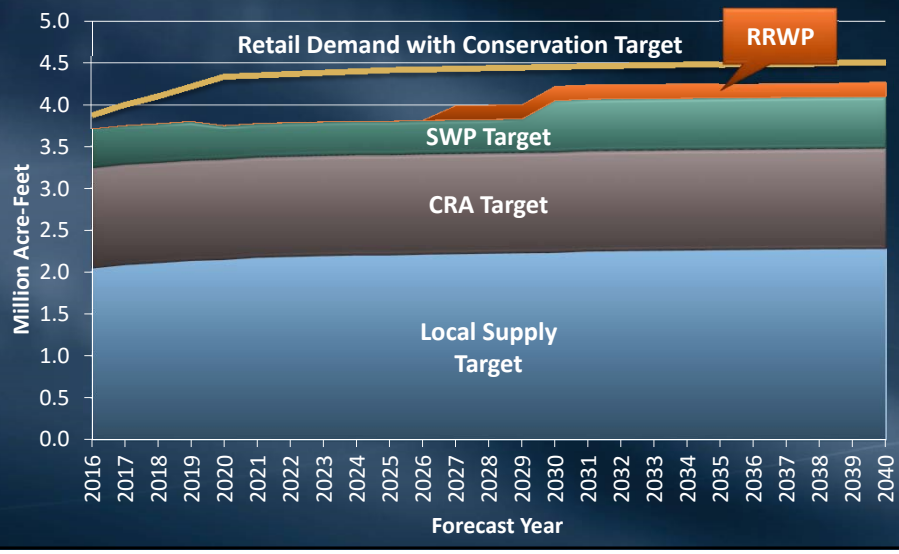
# Potential Regional Recycled Water Program

MWDOC Workshop
September 7, 2016

## Opportunity for Regional Program

- Development of new regional water source
  - Deliveries for recharge of GW basins
- Significant favorable impact on future probabilities of regional supply shortages
- Increased diversity consistent with IRP
  - Conservation
  - Desalination
  - Recycling
  - Stabilization of imported water supplies
- Emergency storage benefits

# Regional Recycled Water Project Dry-Year Supplies with IRP Targets



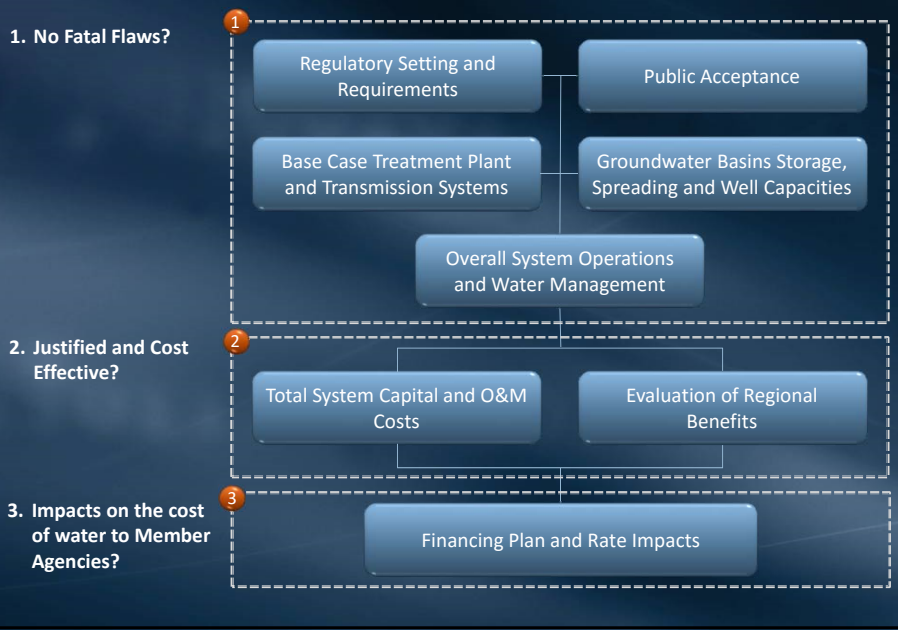

# Metropolitan & LACSD

- Decade of discussions on water recycling
  - 2010-12 Pilot studies on treatability of effluent
  - 2015 Discussions on a potential partnership
- November 2015 – Board authorized
  - Agreement with LA County Sanitation District No. 2 for development of potential regional recycled water program
  - Recycled water demonstration project
  - Feasibility and financing studies

