

# This presentation premiered at WaterSmart Innovations

[watersmartinnovations.com](http://watersmartinnovations.com)





---

CUSTOMERS FIRST

# Hyperion Reuse and Water Resilience Program

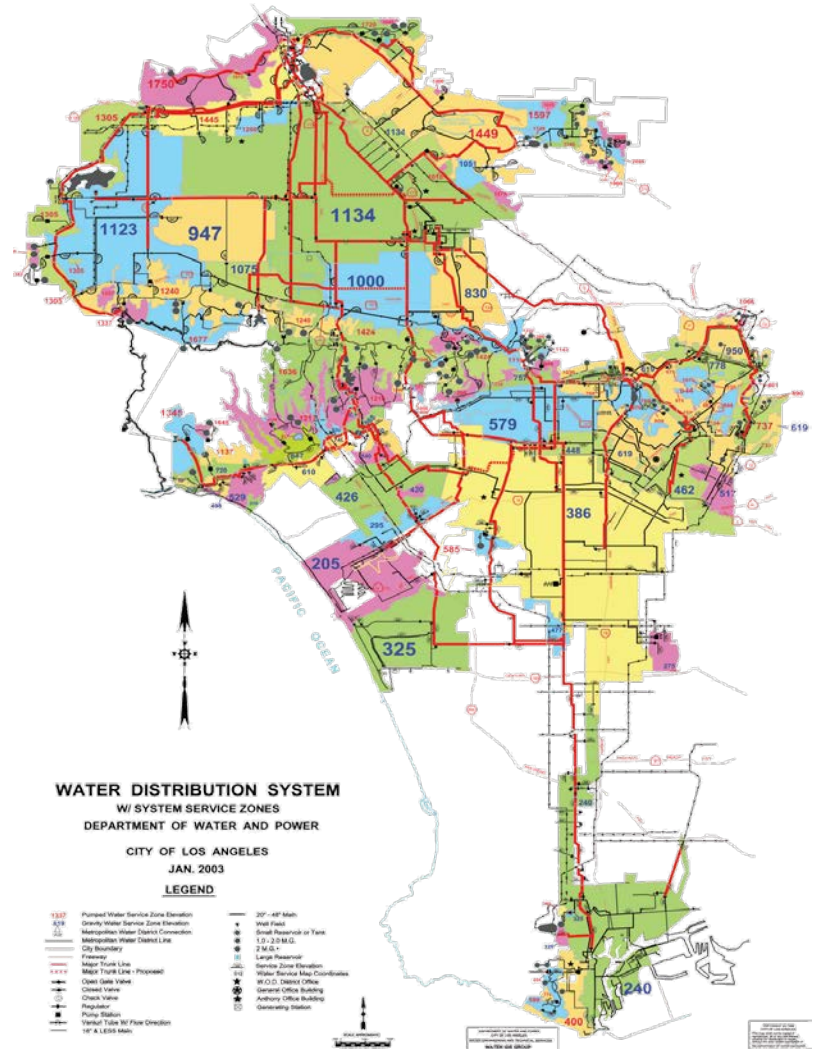
WaterSmart Innovations Conference – Las Vegas  
October 2, 2019

Water Resources Division – LADWP  
Hyperion Reuse and Water Resiliency Program  
Rafael Villegas, P.E., MSCE



