



MAWAC-ENA WORKSHOP

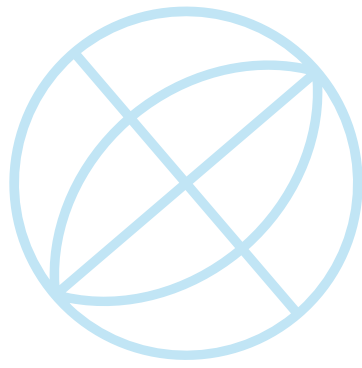
PARIS

November
2025



Felicia Marcus for Los Angeles
Mega-region
Paris
November 19, 2025

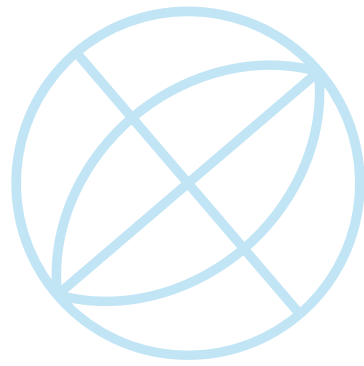
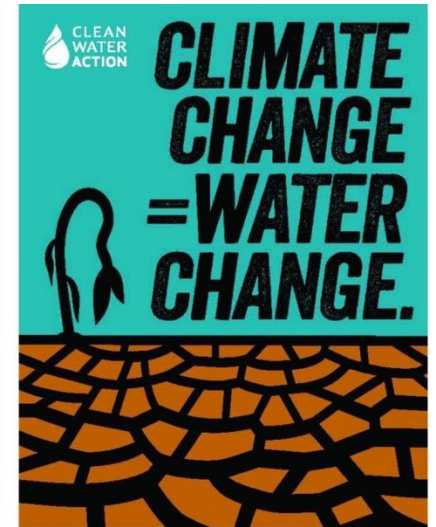
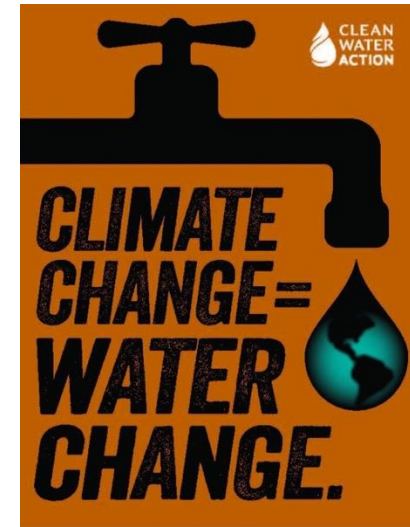
Los Angeles Mega-region Moonshot on Achieving a Circular Economy for Water



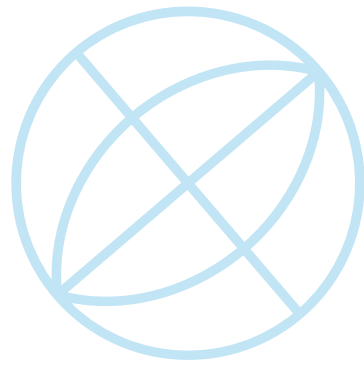
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Paris, France
November 19, 2025
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Overview

- Format:
 - Water Reuse on a dramatic rise in the US
 - The LA Mega-region story
 - And then to your questions



Climate change manifests differently in different places...*um...water!*



≡ 🔍 OPINION

The New York Times

GIVE THE TIMES

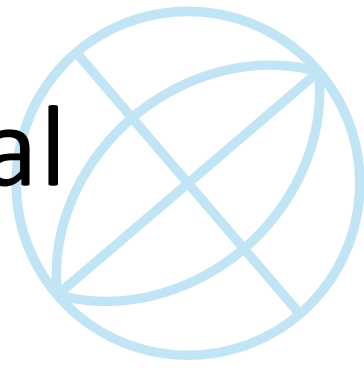
Account ▾

What to call climate change where you live

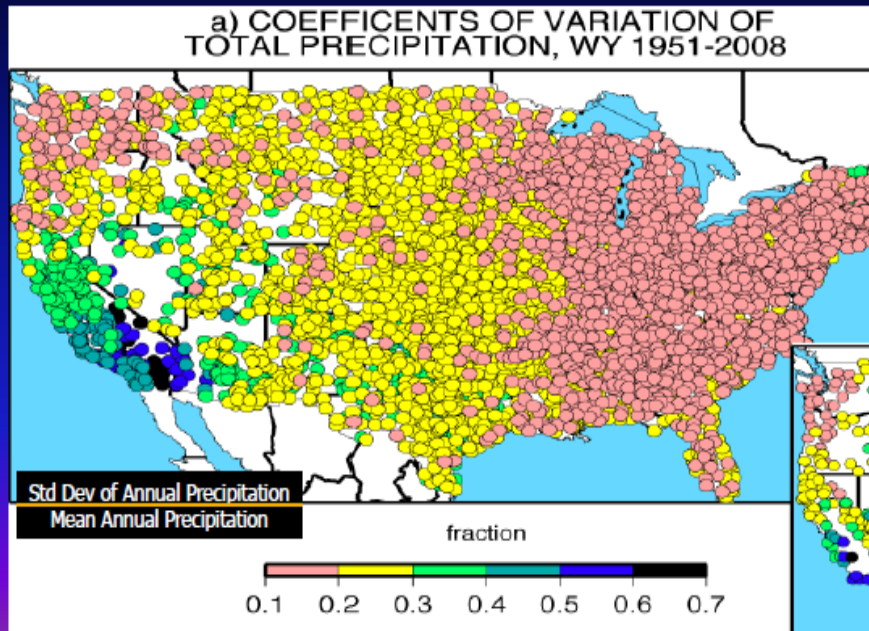
Intensity shows risk level from low (lighter) to very high (darker)



