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OC SAN
ORANGE COUNTY SANITATION DISTRICT

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DSWA
DELAWARE SOLID WASTE AUTHORITY

**LOS ANGELES COUNTY
SANITATION DISTRICTS**
Converting Waste Into Resources

Stanley Consultants

**LA
DWP** Los Angeles
Department of
Water & Power

We will begin our presentation in a few minutes...



Leadership and Excellence in Environmental Engineering and Science

Driving Innovation and Sustainability Through Asset Management

Rob Thompson
General Manager

American Academy of Environmental Engineers
and Scientists

August 20, 2025

OC SAN
ORANGE COUNTY SANITATION DISTRICT

Our Service Area

479

square miles

~190

million gallons per day

2.6

million population

20

cities

4

special districts

1

representative from the Orange County Board of Supervisors

388

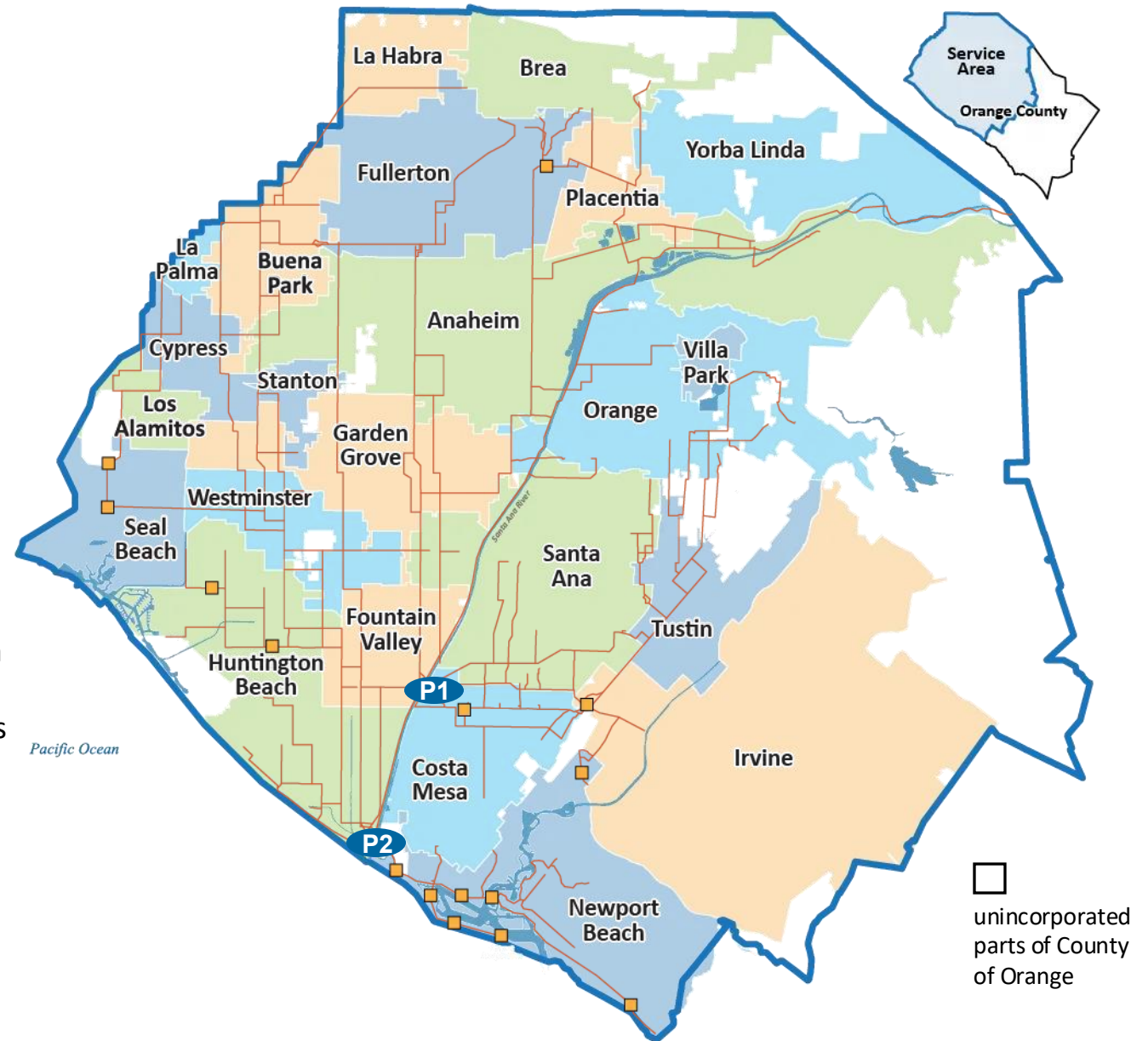
miles of sewers

2

reclamation plants

15

pump stations



Our Facilities



OC San Headquarters
Fountain Valley



Reclamation Plant No. 1
Fountain Valley



Reclamation Plant No. 2
Huntington Beach

Comparing Sewer Pipelines

Pipeline
Maintenance
Responsibilities:

- **Private Lateral**
Home/Business Owner
- **Local Sewer**
City or Local Agency
- **Regional Trunkline**
Wastewater Agency

4"

**Private
Lateral**

4 inch
diameter

12"

