Workshop Format

1. Background
2. Expected Outcomes for PWC Workshop
3. Priority Considerations
   • Local Water Supply
   • Emergency Storage
   • Demand Projections
   • Water Efficiency
   • Addressing Aging Infrastructure
4. Priority Ranking
5. Criteria Weighting
6. Other
7. Next Steps
Why are we here?

- Interactive Workshop
- Setting the course for analysis and IWRMP Final Report
- Policy-level direction from PWC
Key Workshops and Meetings Completed to Date

Previous workshops have focused on staff-level project discussions, system needs, and operations.

- Workshop #1 – Potable Water System
- Workshop #2 – Sewer and Storm Systems
- Workshop #3 – Groundwater

Meeting with Chair Aronberg and Commissioner Greer

Meetings with outside Agencies
Water System Summary

- 170+ miles of pipeline, 4” to 24” diameter
- 10 pump stations
- 10 storage reservoirs totaling 43 MG
- 10,600 connections
Sewer System Summary

• 98 miles of gravity pipeline, 6” to 36” diameter
• No pumping or treatment within the City
• Treatment by City of LA at Hyperion Plant
Storm Drain System Summary

- 47 miles of gravity pipeline, 6” to large box culverts
- No pumping
- Major conveyance facilities:
  - Benedict Canyon
  - Coldwater Canyon
  - La Cienega / San Vicente
  - Both City-owned and County-owned facilities
Questions/Discussion Points
Expected Outcomes for PWC Workshop

Establishing prioritization ranking

<table>
<thead>
<tr>
<th>IWRMP Priorities</th>
<th>Ranking</th>
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<tr>
<td>Local Water Supply</td>
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Establishing criteria to evaluate project feasibility

<table>
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<th>Ranking Criteria</th>
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<td>Cost</td>
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<td>Schedule</td>
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<td>Risk of Doing Nothing</td>
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<td>Other</td>
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Expected Outcomes for PWC Workshop

Answer key questions that will guide project implementation
Questions/Discussion Points
Priority Consideration: Local Water Supply

What is the local water supply goal (percentage)?
Near term? Long term?

To what extent should the City consider other water supplies including recycled water or other?
Priority Consideration: Local Water Supply

- Conservation (?%)
- Local (?%)
- Imported (?%)
- Groundwater (?%)
- Other (?%)

Projects:
- Project #1
- Project #2
- Project #3
- MWD Water
Local Water Supply with Current Projects – 2019 to 2023

Demand baselined to 10 MGD (pre-2015 conditions)

- **Current**
  - 80% MWD Water

- **Foothill WTP Online**
  - 55% MWD Water
  - 25% Local Water

- **Foothill WTP Expansion for all La Brea Wells**
  - 45% MWD Water
  - 35% Local Water

- **Conservation**
  - 20%
## Local Water Supply – List of Current and Potential Near-Term Projects

<table>
<thead>
<tr>
<th>Projects</th>
<th>Notes</th>
<th>% of Water Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foothill WTP Pretreatment + One La Brea Well (Coffee Bean Site)</td>
<td>Moving forward</td>
<td>25%</td>
</tr>
<tr>
<td>La Brea – Additional Wells</td>
<td>Moving forward</td>
<td>10%</td>
</tr>
<tr>
<td>New Hollywood Basin Deep Well</td>
<td>Potential</td>
<td>4%</td>
</tr>
<tr>
<td>Roxbury Park Non-Potable Supply</td>
<td>Potential</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>New Shallow Wells near Foothill WTP</td>
<td>Potential</td>
<td>4%</td>
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</tbody>
</table>
Long-Term Water Supply Considerations for Discussion

- Increased Conservation – above current goal of 20%
- Recycled water (regional system)
- Wastewater treatment and reuse (local recycled water system)
- Ocean desalination (buying into regional plant)
- Surface water capture and reuse
- Greywater
Local Water Supply

What is the local water supply goal for the near term? Long term?

To what extent should the City investigate other local water supply options?
Priority Consideration: Emergency Storage

How much emergency storage?

Consideration for catastrophic emergencies?
  Number of days to plan for?
  Expected level of conservation?
How much conservation during an emergency?

- No discernible demand reduction during MWD outage in December 2018

Section 4503. Suspension of Deliveries

“(b). Each member agency shall have sufficient resources such as local reservoir storage, groundwater production capacity, system interconnections or alternate supply source to sustain:

(1) A seven-day interruption in Metropolitan deliveries from raw and treated water distribution facilities based on average annual demand of the affected facility.”
Storage Components

Total storage capacity for a system is comprised of three components:
  • Equalization storage
  • Fire storage
  • Emergency storage

Emergency storage duration is a policy decision
# Emergency Storage Analysis Summary

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Supply from Foothill WTP (MGD)</th>
<th>Emergency Storage Duration (based on no demand reduction up to 25% reduction)</th>
<th>Average Increase from 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019 (Current)</td>
<td>0</td>
<td>4.2 days to 6.8 days</td>
<td>N/A</td>
</tr>
<tr>
<td>2021 (Foothill WTP Complete)</td>
<td>2.6</td>
<td>5.3 days to 11.4 days</td>
<td>2.9 days</td>
</tr>
<tr>
<td>2023 (Foothill WTP w/ La Brea Expansion)</td>
<td>3.6</td>
<td>5.7 days to 13.7 days</td>
<td>4.3 days</td>
</tr>
</tbody>
</table>

Note: Duration assumes reservoirs are 100% full at time of need
Emergency Storage Analysis (Peak Demands 2023)

Emergency Storage (Days)

Emergency Storage (Million Gallons)

- No Reduced Demand
- 10% Reduced Demand
- 25% Reduced Demand
Emergency Storage Discussion

How much emergency storage?