# Demonstration Plant

- Treatability of JWPCP effluent proven
  - Two years of successful pilot testing
  - Operational experience at other facilities
- Allows for optimization of full-scale plant
  - Nitrogen management
  - Need for Microfiltration
- Provides water quality data for regulators
- Allows for coordinating operations with LACSD
- Provides venue for public outreach

# Feasibility Report Methodology



# Operational Scenarios

| Performance | Operational Scenarios | |
|---|---|---|
| | Base Case | Alternative Operations |
| **Goal** | Delivery Flexibility | Maximize Deliveries |
| **AWT Production Capacity** | 150 | 150 |
| **Average Daily Delivery** | 145-150 mgd | <150 mgd |
| **Minimum Day Delivery** | >=110 mgd | <150 mgd |
| **Manage Peak Flows** | No | No |
| **Additional Infrastructure and Facilities Needed (not currently included in the Base Case)** | No | Yes (spreading basins and injection wells) |

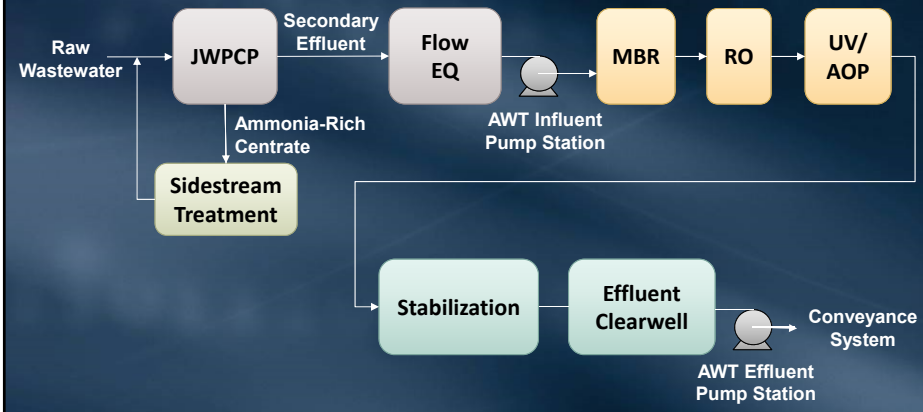
# Full-Scale AWT Base Case

# Location of AWT Facilities at JWPCP


# Full-Scale AWT Base Case Overview

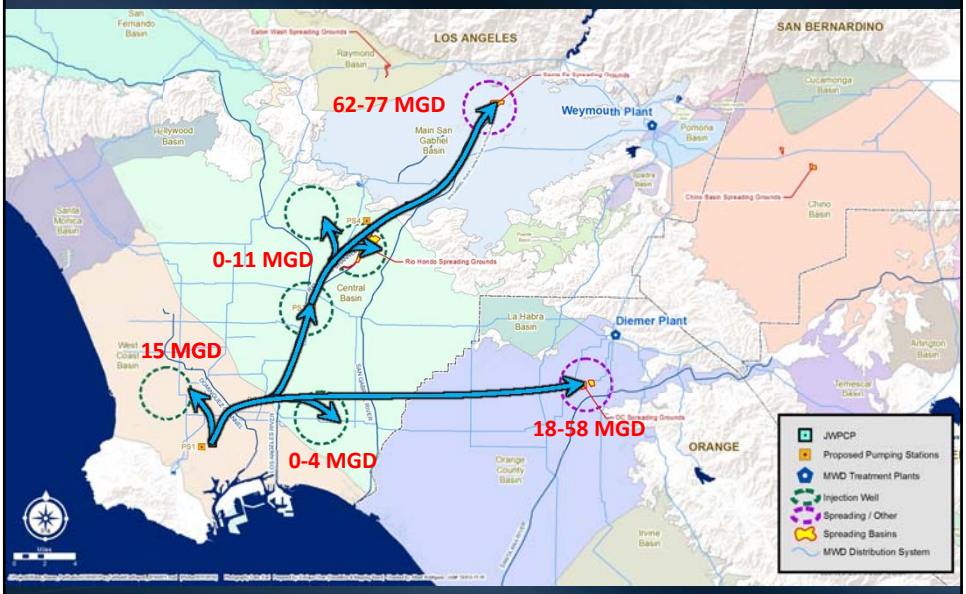
- Receive unchlorinated, non-nitrified secondary effluent from JWPCP
- Produce high-quality water suitable for groundwater recharge
  - 150 mgd product water design capacity
  - Meet current basin objectives
- Use tertiary MBR (tMBR) to achieve pathogen log reduction and minimize membrane fouling

