



SANITATION DISTRICTS OF LOS ANGELES COUNTY



# Regional Recycled Water Program Overview

American Academy of Environmental  
Engineers and Scientists

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# Regional Recycled Water Program

- Collaboration between Metropolitan & the Sanitation Districts of Los Angeles County
- Would develop a new regional water source
  - Up to 150 mgd (168,000 AFY)
  - Deliveries exclusively to Metropolitan member agencies
  - Recharge & storage in multiple GW basins
  - Increase in regional storage reserves

Let's Talk About The Need

# Regional Groundwater Production Is Declining



■ Groundwater

■ Groundwater Recovery

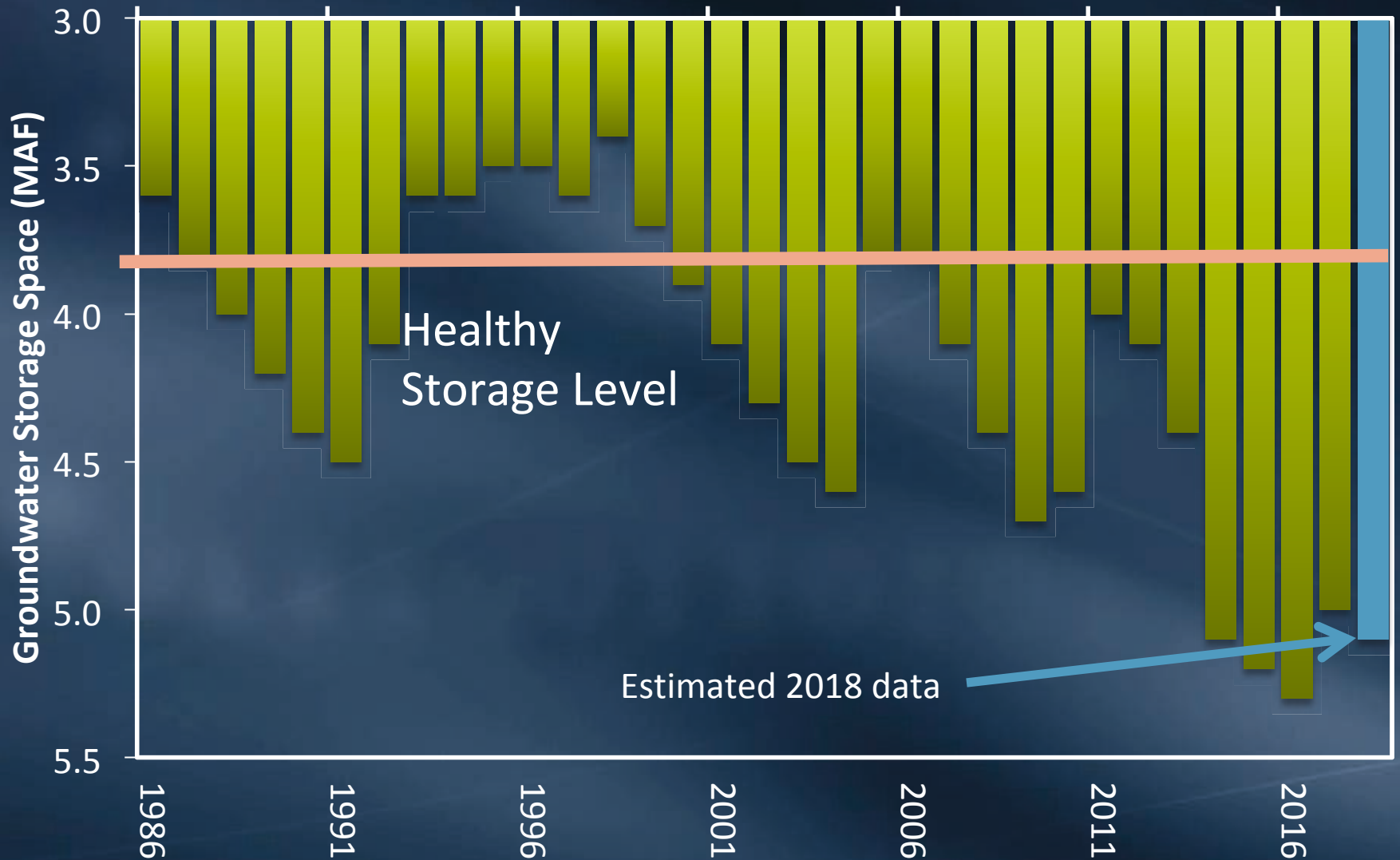