**Local
Sewer**

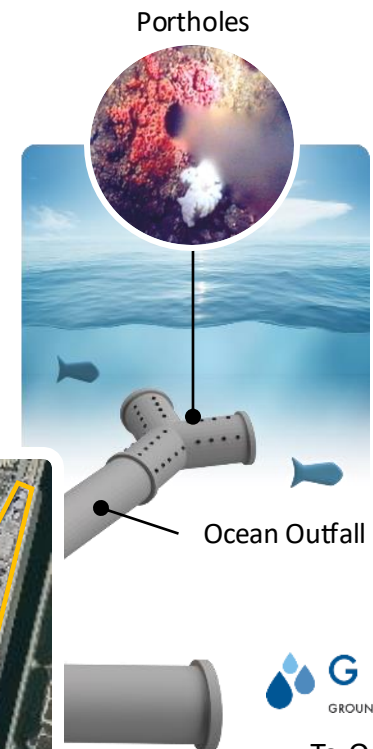
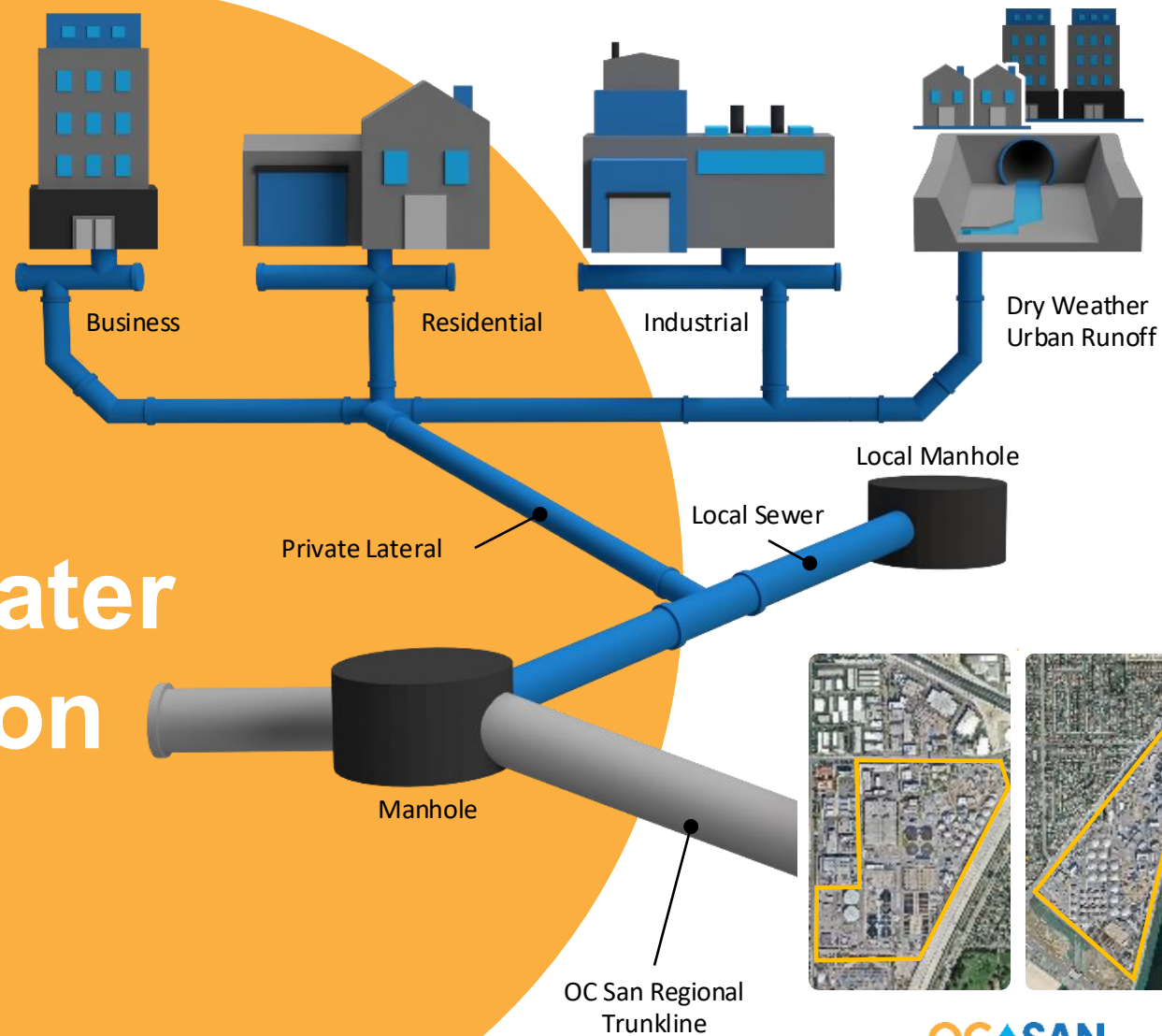
4-12 inch
diameter