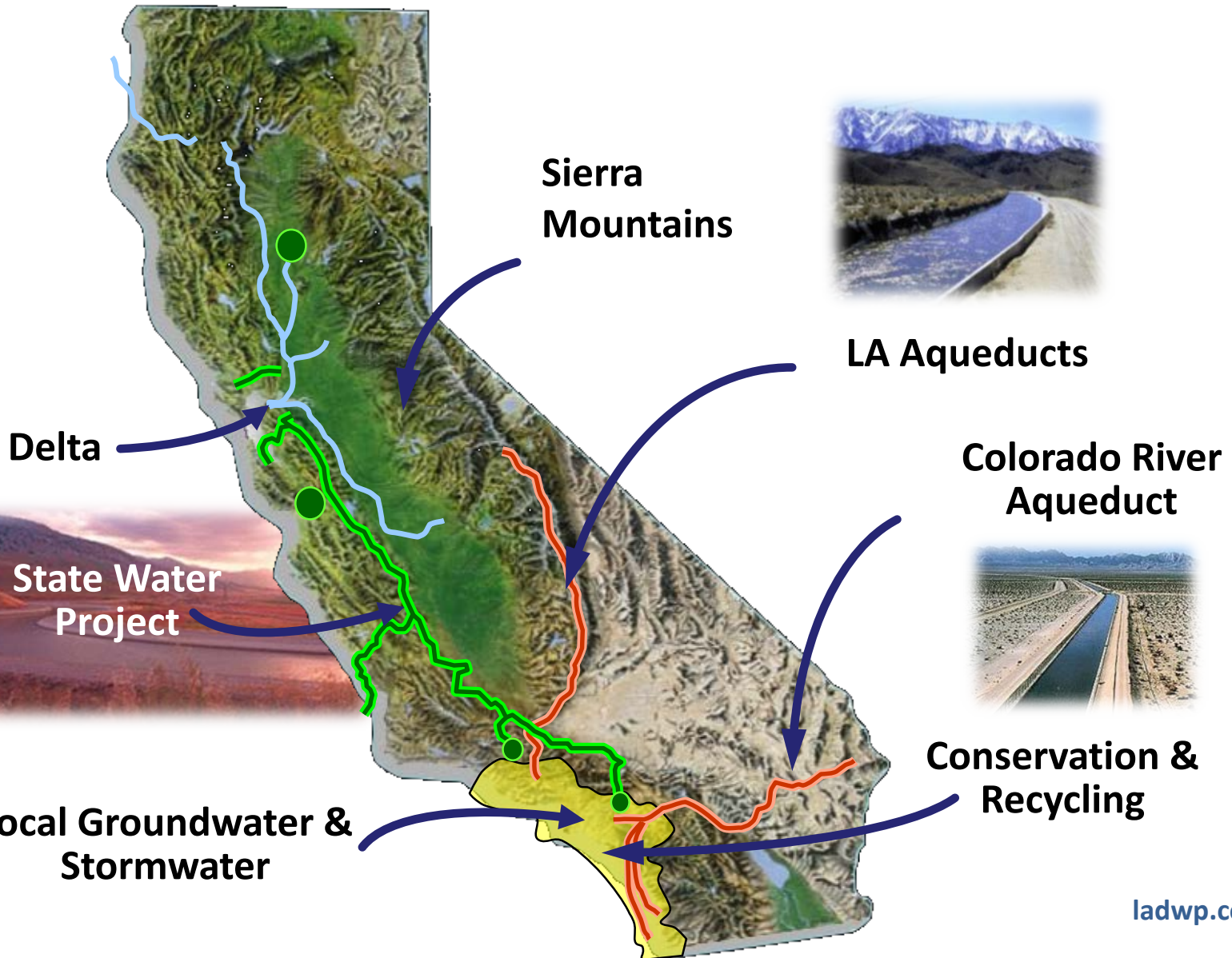
# LADWP Today

- Service area - 472 mi<sup>2</sup>
- Provide Water and Power to over 4 million people every day
- Over 467 million gallons of water delivered per day  
- 523,100 acre-feet per year

