Regional Recycled Water Program Update
Engineering and Operations Committee
Item 6b
March 11, 2019
Outline

- Program Background
- Demonstration Plant
- Conceptual Planning Studies Report
  - Phasing Evaluation
  - Updated Program Costs
  - Recommended Program Implementation
- Next Steps
Collaboration between Metropolitan and the Sanitation Districts of Los Angeles County
Development of a new regional water source
Up to 150 mgd (168,000 AFY)
Deliveries to Member Agencies
Recharge groundwater basins
Increase regional storage reserves and reliability
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
November 2016 – Feasibility Study Report

- RRWP at 150 mgd is technically feasible
- Identified challenges and uncertainties
- Recommended additional conceptual planning studies
- Total Capital Costs: $2.7 Billion (2016 dollars)
- Unit Cost of Yield: $1,610 per acre-foot (2016 dollars)
- Report reviewed by panel of independent subject-matter experts
AWT Location at JWPCP
Demonstration Plant
Demonstration Plant Construction

- Capital Program Budget: $17 million
- Construction Contract: $13.85 million
- Construction status: 98% complete
- Commence Operation and Testing: May 2019
Facility Overview
Reverse Osmosis Skid Commissioning
Chemical Feed and Control System Commissioning
Independent Science Advisory Panel established to review work plan

Regulatory approval of test plan obtained

Initial 15 month test plan
Phased implementation is recommended
- **100 MGD first phase**

Include backbone conveyance system within first phase of program
- **Capacity up to 150 MGD**

Include potential for future Direct Potable Reuse (DPR) applications within overall program

New cost estimate developed (2018 dollars)

Phased approach is cost effective
Benefits of Phasing

- Annual yield of 100 mgd closely matches near-term demands
- Production of 100 mgd increases certainty of wastewater flow availability
- Regulatory complexity reduced
- Future DPR opportunities are preserved
- Unit production costs at 100 MGD are competitive with ultimate capacity at 150 MGD
- Impact on overall MWD costs reduced from full-scale implementation
Conceptual Conveyance Alignment
Proposed Program
Phase 1: Backbone System

- JWPCP 100-mgd AWT & Pump Station
- Montebello Forebay Injection Wells
- Rio Hondo Spreading Grounds
- Long Beach Injection Wells
- Harbor Industrial Users
- Pump Station
- Santa Fe Spreading Grounds

Initial Backbone System

Up to 150-mgd Pipeline

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Phase 2: Additional Recharge

- Montebello Forebay Injection Wells
- Rio Hondo Spreading Grounds
- Long Beach Injection Wells
- Harbor Industrial Users
- West Coast Basin Injection Wells
- JWPCP 150-mgd AWT & Pump Station
- Pump Station(s)
- Pump Station
- Junction Structure
- Initial Backbone System
- Additional Basin Options
- Up to 150-mgd Pipeline
- 60-mgd Pipeline
- Orange County Spreading Grounds

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Phase 2: DPR Option at Diemer WTP

- West Coast Basin Injection Wells
- Montebello Forebay Injection Wells
- Rio Hondo Spreading Grounds
- Long Beach Injection Wells
- Harbor Industrial Users
- Santa Fe Spreading Grounds
- Pump Station
- Junction Structure
- Up to 150-mgd Pipeline
- 60-mgd Pipeline
- Orange County Spreading Grounds, Pump Station
- Initial Backbone System
- Additional Basin Options
- Future DPR Options

JWPCP 150-mgd AWT & Pump Station

Pump Station

Diemer WTP

MWD EOCF#1

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Phase 2: DPR Option at Weymouth WTP

Initial Backbone System
- JWPCP 150-mgd AWT & Pump Station
- Montebello Forebay Injection Wells
- Rio Hondo Spreading Grounds
- Long Beach Injection Wells
- Harbor Industrial Users

Additional Basin Options
- West Coast Basin Injection Wells
- Orange County Spreading Grounds

Future DPR Options
- Up to 150-mgd Pipeline
- MWD Yorba Linda Feeder
- Diemer WTP
- MWD EOCF#1
- Santa Fe Spreading Grounds
- Junction Structure
- Weymouth WTP

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Additional Comments

- Programmatic approach to Environmental Documents recommended
  - Will cover near- and long-term program objectives
  - May include project-specific details as appropriate to allow early deliveries

- Further refinement of DPR options
  - Will continue during environmental planning
  - Will evolve as regulations are developed

- Cost estimates have been updated from 2016 to 2018 dollars
## Updated Program Costs

### Recommended Program

<table>
<thead>
<tr>
<th></th>
<th>Phase 1 Backbone (2018 Dollars)</th>
<th>Full Program(^1,2) (2018 Dollars)</th>
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<tbody>
<tr>
<td>Production Capacity (mgd)</td>
<td>100</td>
<td>150</td>
</tr>
<tr>
<td>Capital Program Cost(^3)</td>
<td>$2.6 billion</td>
<td>$3.4 billion</td>
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<tr>
<td>Program Unit Cost of Yield ($/AF)</td>
<td>$1,813</td>
<td>$1,826</td>
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\(^1\) Adds Orange County and West Basin deliveries to Initial Backbone system

\(^2\) Does not include costs for DPR to Weymouth or Diemer WTPs

\(^3\) Costs include 25% for engineering services and 35% overall program contingency
Next Steps
Preliminary Board Workshop Goals

Provide sufficient information for approval of a 2019 Board action, potentially consisting of:

- Commencing CEQA process
- Beginning preliminary engineering
- Refining rights of way

Define approach to cost recovery

Develop consensus on integrating this program into next biennial budget cycle

Discuss potential alternatives that enable early delivery of purified water
Examples of Workshop Questions

- What additional information is needed before proceeding to CEQA and predesign activities?
- How should the program costs be recovered?
- What level of commitment from recipients is needed before proceeding?
- How important is retaining the ability to incorporate future DPR opportunities?
- Is the level of regional collaboration with Metropolitan sufficient to enable program implementation?
- Is early-delivery of water a program goal?
Next Steps

- Continue Demonstration Plant testing for regulatory approval and AWT optimization (May 2019)
- Issue White Papers (Spring 2019)
- Conduct Board Workshops (Spring-Summer 2019)
- Board Action to proceed with environmental process and engineering support (Fall 2019)
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