Agenda

- ORANGE COUNTY WATER RELIABILITY STUDY
- MET INTEGRATED RESOURCES PLAN
  - MET/LACSD INDIRECT POTABLE REUSE PROJECT
- SWRCB EMERGENCY REGULATIONS II
- ROUNDTABLE DISCUSSION
OC Water Reliability Study Phase 1 Overview DRAFT Initial Results

November 5, 2015
Elected Officials Meeting
Municipal Water District of Orange County

OC Supply GAP Findings in 2040 Average shortages under 3 Scenarios

Scenario 1
Without Delta Fix: 33,600
With Fix: 5,400
6% 1%

Scenario 2
Without Delta Fix: 76,800
With Fix: 17,900
14% 3%

Scenario 3
Without Delta Fix: 129,200
With Fix: 67,800
23% 12%
Phase 1 Summary

1. Investments are needed by DWR, MET and OC to secure more reliable supplies over the long run

2. Supply GAPS in OC in 2040 can range from 5,000 AF per year to 129,000 AF per year under three Scenarios

Phase 1 Summary

3. The California WaterFix improves Supply Reliability considerably, but additional investments are required

4. Emergency System Gaps will occur following major earthquake events without additional investments
Project List

- Ocean desalination
- OCWD basin storage
- Water transfers and banking
- San Juan Basin yield augmentation
- Additional recycling
- Water Use Efficiency
- California WaterFix
- Emergency power supplies
- MET IRP Projects
- Others

Why a Reliability Study??

- Droughts happen and climate variability for the future is uncertain
- Endangered Species Act (ESA)
- Growth in population and Gross Domestic Product results in competition for water supplies
- Earthquakes and Power outages will happen
- Provides basis for OC input into Metropolitan’s Integrated Resources Plan (IRP) for Southern California to prevent over or under investing
- Peer reviewed information for local decisions
**MWDOC Perspective**

- Planning + Investments = Reliability
- Key issues
  - Balancing OC decisions with MET decisions
  - Considering decisions given future uncertainties
  - Utilization of OCWD Basin by producers and others
  - What future investments should be made in OC
- Providing local officials best information to chart course for their decisions affecting their stakeholders

**Study Phasing**

- **Phase 1**
  - Develop data, models, OC water demand projections for 25 years and analyze supply & system gaps under various scenarios
  - Develop list of projects (portfolios) that could fill the gaps
- **Phase 1 Extension – starting NOW**
  - Workshops to gather input from member agencies
- **Phase 2**
  - Quantifies the reliability improvement from project portfolios
  - Portfolios target specific gains in supply reliability, such as lower-cost, higher reliability, more local control, etc.
What are GAPs, Scenarios and Portfolios?

- GAPs represent the inability to meet demands under the given Scenario
- Scenarios (accounting for growth, local resources, climate change) are NOT predictions, but are plausible planning outcomes
- Portfolios are combinations of potential water-supply projects such as high reliability, low risk, low cost, etc.

Major Uncertainties

<table>
<thead>
<tr>
<th>Uncertainty</th>
<th>Range of Outcomes</th>
</tr>
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<tbody>
<tr>
<td>California WaterFix</td>
<td>No/Yes</td>
</tr>
<tr>
<td>MET Demands (growth)</td>
<td>Lower/Higher</td>
</tr>
<tr>
<td>MET IRP Policies &amp; Investments</td>
<td>Higher or Lower Reliability</td>
</tr>
<tr>
<td>OC Demands</td>
<td>Rebound from 2015/WUE</td>
</tr>
<tr>
<td>Regional Local Supplies</td>
<td>Low, High</td>
</tr>
<tr>
<td>Regional WUE</td>
<td>Low, High</td>
</tr>
<tr>
<td>Climate Variability/Change (CRA &amp; SWP)</td>
<td>None, Moderate, High</td>
</tr>
<tr>
<td>Santa Ana River Baseflows</td>
<td>Low, Med</td>
</tr>
<tr>
<td>Bureau of Reclamation Basin Study</td>
<td>Long Term Sustainability</td>
</tr>
<tr>
<td>DWR Projections of SWP Yield</td>
<td>Range of Outcomes</td>
</tr>
<tr>
<td>Earthquakes</td>
<td>Will happen</td>
</tr>
</tbody>
</table>
Phase 1 SUPPLY GAP Findings

OC Water Demand Forecast

Total Orange County Water Demand Forecast

- Existing Levels of Conservation
- Baseline New Passive/Active Conservation
- 20% Landscape Conversion
OC Supply GAP Findings in 2040
Average shortages under 3 Scenarios

Orange County supply reliability is dependent on combination of actions by DWR, MET and OC agencies

Using Scenario 1 (MET’s assumptions), supply gaps can be managed, especially with construction the California WaterFix

OC’s potential projects include enough options to satisfy demands under Scenario 1 (with or without CaliforniaFix)