Another way to look at the key hydrological differences

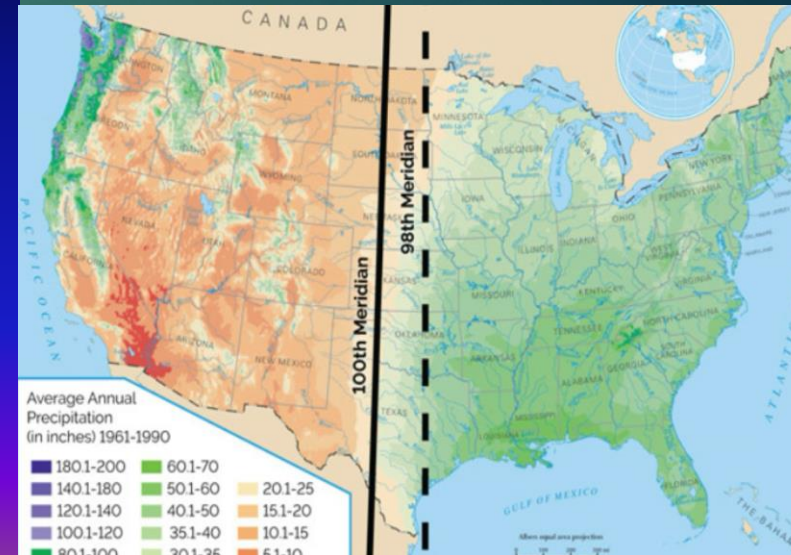


California's Precipitation is Uniquely Variable



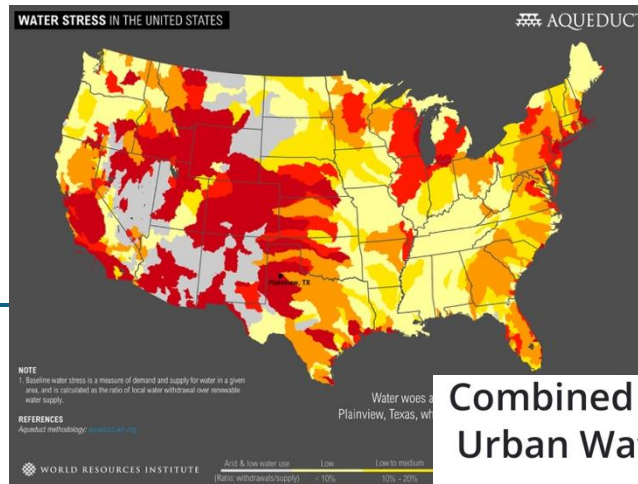
Dettinger et al, 2011

- ✓ Not just California's
- ✓ Impact of loss of snowpack severe to system dependent upon imported water