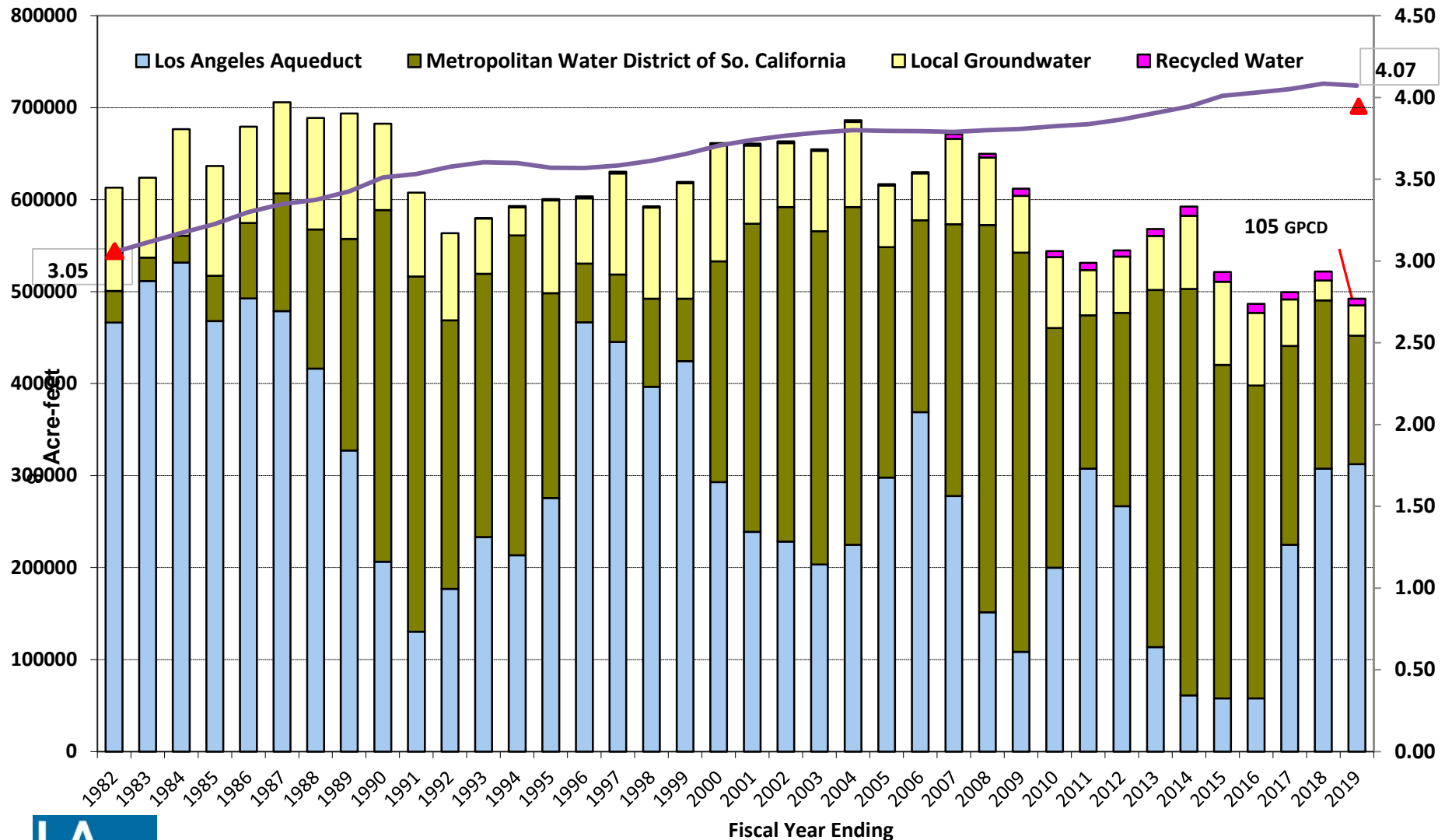




# Los Angeles' Water Supplies

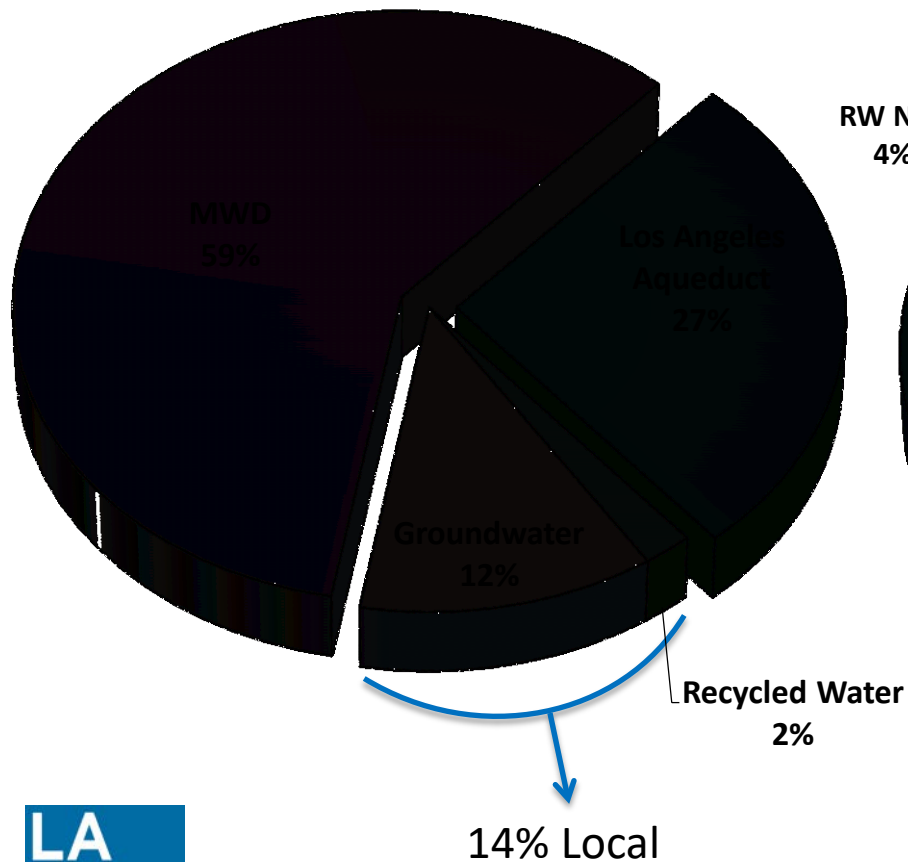


# Historical Water Supplies

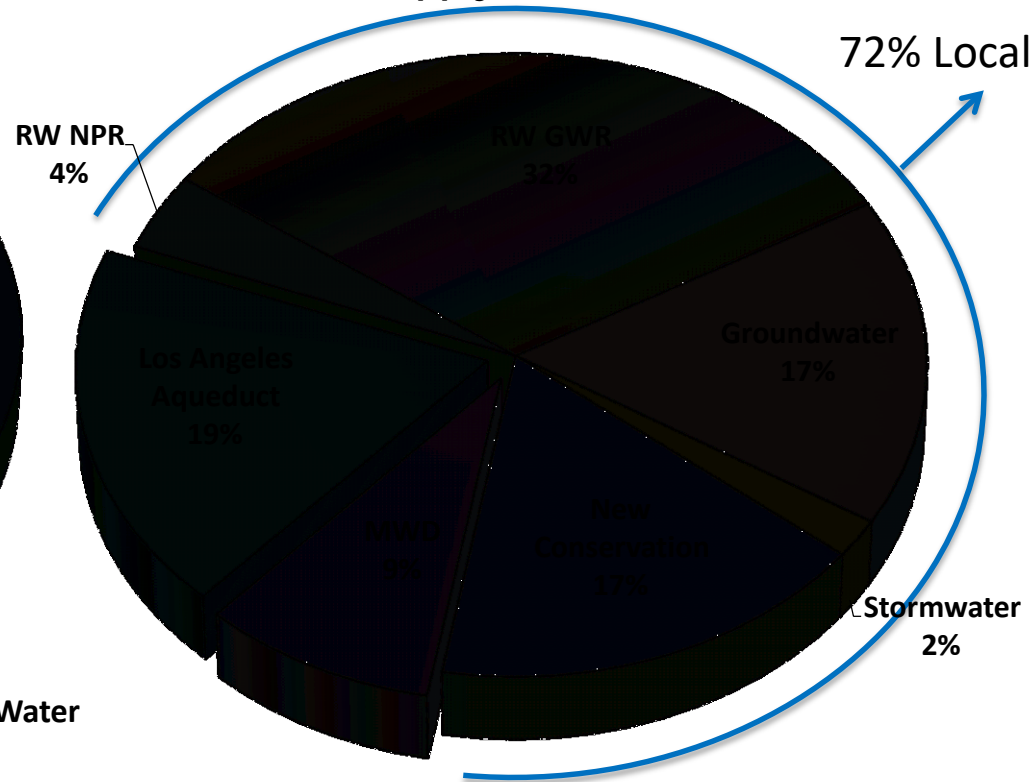