**OC San
Regional Trunkline**

up to 10 ft diameter

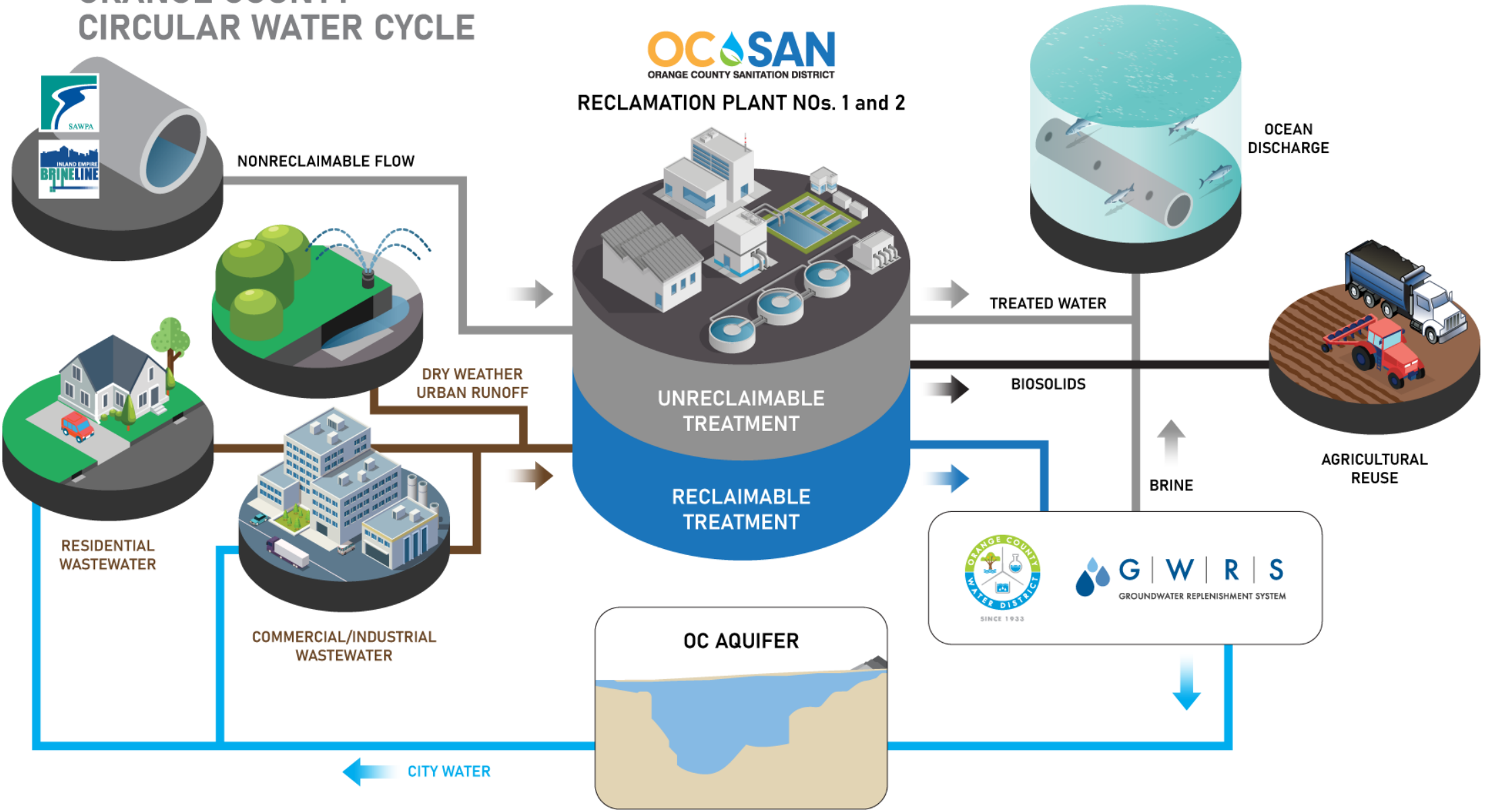
Wastewater Collection System



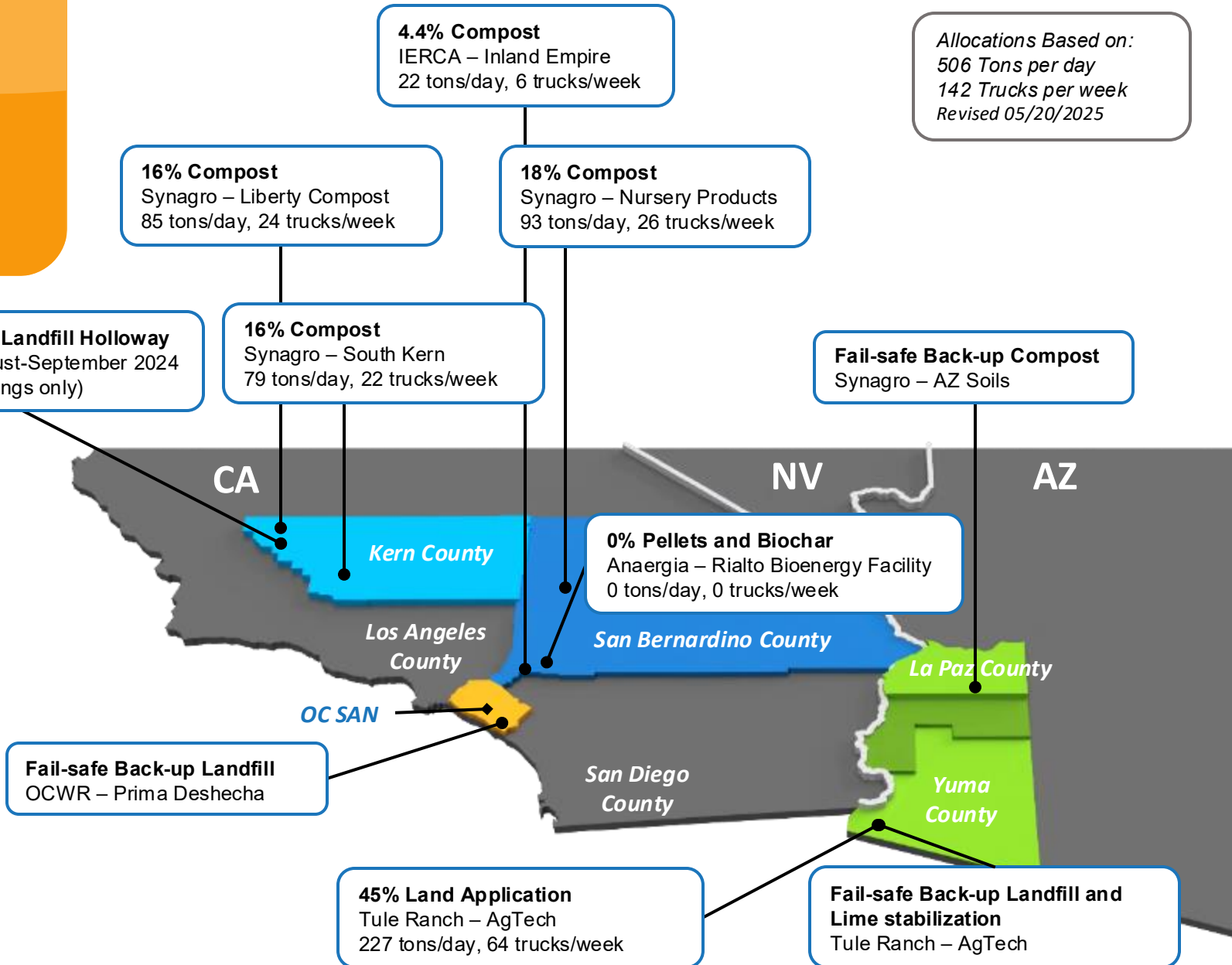
To Orange County
Water District

OC SAN
ORANGE COUNTY SANITATION DISTRICT
Reclamation Plants

ORANGE COUNTY CIRCULAR WATER CYCLE



Biosolids Management



Treatment Challenges

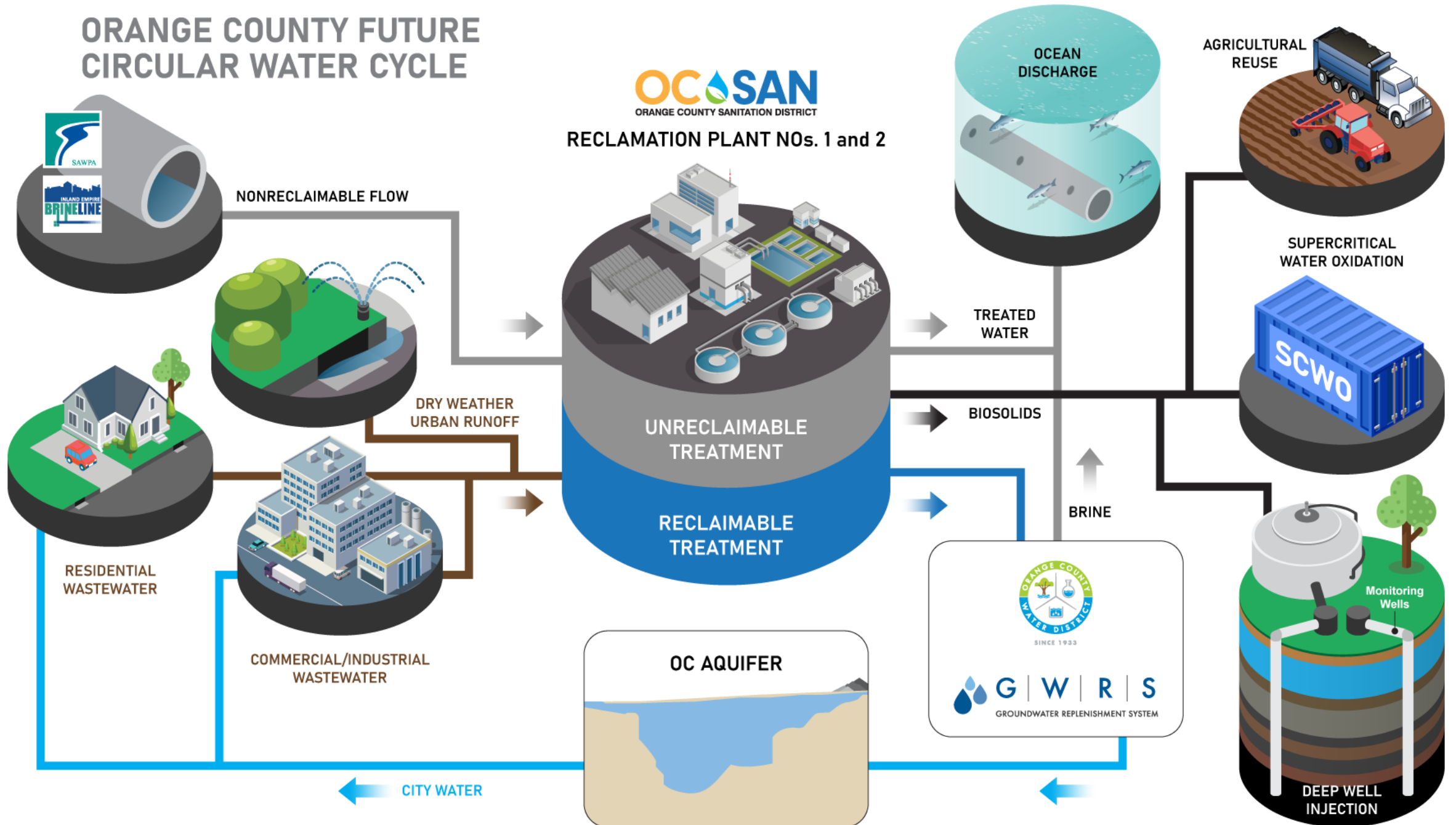