Consideration for catastrophic emergencies?
Number of days to plan for?
Expected level of conservation?
Priority Consideration: Demand Projections

Are there any desired analyses or outcomes for new development considerations in the IWRMP?

How often should current new development ordinances be evaluated and updated?
Demand Projections

What are they used for?

- Water supply planning (Urban Water Management Plan)
- Financial planning (rate studies)
- Capital improvement planning (IWRMP)
- Operations analysis – can the system meet service criteria like fire flow, pressure (IWRMP)
Demand Projection Potential Methodologies

- Engineering judgement
- Per-unit use coefficients (water consumption per capita)
- Statistical models (regression, time-series, end use fixture count models)
- Hybrid approaches

Demand Projections – Methodology

• 2019 Hydraulic Model Update
  • Existing demands + known proposed developments
  • Hybrid approach of statistical model methodology used for future projections for individual meter data
### New Developments within Last 3 Years (Top 15 Projected Water Usage)

<table>
<thead>
<tr>
<th>Address</th>
<th>Usage</th>
<th>City</th>
</tr>
</thead>
<tbody>
<tr>
<td>9900 Wilshire Boulevard</td>
<td>Multi-family Residential &amp; Hotel</td>
<td>BH</td>
</tr>
<tr>
<td>9040 West Sunset Boulevard</td>
<td>Multi-family Residential &amp; Hotel</td>
<td>WH</td>
</tr>
<tr>
<td>9876 Wilshire Boulevard</td>
<td>Multi-family Residential &amp; Hotel</td>
<td>BH</td>
</tr>
<tr>
<td>9200 Wilshire Boulevard</td>
<td>Mixed Use</td>
<td>BH</td>
</tr>
<tr>
<td>9060 Santa Monica Boulevard</td>
<td>Mixed Use</td>
<td>WH</td>
</tr>
<tr>
<td>8899 Beverly Boulevard</td>
<td>Mixed Use</td>
<td>WH</td>
</tr>
<tr>
<td>702-714 North Doheny (completed)</td>
<td>Multi-Family Residential</td>
<td>WH</td>
</tr>
<tr>
<td>8600 Wilshire Boulevard</td>
<td>Mixed Use</td>
<td>BH</td>
</tr>
<tr>
<td>9001 Santa Monica Boulevard</td>
<td>Mixed Use</td>
<td>WH</td>
</tr>
<tr>
<td>627 North La Peer Drive</td>
<td>Hotel</td>
<td>WH</td>
</tr>
<tr>
<td>121 San Vicente Boulevard (completed)</td>
<td>Commercial</td>
<td>BH</td>
</tr>
<tr>
<td>563 North Alfred Street</td>
<td>School</td>
<td>WH</td>
</tr>
<tr>
<td>8750 El Tovar Place</td>
<td>Park</td>
<td>WH</td>
</tr>
<tr>
<td>837-850 North San Vicente Boulevard</td>
<td>Hotel</td>
<td>WH</td>
</tr>
<tr>
<td>948 &amp; 954 North San Vicente Boulevard</td>
<td>Mixed Use</td>
<td>WH</td>
</tr>
</tbody>
</table>

IWRMP to address demand projections relative to 2015 Urban Water Management Plan and compared to actual usage for completed developments.
New Development Growth Impacts Mitigated by City Ordinances

- New developments start with Will-Serve requests
- Existing Water Capacity Fee
- Water Supply Fee
- Periodic Fee Updates presented to City Council
Priority Consideration: Demand Projections

Are there any desired analyses or outcomes for new development considerations in the IWRMP?

How often should current new development ordinances be evaluated and updated?
Priority Consideration: Water Efficiency

What is a reasonable and achievable level of water loss?

Should the City develop additional programs to further reduce water loss?

Should the City implement a proactive leak detection program?

Should the City implement measures to increase passive water conservation?
Priority Consideration: Water Efficiency

• SB 555 and the Department of Water Resources (DWR) requires urban water systems to quantify water loss statistics every year, however there are no specific performance targets.

• It is generally accepted that water loss under 10% is acceptable for urban water systems
Water Loss Statistics

- **LADWP**
  - 712,000 connections
  - 5.2% of total supply water loss

- **Moulton Niguel Water**
  - 55,000 connections
  - 8.7% of total supply water loss

- **City of Simi Valley**
  - 25,000 connections
  - 6.0% of total supply water loss

- **Culver City**
  - 9,000 connections
  - 3.2% of total supply water loss

- **City of Beverly Hills**
  - 10,600 metered connections
  - 7.6% of total water supply loss*

Some agencies choose to implement leak detection programs for the early detection of leaks which can reduce emergency break repairs and reduce water loss.

