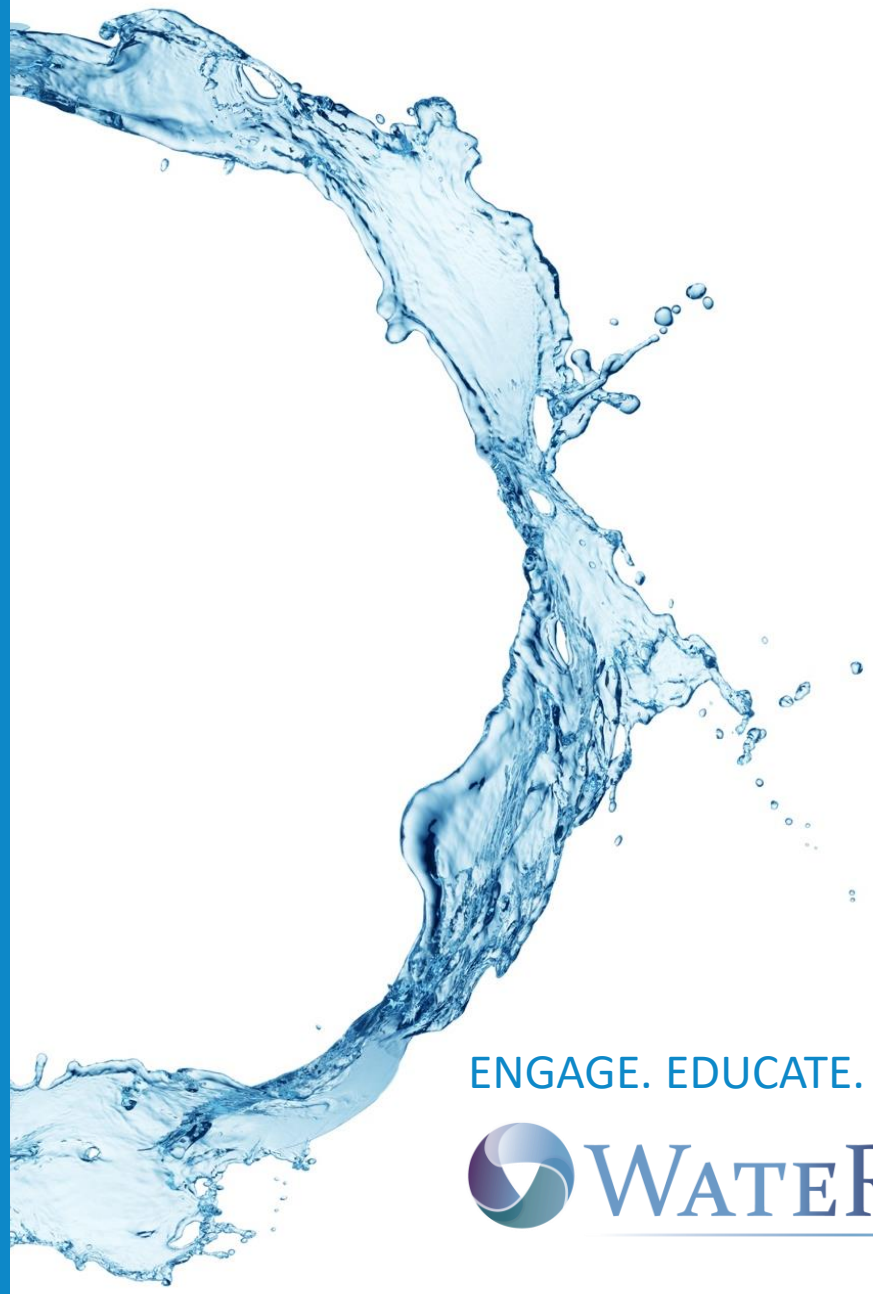
[5]US NCAR

DPR AND CONSERVATION REGULATIONS

Two of the Most Significant Reuse Regulations Now Moving Forward

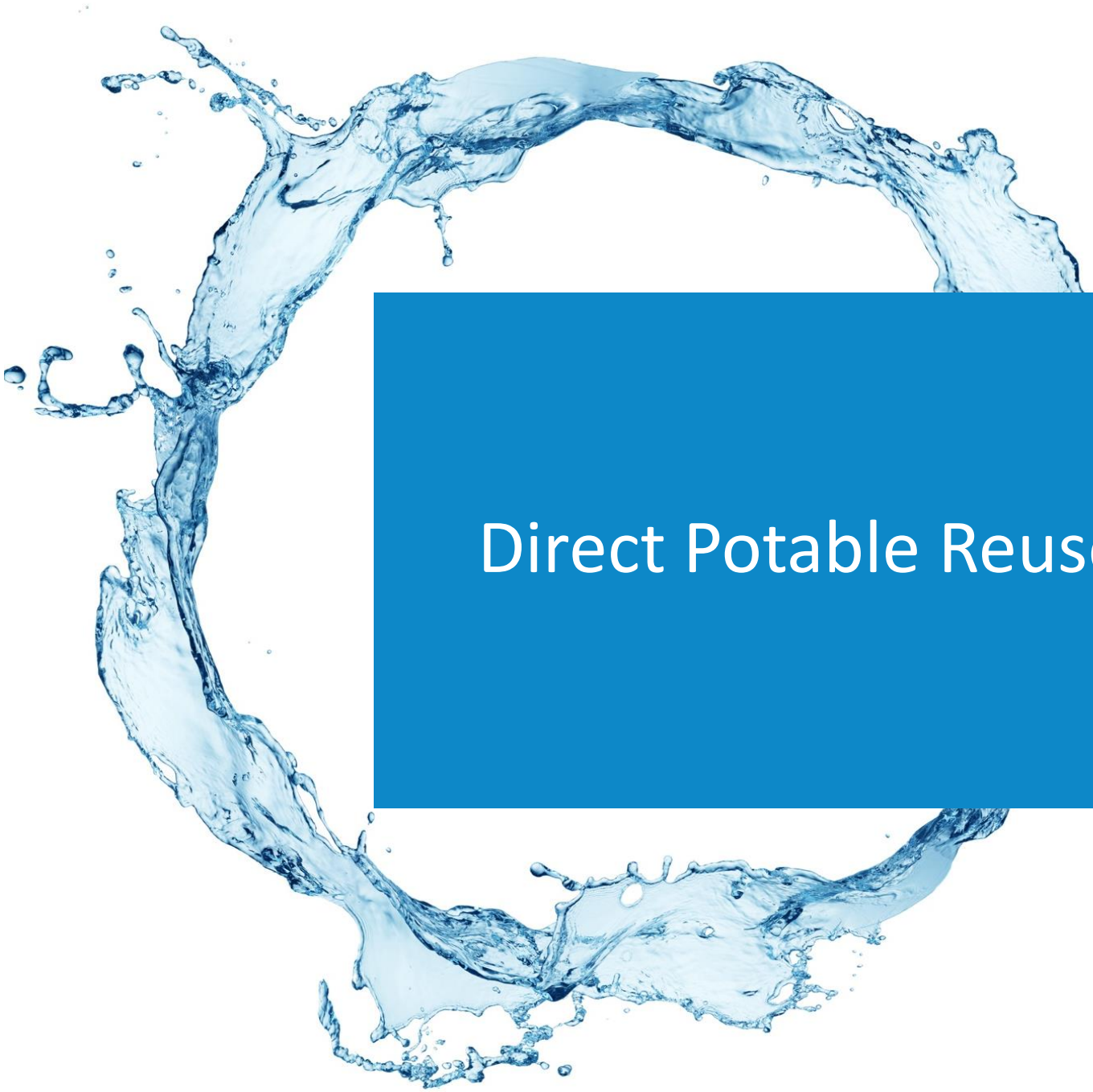
Jennifer West, Managing Director
WateReuse California

October 10, 2023



ENGAGE. EDUCATE. ADVOCATE.

WATEREUSE CALIFORNIA



Direct Potable Reuse

WateReuse CALIFORNIA

WRCA DPR Water Board Panel

Los Angeles Times

OPINION

Editorial: You're already drinking dinosaur pee. So don't be afraid of recycled wastewater

SUBSCRIBERS ARE READING ›

FOR SUBSCRIBERS

'The tenant from hell': She refused to pay for her luxury Airbnb for 540 days. She says she has a legal right to stay

Column: For drivers 70 and older, the road rage over DMV test questions continues

Plaschke: Clayton Kershaw's dream start

Changes in DPR Regs Since 2021

Pathogen control

- Differentiation of RWA and TWA: regulations now give pathogen credit for reservoirs, aquifers, and blending
- Greater flexibility to operate between 16/10/11 and 20/14/15 LRVs

Chemical control

- Greater flexibility in O_3:TOC ratio and BAC empty bed contact time
- TOC monitored in RO permeate every 15 min rather than 5 min
- Greater flexibility for TOC critical limit if project includes blending

Source control

- Replaced sewershed surveillance in the collection system with early warning at WWTP

Staffing and Operator Certifications

- 24/7 staffing required <u>but</u> after one year agency can submit plan to DDW to reduce staffing requirements.
- Reduced AWT certification requirements (only for facilities providing *chemical* control)

TMF: reduction in requirements (e.g., fewer plans, processes required)

Broad Flexibility for Chemical Control

- *"A DiPRRA may use an alternative to a treatment or treatment sequence requirement in subsections (a) through (l) and (o) if the DiPRRA"*….provided that is it is equivalent or better than the current chemical control requirements and is approved by DDW

- <u>Existing</u> Water Board process allows for validation and use of new technology for DPR