Surface Reservoir

Los Angeles Aqueduct

Recycled Water

Seawater Desalination

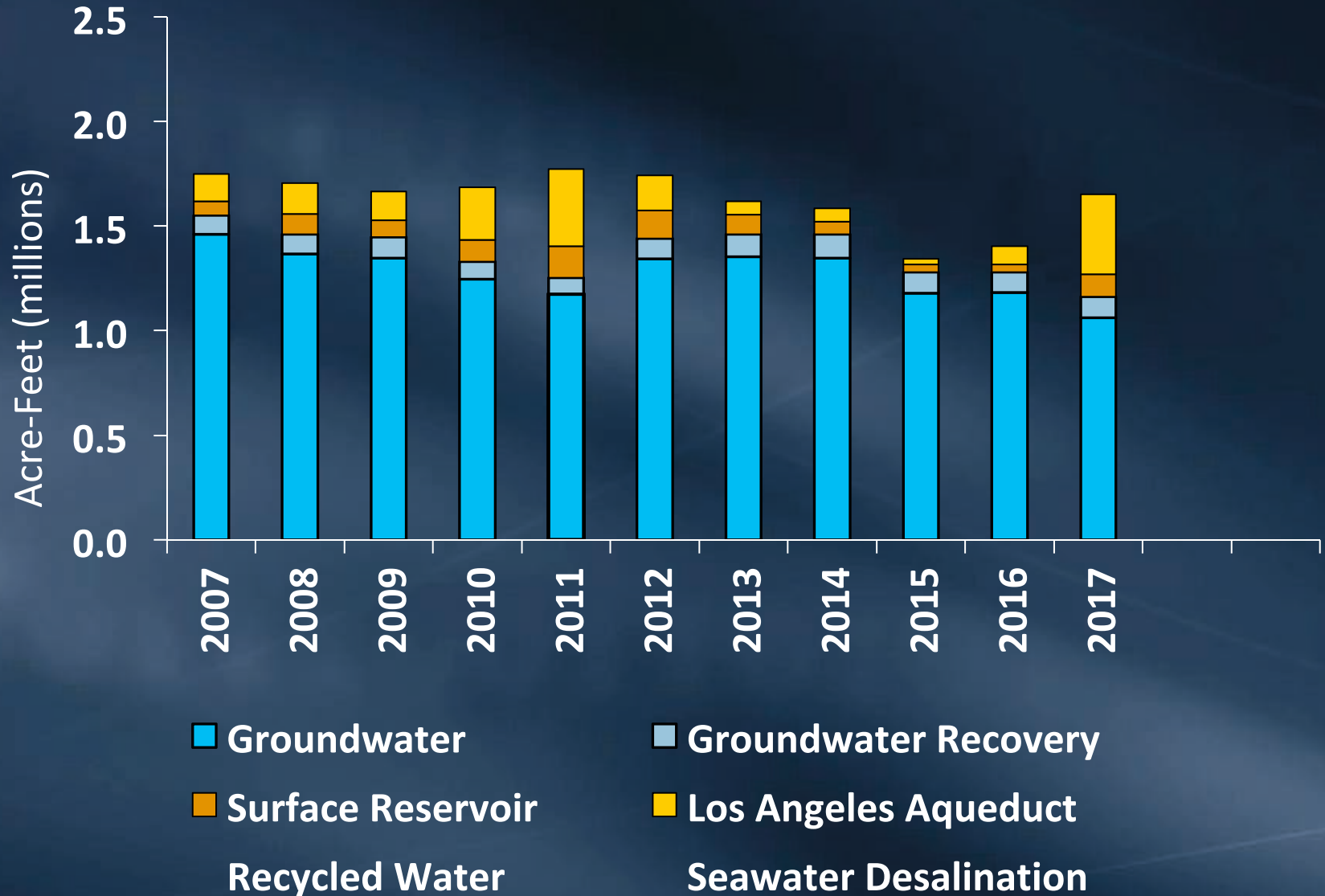
# Groundwater Storage Declining



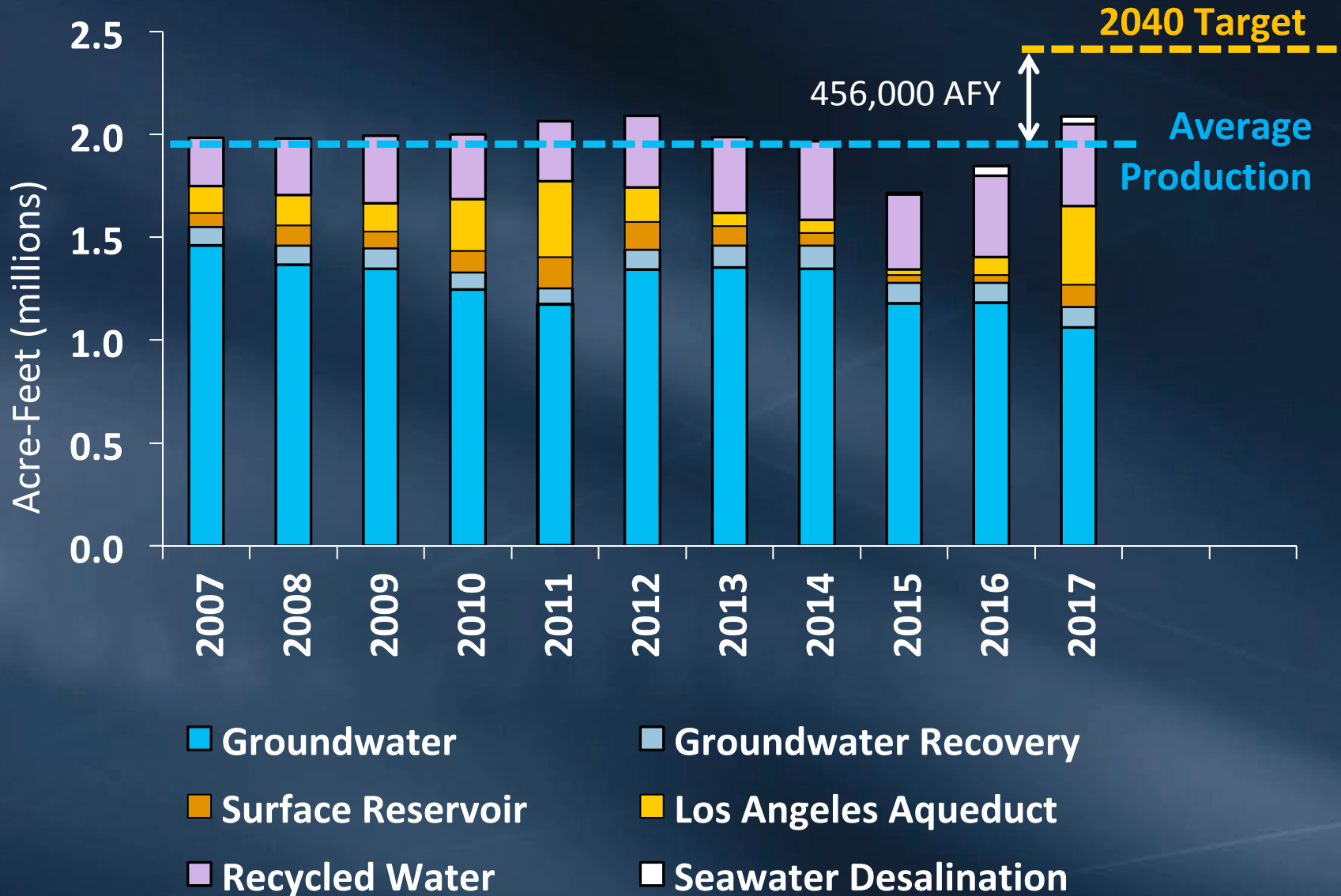
# Local Supply Needed to Reach IRP Target



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# Why Pursue Recycled Water?

