

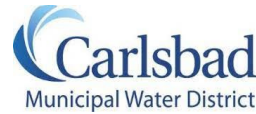
Chapter Meeting

March 5, 2025 | City of Escondido

*Thank you
to our sponsor!*

**Brown AND
Caldwell**

®



Welcome to our members! Please remember to sign-in!

Agenda

1

**Welcome to the City
of Escondido**

2

Sponsor Spotlight

3

Chapter Updates

4

**Escondido MFRO
Facility Presentation**

*City of Escondido and Brown &
Caldwell*

5

Closing Remarks

6

Tour of MFRO Facility

Thank to you
our host!



*Thank you
to our sponsor!*

Brown AND
Caldwell

®



Serving San Diego since 1955

March 5, 2025



Solving water/environmental challenges is what we do

100% environmental

2,300+
personnel

Engineering News-Record
#4 Top 20 Design Firms
in Sewer & Waste



BC founded
1947

60+
offices

employee
owned

Guiding our clients from concept to startup



Water
Resources



Drinking Water



Wastewater
Treatment



Industrial
Water



Reuse



Wet Weather



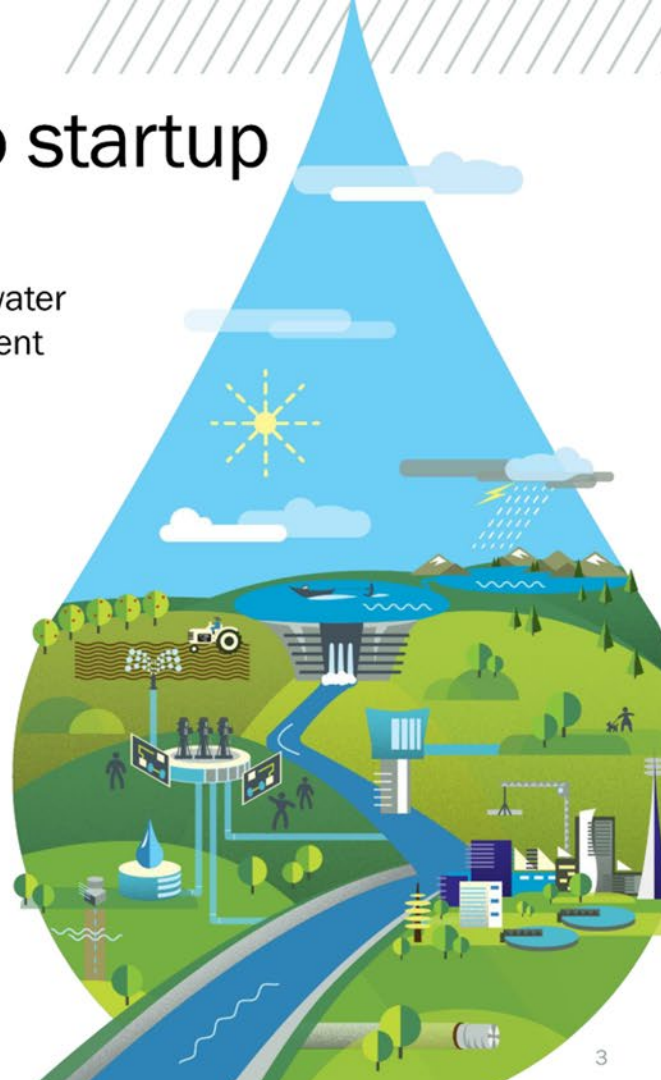
Solids / Energy



Conveyance



Compliance &
Permitting



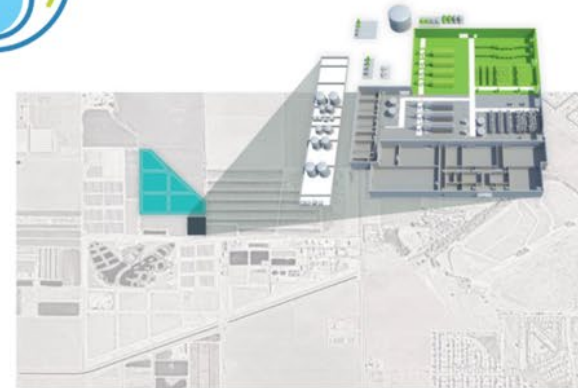
Project Highlights



Water Reuse



Pure Water San Diego
City of San Diego



Purified Water
Replenishment
**Eastern Municipal Water
District**

Pipelines & Conveyance



Pump Station 2
City of San Diego



Crossover Pipeline
San Diego County Water
Authority

Chapter Updates

WateReuse San Diego Officers

2025 Officers



Past-President
Rosalyn Prickett
Rincon Consultants



President
Mitch Bartolo
Trussell Technologies



President-Elect
Jessica Cleaver
San Diego CWA



Treasurer
Aaron Cook
Fallbrook PUD



Secretary
Megan Drummy
Hazen and Sawyer



Director of PR
Antonia Estevez-Olea
West Coast Civil



Newsletter Editor
Shoshana Aguilar
City of Carlsbad



Chapter Representative
Lindsey Stephenson
Olivenhain MWD

Leg/Reg Update

WRCA Sponsored Senate Bill 31

- Would update Title 22 to expand use of tertiary recycled water
- Letter of Support
 - Email JCleaver@sdewa.org if you'd like to sign on
 - Deadline is March 12

State Water Board 2025 Priorities

- [Draft 2025 State Board Strategic Work Plan](#)
- Infrastructure funding programs
 - Prop 4
 - State Revolving Funds
- Develop new water supplies
 - Resolve permitting obstacles
- CEC management strategy
 - protect water quality

Onsite Reuse Regulations

- SB 966 (2018) requires regulation for onsite treatment/reuse in multi-family and commercial buildings
- **Rulemaking expected to begin March**
- Adoption planned for fall 2025

Funding - Federal

US Bureau of Reclamation
WaterSMART funding
opportunities have been paused
following (rescinded) Executive
Order freezing federal grant
programs



OPEN FUNDING OPPORTUNITIES

The following notice of funding opportunities are currently paused and are under review until further notice.