Supply reliability suffers under tougher scenarios that increase demands and incorporate climate change impacts on SWP, CRA and local hydrology; the outlook is substantially more challenging under Scenario 3 without the Delta Fix
Primary Risks:
- Earthquakes
- Power Outages

Potential Duration of EMERGENCY Outages

<table>
<thead>
<tr>
<th>Reliability Event</th>
<th>Duration</th>
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<tbody>
<tr>
<td>Regional Transmission Lines in OC</td>
<td>One Month</td>
</tr>
<tr>
<td>MET Regional Conveyance Outside of OC</td>
<td>Two Months</td>
</tr>
<tr>
<td>Colorado River Aqueduct</td>
<td>6 months</td>
</tr>
<tr>
<td>Diemer WTP Outage</td>
<td>One week to 2 months</td>
</tr>
<tr>
<td>Delta Levee Failure</td>
<td>1 to 2 Years</td>
</tr>
<tr>
<td>Edmonston Pumping Plant &amp; East/West Branch Outages</td>
<td>Not analyzed – posited at 1-2 years</td>
</tr>
<tr>
<td>Local Water Systems</td>
<td>Days, weeks, possibly longer depending on Fault</td>
</tr>
<tr>
<td>Electrical Grid Outages</td>
<td>7 Days</td>
</tr>
</tbody>
</table>
Next Step: Phase 1 Extension

- Gather Input from Member Agencies
  - 3-5 workshops
  - Understand implications from Phase 1
  - Additional model runs with modified assumptions
- Phase 2 Scoping
  - Financial/Economics of decisions
- Complete workshops in January
- Begin Phase 2

Phase 2 Balancing Decisions

- With CA WaterFix
  - MET IRP
  - OC Reliability
- Without CA WaterFix
  - Comfort with Risk
  - Level of Investment
Need for Phase 2

- Phase 1 identified GAPS and Phase 2 will examine options to fill those GAPS
- Bring together MET IRP Strategy Options with OC Strategy Options
- Decisions to be made by all water entities – not dictated by MWDOC
- Providing local officials best information to chart course for their decisions affecting their stakeholders
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Metropolitan’s 2015 IRP

- MET’s Integrated Resources Plan (IRP)
  - A comprehensive long-term strategy to identify potential resources development needs, adaptation measures, and implementation pathways

- IRP Objectives
  - Ensure Reliability
  - Maintain and expand diversity and flexibility
  - Provide adaptability
  - Acknowledge constraints
Phase 1: Technical Update

- Evaluation of our current outlook on supplies and demands
- Assess future water supply and demand imbalances
- Develop regional targets to support long term reliability

Phase 2: Resource Implementation Policies

- How might we achieve these targets
- What are the local and regional responsibilities
- Evaluation of Cost and Rates

Phase 1: IRP Technical Update
The 2010 IRP Targets do not provide a sufficient buffer against potential risks

- Demographic Changes i.e. population growth, economy
- Reductions in Local Resources due to lower than expected groundwater production or surface supplies, Project implementation Timing, etc.
- More restrictive Delta regulations lowering State Water Project deliveries
- Potential shortage on the Colorado River

Additional local supplies and conservation are needed to mitigate risk

- Maintaining imported supplies continue to be critical
- Need to develop a comprehensive water transfer approach to address short-term reliability challenges
- California WaterFix results in a major benefit, but it does not solve all of our problems; there is still a need for additional investments
Phase 2: IRP Policy Implementation Update

- Kick-off in early 2016 with MET Board
- Reviewing supply and demand imbalance
- Identify projects and programs to meet this “Gap”
  - Evaluate MET’s and member agency’s role
  - Analysis costs and benefits
  - Assess Risks and Challenges
- MET’s IRP Decision will impact the reliability of Orange County
- Completion in Summer 2016

Phase 2: Policy Issues

- Future of Water Conservation
- Developing Further Local Resources
  - Recycling
  - Desalination
  - Stormwater
- Sustainable Groundwater Management
- Water Transfer and Exchange Program to mitigate near term shortages
- Stabilizing Imported Supplies
Potential Regional Recycled Water Supply Program

- Metropolitan & LACSD
- Ongoing discussions on a water recycling treatment facility for number of years
- Regional recycled water program
  - At JWPCP in Carson
  - For indirect potable reuse
  - Phased approach
    - Up to 150 MGM
- Development of a Term Sheet between MET and LACSD

Location Map
Joint Water Pollution Control Plant

Approach to the Program

- Start with 1 MGD Demonstration Project
  - Provide for timely and cost effective implementation
  - Provide for regulatory acceptance of the project – water quality for groundwater recharge
  - Duration of the Demo – 1 year
- Feasibility & Environmental Studies for the Full Scale
  - Evaluate delivery system capabilities
  - Agency planning and Coordination
- Funding and Financing
  - Seek grant and loans
  - Establish water sale agreements
  - Determine rate impact
Potential Full Program (up to 150 MGD)