- PFAS
- Microplastics
- Methane
- Brine
- Electric Haul Trucks

ORANGE COUNTY FUTURE CIRCULAR WATER CYCLE



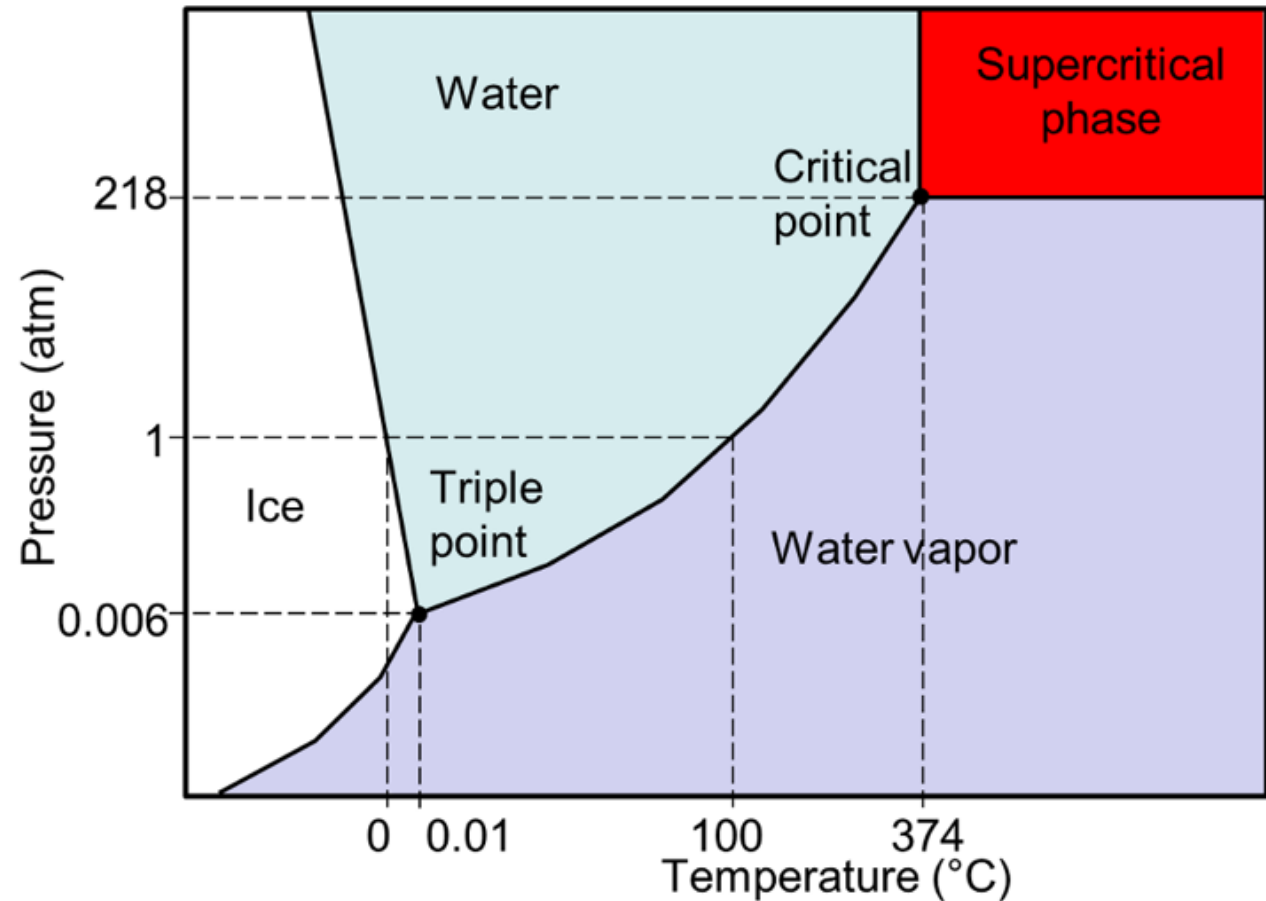
RECLAMATION PLANT NOs. 1 and 2



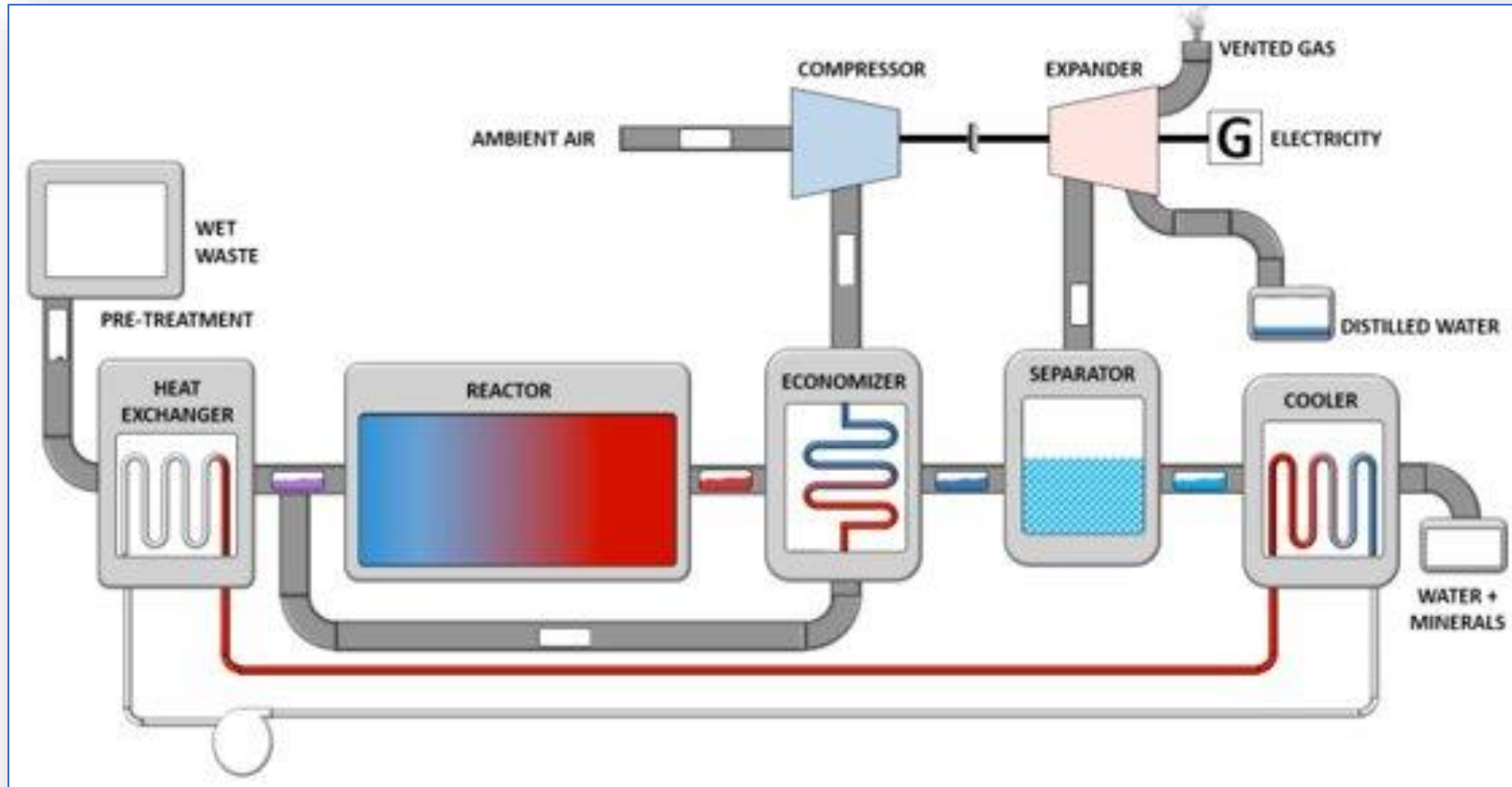
What is Supercritical Water

Properties of H₂O change significantly above:

- 218atm (3200 psi)
- 374C (705F)



Tomorrow's Solids Solution



