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

Forecast Year

Million Acre-Feet

Local Supply Target
CRA Target
SWP Target
Retail Demand with Conservation Target
RRWP

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

1. No Fatal Flaws?
   - Regulatory Setting and Requirements
   - Public Acceptance
   - Base Case Treatment Plant and Transmission Systems
   - Groundwater Basins Storage, Spreading and Well Capacities
   - Overall System Operations and Water Management

2. Justified and Cost Effective?
   - Total System Capital and O&M Costs
   - Evaluation of Regional Benefits

3. Impacts on the cost of water to Member Agencies?
   - Financing Plan and Rate Impacts
# Operational Scenarios

<table>
<thead>
<tr>
<th>Performance</th>
<th>Base Case</th>
<th>Alternative Operations</th>
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</thead>
<tbody>
<tr>
<td>Goal</td>
<td>Delivery Flexibility</td>
<td>Maximize Deliveries</td>
</tr>
<tr>
<td>AWT Production Capacity</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>Average Daily Delivery</td>
<td>145-150 mgd</td>
<td>&lt;150 mgd</td>
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<tr>
<td>Minimum Day Delivery</td>
<td>&gt;=110 mgd</td>
<td>&lt;150 mgd</td>
</tr>
<tr>
<td>Manage Peak Flows</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Additional Infrastructure and Facilities Needed (not currently included in the Base Case)</td>
<td>No</td>
<td>Yes (spreading basins and injection wells)</td>
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**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
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)

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**Project Water Demand in Orange**

65-95 TAFY of Potential Project Water Demands

- **Current imported water replenishment forecast (65 TAF)**
- **Proposed GWRS Expansion (30 TAF)**
- **Proposed Huntington Beach Desalination (50 TAF)**

*Note: Insufficient GW Storage Space for full amount*

Using existing recharge and extraction facilities

New Facilities Needed & Increase in BPP
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