- **Note**: flexibility also exists for pathogen treatment though trains must provide 1) membrane separation, 2) UV inactivation, and 3) chemical inactivation

DPR Advocacy Highlights

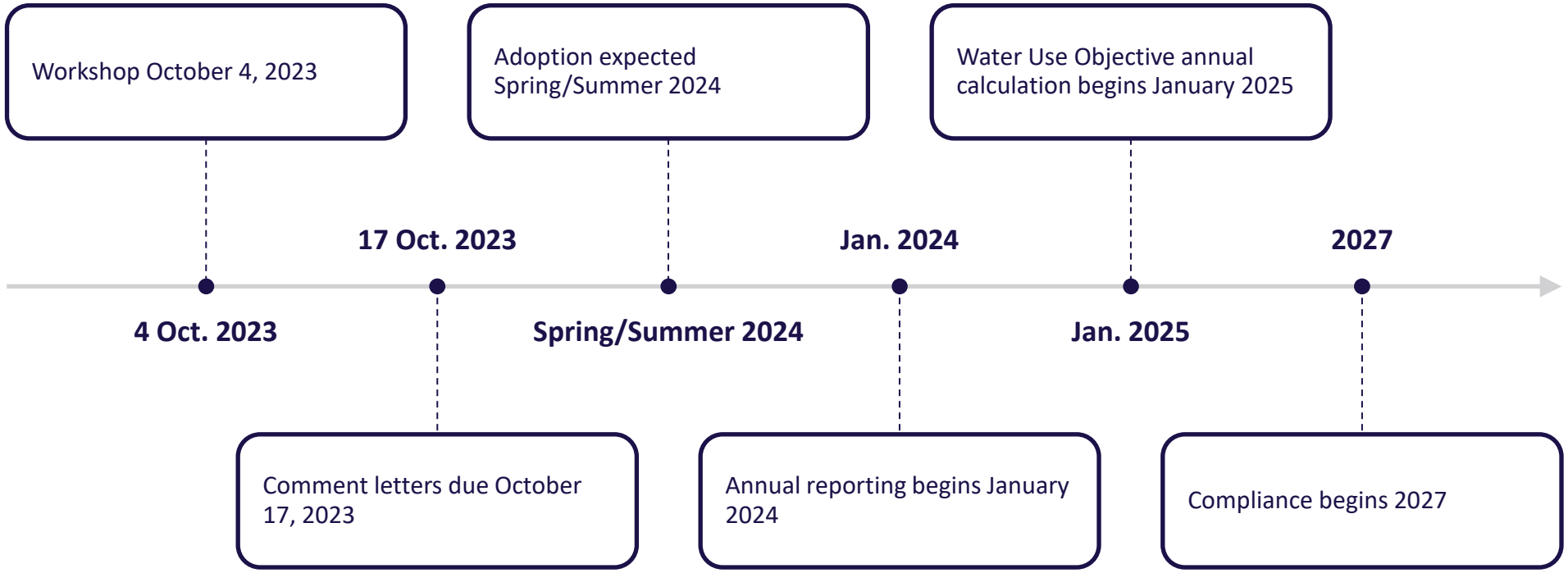
- Need Board Alternatives Clause that applies to the entire regulations – as in previous potable reuse regualtions.

- Need greater consistency with CEC monitoring requirements and thresholds. Asking for one Water Board Expert Panel to act as clearinghouse rather than each each DiPPRA doing this analysis.

MAKING CONSERVATION A WAY OF LIFE – REUSE ISSUES

WATEREUSE CALIFORNIA

Timeline


Workshop October 4, 2023
Adoption expected Spring/Summer 2024
Water Use Objective annual calculation begins January 2025
17 Oct. 2023
Jan. 2024
2027
4 Oct. 2023
Spring/Summer 2024
Jan. 2025
Comment letters due October 17, 2023
Annual reporting begins January 2024
Compliance begins 2027

WATER USE OBJECTIVE AND REUSE

WATER USE OBJECTIVE = RESIDENTIAL INDOOR + RESIDENTIAL OUTDOOR + CII OUTDOOR + WATER LOSS + VARIANCE + BONUS

Reduced residential indoor flows may have impacts on wastewater and reuse

WRCA FOCUS ON REUSE ISSUES

- **Ensure recycled water landscape sites remain 1.0 ET**
  - *This is consistent with MWELO but MWELO could change in the future.*

- **Maintain High TDS Recycled water irrigation variance**
  - *Up to 1.24 ET but very cumbersome variance process*

- **Maintain potable reuse bonus incentive** (adding up to 10 to 15% to your Water Use Objective) as described in the statute and DWR appendix
  - *Ask that a DPR process be established after the DPR regulations are adopted.*

RESIDENTIAL INDOOR STANDARDS

Effective Date	Gallons per Capita per Day (GPCD) Standard
Until January 1, 2025	55
January 1, 2025 – January 1, 2030	47
January 1, 2030 on	42