Drivers

Water stress



Combined Sewer Overflow: A Growing Urban Water Management Challenge



Combined sewer overflows/flooding

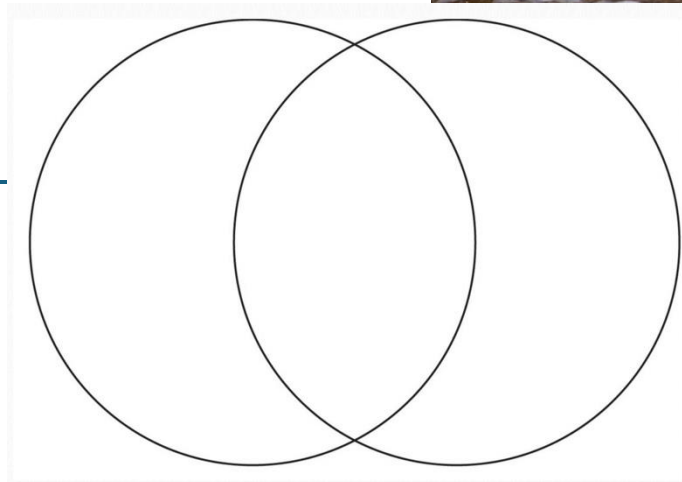


Nutrient limitations/algal blooms/ocean acidification



Groundwater overdraft/salinity incursion

Combined problems' solution/Two birds

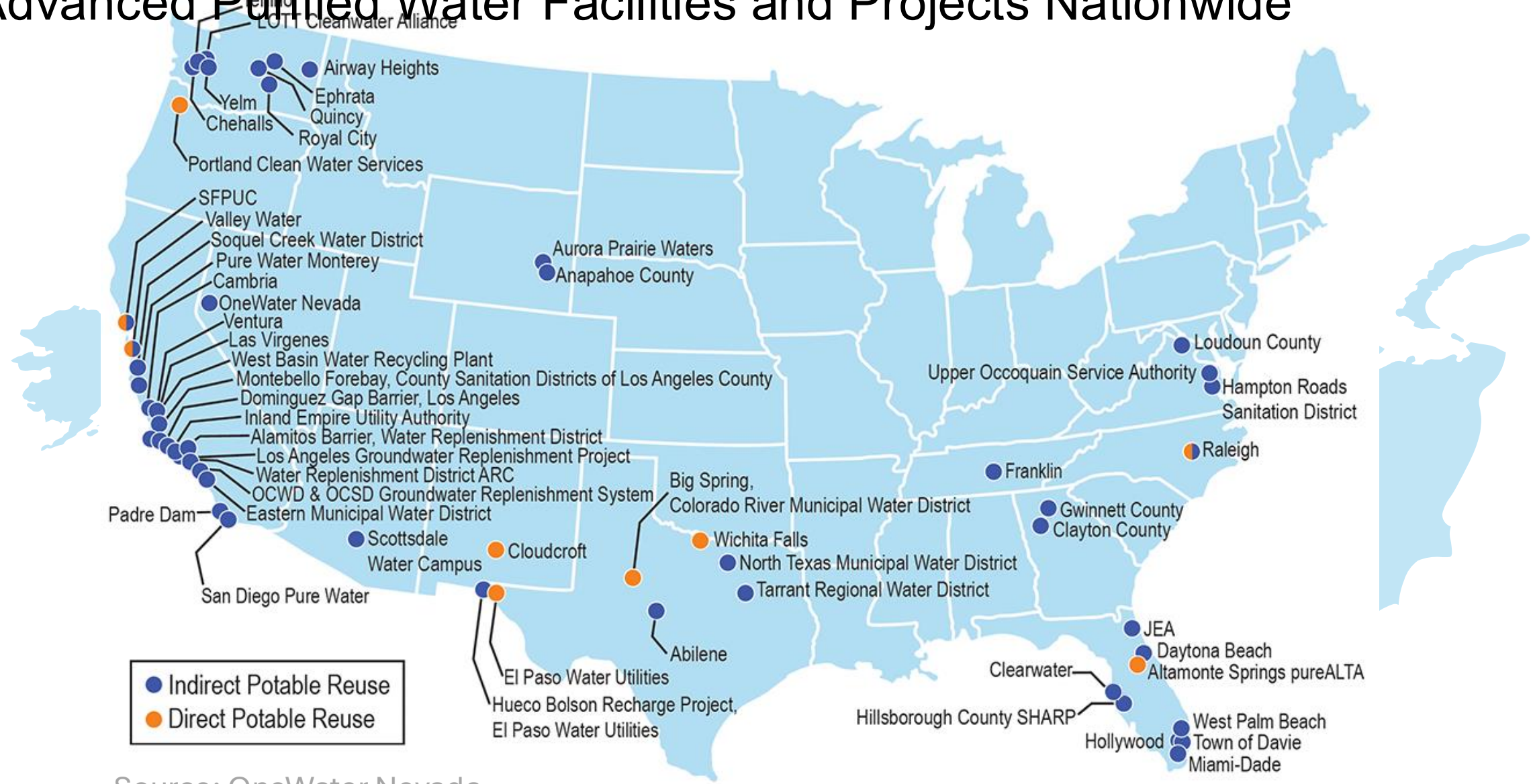


Recycling arc -- on steroids in California and beyond

- Explosion of interest in CA and across country for
 - Augment Water Supplies
 - Need to reduce nutrient loading so it becomes more economical to treat it a bit more to reuse it.
 - Need to remove inputs to combined sewer systems.
- State incentives in CA: Timeline, expert panels, public process. Predictability and scalability.
 - Statewide standards to aim for
 - GW recharge, ag use, IPR, DPR (2023), Onsite on the way.
 - Funding: Over \$2 billion in bonds, grants, loans