FY25 Applied Science Grants funding opportunity

FY24 Environmental Water Resources Projects funding opportunity

FY25 Large-Scale Water Recycling Projects funding opportunity

FY25/26 Aquatic Ecosystem Restoration Program funding opportunity

FY25 Cooperative Watershed Management Program Phase I funding opportunity

FY24/25 Small-Scale Water Efficiency Program funding opportunity

<https://www.usbr.gov/watersmart/>

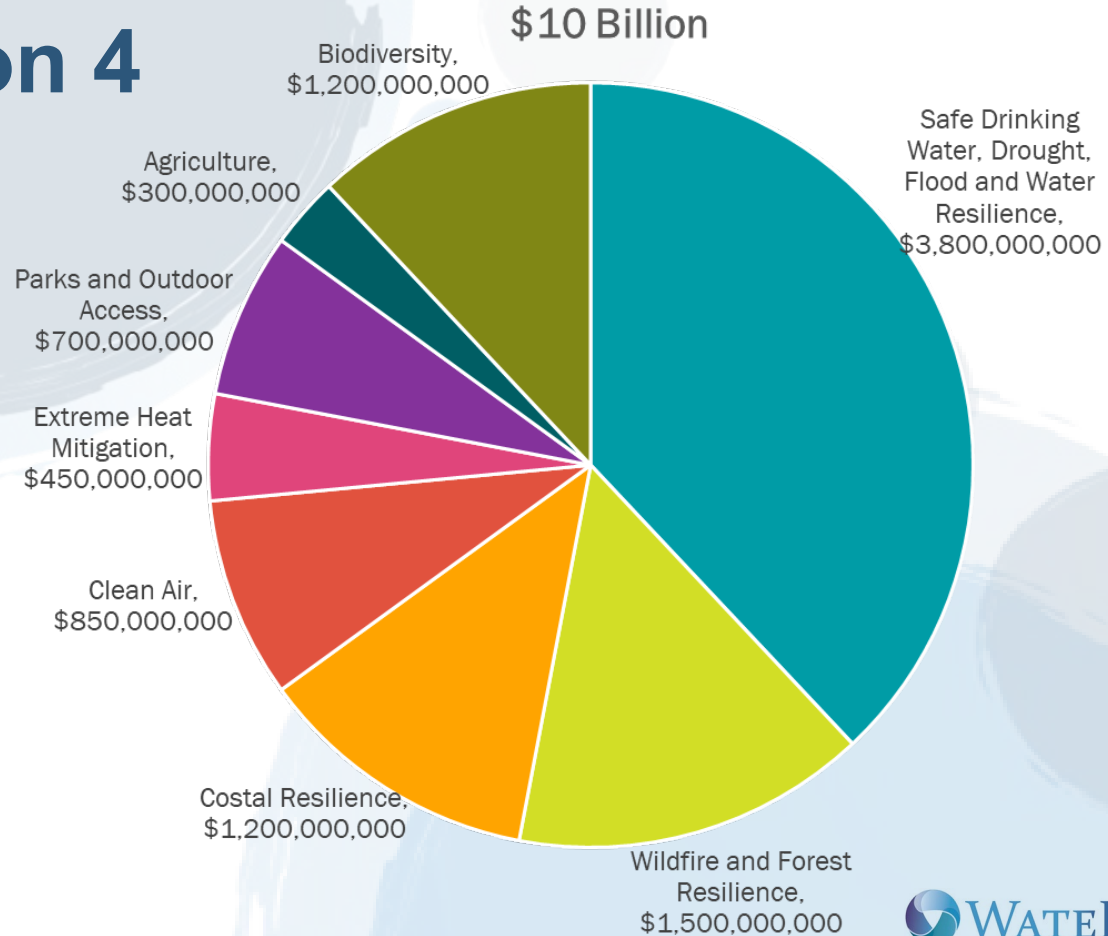
Funding - State

Proposition 4 - \$10 billion bond

- Approved by California voters in November 2024
- Statewide coalition of around 180 organizations
- Dedicated funding for tribes, farmworker groups and vulnerable communities
- Focus on multi-benefit projects
- On-going negotiation this Spring between CA Legislature and Governor's Office



Proposition 4



Proposition 4

- Governor proposes \$1.1 Billion for water-related spending in 2025-26
- \$386 Million allocated from bond to SWRCB for water reuse and recycling
- \$153 Million (40%) proposed in 2025-26 budget