- Established by SB 1157 (2022)
- DWR to conduct studies to quantify impacts on water, wastewater and recycled water systems by October 2028
- **Governor's signing message encourages State Water Board to adopt variances to reflect local investments in recycled water and infrastructure**

“SB 1157 PROCESS” FOR IMPACTS TO WASTEWATER

- Suppliers may request **temporary provision** to respond to negative impacts to wastewater collection, treatment and reuse systems
  - Demonstrate need to adhere to the indoor standard to meet the overall water use objective; and
  - Demonstrate that it is causing challenges
- Submit a request for approval by October 1 each year
  - Demonstrate how it protects beneficial uses
  - Quantify and substantiate each request
  - Demonstrate that it would not jeopardize permit compliance
- WRCA Request: Make this every five years/streamline process

2023 WATEREUSE CALIFORNIA CONFERENCE

INDIAN WELLS, CA • NOV. 5-7

Register Today!

https://watereuse.org/sections/watereuse-california/

Updates on the Region's Recycled Water Program

October 10, 2023

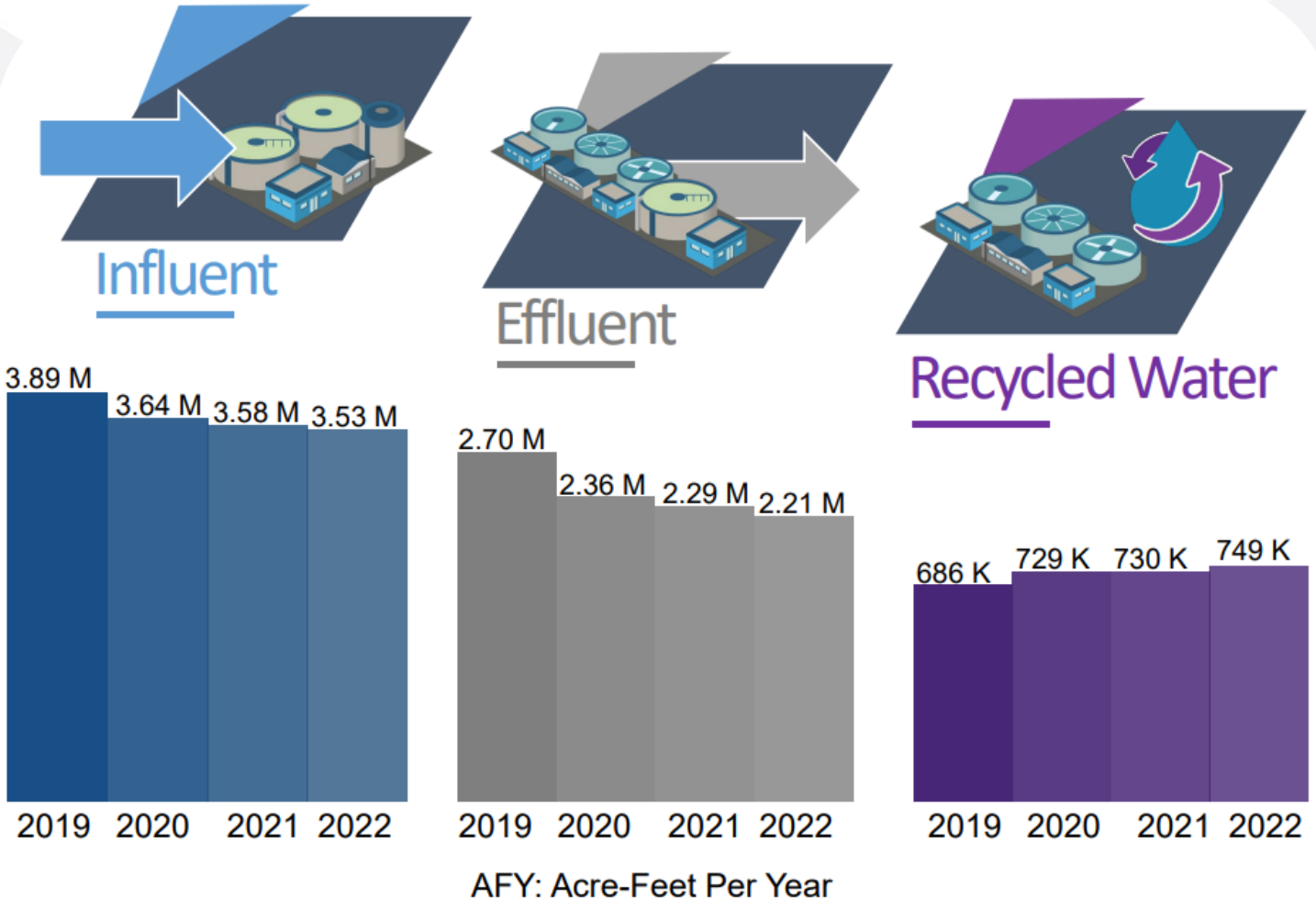
CALIFORNIA
Water Boards

Los Angeles Regional Water Quality Control Board

Annual Volumetric Reporting

2022 Volumetric Data Released

- 100 percent reporting for Region 4
- https://www.waterboards.ca.gov/water_issues/programs/recycled_water/volumetric_annual_reporting.html