Advanced Purified Water Facilities and Projects Nationwide



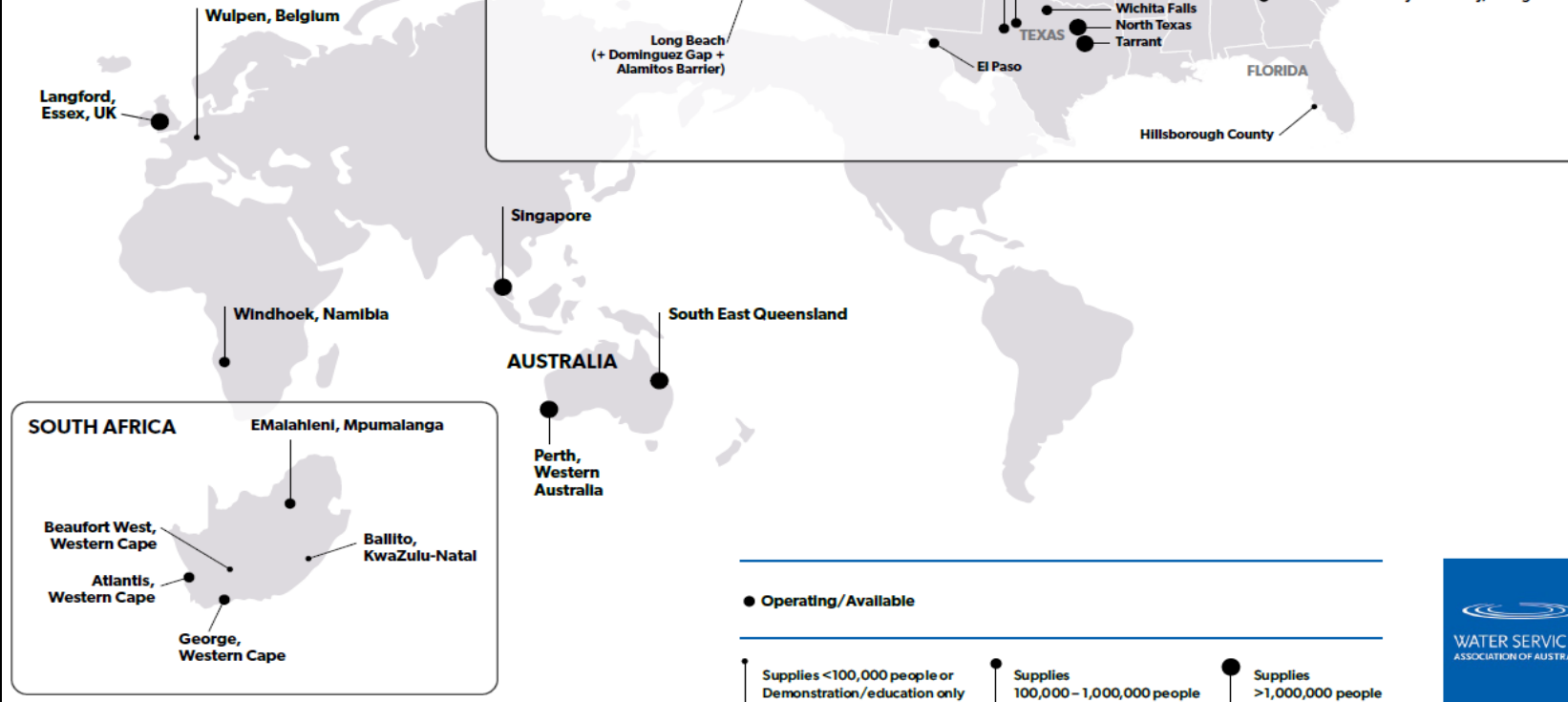
Source: OneWater Nevada

2025

Global purified recycled water locations

2010s

250315

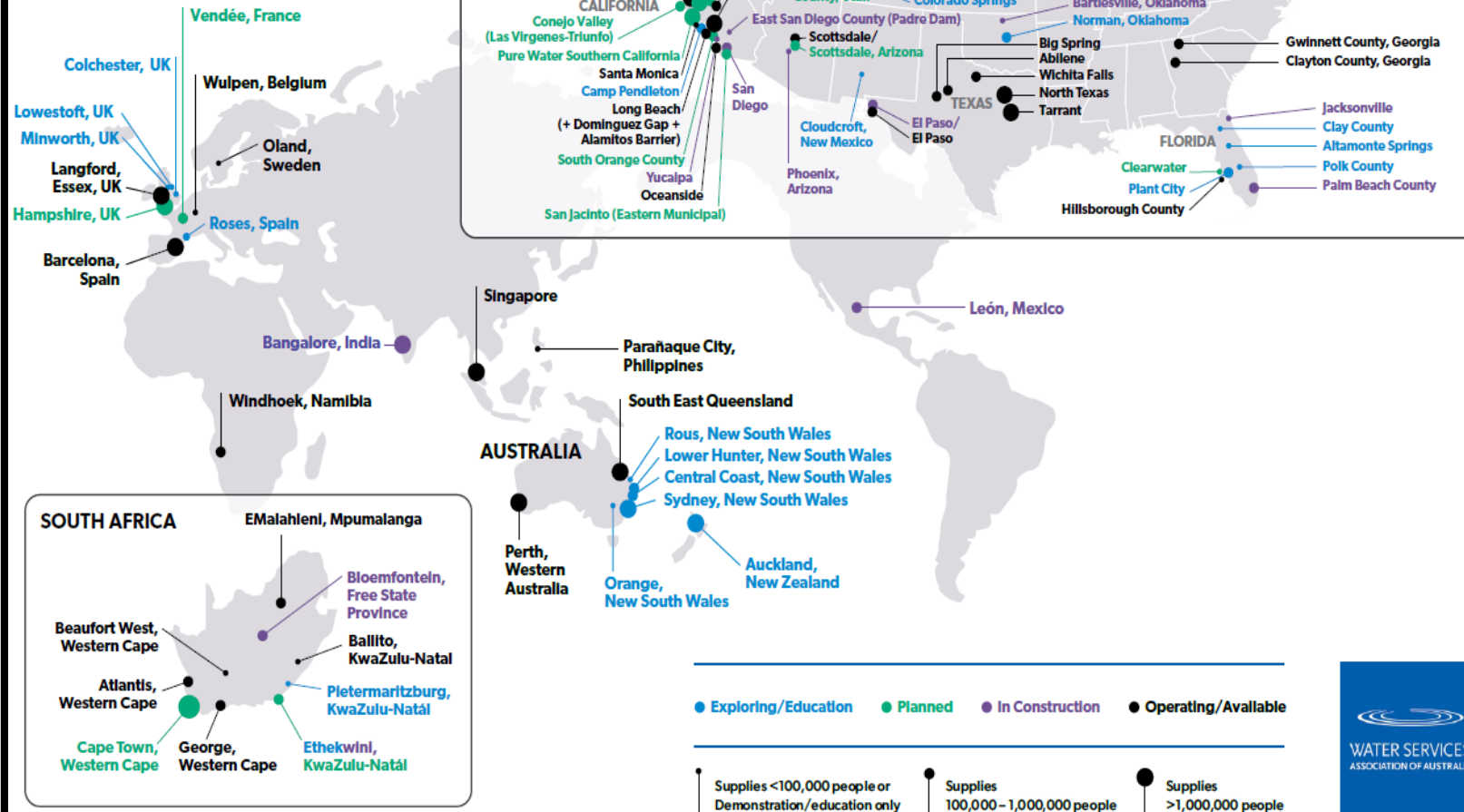


2040

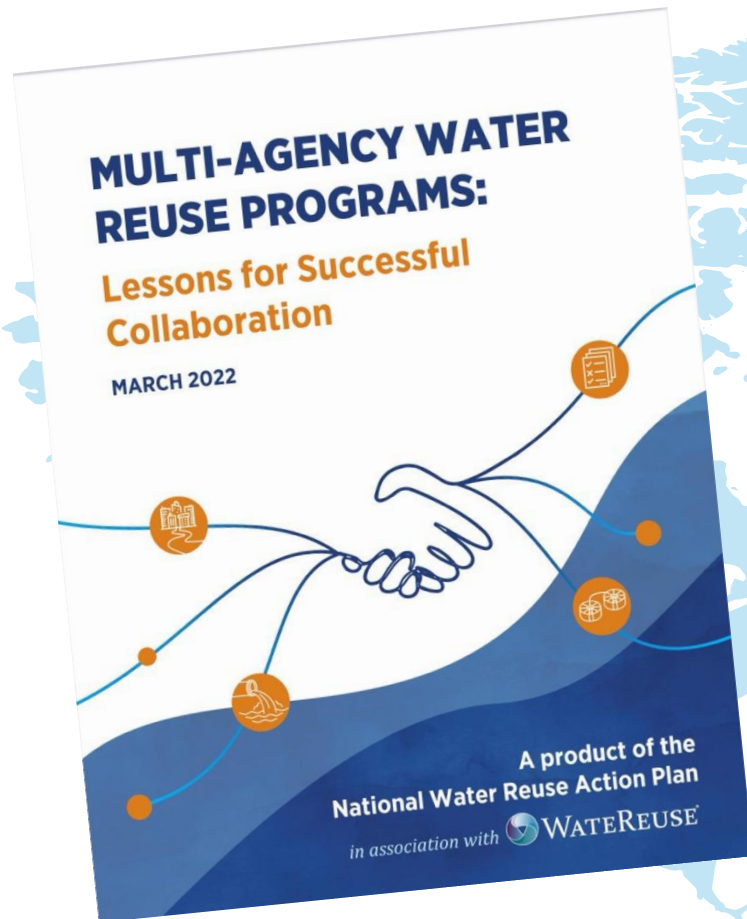
Global purified recycled water locations