OC San and 374Water[®] have partnered to build a six-ton-per day demonstration project called AirSCWO 6. This process uses high temperature and pressure to oxidize and break down complex compound materials like PFAS.

The Process...

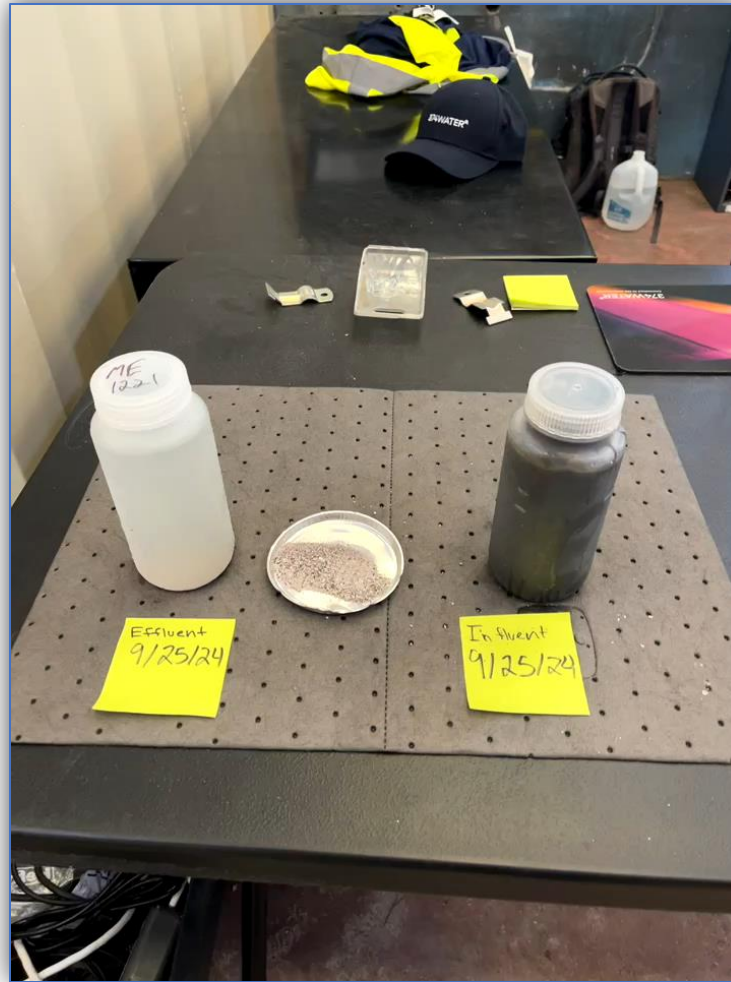


Sludge Cake to the Preprocessing Unit



Preprocessed Sludge

The Process...