Annual Volumetric Reporting

State Water Board Volumetric Annual Report Interactive Map

Region

- R1
- R2
- R3
- R4
- R5
- R6
- R7
- R8
- R9

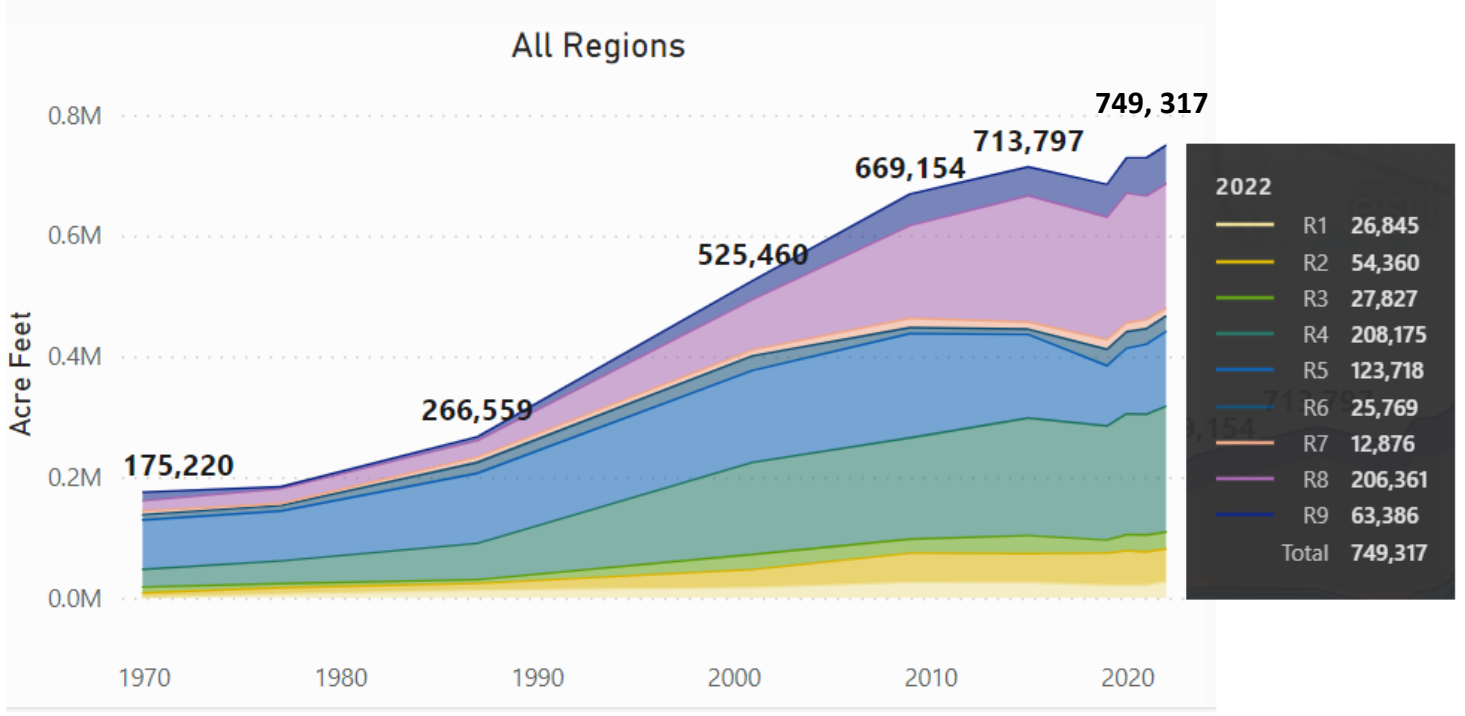
Select a Region, Reporting Year, or Facility Type to explore data.

On the Map, hover over, or click on, any dot to show Facility information.