Purpose	Code Section	Implementing Department	Bond Total	2025-26 Proposed	
				Amount	Percent of Bond Total*
Water Quality, Safe Drinking Water			\$610	\$194	32%
Water quality, safe drinking water	91011(a)	SWRCB	\$585	\$183	32%
Tribal water infrastructure	91011(a)(8)(B)	SWRCB	25	11	45
Flood Risk, Stormwater Management			\$1,140	\$406	36%
Sacramento-San Joaquin Delta levees	91021(a)	DWR	\$150	—	—
Flood Control Subventions Program	91021(b)	DWR	150	\$110	74%
State Plan of Flood Control projects	91021(c)	DWR	250	63	25
Dam Safety and Climate Resilience Local Assistance	91022	DWR	480	232	49
Urban stormwater management	91023	SWRCB	110	1	1
Rivers, Lakes, Streams; Watershed Resilience			\$605	\$191	32%
Integrated regional water management	91031	DWR	\$100	\$0.5	0.5%
Los Angeles River Watershed—Lower	91032(a)	RMC	40	0.6	2
Los Angeles River Watershed—Upper	91032(b)	SMMC	40	15	39
Riverine Stewardship Program	91032(c)	DWR	50	0.1	0.2
Santa Ana River Conservancy Program	91032(d)	SCC	25	10	40
Urban Streams Restoration Program	91032(e)	DWR	25	0.3	1
Wildlife refuges and wetland habitat areas	91032(f)	CNRA	25	0.2	1
Lower American River Conservancy Program	91032(g)	WCB	10	3	30
Coyote Valley Conservation Program	91032(h)	SCC	25	3	12
West Coyote Hills Program	91032(i)	SCC	25	—	—
California-Mexico rivers and coastal waters	91032(j)	SWRCB	50	9	19
Clear Lake Watershed	91032(k)	CNRA	20	0.1	1
Salton Sea Management Program	91033(a)	DWR/CNRA	160	148	93
Salton Sea Conservancy or Salton Sea Authority	91033(b)	TBD	10	— ^b	—
Streamflow Enhancement Program			\$150	\$31	21%
Streamflow Enhancement Program	91040(a)	WCB	\$100	\$21	21%
Habitat Enhancement and Restoration Program	91040(b)	WCB	50	11	21
Other			\$1,295	\$252	20%
Groundwater management	91012(a)	DWR	\$386	\$10	3%
Multibenefit Land Repurposing Program	91013	DOC	200	12	6
Water reuse and recycling	91014	SWRCB	388	153	40
Water Storage Investment Program	91015	CWC	75	74	100
Brackish desalination, salinity management	91016	DWR	63	0.2	0.3
Water data management, stream gages	91017	SWRCB/DWR	15	1	7
Regional conveyance projects and repairs	91018	DWR	75	0.7	1
Water conservation—agricultural and urban	91019	DWR	75	0.3	0.5
Nature and climate education and research	91045	CNRA	20	0.1	1
Totals			\$3,800	\$1,074	28%

Upcoming Events

Women in Water Symposium
Potable Reuse Programs Panel
1:30-2:30pm



**8TH ANNUAL
WOMEN IN WATER
SYMPOSIUM**

Save the Date!
Thurs., March 20, 2025
Cuyamaca College

**WOMEN
IN
WATER**

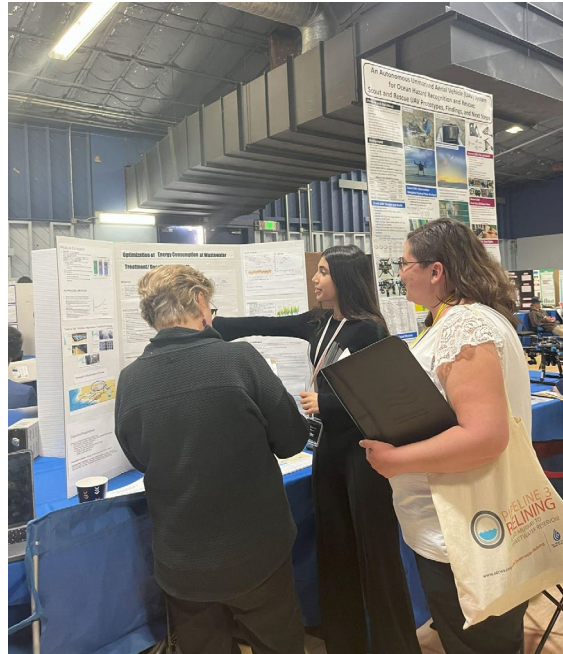
**"Riding
Your
Career
Wave"**

 bit.ly/wiw-symp

WaterReuse Events

Greater San Diego Science and Engineering Fair

- March 12 11:30am - 2:30pm
- Balboa Park Activity Center
- 2145 Park Blvd, San Diego,
CA 92101
- See Antonia if you are
interested in volunteering!



WaterReuse Events

2025 Conferences

We are hosting - located in San Diego!

2025 WaterReuse California

- September 21-23, 2025
- Town & Country Hotel
- Call for abstracts is open! Due April 4

Please let us know

*(WaterReuseSD@gmail.com) if you are
interested in volunteering for the conference!*



2025 WaterReuse National

- March 16-19, Tampa FL
- Call for abstracts is closed

City of Escondido Membrane Filtration Reverse Osmosis Facility for Agriculture

Angela Morrow, City of Escondido

Jocelyn Lu-Morinishi, Brown & Caldwell

WATERUSE SAN DIEGO –
MARCH 5, 2025



Progressive Design-Build for the Membrane Filtration Reverse Osmosis Facility for Agriculture Project