2040s/Unknown

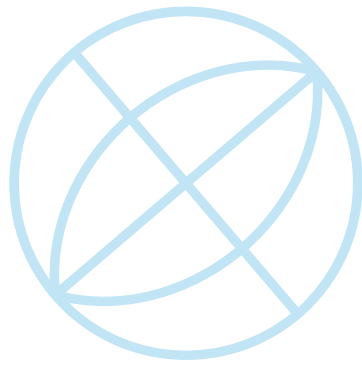
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Resources are out there...



Audacious Plans build on partnerships, including academia



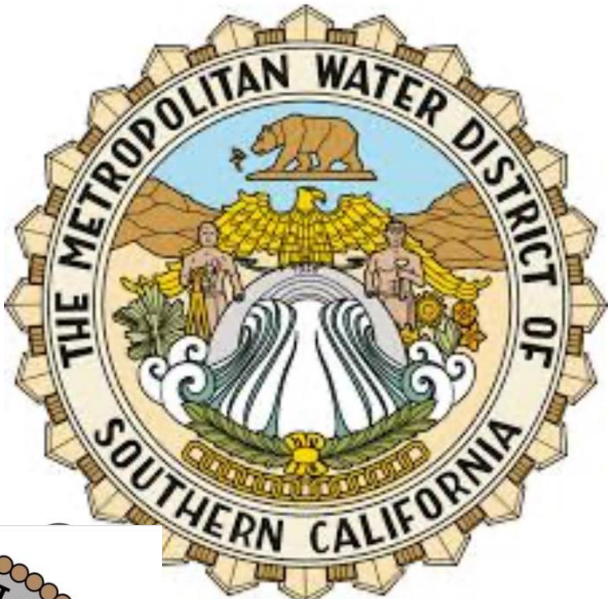
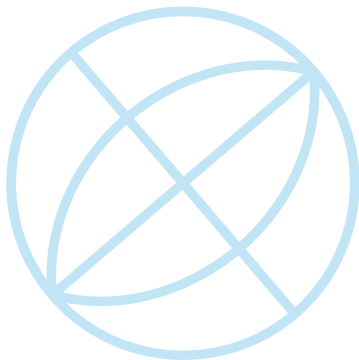
Metropolitan's Sustainability Strategy will include Guiding Principles, Section-Specific Goals and Key Performance Indicators and Initiatives



Issues:

- How developed?
- How governed?
- How implemented?

Greater LA megaregion & So. Cal—more than recycling alone



19 million



4 million



10 million

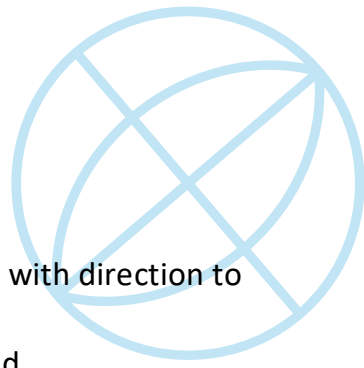
Goal: 70% reduction in imported water by 2035

Greater LA

- **Greater Los Angeles mega-region:**
 - Climate adaptation in a **water scarce region**
 - Three key emerging players: Metropolitan, City of LA, County of LA (building on Orange County lead). San Diego important neighbor on cutting edge.
 - Largest recycled water projects for potable reuse in the world
 - Massive stormwater program for multiple benefits of water supply, flood control, water quality, and urban greening.
 - Above ground LA County will be transformed--and below ground it will too.



Greater LA trifecta



- **City of LA-4 million**

- 4 million
- Mayor Garcetti—Green PLAN, including ambitious water directive with direction to achieve 70% local water by 2035, where it was 5 in 2015
- LADWP and LASan partner for largest recycling project in the world PureWaterLA100% goal.
- Up tp 230MGD
- Prop O \$500 m demonstration for stormwater multi-benefit

- **Metropolitan Water District of Southern California (w/LA County Sanitation Districts)-19 million**

- 20 million served in whole or in part
- Largest wholesale water district in the nation
- Historically the imported water people
- Now shifting to greater overall responsibility, including taking on massive water recycling itself (150 MGD)
- Nearly \$400 m for lawn rebates last drought

- **County of LA-10 million**

- Inspiration from Australia
- \$300 m/yr in perpetuity for multi-benefit stormwater capture and quality. “Safe, Clean Water program. Measure W.
- Flood control, water supply/groundwater augmentation, water quality, and much needed greenspace
- Key element—equity in allocation and governance

*“Our relationship with
water has to evolve.”*

Los Angeles

Mayor Eric Garcetti, October 14, 2014



Donald C. Tillman Water Reclamation Plant GWRS—25-40 MGD



City of Los Angeles
Shaping the Future of Water
Stanford University

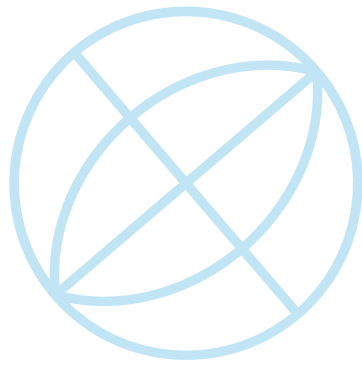


PROJECT OVERVIEW

1. **GWR Increases Sustainability of Our Water Supply**
2. **GWR Project Objectives:**
 - ✓ New Water Supply - 250,000 Angeleno's
 - ✓ Replenish the San Fernando Groundwater Basin with Purified Recycled Water
3. **Investment of \$1.0 Billion in Next 2 Years & \$428M Secured**
4. **Start Construction in 2024 & Complete in 2027**
5. **Balance Water Supply with Environmental & Recreation Needs**