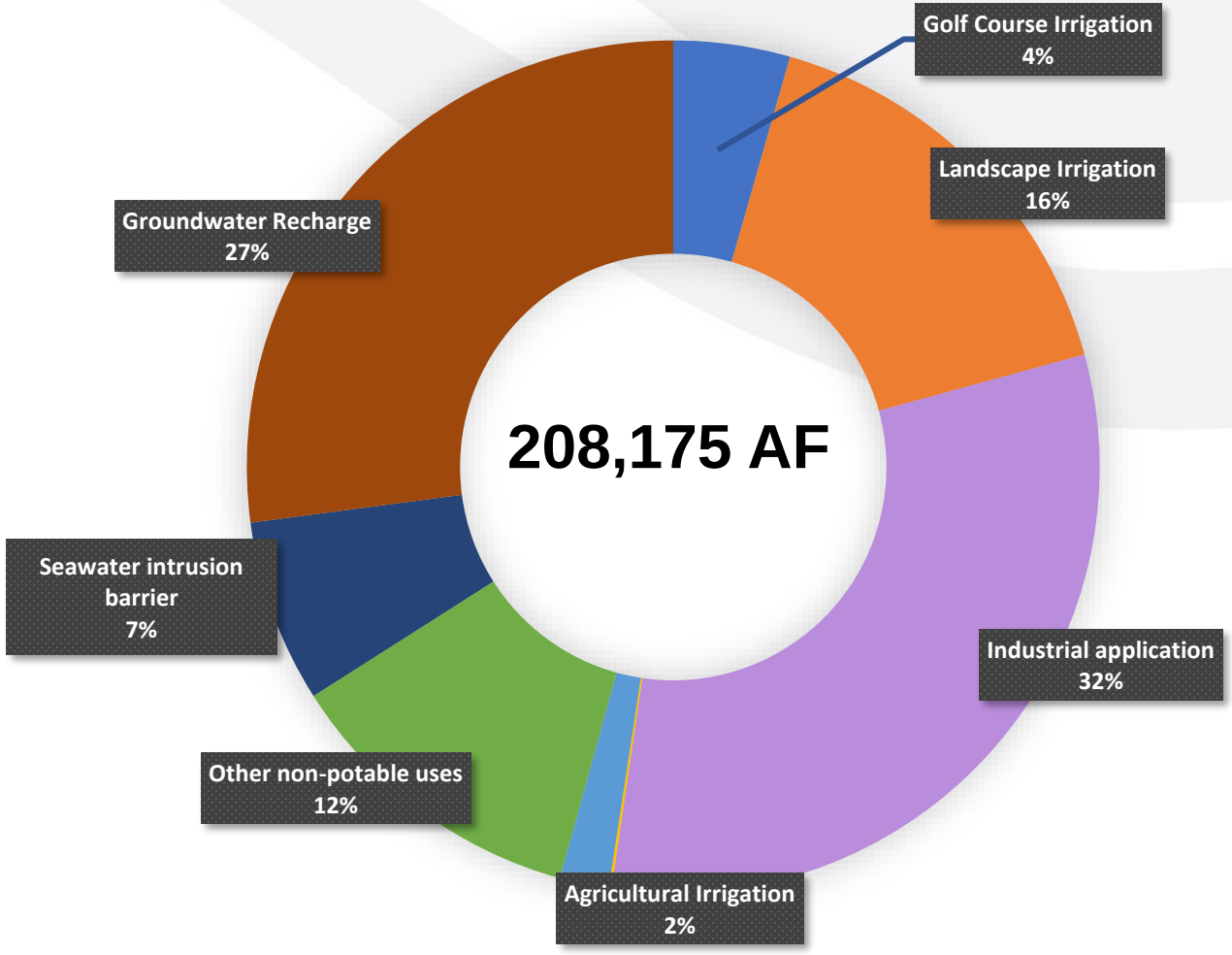
REPORTING YEAR

2019 | 2020 | 2021 | **2022**

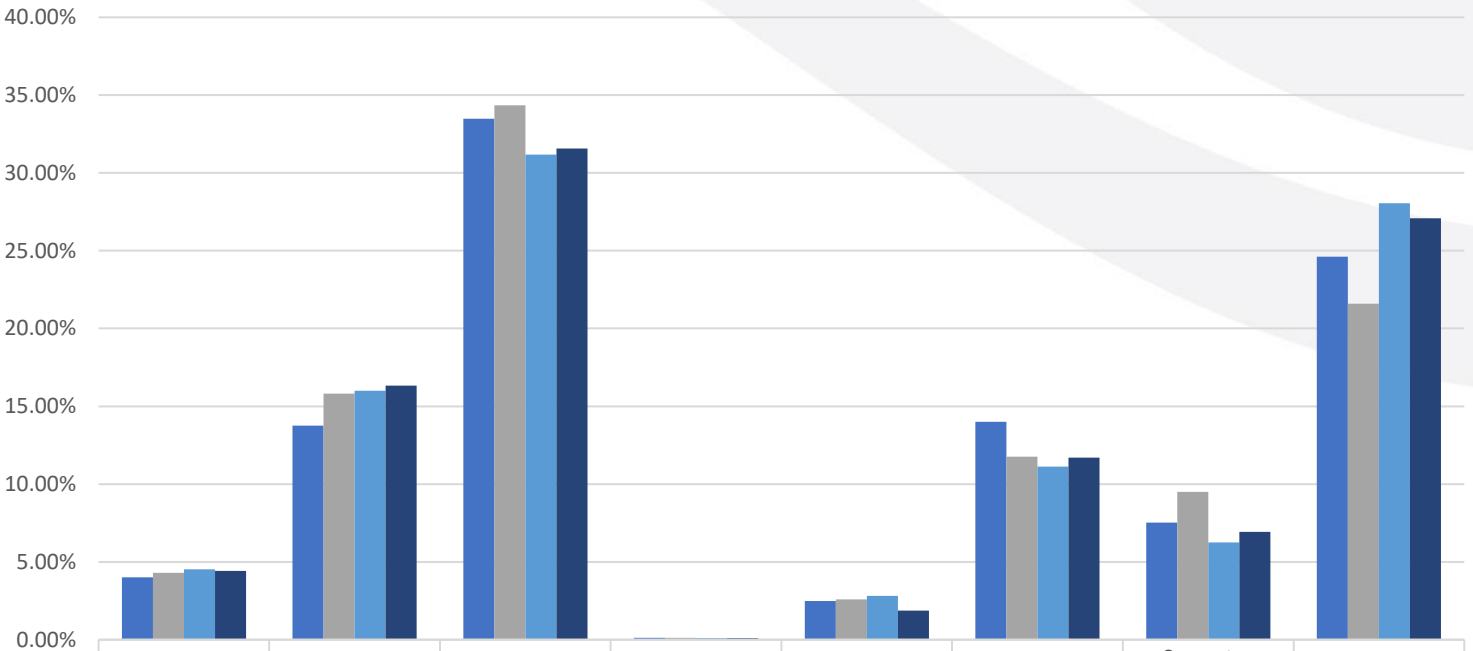
Facility Type	Number of Facilities
Wastewater Treatment Plant produces Recycled Water	29
Wastewater Treatment Plant	25
Recycled Water Producer	3
Total	**57**



Recycled Water Usage in 2022



Regional Trends



	Golf Course Irrigation	Landscape Irrigation	Industrial application	Commercial Application	Agricultural Irrigation	Other non-potable uses	Seawater intrusion barrier	Groundwater Recharge
2019	4.01%	13.75%	33.49%	0.13%	2.49%	14.01%	7.52%	24.61%
2020	4.29%	15.82%	34.35%	0.12%	2.58%	11.76%	9.49%	21.58%
2021	4.51%	16.00%	31.18%	0.09%	2.81%	11.12%	6.24%	28.04%
2022	4.42%	16.33%	31.56%	0.11%	1.86%	11.70%	6.93%	27.09%

Increase in Groundwater Recharge and Landscape Irrigation

Decrease in Seawater Intrusion, Industrial and Agricultural application

Employment Opportunities

- **(2) Water Resource Control Engineer Vacancies**