# Water Supply Reliability

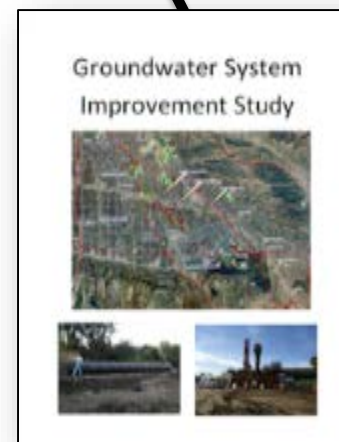
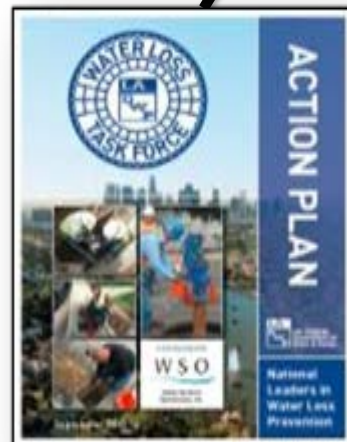
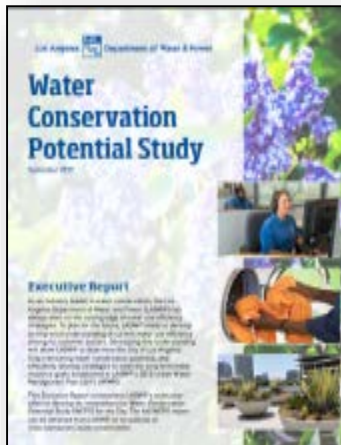
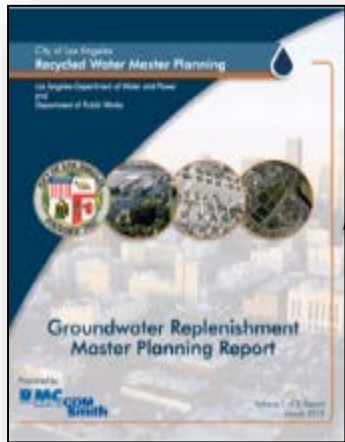