Effluent/Minerals/Influent

What's Left



Clean Gas Effluent



Effluent Water After Processing

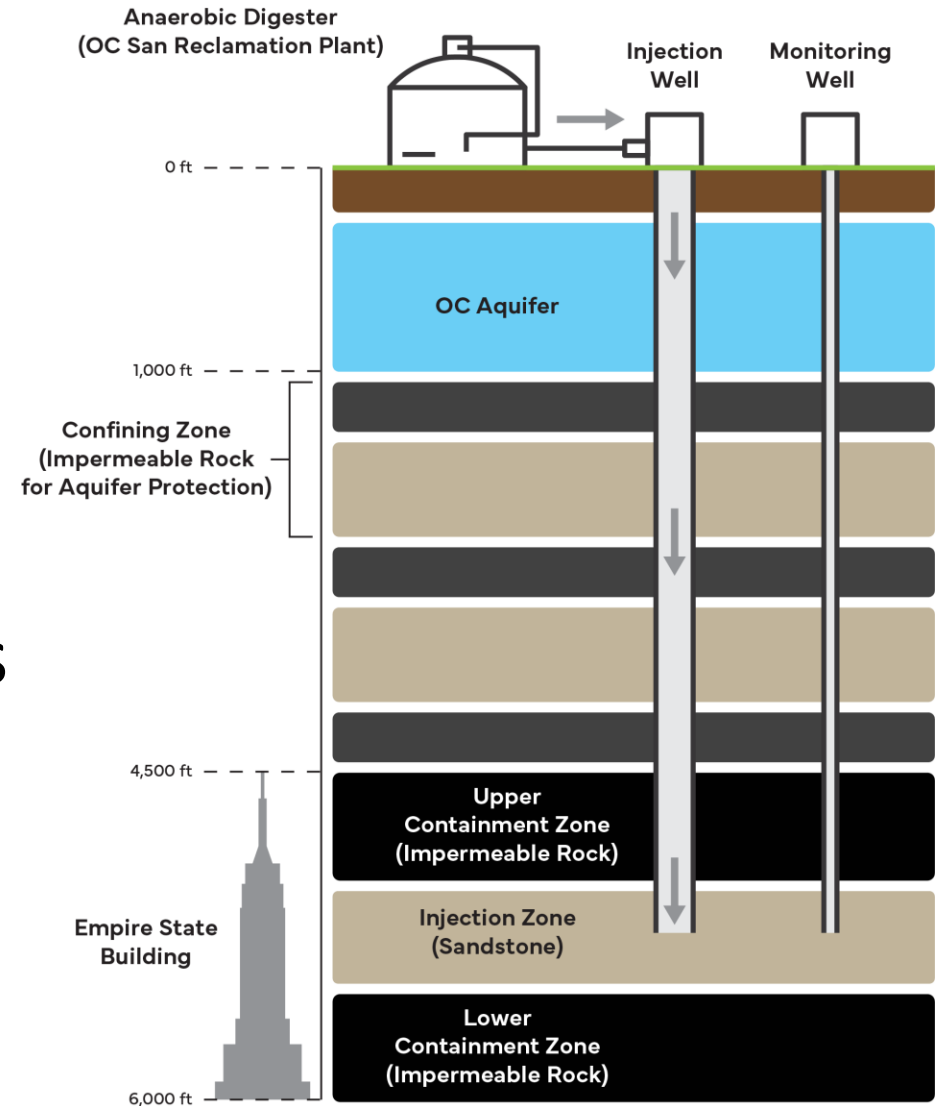
Next Steps...

- Complete Factory Testing (Fall 2025)
- Install and operate at OC San (2025-26)
- Investigate 30 ton/day unit with energy recovery.
- How can we concentrate problem compounds?
- What path do we take to a 100 ton/day unit?
- What else might SCWO help with?
 - Leachate
 - Food waste
 - GAC/Ion Exchange Resin



Deep Well Injection

- Reduce/eliminate transport costs/carbon
- Reduce treatment costs
- Reduce greenhouse gas emissions
- Long-term carbon sequestration
- PFAS/microplastic/pharmaceuticals forever home



Injection Profile

Pleistocene	LOWER	1,000'	Base USDW (Bottom of the Aquifer)
		2,000'	
		3,000'	
Upper Pliocene	PICO	4,000'	
Lower Pliocene	REPETTO	5,000'	UPPER CONFINING SHALES
		6,000'	INJECTION IN SANDSTONE LOWER CONFINING SHALES
Miocene	PUENTE	7,000'	

Permits

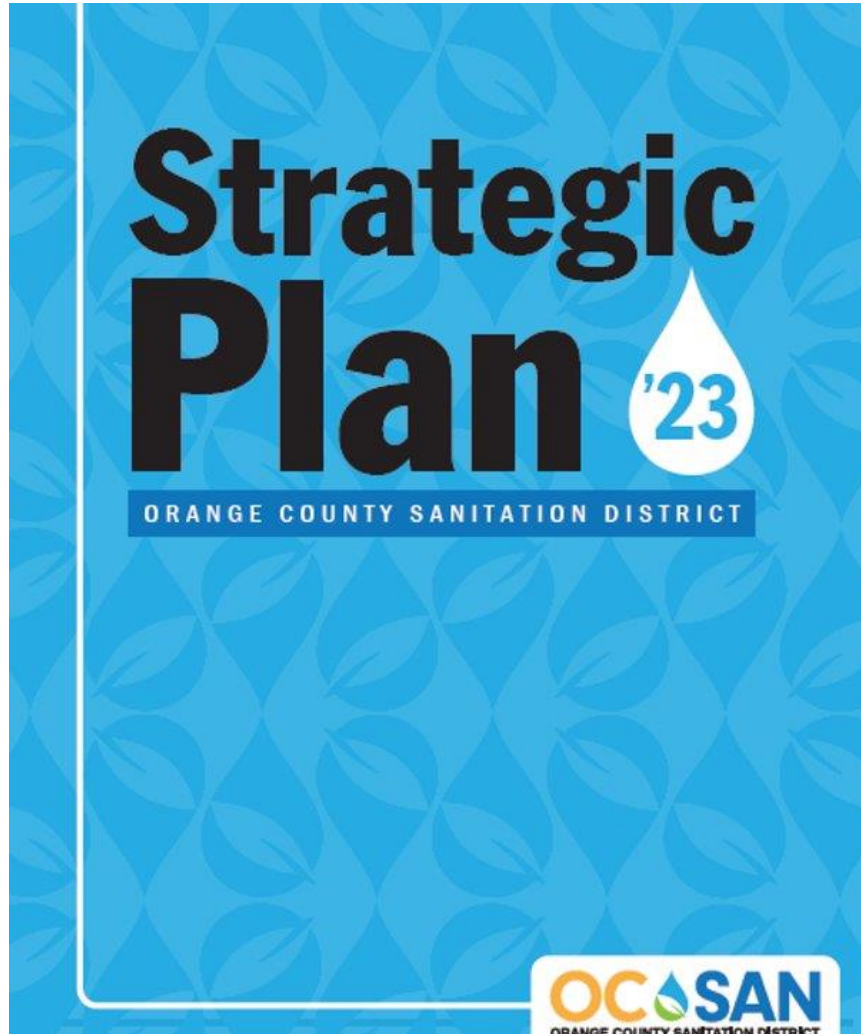
- EPA Underground Injection Control (UIC) Program
- City of Fountain Valley Well Permit
- CEQA
- Coastal Commission – Plant No. 2
- SCAQMD - odor scrubbers



Next Steps

- Evaluate DWI feasibility at Plant No. 2 (late summer 2025)
- Key decisions
 - Project implementation
 - Integration with existing biosolids management
- J-143
 - Issue a public outreach consultant contract
 - Procure Owner's Advisor/CEQA consultant (likely MND)
 - Procure Design Builder (mid 2026)
 - EPA permit
 - Well testing early activity (late 2028)