Credit: Jesus Gonzalez, LADWP

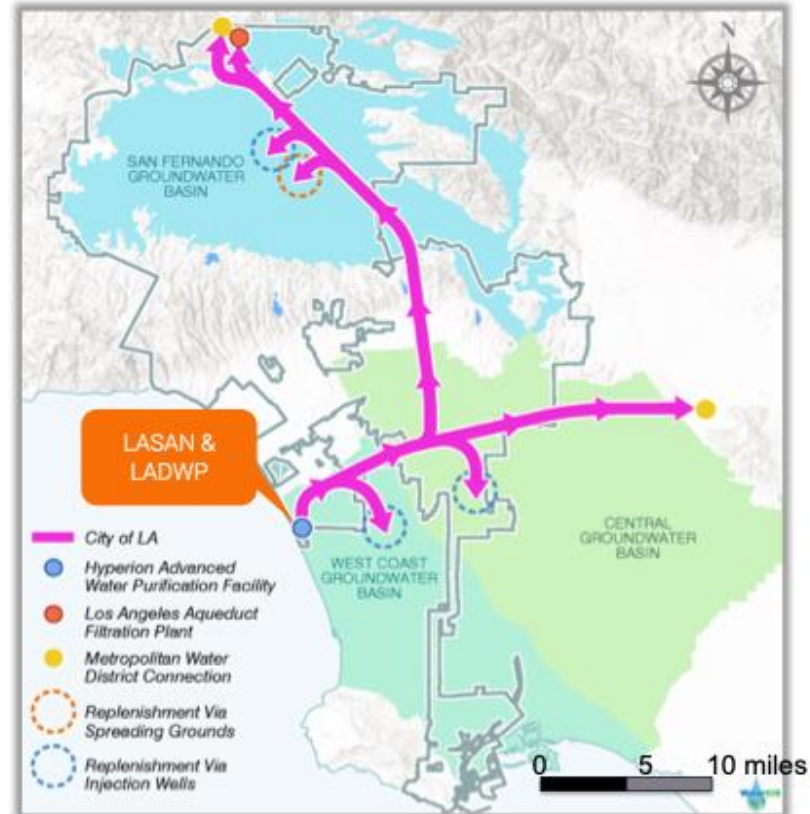
Pure Water LA



City of Los Angeles
Shaping the Future of Water
Stanford University



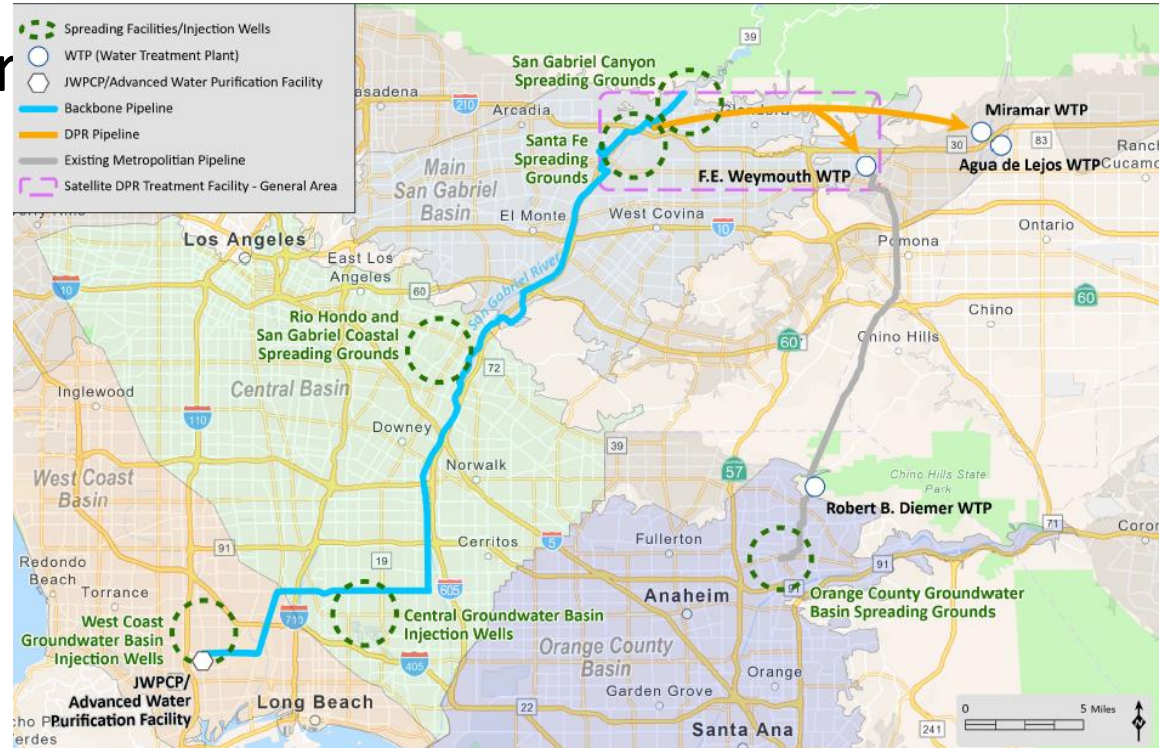
- Pure Water Los Angeles - “Mulholland Moment”
- LA’s Future Water Supply
- Master Plan Completed in Dec. 2024
- ~\$25 Billion