*Source: 2017 Water Loss Audit (2018 Water Loss Audit is in progress)
Priority Consideration: Water Efficiency

What is a reasonable and achievable level of water loss?

Should the City develop additional programs to further reduce water loss?

Should the City implement a proactive leak detection program?

Should the City implement measures to increase passive water conservation?
Priority Consideration: Addressing Aging Infrastructure (Water, Sewer, and Stormwater Systems)

• Where does addressing aging infrastructure rank compared to other priorities?
• Should the City’s infrastructure upgrades prioritize one system above another?
• Assuming projects for each system are implemented each year, what percentage should be allocated to water, sewer, and stormwater?
Water System Performance Indicators

- Through the first 3 quarters of FY 18/19, the City experienced 26 waterline breaks
  - The goal is less than 15 breaks per year, historically it’s been less than 15 per year over the last 5 years.

Average number of breaks for a system of the City’s size would be 45 breaks per year*

Sewer System Performance Indicators

- Through the first 3 quarters of FY 18/19, the City experienced 8 overflows
  - The goal is less than 6 overflows per year
- Improvement projects have focused on relining existing pipelines rather than replacement or upsizing
Storm Drain System

- Historically the City has prioritized water and sewer projects over storm drain projects.
## Pipeline Age Statistics

<table>
<thead>
<tr>
<th>Decade</th>
<th>Water</th>
<th>Sewer</th>
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<tbody>
<tr>
<td>&lt;1930</td>
<td>31%</td>
<td>1%</td>
</tr>
<tr>
<td>1930</td>
<td>10%</td>
<td>49%</td>
</tr>
<tr>
<td>1940</td>
<td>&lt; 1%</td>
<td>7%</td>
</tr>
<tr>
<td>1950</td>
<td>12%</td>
<td>11%</td>
</tr>
<tr>
<td>1960</td>
<td>5%</td>
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</tr>
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<td>1970</td>
<td>14%</td>
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<td>1980</td>
<td>5%</td>
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</tr>
<tr>
<td>1990</td>
<td>12%</td>
<td>0%</td>
</tr>
<tr>
<td>2000</td>
<td>5%</td>
<td>1%</td>
</tr>
<tr>
<td>2010</td>
<td>5%</td>
<td>&lt; 1%</td>
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Priority Consideration: Addressing Aging Infrastructure (Water, Sewer, and Stormwater Systems)

• Where does addressing aging infrastructure rank compared to other priorities?
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Questions/Discussion Points
Expected Outcomes for PWC Workshop

Establishing prioritization ranking

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<td>Water Efficiency</td>
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**Expected Outcomes for PWC Workshop**

*Establishing criteria to evaluate project feasibility*

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<tr>
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<tr>
<td>Schedule</td>
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<tr>
<td>Emergency Resiliency</td>
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<tr>
<td>Risk of Doing Nothing</td>
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<tr>
<td>Other</td>
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Criteria Description

- **Cost**
  - Is the project cost effective in terms of total cost and cost per unit? Are there outside issues driving costs that are beyond the City’s control?

- **Reliability**
  - To what extent does this project increase the system’s reliability?

- **Schedule**
  - Can the project be implemented in the near future? Is the project within the City’s control or are there outside agencies involved? Will permits or other regulatory requirements impact implementation? Is the needed technology available?
Criteria Description

- **Emergency Resiliency**
  - Does the project make the system more resilient to emergencies? Does the project prevent potential emergencies from occurring?

- **Risk of Doing Nothing**
  - What is the risk of either deferring, or not implementing this project at all? Risk of not conforming to regulations? Risk of inefficiencies by deferring replacement or maintenance? Reduced resources to address emergencies?
## Project Example – Whittier Narrows Water Treatment Facility

<table>
<thead>
<tr>
<th>Program Alternative</th>
<th>Weighting Factors</th>
<th>Physical (Site)</th>
<th>Risk</th>
<th>Score*</th>
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<tbody>
<tr>
<td></td>
<td>Cost</td>
<td>Reliability</td>
<td>Financing</td>
<td>Environmental</td>
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<tr>
<td>Alternative 1</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>0.75</td>
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<tr>
<td>No EPA Project, City Treatment</td>
<td>6.00</td>
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<td>Alternative 2</td>
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<tr>
<td>Treatment @ Corps Locations</td>
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<td>EPA Treatment @ Whittier Plant 2</td>
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<td>Alternative 5</td>
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## SAMPLE Ranking and Prioritization Table

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<th>IWRMP Priorities</th>
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<th>Reliability</th>
<th>Schedule</th>
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<th>Other</th>
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The IWRMP team is ready to move into the analysis and report writing phase starting Q3 2019.
Next Steps after Workshop

• Summarize and present key conclusions at July 11, 2019 PWC Meeting
• Present IWRMP prioritization and ranking criteria to City Council in August 2019
• IWRMP to move forward with analysis and Draft Report to be reviewed by PWC
Thank you for your time