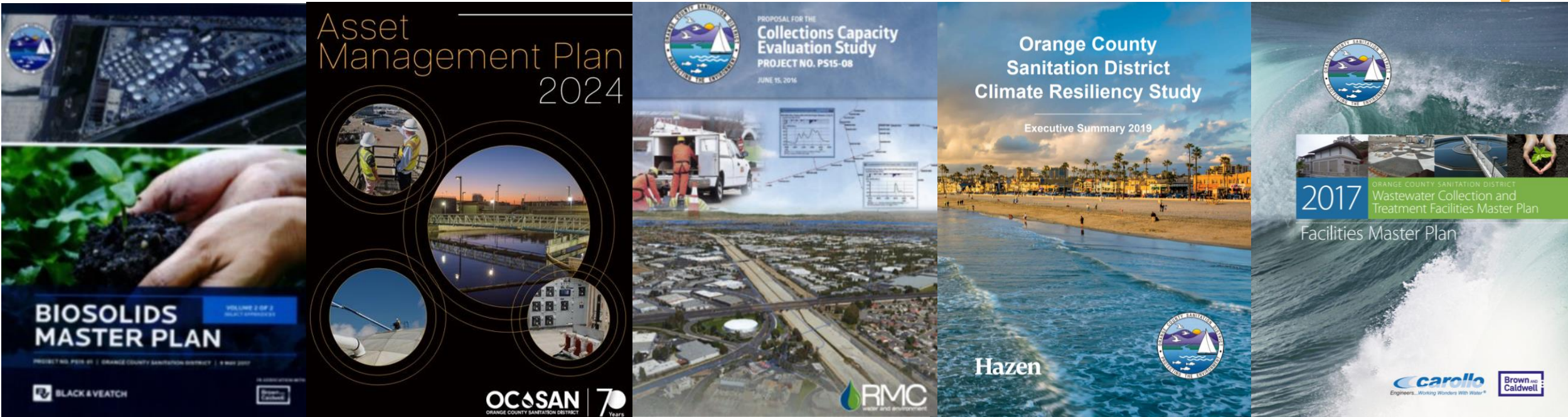
Intentionally Decide What To Do



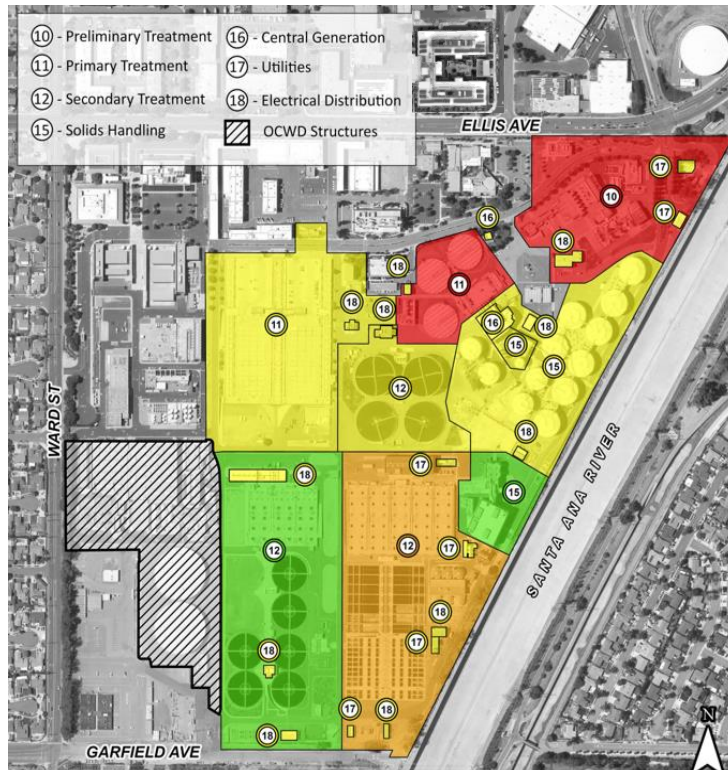
Policy Areas:

- Business Principles
- Environmental Stewardship
- Wastewater Management
- Workforce Environment