- New water source
  - Significant reductions have occurred in local surface supplies & GW production during drought
  - Regional recycled program would maintain GW recharge & storage levels within service area
- Efficient utilization of water resources
- Drought-proof & sustainable
- Scientifically feasible
- Socially, environmentally, & economically viable

# MWD-LACSD Partnership

# Major Objectives



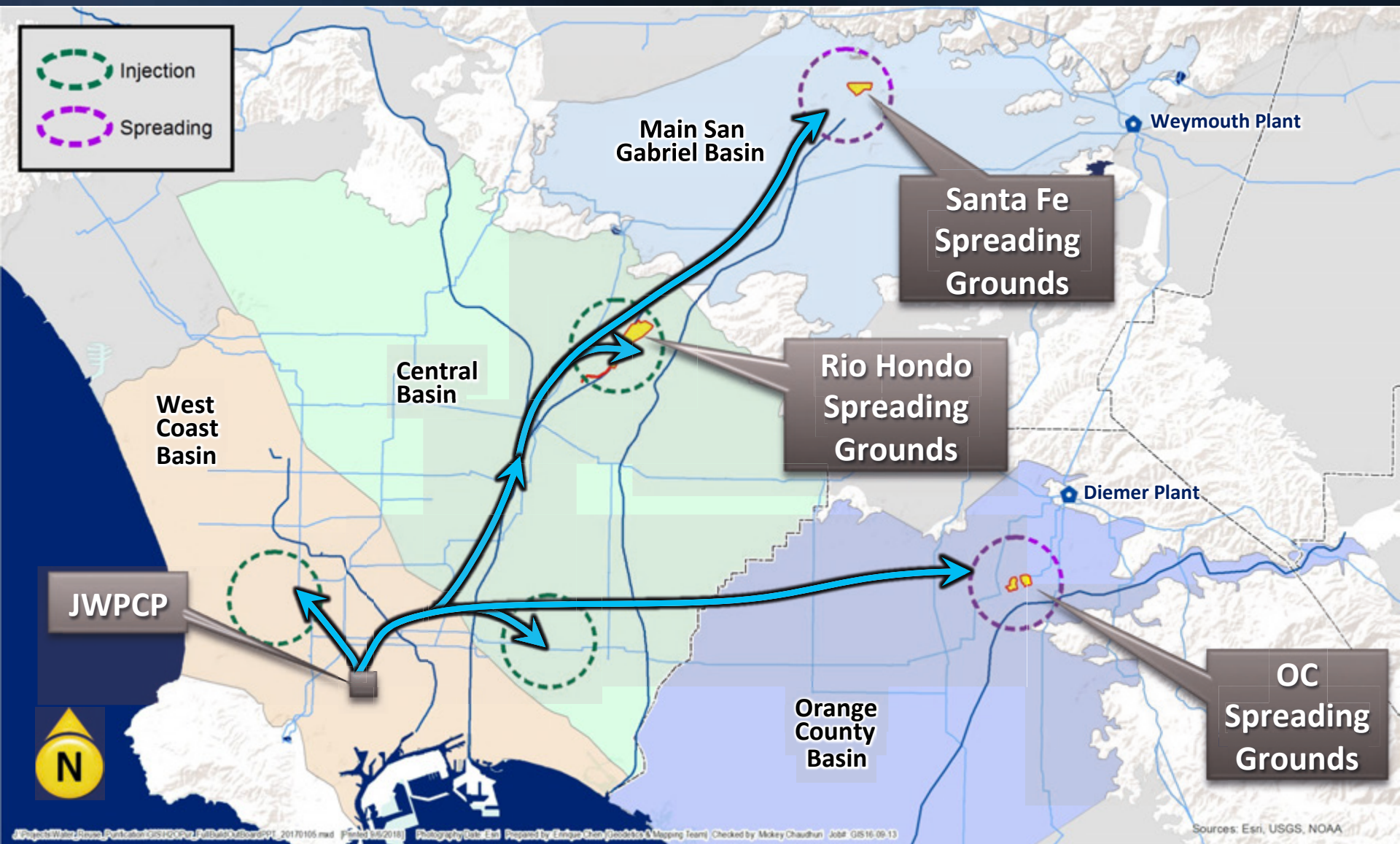
*Metropolitan Water District of  
Southern California*