Quality Water
DEEP ROOTS

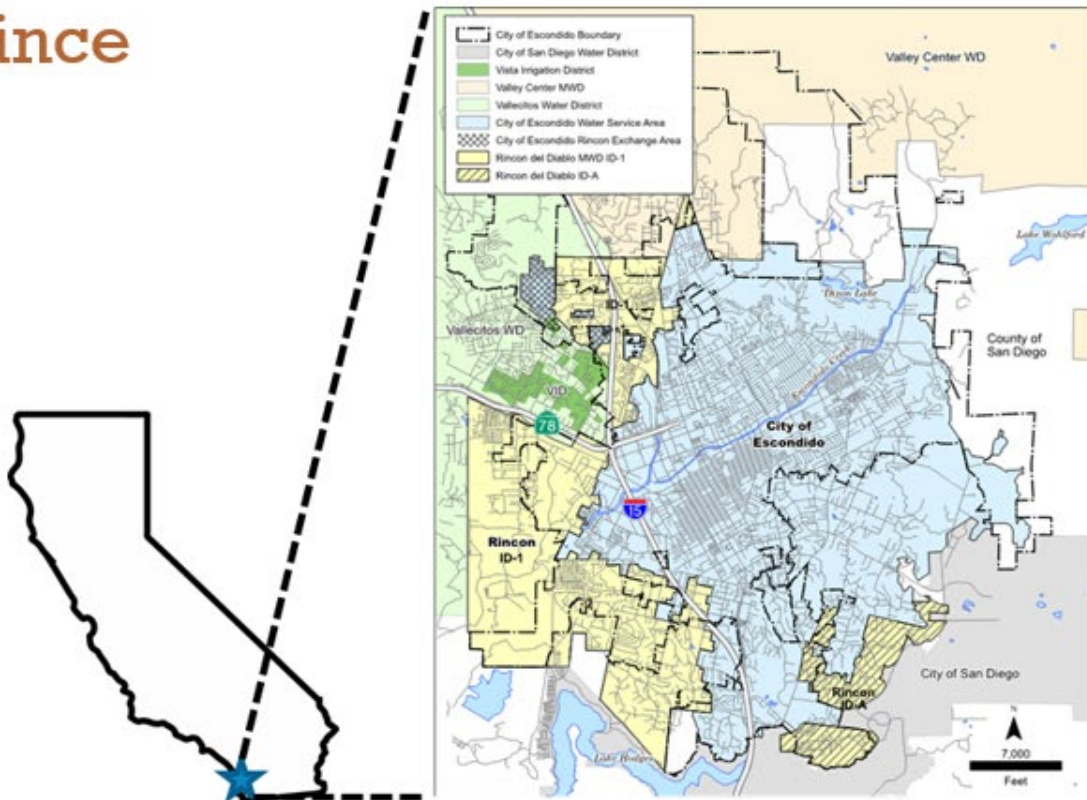
FILANC + **Brown and Caldwell**



Serving Escondido since 1888

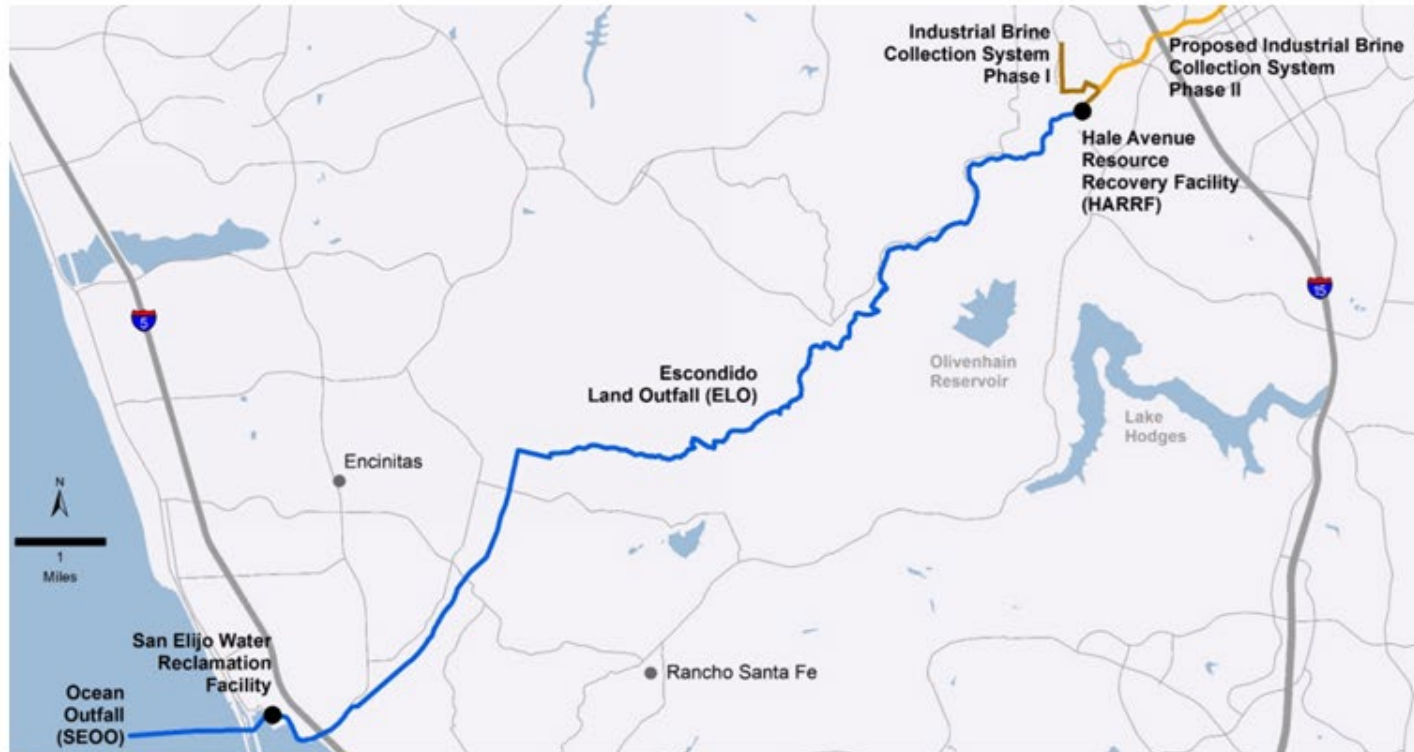
Escondido Utilities Department does the following:

- **Water** serves ~ 150,000 people from Escondido-Vista WTP
- **Wastewater** serves ~142,000 people through the Hale Avenue Resource Recovery Facility (HARRF)
- **Recycled water** HARRF designed to produce up to 9 mgd of Title 22 recycled water





Offsetting an outfall that was reaching capacity





Partnering with the agricultural community

- Signed agreements with agricultural users
- 1.2 mg repurposed hilltop reservoir
- Reduced chloride for avocados and other sensitive crops
- Contracted water rate structure
- Drought tolerant water supply
- Backup raw and potable water connections

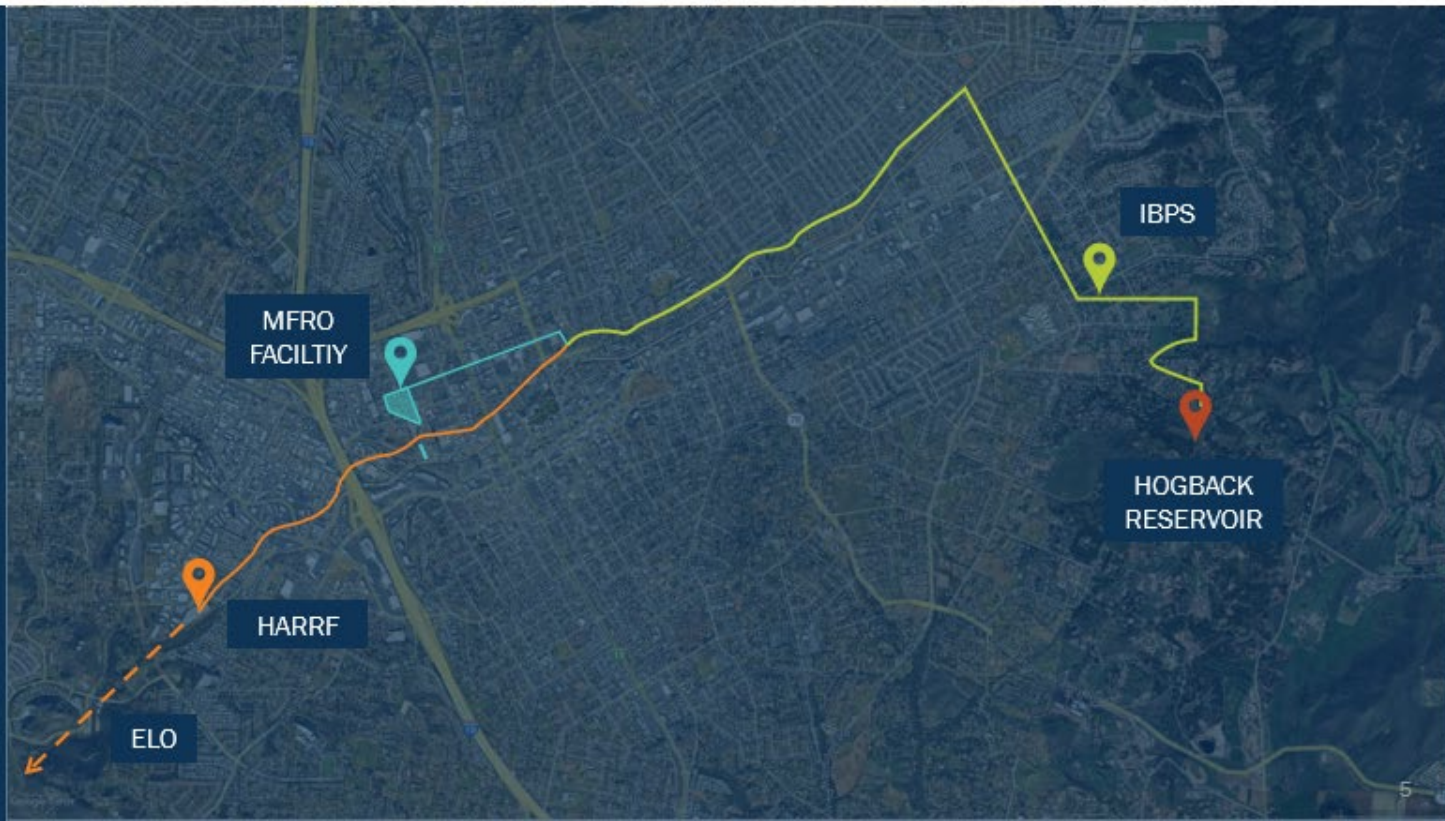




Investing in MFRO for Agriculture for the community

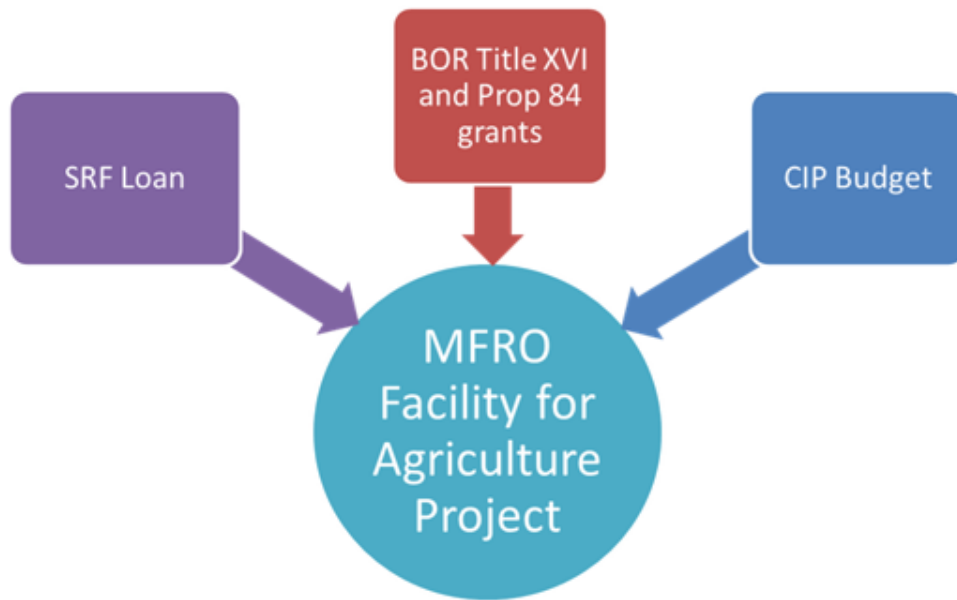
Benefits include:

