Panel Discussion: A Public Utility Perspective from Southern Arizona

John Kmiec, Marana Utilities Director

WRRC Conference 2014: Closing the Gap Between Water Supply and Demand

Tuesday, April 8, 2014
Marana Utilities: Profile

- Water and Wastewater Systems
- Municipal Provider (TAMA)
- One of 10 providers with an assured water supply
- 1 MW Hydropower
Need for Change
Need for Change

LEGEND

Water Level Change 1950 - 2008

<table>
<thead>
<tr>
<th>Range</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>+50 to +100</td>
<td>Light Blue</td>
</tr>
<tr>
<td>0 to +50</td>
<td>Light Green</td>
</tr>
<tr>
<td>0 to -50</td>
<td>Light Orange</td>
</tr>
<tr>
<td>-50 to -100</td>
<td>Orange</td>
</tr>
<tr>
<td>-100 to -150</td>
<td>Dark Orange</td>
</tr>
<tr>
<td>-150 to -200</td>
<td>Brown</td>
</tr>
<tr>
<td>-200 to -250</td>
<td>Dark Brown</td>
</tr>
<tr>
<td>-250 to -300</td>
<td>Black</td>
</tr>
<tr>
<td>-300 to -350</td>
<td>Dark Red</td>
</tr>
</tbody>
</table>

Subsidence in inches
USGS 1987-2005

Source: TUCSON WATER
**Need for Change**

Components of Natural Recharge in the TAMA (Mason and Boda, 2006)

<table>
<thead>
<tr>
<th>Element of Net Natural Recharge</th>
<th>Acre Feet/Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mountain Front Recharge</td>
<td>34,445</td>
</tr>
<tr>
<td>Streambed Infiltration</td>
<td>39,270</td>
</tr>
<tr>
<td>Groundwater Inflow</td>
<td>24,710</td>
</tr>
<tr>
<td>Groundwater Outflow</td>
<td>-16,461</td>
</tr>
</tbody>
</table>

**Total Net Natural Recharge**

- 81,964 Acre Feet

*does not include incidental recharge from M,I,A activities

Historical Demands in the TAMA (ADWR - TAMA Assessment, 2010)

- 192,771 AF/Y (1985)
Change in Action
Change in Action
Change in Action
### The Transition: Challenges & Solutions

![Bar chart showing water usage over time](chart.png)

Source: ADWR, TAMA Assessment

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>113,080</td>
<td>154,288</td>
<td>169,211</td>
<td>185,550</td>
<td>172,748</td>
</tr>
<tr>
<td><strong>Groundwater</strong></td>
<td>113,080</td>
<td>147,763</td>
<td>158,953</td>
<td>100,777</td>
<td>42,504</td>
</tr>
<tr>
<td><strong>CAP (direct, recovery, repl'mnt)</strong></td>
<td>0</td>
<td>0</td>
<td>69</td>
<td>71,132</td>
<td>114,811</td>
</tr>
<tr>
<td><strong>Reclaimed Water</strong></td>
<td>0</td>
<td>6,525</td>
<td>10,189</td>
<td>13,453</td>
<td>15,421</td>
</tr>
<tr>
<td><strong>Surface water</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>188</td>
<td>12</td>
</tr>
</tbody>
</table>
The Transition: Challenges & Solutions

2000 - 2012

Water level recovery in many areas

Some areas still in decline

Source: TUCSON WATER
The Transition: Challenges & Solutions

Addressing areas where declines continue through Regional Cooperation and Wheeling

- Recovered CAP
- Effluent

Source: TUCSON WATER
Marana Moving Forward
Current Designation: 7580 AF

Marana Water Department Demand (AF/yr)

- CAP
- LTSC
- CAGRD
- Effluent
- Incidental Recharge
Marana Moving Forward
Marana Moving Forward
Marana Moving Forward
Marana Moving Forward

Town of Marana
Application for Non-Indian Agricultural Allocation
Thank you!

John Kmiec
Utilities Director
Town of Marana
jkmiec@marana.com