- Diversify regional supplies
- Improve storage and delivery capabilities
- Provide new source of high quality, drought-resistant water

- Increase overall reuse within its system
- Begin beneficial reuse at the Joint Water Pollution Control Plant
- Reduce ocean discharges

# Potential Full Program (up to 150 MGD)



# Current Program Activities

# Demonstration Plant In Carson (at JWPCP)



# Demonstration Plant Construction

## Current Status and Schedule

- Construction approximately 65% complete
- Complete construction – December 2018/January 2019
- Commence start-up and testing – January to March 2019
- Potential Ribbon Cutting and operation – Spring 2019





# Regional Recycled Water Advanced Purification Center

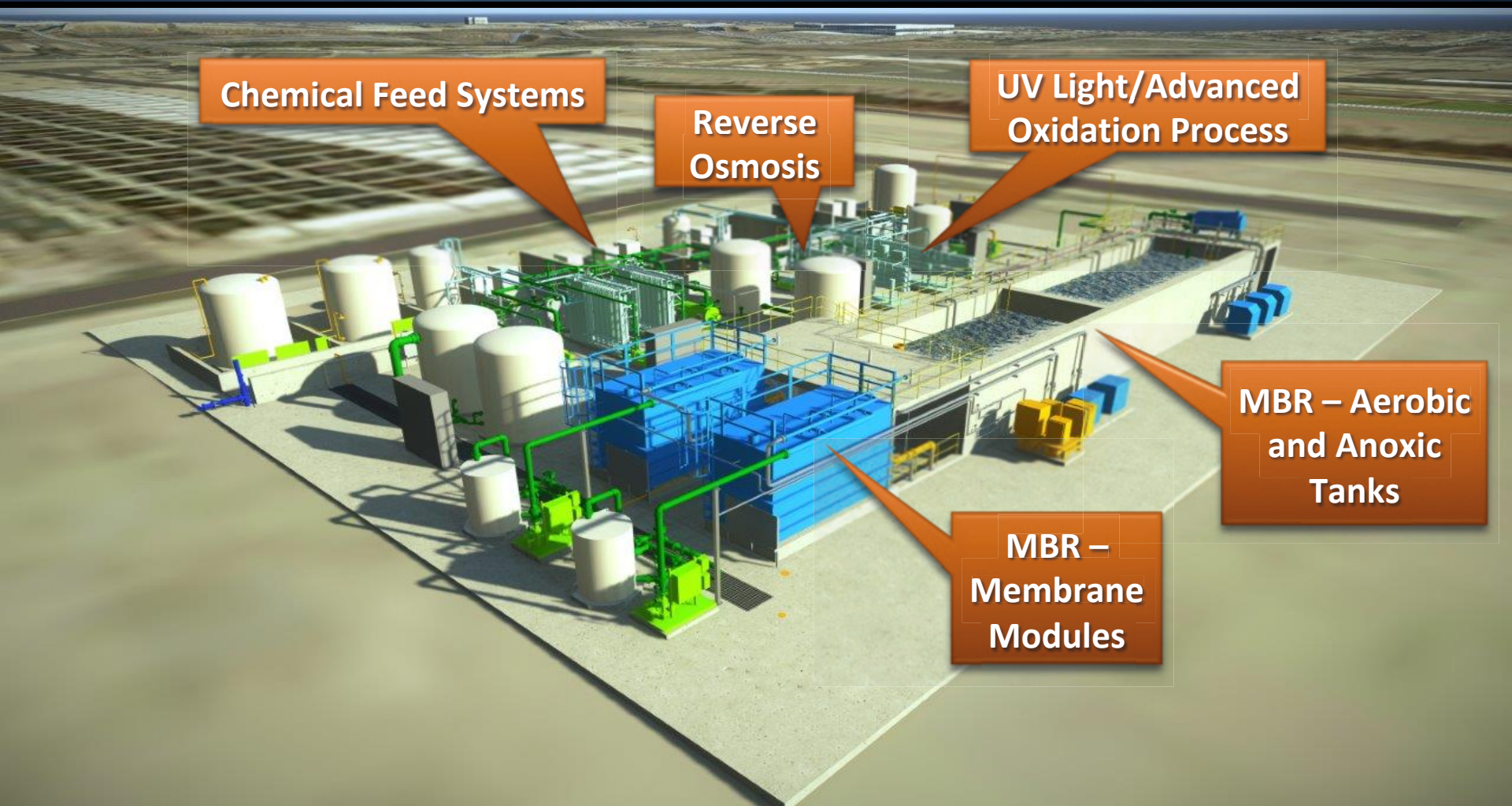
**Chemical Feed Systems**

**Reverse  
Osmosis**

**UV Light/Advanced  
Oxidation Process**

**MBR – Aerobic  
and Anoxic  
Tanks**

**MBR –  
Membrane  
Modules**





# Construction Site Overview



# Demonstration Plant Objectives

- Provide data for regulatory acceptance
- Confirm viability of membrane bioreactor (MBR) process
- Optimize full-scale treatment process design
- Establish cost clarity for treatment
- Confirm operational dependencies/interfaces with LACSD
- Provide vehicle for public outreach and acceptance

# Current Activities

- Complete the construction, start-up, & operation of Demonstration Plant
- Complete conceptual planning, evaluation of phasing, & additional GW modeling
- Finalize agreements with Sanitation Districts
- Develop institutional & financial arrangements needed for implementation
- Continue public outreach effort focused on Demonstration Plant

