FOURTH WORLD WATER FORUM
MEXICO 2006

TOPI C- SESSI ON FT3.39:
“CHALLENGES AND PERSPECTIVES
OF WATER IN MEGACITIES”

Case Study:
West and Central Basin
Water Recycling Program -
Reliability through Diversification

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Chief of Engineering & Operations

March 20, 2006
Where Southern California Gets its Water

- Local Supplies
- Groundwater & Recycling
- LA Aqueduct
- California Aqueduct
- Transfers & Storage
- Colorado River Aqueduct
- Conservation

- Local Supplies
- LA Aqueduct
- Colorado River Aqueduct
- Conservation
West Basin Programs

- Recycled Water
- Desalination
- Groundwater Desalting
- Seawater Barrier Water Conservation
- Conservation
- Education
West Basin Water Recycling Facility
Program Funding

- Stand-by Charge
- MWD’s Local Resources Program
- Rates
- Business Deal – Capital Payment
- California: Prop 13 and Water Resources Control Board’s revolving loan program
- Army Corps of Engineers
- Title 16: USBR
Current uses for recycled water

- **Industrial**
  - Refineries
  - Boiler feedwater

- **Irrigation**
  - Landscape (medians, golf courses, etc.)

- **Commercial**
  - Toilets & urinals
  - Hospital use (i.e. x-ray machines)

- **Seawater Barrier**
• Purchase secondary recycled water from LA Bureau of Sanitation (Hyperion Plant)

• Approximately 65-miles of distribution system and three satellite treatment plants

• FY ’03–’04 served 190 sites totaling 24,554 AF
<table>
<thead>
<tr>
<th>Process</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tertiary</td>
<td>Irrigation, Street Sweeping</td>
</tr>
<tr>
<td>Nitrified</td>
<td>Cooling Towers</td>
</tr>
<tr>
<td>MF/RO</td>
<td>Low Pressure Boilers</td>
</tr>
<tr>
<td>MF/RO/RO</td>
<td>High Pressure Boilers</td>
</tr>
<tr>
<td>Stabilized RO</td>
<td>Groundwater Injection</td>
</tr>
<tr>
<td>Next ??</td>
<td>To Customer Specs</td>
</tr>
</tbody>
</table>
Designer Recycled Water 2004-2005

Acre-feet per year

<table>
<thead>
<tr>
<th>Category</th>
<th>2004</th>
<th>2005</th>
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<tbody>
<tr>
<td>Tertiary</td>
<td>3,800</td>
<td>8,300</td>
</tr>
<tr>
<td>Cooling Towers</td>
<td>8,300</td>
<td></td>
</tr>
<tr>
<td>GW Injection</td>
<td>7,300</td>
<td></td>
</tr>
<tr>
<td>Low Pressure Boiler Feed</td>
<td>6,500</td>
<td></td>
</tr>
<tr>
<td>High Pressure Boiler Feed</td>
<td>2,600</td>
<td></td>
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</table>
## Rates

<table>
<thead>
<tr>
<th>Process Type</th>
<th>Discount Percentage or Factor</th>
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<tbody>
<tr>
<td><strong>Baseline MWD:</strong></td>
<td>$510/ AF</td>
</tr>
<tr>
<td>1. Tertiary:</td>
<td>~25%-40% Discount</td>
</tr>
<tr>
<td>2. Nitrified:</td>
<td>~20% Discount</td>
</tr>
<tr>
<td>3. Softened RO:</td>
<td>~10% Discount</td>
</tr>
<tr>
<td>4. Single RO:</td>
<td>2 times</td>
</tr>
<tr>
<td>5. Double RO:</td>
<td>2.5 times</td>
</tr>
</tbody>
</table>
QUESTIONS?