Fiscal Year End 2014 - 18 Average  
Total Supply: 523,100 AFY



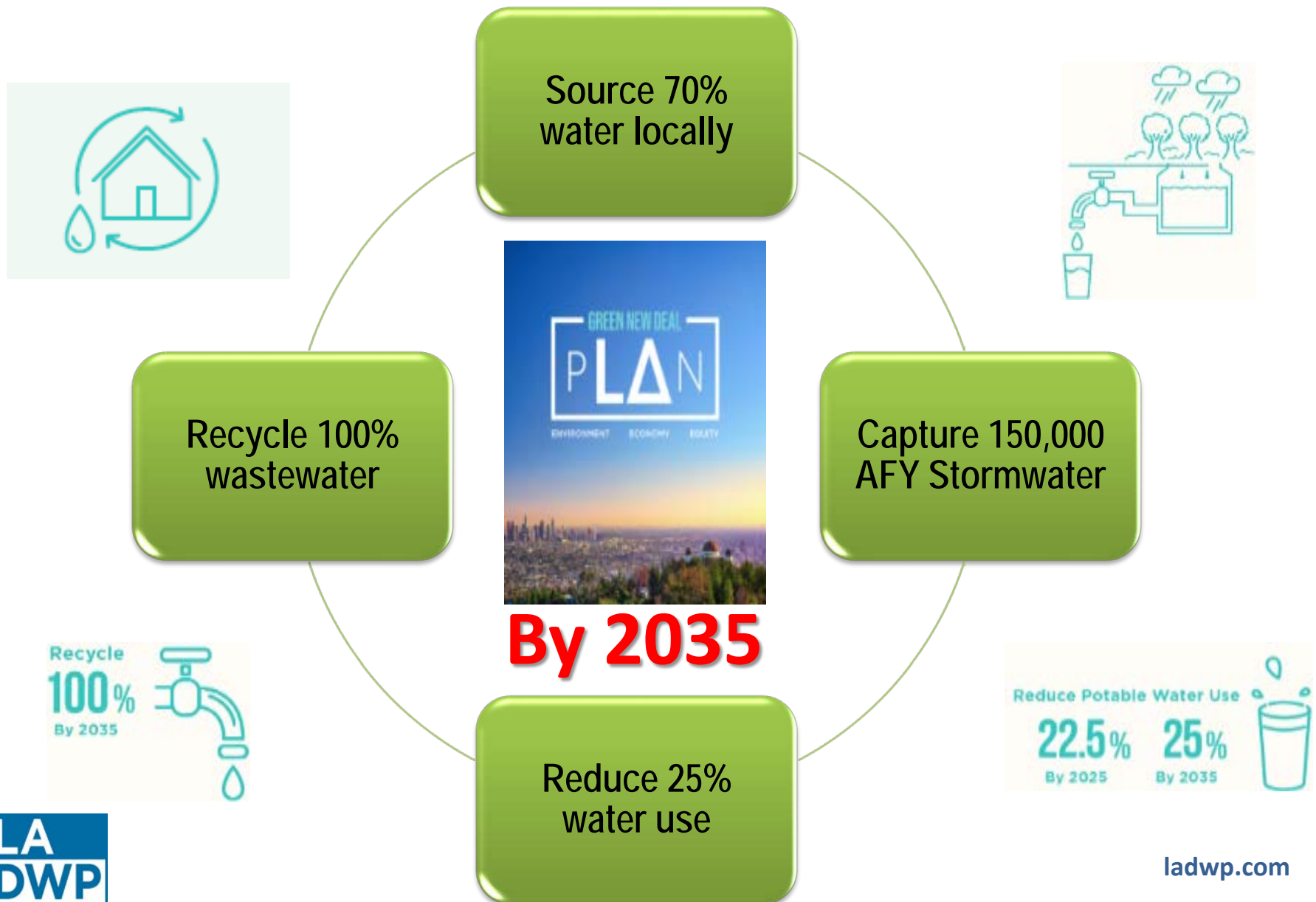
L.A.'s **Green New Deal**  
Fiscal Year 2034 - 35 Average Hydrology  
Total Supply: 661,800 AFY