A Great Opportunity, But  
Many Things To Consider

# Metropolitan's Historic Policy Progression

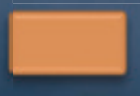
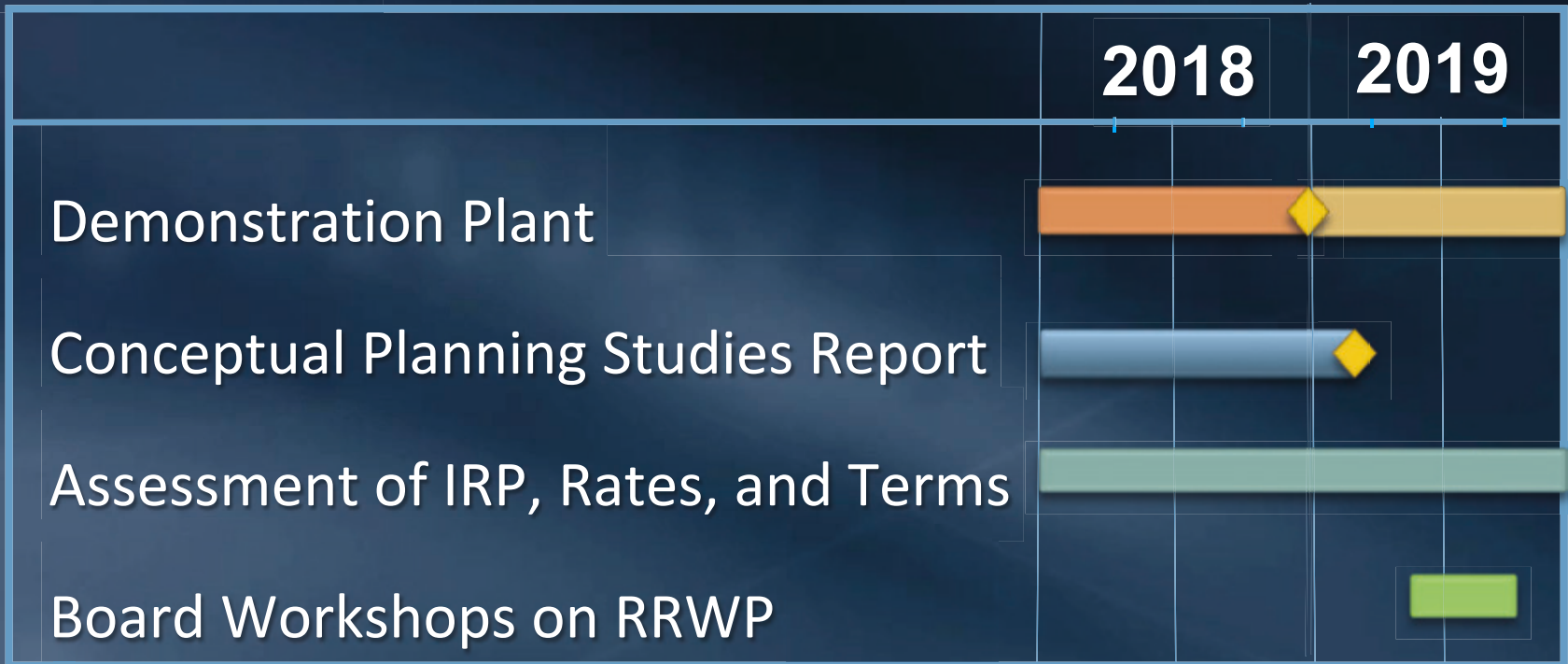
- Started as an importer of water
  - Develop and sell imported water
  - Local agencies plan for their own reliability
- Developed a policy to become regional planner
  - Help the region plan for reliable future
- Implemented regional programs to help pay for conservation and local supply development
  - Local agencies develop projects and MWD would help pay

# Now Metropolitan Is Considering Developing A New Local Supply

- Scale and distribution of benefits warrants consideration
- Cost is higher than imported supplies, but less than many local supply alternatives
- Many institutional items to consider (examples):
  - Expansion of Metropolitan's regional role
  - Interaction with groundwater agencies
  - Splitting of costs
  - Operations and coordination with other supplies



# Schedule



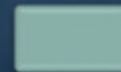
Construction



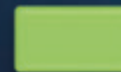
Operations/Testing



Studies



Other



Board Workshops



Completion



# Metropolitan Recycled Water Website



INTRODUCTION HOW IT WORKS PROCESS BENEFITS STRATEGY MILESTONES RESOURCES PARTNERSHIP



## Regional Recycled Water Advanced Purification Center

### A NEW SOURCE OF WATER FOR SOUTHERN CALIFORNIA

Water is too precious to use just once. So the Metropolitan Water District of Southern California is making a major investment in a potential water recycling project that will reuse water currently sent to the ocean.

[www.mwdh2o.com/RRWP](http://www.mwdh2o.com/RRWP)