Intentionally Decide What to Do/Become



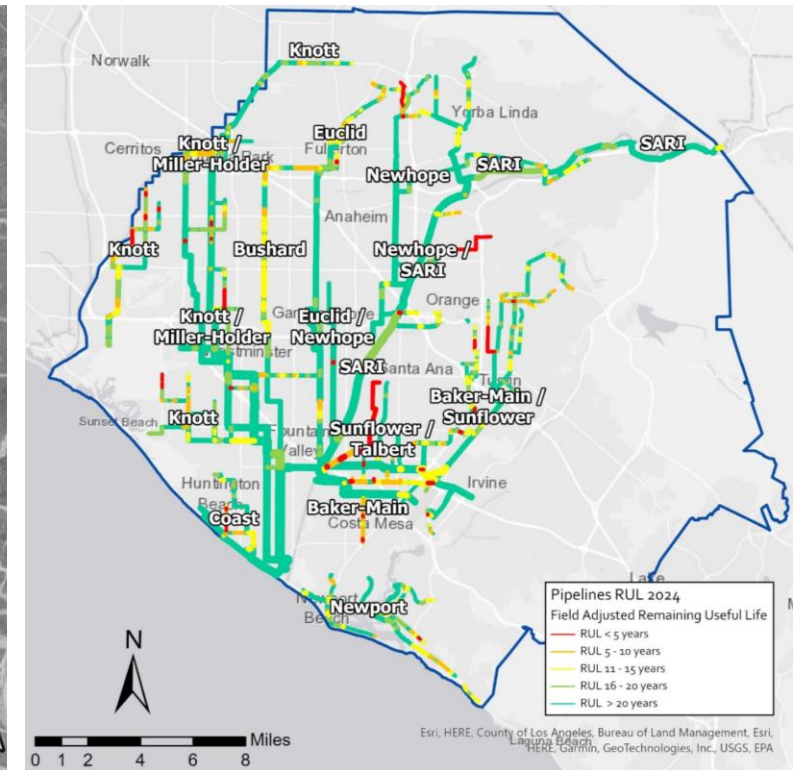
Every Process Renewed Every 25 Years



Plant No. 1

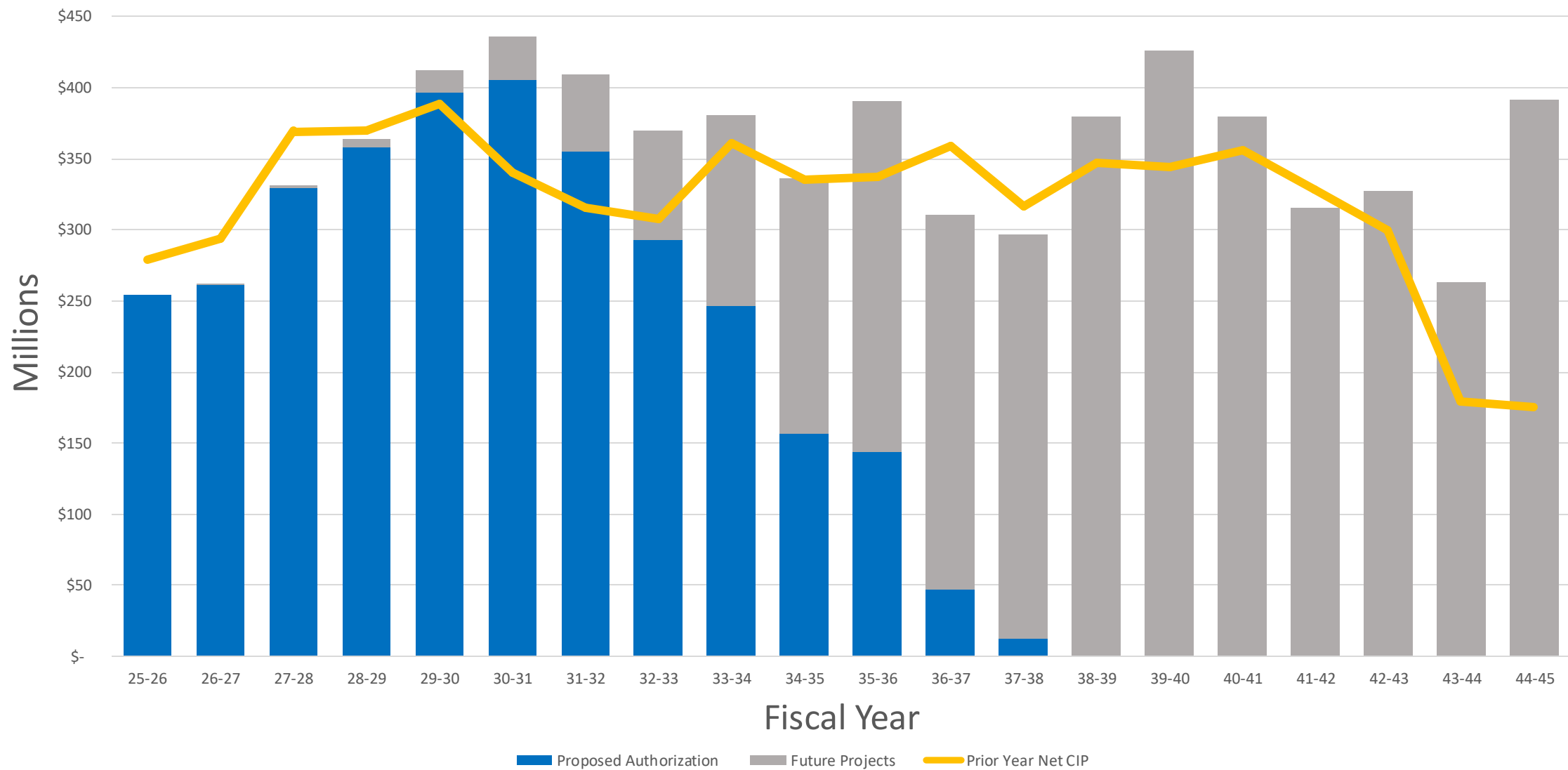


Plant No. 2

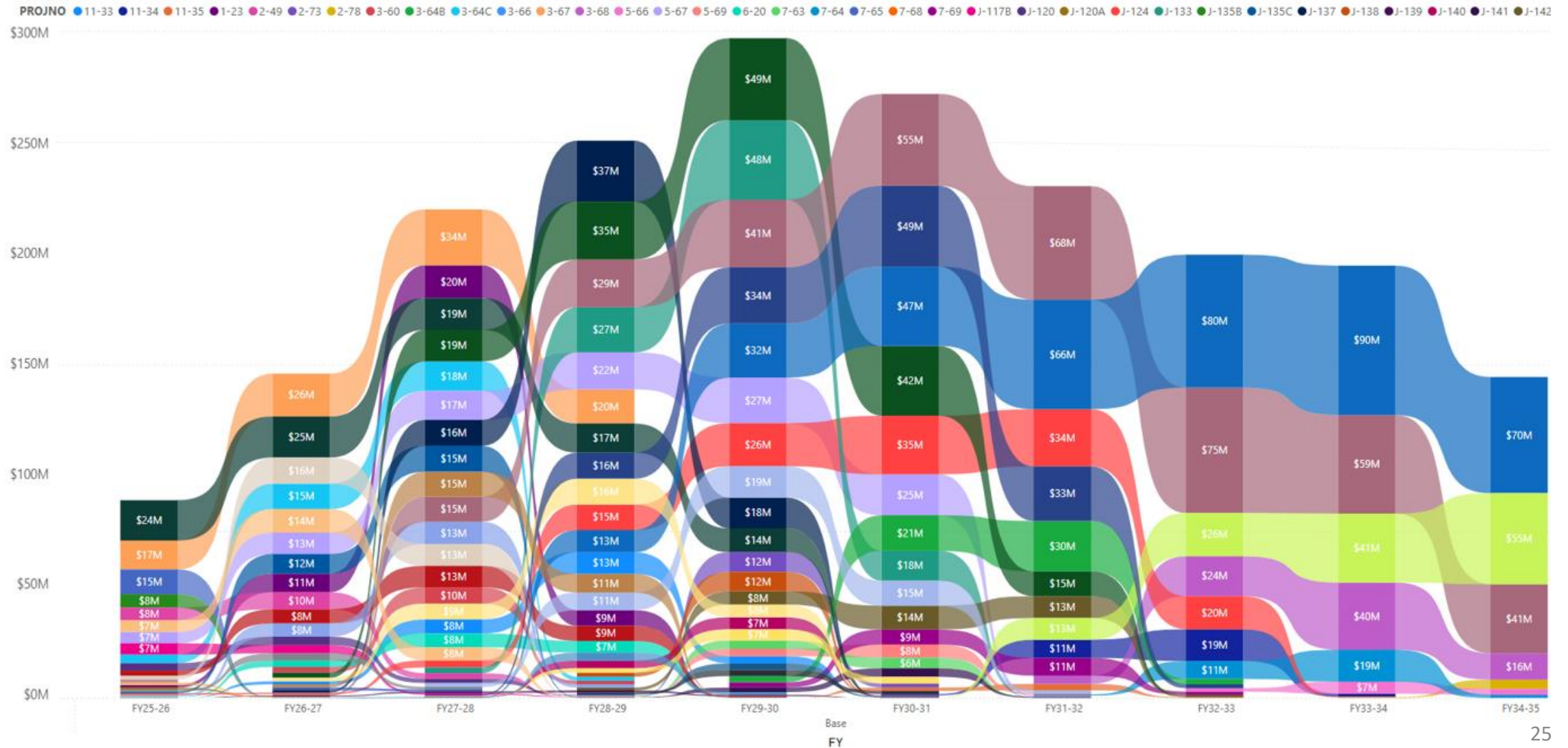


Collections

20-Year Net CIP: \$6.7B



CIP Construction Forecast by Project



Questions?



For More Information

Visit us at: OCSan.gov
Follow us: [@OCSanDistrict](https://twitter.com/OCSanDistrict)



Also on...



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Thank you for attending our event today.

Would you like to attend our next event?

We have several webinars happening in the near future. Go to <https://www.aaees.org/events> to reserve your spot.

Would you like to watch this event again?

A recording of today's event will be available on our website in a few weeks.

Need a PDH Certificate?

Board Certified Individuals will be emailed a PDH Certificate for attending this event within the next week.

Questions?

Email Marisa Waterman at mwaterman@aaees.org with any questions you may have.



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