- Offsetting the outfall could save up to \$1B of ratepayer money
- Expanding beneficial reuse for the local agricultural community
- Improving local water resiliency by offsetting potable use





Funding through multiple sources



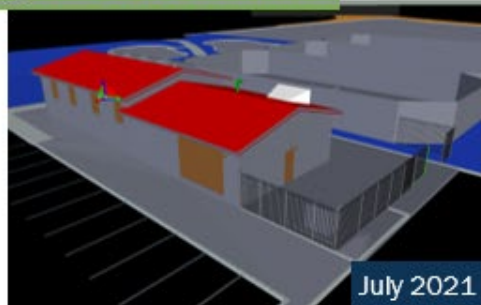


Delivering through progressive design-build

MFRO: Design → Construction

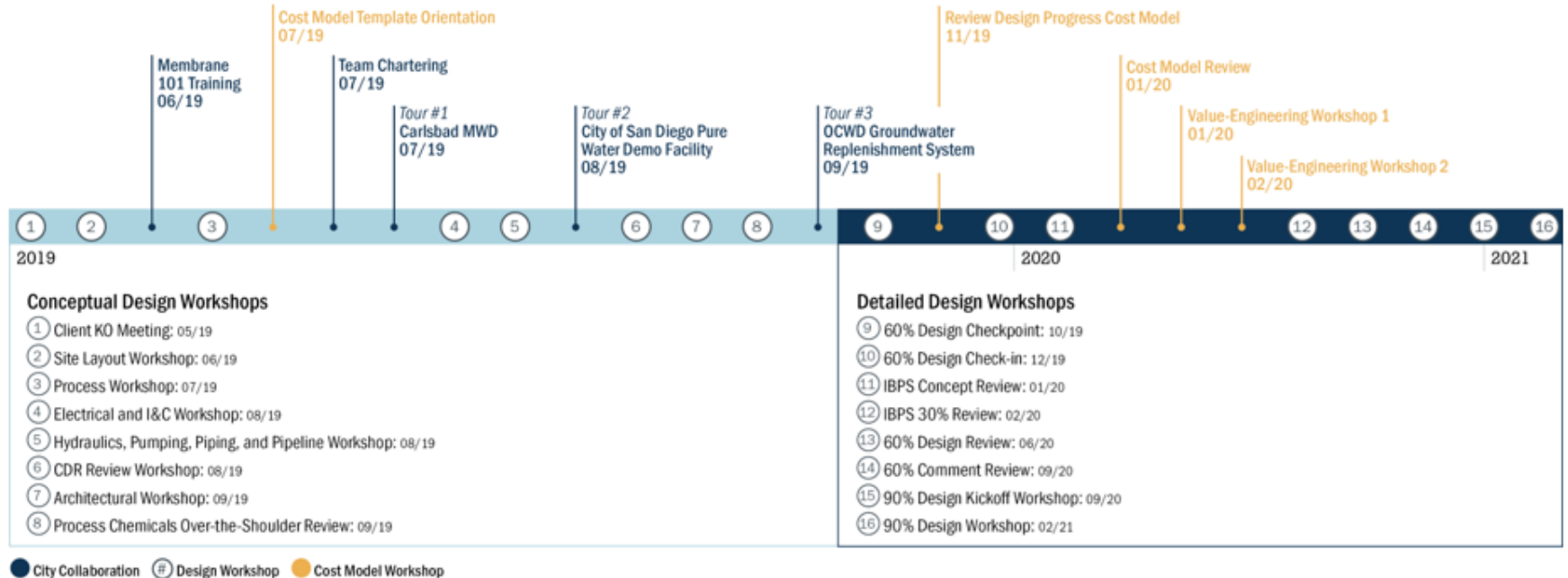


IBPS: Design → Construction