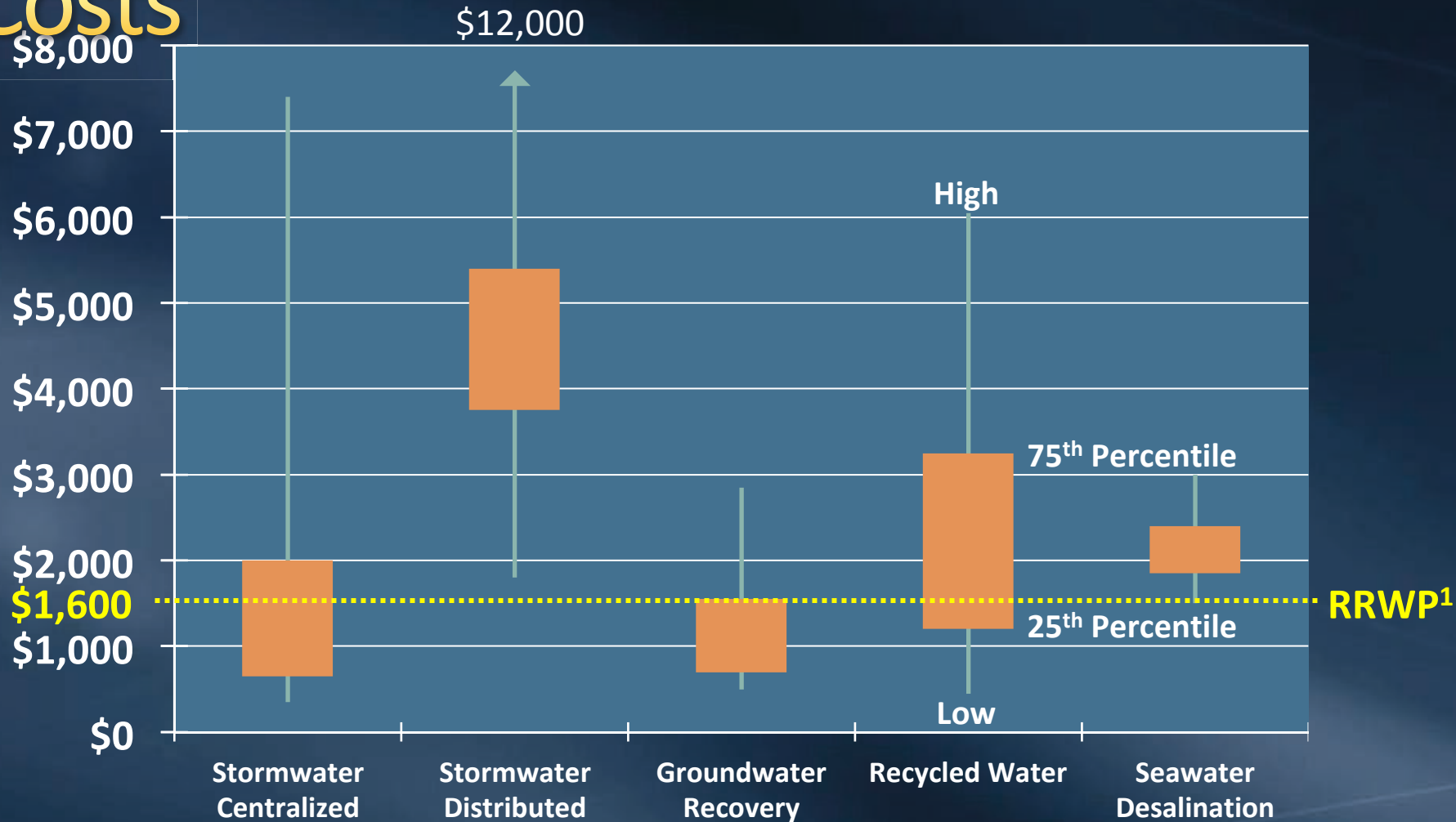
Deven Upadhyay  
Chief Operating Officer  
[dupadhyay@mwdh2o.com](mailto:dupadhyay@mwdh2o.com)

# Capital and O&M Costs

- Total capital cost of \$2.7 billion
  - All new facilities including 150-mgd AWT, 60 miles of pipelines, & 3 pump stations
- Annual O&M cost of \$130 million
  - Includes power costs for AWT & pump stations
- Total unit cost of \$1,600/AF
  - Interest rate at 4%
  - No grants or low-interest loans
  - Includes 35% capital cost contingency
- Total cost divided by total water sales of \$150-\$160/AF
  - MWD water sales at 1.7 MAFY

# Future Resource Development

(\$/AF)  
**Costs**



Source: Integrated Water Resources Plan 2015 Update

<sup>1</sup> Estimated unit cost is based on 4% interest rate financing and does not include additional outside funding or optimized design.