Preliminary Program Timeline

Legend
- Demonstration Program
- Full Scale Program
- Const. & Operation
- Board Action/Info
ELECTED OFFICIALS MEETING
Municipal Water District of Orange County
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### SWRCB Regulations
#### OC Conservation Goals

<table>
<thead>
<tr>
<th>City</th>
<th>Percentage</th>
<th>City</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anaheim</td>
<td>20%</td>
<td>Huntington Beach</td>
<td>20%</td>
</tr>
<tr>
<td>Brea</td>
<td>24%</td>
<td>IRWD</td>
<td>16%</td>
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<tr>
<td>Buena Park</td>
<td>20%</td>
<td>La Habra</td>
<td>28%</td>
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<tr>
<td>EOCWD</td>
<td>36%</td>
<td>La Palma</td>
<td>20%</td>
</tr>
<tr>
<td>ETWD</td>
<td>24%</td>
<td>LBCWD</td>
<td>24%</td>
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<tr>
<td>Fountain Valley</td>
<td>20%</td>
<td>Mesa Water</td>
<td>20%</td>
</tr>
<tr>
<td>Fullerton</td>
<td>28%</td>
<td>MNWD</td>
<td>20%</td>
</tr>
<tr>
<td>Garden Grove</td>
<td>28%</td>
<td>Newport Beach</td>
<td>28%</td>
</tr>
<tr>
<td>GS–Cowan Heights</td>
<td>36%</td>
<td>Orange</td>
<td>28%</td>
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<tr>
<td>GS–Placentia</td>
<td>24%</td>
<td>San Clemente</td>
<td>24%</td>
</tr>
<tr>
<td>GS-West Orange</td>
<td>16%</td>
<td>SJ Capistrano</td>
<td>28%</td>
</tr>
</tbody>
</table>

### MWDOC YTD Allocation Surplus & Secondary Assignment

#### Cumulative Imported Water Usage vs. Allocation Target

![Cumulative Water Usage Chart](chart.png)

#### MWDOC YTD Water Usage

- **Target:**
  - 80 TAF
  - 15 TAF Buffer
  - 17 TAF OCWD
  - 48 TAF Retail

- **Actual:**
  - 70 TAF

![Water Usage Chart](chart2.png)
Governor’s Executive Order
SWRCB Emergency Regulations

- Focused on **1.2 MAF Reduction Goal** (25%)
  - Nine Months (June 2015 – February 2016)
- Non-responsive Public “Workshop” (April 2015)
  - Lawns as the Enemy
  - No Climate Adjustment
  - No Indirect Potable Reuse Credit
  - Fire Zone Requirements not Considered
  - Issues Recognized but “Not Enough Time”
  - Issues deferred to future workgroups

SWRCB Emergency Regulations
ENFORCEMENT

- **Priority Levels**
  - Priority 1 = > 15% from goal (6 = 2%)
  - Priority 2 = 5% to 15% from goal (49 = 13%)
  - Priority 3 = 1% to 5% from goal (52 = 13%)
  - Priority 0 = met or within 1% of goal (282 = 72%)

- **Enforcement Actions**
  - Warning Letter (Priority 3)
  - Notice of Violation (Priorities 2 & 1)
  - Information Order (Priorities 2 & 1)
  - Conservation Orders (Subset of Priorities 2 & 1)

- **Fines**
  - $500/day x 122 days = $61,000
    - Beverly Hills (20.4%/32%), Indio Water Authority (21.6%/32%)
    - Coachella Valley Water District (27.1%/36%) – Redlands (25.1%/36%)
Current Emergency Regulations Expire in February 2016
Governor Extension of Emergency Declaration - Uncertain
“Informal Discussions” Workgroup Meetings
  - August 26, October 26 & November 13 2015
  - Public “Workshop” December 7, 2015
    - Possibly no draft regulations published
    - 2-3 minute comments
  - SWRCB approval January 5th or 19th 2016
    - Effective March 2016 – December 2016

NGOs UTILITIES

AT LEAST AS STRINGENT AS THE CURRENT REGULATIONS
INITIATE A PARALLEL PROCESS TO DEVELOP PERMANENT CONSERVATION STANDARDS

VARIOUS “DEDUCTIONS & CREDITS” TO CURRENT REGULATIONS
ELIMINATE ZERO SUM GAME
PERMANENT CONSERVATION STANDARDS UNNECESSARY
SWRCB Emergency Regulations II
UTILITY PROPOSALS

- Climate Equity Adjustments
- Growth Equity Adjustments
- Recycled Water Equity Adjustment
  - Purple Pipe
- Regional Compliance Approach
- Groundwater Adjustment
- Drought-Sustainable Supply Credit
  - Potable Reuse (IPR & DPR)
  - Desalination

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