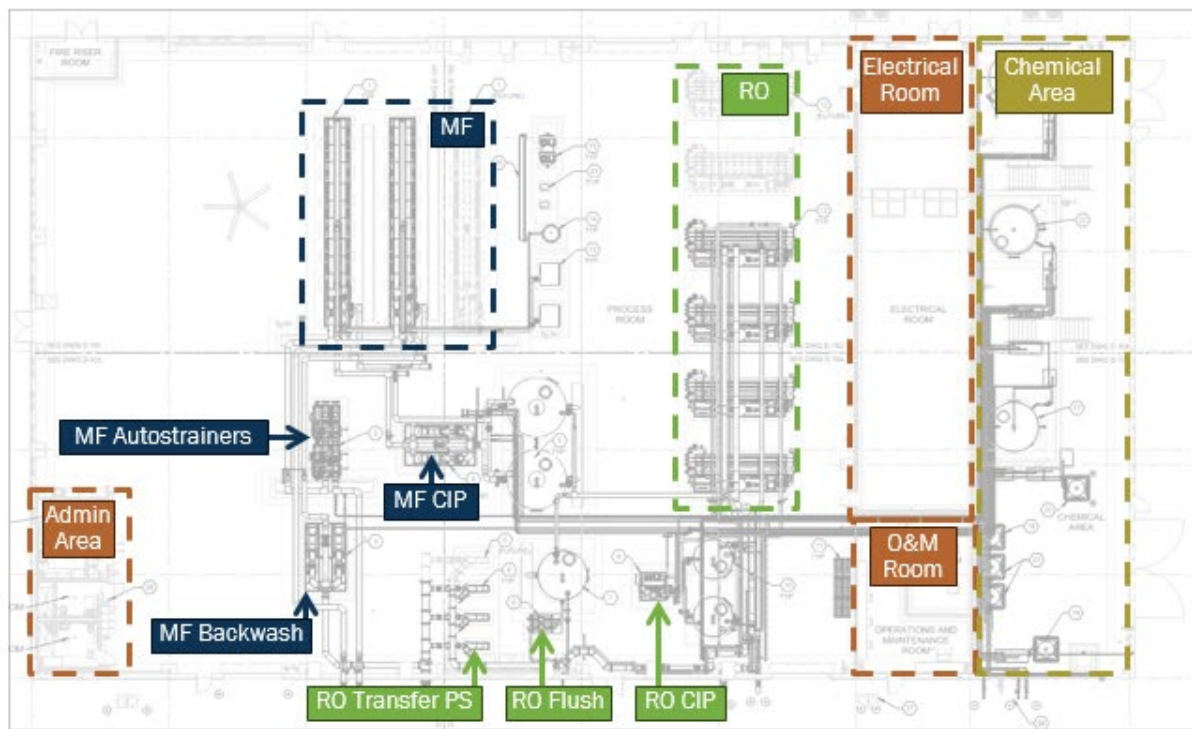
Collaborating as one team to enable cost-informed design decisions





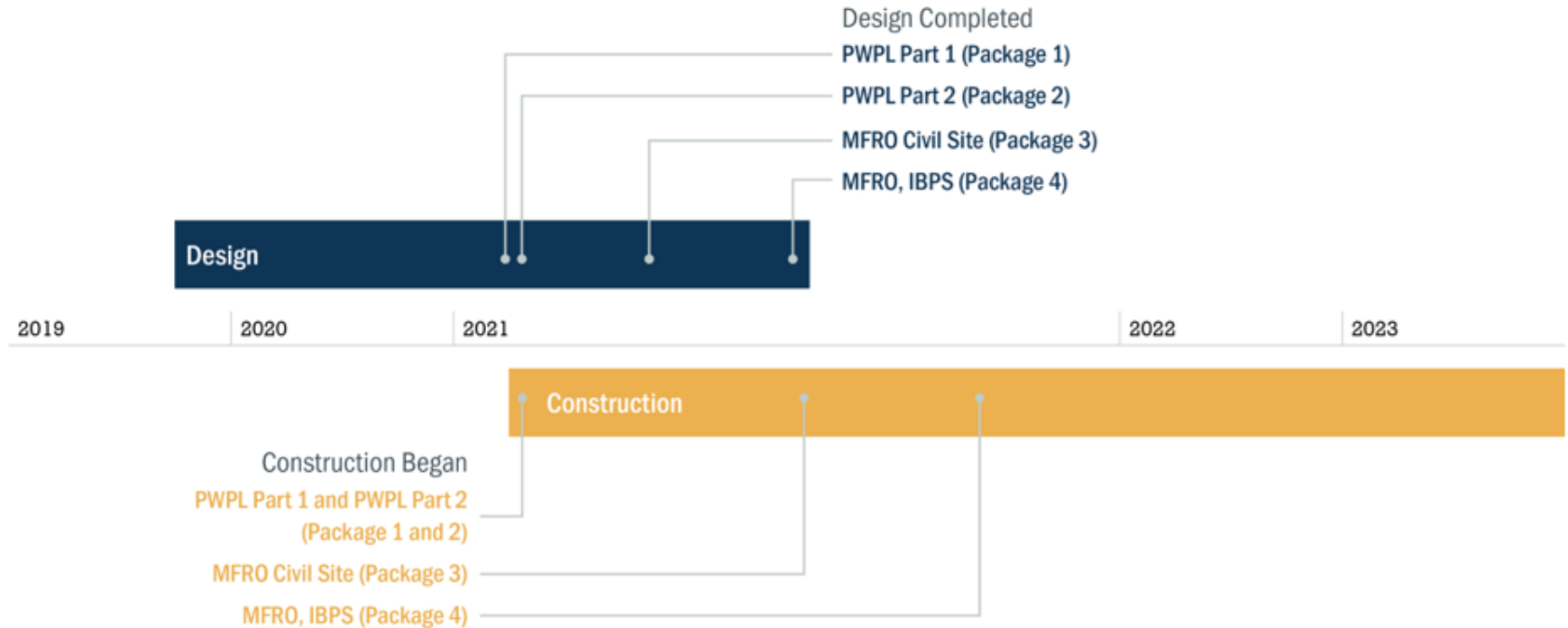
Treating wastewater through the MFRO Facility

- Sized to produce **2 mgd of RO permeate**, with provisions to expand to 3 mgd in the future
- Controls target **chloride concentration < 80 mg/L** for farmers through 55% blend of RO permeate and Title 22 tertiary effluent





