Water Supply Program

Kelley S. Neumann
Senior Vice President, Strategic Resources

Rates Advisory Committee
8 January 2009
50-Year Water Resource Plan Goals
The results of transformation: a clear, sustainable development strategy:

- **Long-Term Conservation**: Postpone dependence on more costly supplies
- **Effective Drought Management**: Provide adequate supplies, even during critical drought periods
- **Diversification**: Promote greater use of non-Edwards Aquifer sources in the long-term
- **Regional Partnerships**: Fulfill the needs of San Antonio, while providing the region with the option of utilizing SAWS as a regional wholesale provider
- **Affordability**: Recognize the reality that future supplies must be affordable
Ensuring Growth and Supplies
SAWS water projects key to San Antonio’s future.

- Conservation – One of the best programs in the country
- Recycled Water Program – Huge strides in eight years
- Twin Oaks Aquifer Storage and Recovery (ASR) – Long awaited underground reservoir for San Antonio
- Trinity Aquifer Projects
- Edwards Aquifer Permits – Still the cornerstone of our water supply
- Canyon Lake – Partnership with GBRA
- Carrizo Aquifer – Bexar, Gonzales, and Wilson Counties
- Brackish Groundwater Desalination – Promising new technology
- Lower Colorado River Authority (LCRA) – Longer term project
- Additional Opportunities in Central and Southwest Texas
SAWS Water Resource Plan
The 50-year plan helps ensure quality water for residents and businesses.

- Water Resource Plan updated regularly
  - Existing projects are evaluated, updated, or canceled
  - Additional sources of water are reviewed for feasibility
  - The latest technologies are evaluated for possible incorporation into the plan
  - Current update will be completed in early 2009
  - Final version will be reviewed by CAP, and approved by SAWS Board, City Council, and Region L
Why Update the Plan?

- Update population projections
- Update demand projections
- Incorporate changed projects yields/costs
- Assess impact of external opposition and regulatory authorities
- Incorporate impact of changes to Edwards pumping limits
- Incorporate change in ASR operations
Effective Drought Management

SAWS continues to ensure adequate supply availability, even during critical drought periods, through effective management of its Edwards Aquifer, Trinity Aquifer, Western Canyon, ASR and Local Carrizo sources. In 2008, total production was **212,708*** acre-feet.

<table>
<thead>
<tr>
<th>Source</th>
<th>Acre-Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edwards Aquifer</td>
<td>198,441</td>
</tr>
<tr>
<td>Trinity Aquifer</td>
<td>3,518</td>
</tr>
<tr>
<td>Western Canyon</td>
<td>9,068</td>
</tr>
<tr>
<td>Aquifer Storage &amp; Recovery</td>
<td>1,297</td>
</tr>
<tr>
<td>Local Carrizo Aquifer</td>
<td>383</td>
</tr>
<tr>
<td>Total</td>
<td>212,708</td>
</tr>
</tbody>
</table>

*Production amounts are draft
2009 Edwards Supply

Total Edwards Permits for 2009 - 243,660 af

- Stage I - 194,928 af
- Stage II - 170,562 af
- Stage III - 158,379 af
- Stage IV - 146,196 af
Twin Oaks Aquifer Storage and Recovery

- Stores water in the Carrizo Aquifer
- No loss to evaporation
- Triple the firm yield of Applewhite
- One of the largest ASR facilities in the nation
Diversification: Other Groundwater

Smaller non-Edwards Aquifer sources

- Trinity Aquifer (Northern Bexar County)  
  - 3,500 acre/feet

- Carrizo Aquifer (Southern Bexar County)  
  - 6,400 acre/feet
Diversification: Surface Water

SAWS first-ever surface water project began to deliver Canyon Lake water to customers in April 2006. Completion of a 2 MG tank, located near Fair Oaks Blvd. and IH-10, ensured a successful start-up. In 2007, the completion of an additional 2 MG tank will enable the project to yield up to 9,500 acre-feet on annualized basis.

- Surface water supplies obtained through cooperative agreement with the Guadalupe Blanco River Authority (GBRA)

Fig. GBRA Treatment Facility at Canyon Lake

Western Canyon Project
Supply and Demand (Average Conditions)

Current water supplies in average conditions would meet high and normal demands through the 2040’s

Without Edwards Restrictions

Demand Conditions

Without Edwards Restrictions

Normal Demand

Supply and Demand (Average Conditions)

Current water supplies in average conditions would meet high and normal demands through the 2040’s
Supply and Demand (Drought Conditions)

Edwards supplies would be cut by 40% in extreme drought, creating a shortage as early as 2013 without development of new supplies.
Recurrence of drought of record would create a shortage as early as 2013 without development of new supplies.
Brackish Water Desalination

- Three phased project delivering up to 26,000 acre-feet/year beginning in 2013

- Source water from brackish Lower Wilcox Formation in Bexar and Wilson Counties possible later third phase expansion

- Reverse Osmosis Treatment located at Twin Oaks property in south Bexar County
Regional Carrizo

- Three phased project delivering up to 36,300 acre-feet/year by 2019

- Source water from Gonzales and Wilson Counties

- Pumped to the Twin Oaks Facility located in south Bexar County
LCRA-SAWS

The study goal is to conjunctively identify cost-efficient means for providing water to the LCRA basin and the San Antonio area, while protecting and benefiting the LCRA basin.

- **Principal components**
  - Capture and store surface water for San Antonio
  - Water use reduction through agricultural irrigation conservation
  - Develop groundwater for LCRA’s in-basin use
  - Develop new rice variety with higher yield using less water

- **Significant accomplishments**
  - Matagorda Bay draft inflow criteria developed
  - Instream Flow and Aquatic Habitat criteria complete
  - Off Channel Storage Facility identified
Other Potential Projects

In addition to the previously mentioned projects, SAWS is also analyzing other potential water supplies.

- **Recharge Initiatives**
  - Place more water into the Edwards Aquifer
  - Maintain higher aquifer levels, increase spring flow, and reduce time in drought management

- **Ocean Water Desalination**
  - Provide a long-term drought proof supply
  - Large supply yield, potential regional supply

- **Western Water**

- **Simsboro Aquifer**
Working Together for Water Solutions

- Cities across Texas and across the country are dealing with the same kinds of challenges
- We must partner with others in the region to reach long-term solutions
- Water does not know jurisdictional boundaries
- Developing mutually beneficial options are essential for success
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Helping communities flourish
San Antonio Water System