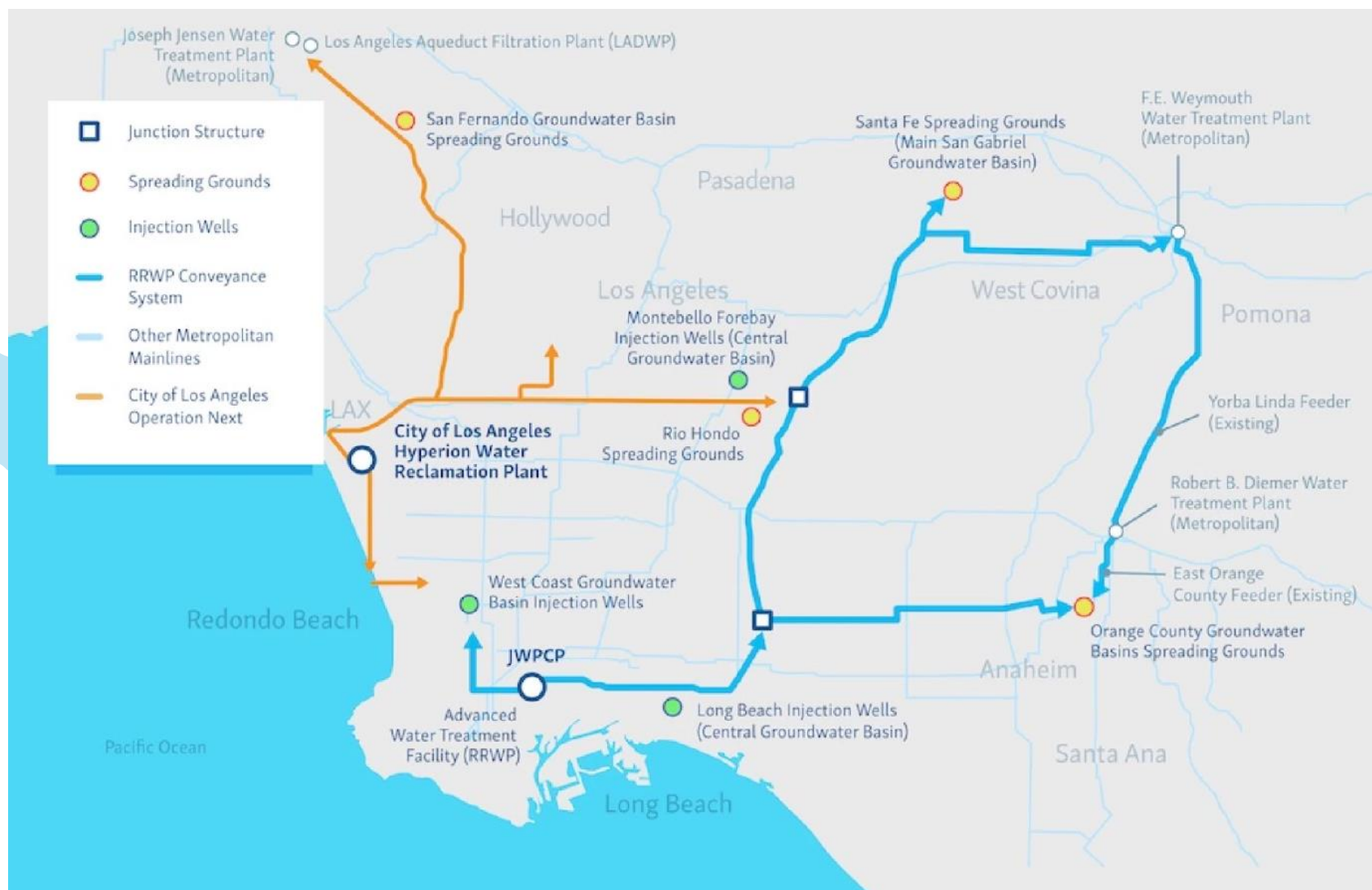
Credit: Jesus Gonzalez, LADWP

Pure Water So Cal

- Partnership with LA County Sanitation Districts (Original recyclers in the area--1962!)
- 150 MGD
- Pilot AWTP/Public info center
- PEIR complete



Potential Full-Scale Program...*locally*



Even bigger thinking brings resources and resilience

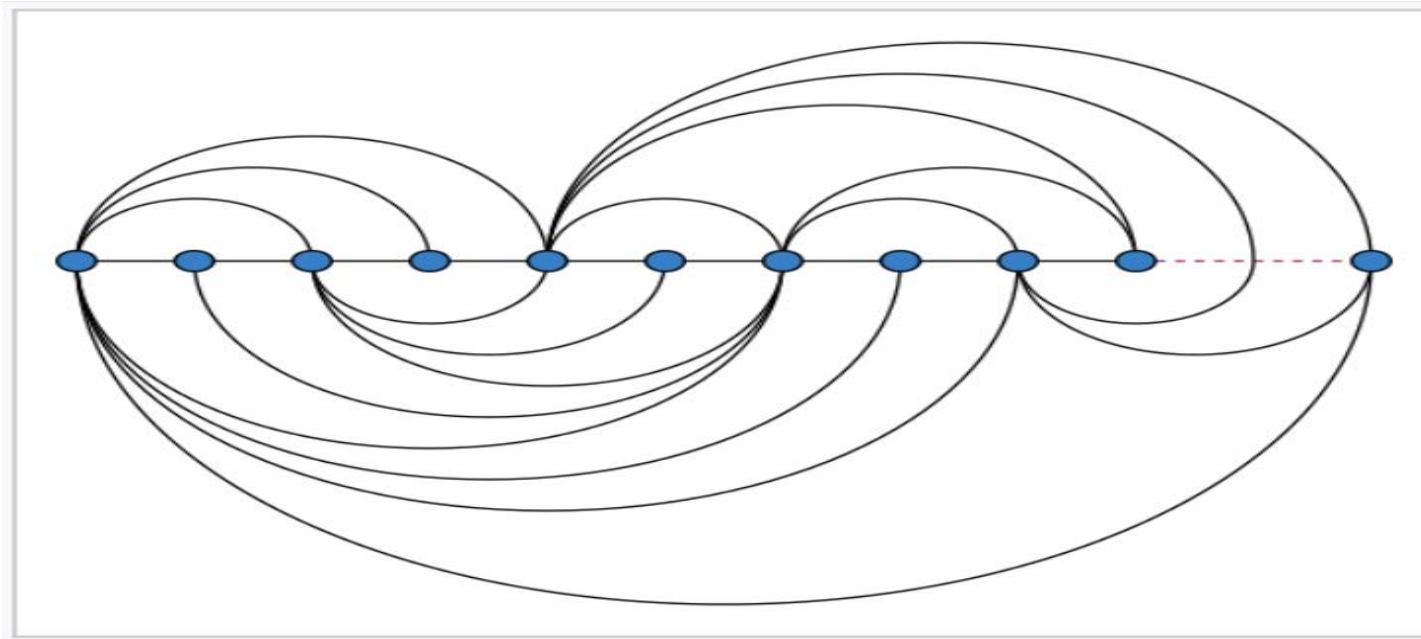
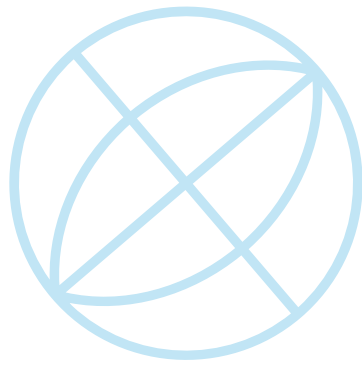