# Full-Scale AWT Base Case Schematic




# Conveyance Base Case

# Potential Full Program (up to 150 MGD)




# Program Timeline

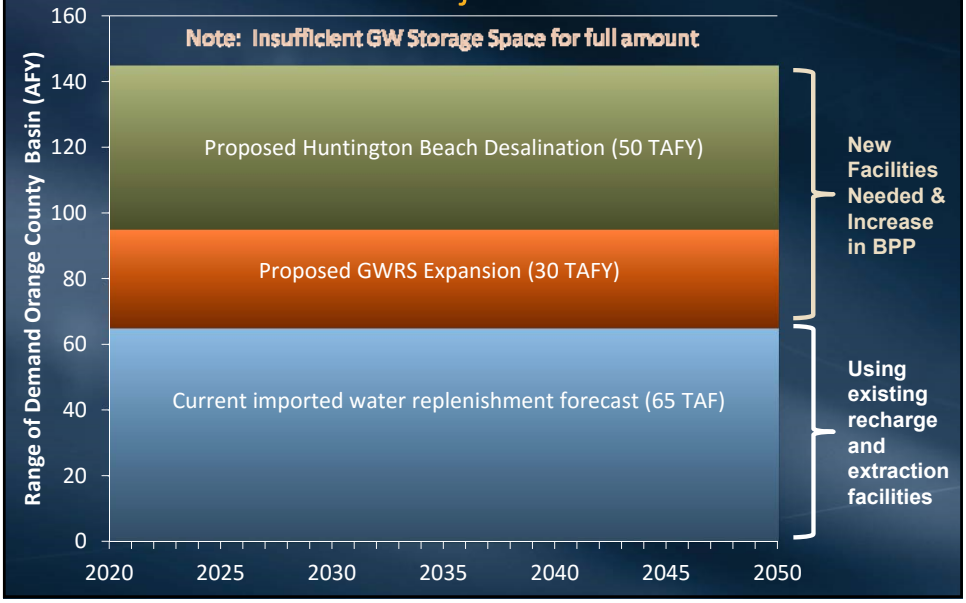

# Orange County Basin

# Orange County Groundwater Basin

- Adequate Demand for Project Water
  - Imported Demand = 160-250 TAFY
  - Current replenishment Demand = 65 TAFY
- Sufficient Well Capacity to Pump Water
  - Existing Capacity = 420-440 TAFY
- Limited by Available Spreading Capacity
  - Winter = 18 MGD
  - Summer = 60 MGD
  - Would need additional 30-60 Ac. spreading capacity (just to spread current replenishment demand)

# Project Water Demand in Orange

## 65-95 TAFY of Potential Project Water Demands



# About Sanitation Districts

- Wastewater and Solid Waste Management
  - Serves 5.3 million people
  - 800 sq. mile service area
  - 460 MGD current average flow
  - 11 water reclamation plants, including Joint Water Pollution Control Plant (JWPCP)
- JWPCP
  - Located in Carson
  - Current Flow ~ 265 MGD
  - Primary and secondary treatment
  - Currently discharges to the ocean

# Agreement Terms: Demonstration Plant

- Boards approved
- LACSD Responsibility:
  - Deliver secondary-treated water to demo plant
  - Provide land & utilities
  - Dispose of waste streams
  - Perform influent lab analyses & maintain source quality control program
- Metropolitan Responsibility:
  - Fund, design, construct, operate & maintain AWT demo plant

# Agreement Framework: Full Scale Facilities

- Boards approved
- LACSD Responsibility to:
  - Deliver secondary-treated source water to AWT plant
  - Commit to level of quality for source water
  - Implement, enforce (& strengthen if necessary) ongoing source quality control program
  - Dispose of brine & waste streams
  - Lease land for AWT plant

# Agreement Framework: Full Scale Facilities

- Boards approved
- Metropolitan responsibility:
  - Provide AWT plant & delivery system
    - Fund, design, construct, operate & maintain entire system
    - Determine phasing
  - Provide exchange water into LACSD service area
    - Approx. 1% of product water
- Sales Revenue
  - Metropolitan revenue

# Additional Considerations

- Potential cost sharing by LACSD
- Potential State Funding
  - Grant funds & SRF low interest loans
  - Joint funding application
  - Phasing of requests to match progress of program
- CEQA Compliance for Full Scale Phase 1
  - AWT plant
  - Delivery system