- Develop waste discharge requirements and water reclamation requirements for recycled water facilities
- Health and Savings Benefits
- CalPERS Retirement

- Final Filing Date: 10/19/2023
- RPA #23-140-019
- https://www.calcareers.ca.gov/CalHrPublic/Jobs/JobPosting.aspx?JobControlId=390773

Chapter Trustee Updates
WATEREUSE LA Chapter – October 10, 2023

Last Board of Trustees Meeting: August 11, 2023

SWRCB 9/7/23 DPR Regs Mtg

- Need a Broad Alternative Clause (BAC)
  - BAC Included in IPR Regulations
  - Complexity + Coordination needed for DPR is unprecedented
  - Don't Restrict Innovation – Add a BAC

SWRCB 10/4/23 Conservation a California Way of Life

- WRCA Provided Public Comment

Recruitment – New Managing Director

- Jennifer West Stepping down 12/31/2023

Chapter Trustee Updates
WATEREUSE LA Chapter – October 10, 2023

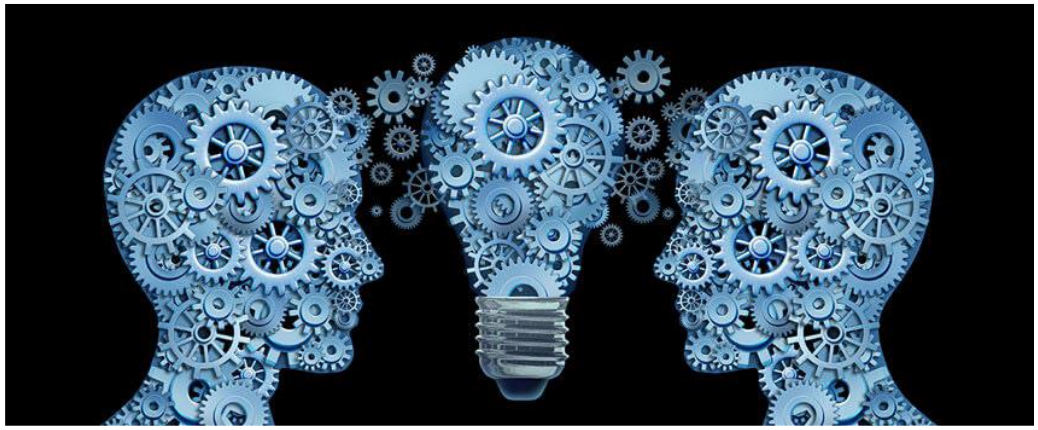
Last Board of Trustees Meeting: August 11, 2023