# Urban Water Management Plan



# L.A.'S "GREEN NEW DEAL"





# New Recycled Water Initiative at Hyperion

## Program Objective:

Recycle 100% of available treated wastewater for beneficial reuse from the Hyperion Water Reclamation Plant by 2035.



# Recycled Water Program at HWRP

## Hyperion MBR Pilot Facility

2019

2021

2022

2025

2035

- 35 MGD to West Basin
- 36 MGD for In-Plant Use

Hyperion AWP

100% Recycling at HWRP



1. Membrane bioreactors

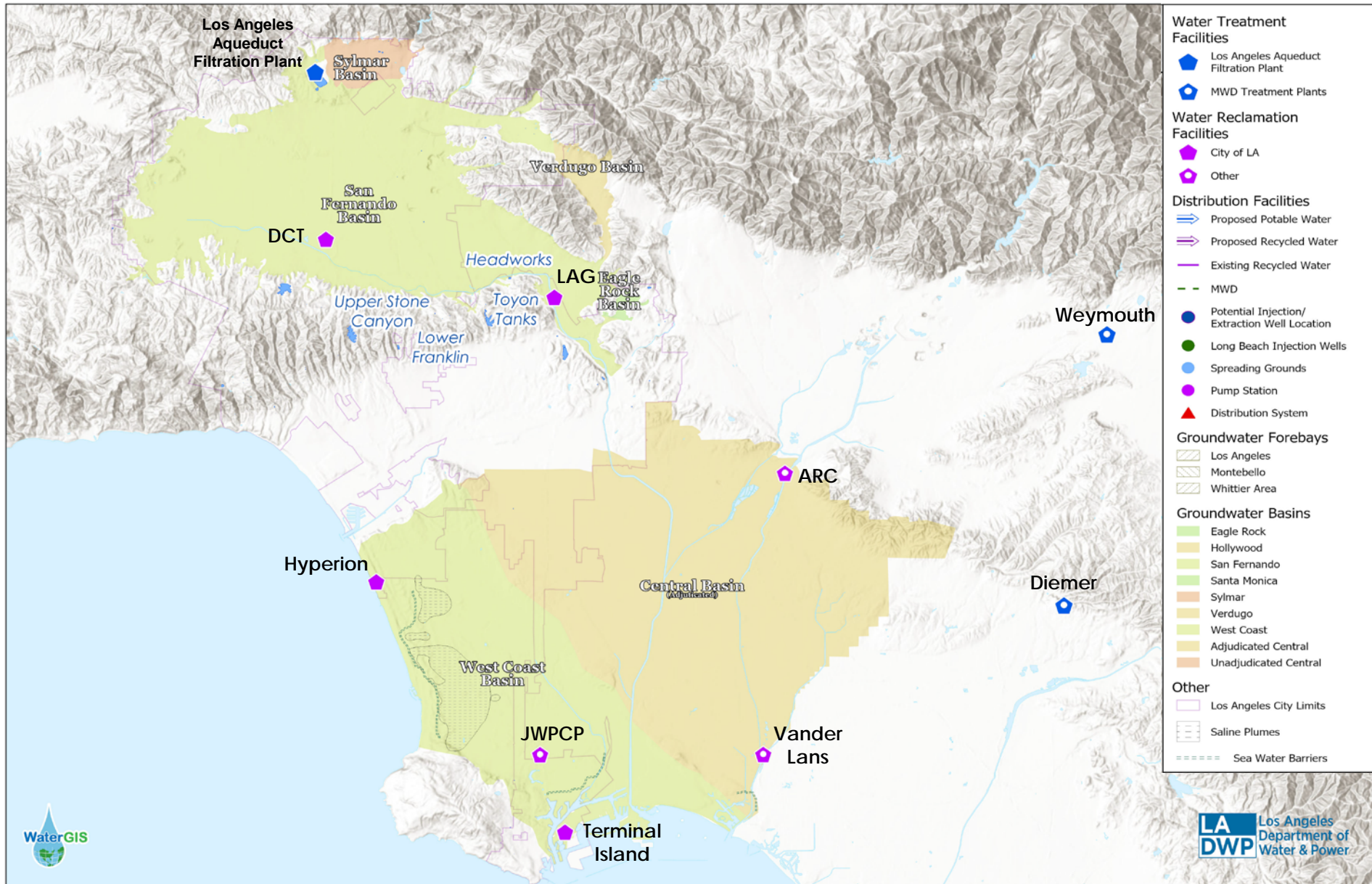


2. Reverse osmosis



3. Advanced oxidation

# Operation NEXT Program Map



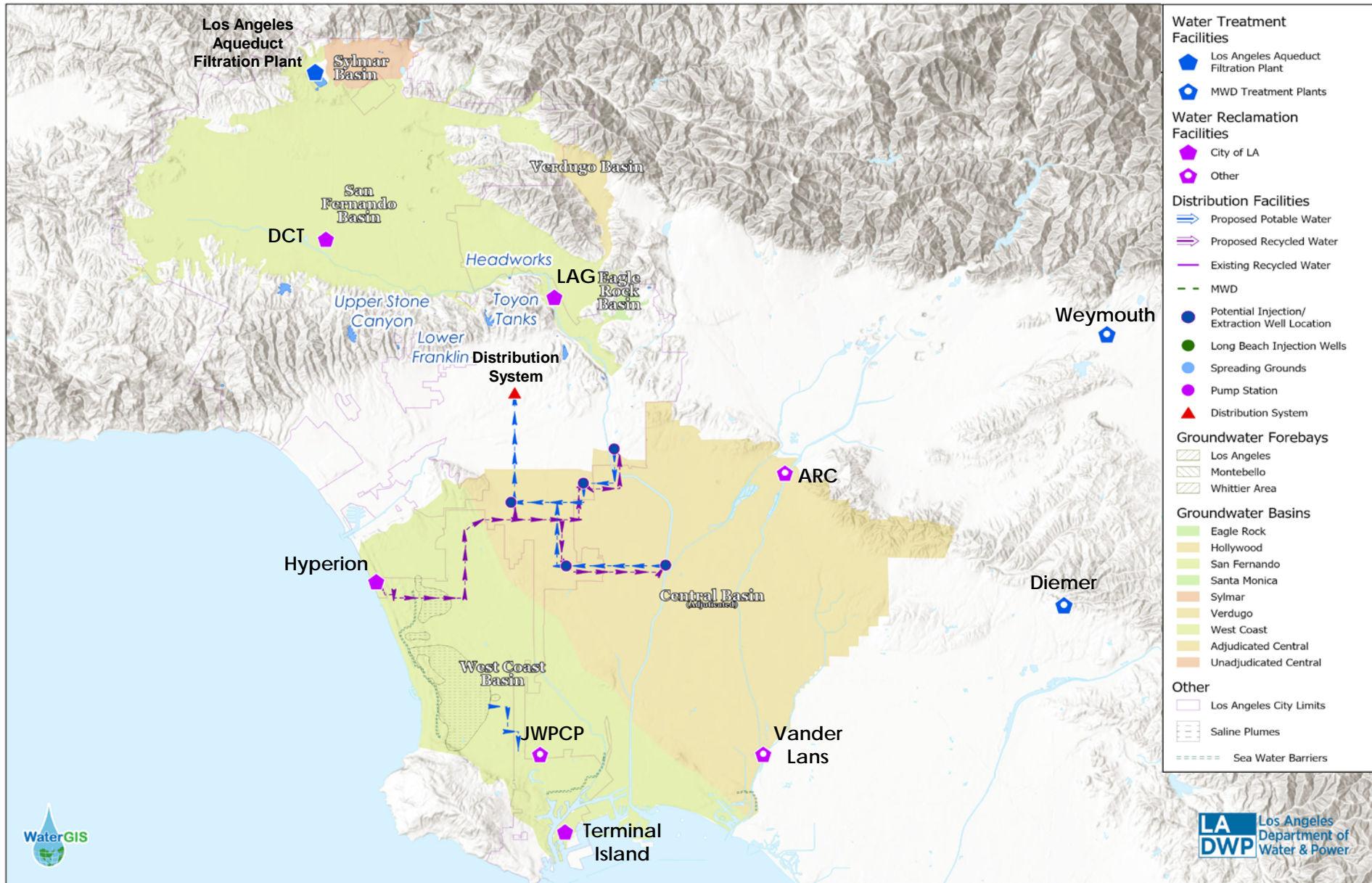