Accelerating the schedule through parallel efforts

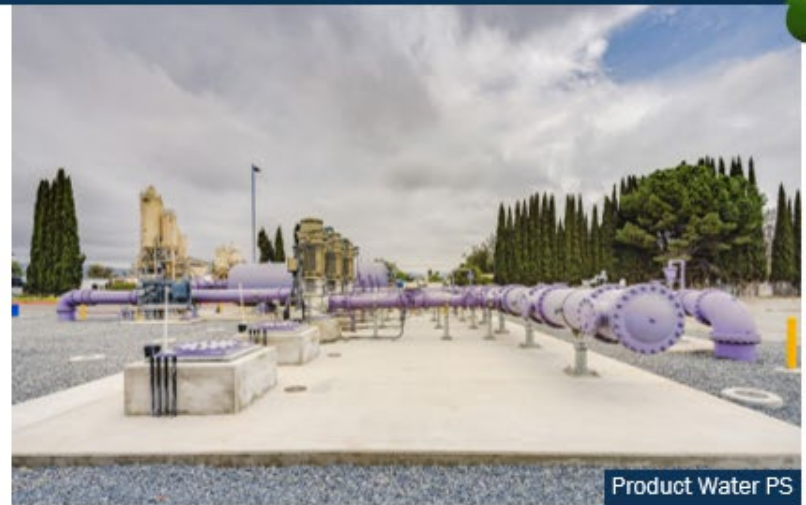




Successfully constructing the MFRO Facility

- Construction took 2 years (2021 – 2023), weathering COVID and supply chain issues
- Provided skid-mounted equipment, **accelerating construction and streamlining start-up**
- Long-term O&M was prioritized during design, providing ample space for O&M activities





Building ancillary systems to support MF & RO

- Outdoor chemical area for 7 different chemicals
- Product water pump station (2 + 1) at 250 hp each
- **Dual-purpose** inter-process tank at 259,000 gallons and product water tank at 1 MG





Designing IBPS with community in mind

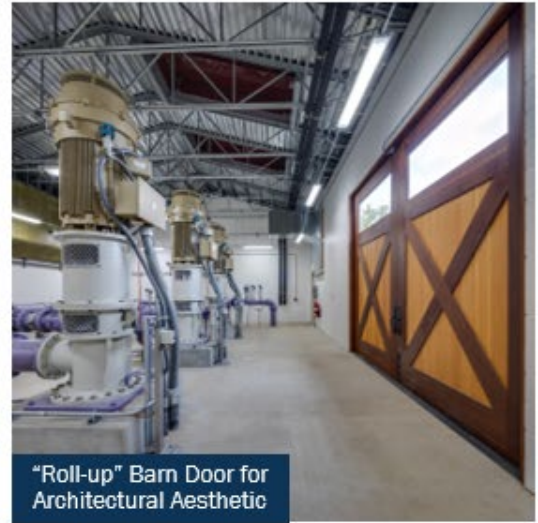
- Located in the parking lot of an existing Mountain View Park, requiring **close coordination with surrounding residential community & park patrons**
- Design included noise mitigation measures and thoughtful architectural aesthetics





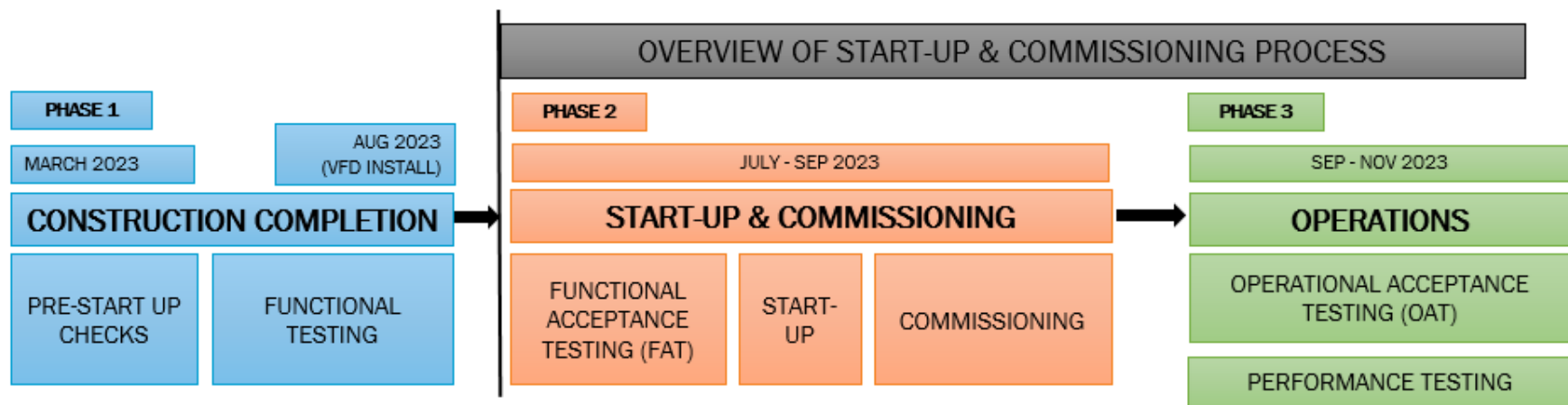
Integrating IBPS into a public park

- IBPS pumped water from the MFRO Facility to Hogback Reservoir and **provided local community benefits**
- Tennis courts were open during construction, 2 new ADA-compliant bathrooms were added, and parking spots were replaced in a 1:1 ratio





Planning for start up and commissioning





Learning through hands-on experience



- Installed a surge pilot system on the influent PRVs
- Managed water quality issues in the Inter-process Tank
- Used UF to flush through RO feed bypass until acceptable water quality for RO



Celebrating milestones together



FILANC + **Brown and Caldwell**



Membrane 101 Training – June 2019



Groundbreaking – March 2021



City Beam Signing – March 2022



Handing over the Keys – Nov 2023



Ribbon Cutting – Aug 2024



WRCA RW Agency of the Year – Sep 2024



**Next: Join us for
a tour of
Escondido's
MFRO Facility!**