Not just massive Southern California scale—not to infinity, but beyond where anyone has gone before



Water Efficiency Arc of Progress

Fastest, cheapest, smartest.....But still long way to go



credit Wikipedia



1970s

- uh oh
- urn off taps
- ...mellow
- ...yellow

Early 90s

- ❖ oh no, not again!
- ❖ turn off taps
- ❖ toilet and shower retrofits

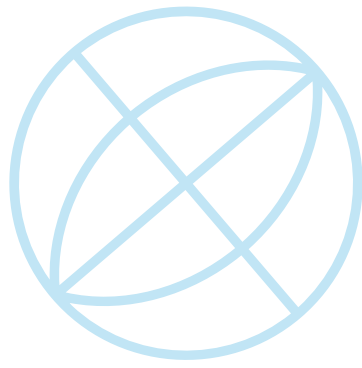
Mid 20-teens

- ✓ holy crap!
- ✓ worst in 500 years, no 1100 years, no. Just no.
- ✓ mandatory urban conservation

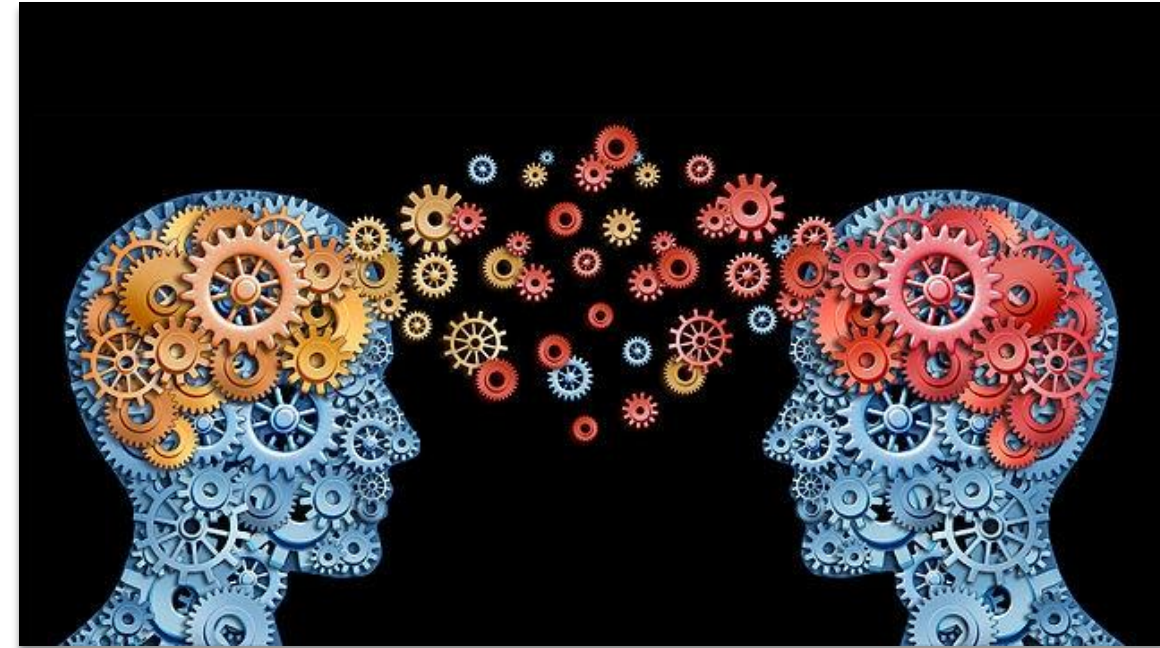
Just yesterday

- wait, not again?
- Lawns and leaks+
- Efficiency Standards?

Facing Common Issues—even with different drivers



- How to collaborate across organizational lines
- How to pay for what's needed
- How to assure affordability and service for all
- How to engage the public
- How to make the case for investment
- How to shape and phase projects
- What is the relationship between nation/state and local? Partnership or regulatory?
- How to engage the private sector



Thank you for your attention



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INSTITUTION : Stanford University, Water in the West Program

MEGACITY : Greater Los Angeles Mega-region





Métropole
du Grand Paris



SEINE
GRANDS
LACS



AGENCE
eau
seine
NORMANDIE



Water Security Management
Assessment, Research & Technology

MAWAC- ENA PARIS 2025