# Operation NEXT Program Map



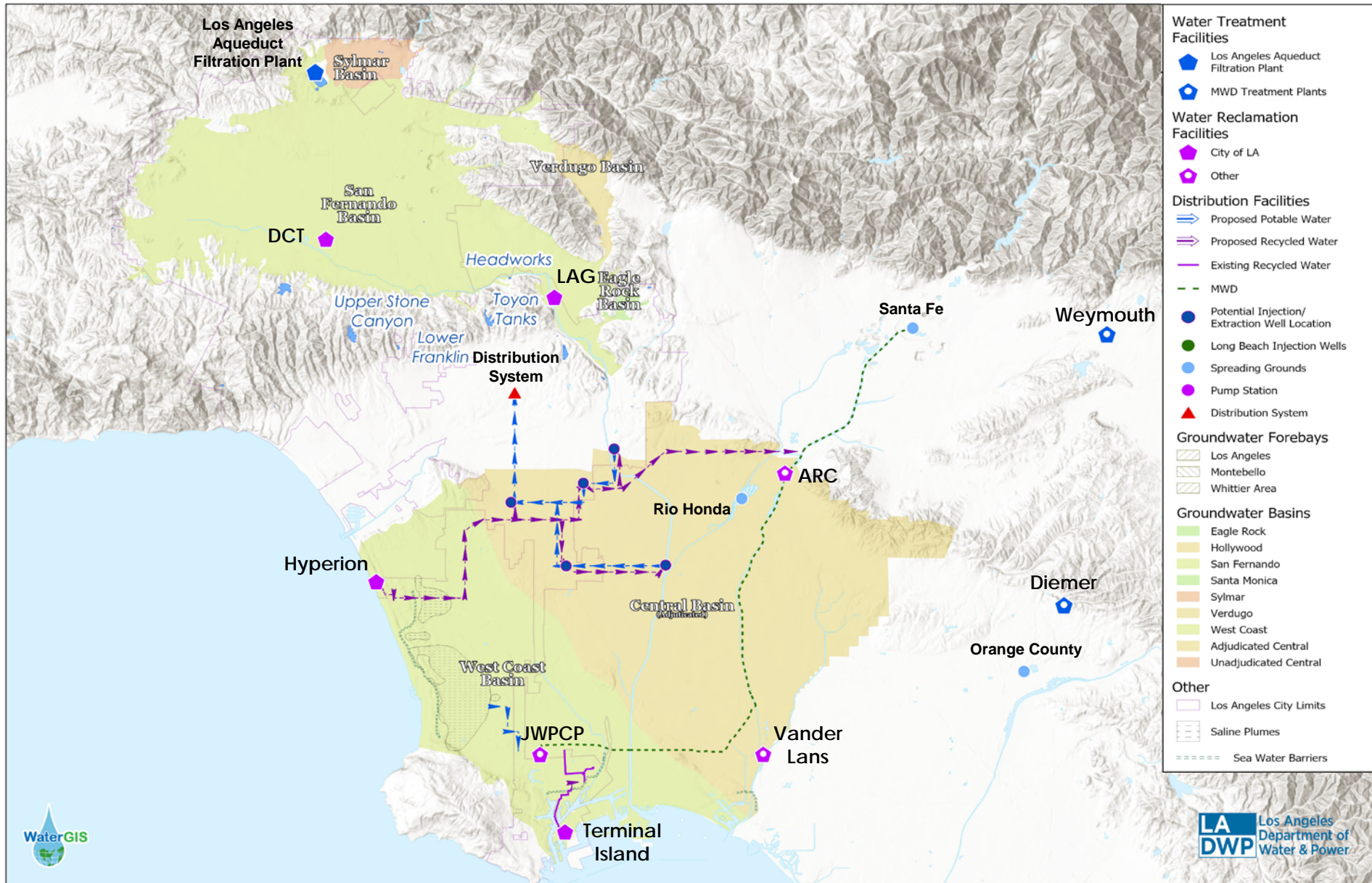


# Operation NEXT Program Map



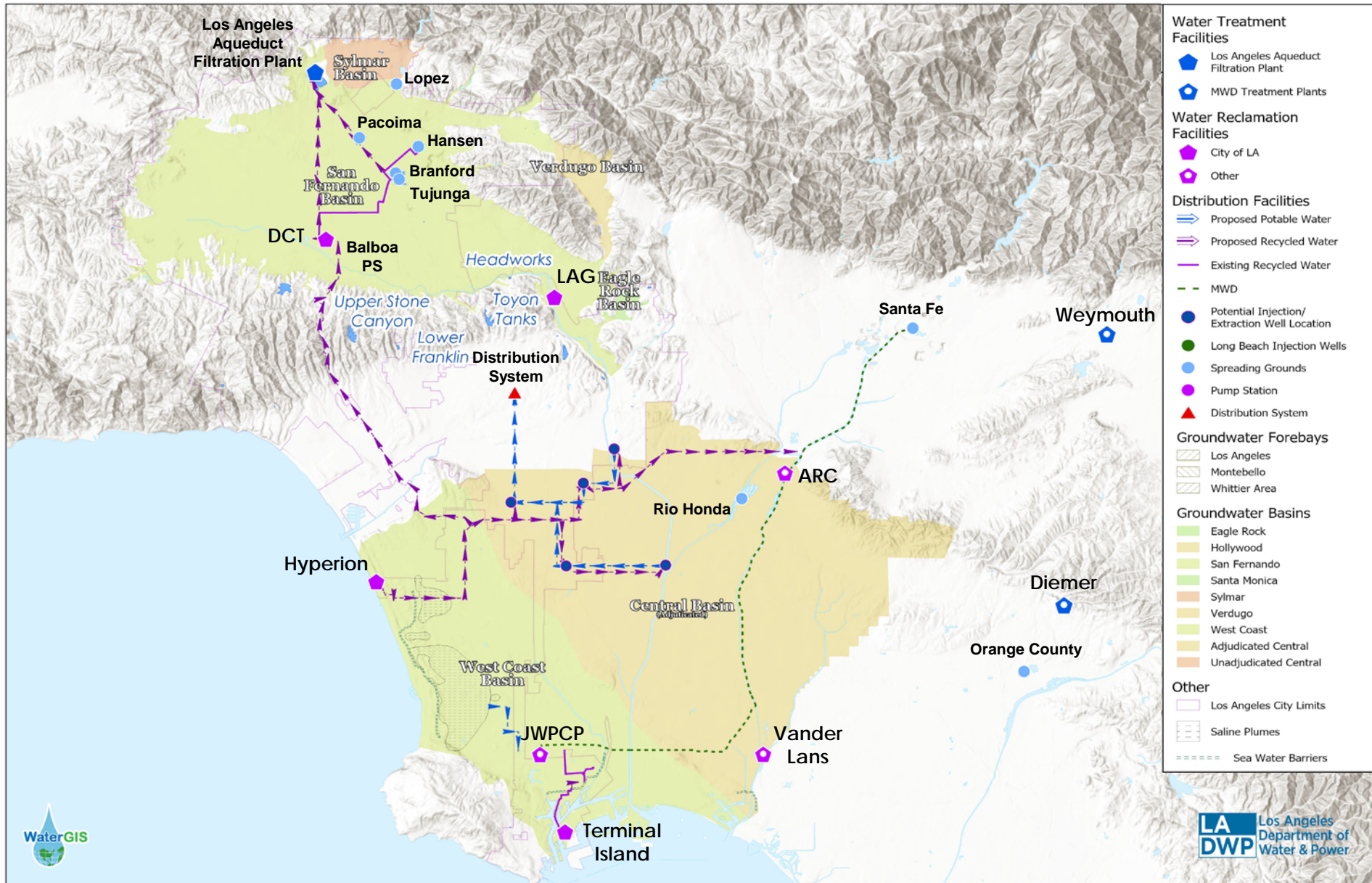


# Operation NEXT Program Map





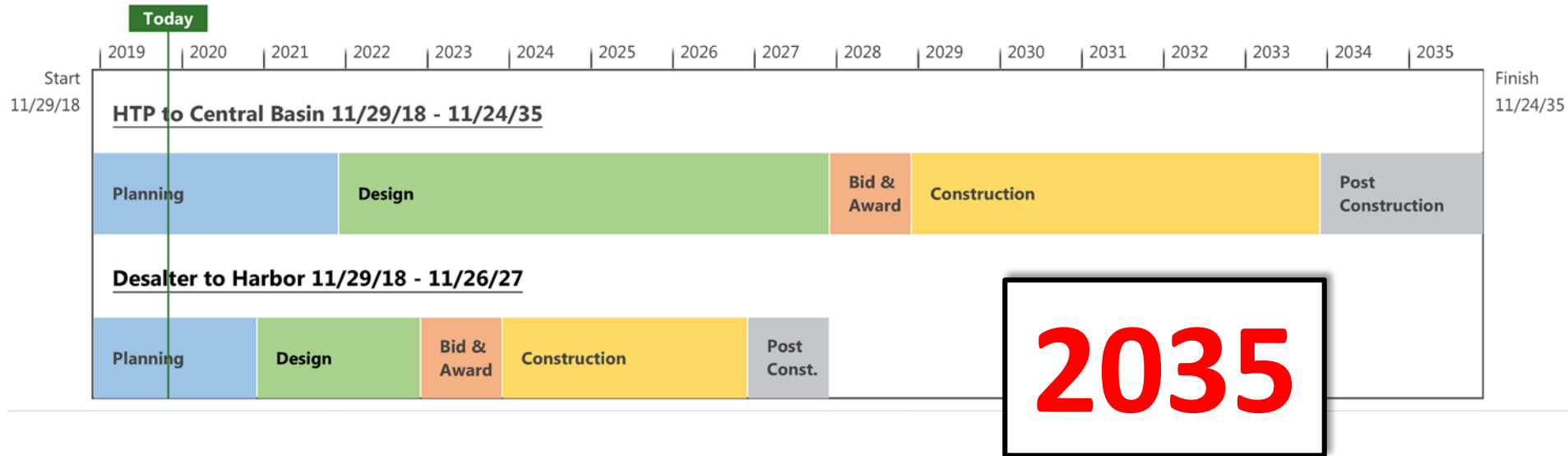
# Operation NEXT Program Map



# Technology Challenges

- Tunneling
- Groundwater Storage
- Advanced Treatment at Hyperion (MBR, log removal, regulatory approval)
- Brine Management
- Diurnal Management/Storage

# Preliminary Program Schedule



# Collaborative Framework

- LASAN Collaboration for Hyperion
- Regional Partnerships
  - Water Replenishment District of Southern California (WRD)
  - MWD of Southern California / LA County Sanitation Districts
  - West Basin MWD
- Other Agency Partnerships / Contract Cities
- Potential Future Joint Powers Authority

# Ongoing Efforts / Next Steps

- Groundwater Development and Augmentation Plan (GDAP)
- Joint Master Plan with WRD
- MOU between LADWP & LASAN
- Hyperion AWWPF Demonstration Project
- Hyperion NdN MBR Pilot Facility
- Pilot Injection Wells
- Letter of Intent (LOI) with MWD – Program Integration
- Feasibility Studies
- Agency Outreach & Coordination
- Community Engagement





Rafael Villegas, MSCE, PE  
Hyperion Water Reuse and Resiliency Development Program  
Water Resources Division  
Rafael.Villegas@ladwp.com  
213-367-1289





---

CUSTOMERS FIRST