WateReuse California Industry Technical Leaders Forum – 9/21/2023

Two In-depth Panel Discussions:

1. Focus Potable Reuse and Recycled Water Issues
2. Direct Potable Reuse Regulations

- Goals:
  1. Sharpen WRCA positions and develop agency expertise on these issues
  2. Network/learn from other agencies - how they are handling recycled water regulatory issues



Chapter Trustee Updates
WATEREUSE LA Chapter – October 10, 2023

- **Reminder**
  - All reservations to the Hyatt Regency Indian Wells Resort & Spa must be made by October 5th, 2023, to take advantage of the discounted rate

Chapter Trustee Updates
WATEREUSE LA Chapter – October 10, 2023

Reimaging Water Together

- Schedule and Technical Program are currently being continually updated

Chapter Trustee Updates
WATEREUSE LA Chapter – October 10, 2023

2024 WateReuse Symposium: Call for Presentations

- The WateReuse Association invites proposals for presentations at the 39th Annual WateReuse Symposium.

Key Dates

September 14, 2023	Proposals Due via Online Submission Form
November 10, 2023	Speakers Notified
January 15, 2024	Deadline for Speaker Registration Discount
February 16, 2024	PowerPoint Presentations Due
March 11-14, 2024	2024 WateReuse Symposium

LA Chapter Update

- Rising Professionals Committee
  - Chair: *Seto Cherchian*
    Scherchian@BrwnCald.com
- Communications Lead
  - Chair: *Oliver Slosser*
    oslosser@lvmwd.com
- Awards Champion
  - Chair: *Everett Ferguson*
    eferguson@wrd.org

- Meeting Summary - June 2023
  - *Thank you Karina Gonzalez, LA Sanitation & Environment*
- Next Meeting
  - Tuesday, December 5, 2023
- Volunteer Opportunity
  - Leg/Reg Updates – Thank you Raymond Jay for many years of service!

WATEREUSE LOS ANGELES

Member Agency Roundtable

Technical Topic Suggestions

- Climate Action Plans/Climate Mitigation Plans
- Potable reuse for inland communities and agriculture
- FAT v non-RO based advanced treatment processes
- Oxidation chemicals (Cl2 v H2O2) in potable reuse
- Innovative procurement of reuse projects
- Drought resiliency through recycled water
- Stormwater capture and reuse
- Novel instruments for real-time monitoring of pathogens

Please contact Alex Franchi
(alex.franchi@aecom.com) if interested to present!

WATEREUSE LOS ANGELES

WATEREUSE LOS ANGELES

Potable Reuse Projects in Los Angeles County

Region 4

Reuse in Los Angeles (Region 4) from 1970 - 2021

Data from the Regional Water Quality Control Board

Los Angeles Chapter Active Members

AECOM
Arcadis
Atkins
Black & Veatch
Brown and Caldwell
Burbank Water and Power
California American Water
California Coastkeeper Alliance
California State Water Resources Control Board
California Water Service Company
Carollo Engineers
Central Basin Municipal Water District
City of Los Angeles, LA Sanitation
City of Santa Monica
Dudek
EKI Environment & Water
ESA
Eurofins Eaton Analytical, Inc.
GHD
Glendale Water & Power
Hach Company
Hazen and Sawyer
Jacobs
John Robinson Consulting, Inc.
Katz & Associates, Inc.
Kennedy Jenks
Kiewit
Las Virgenes Municipal Water District
Long Beach Public Utilities
Los Angeles County Department of Public Works
Los Angeles Department of Water and Power
Metropolitan Water District of Southern California
Michael Baker International
Mott MacDonald
Palmdale Recycled Water Authority
Parsons
Psomas
Rincon Consultants
Rose Hills Memorial Park and Mortuary
Rowland Water District
Sanitation Districts of Los Angeles County
Santa Clarita Valley Water Agency
Stantec
Tetra Tech
Trussell Technologies, Inc.
UCLA
Upper San Gabriel Valley Municipal Water District
Walnut Valley Water District
Water Replenishment District
West Basin Municipal Water District
Woodard & Curran

Check out the LA Chapter Webpage
https://watereuse.org/sections/watereuse-california/chapters/los-angeles-chapter/

Founding Members

Central Basin Municipal Water District
City of Burbank Water and Power
City of Glendale Water & Power
Long Beach Utilities
Los Angeles County Sanitation Districts
LA DWP Los Angeles Department of Water & Power
The Metropolitan Water District of Southern California
WRD Water Replenishment District
West Basin Municipal Water District
SCV Water