San Antonio Water System’s
2012 Water Management Plan

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Director, Water Resources

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Outline

• Planning Assumptions

• SAWS Current Water Resources

• DOR Outlook (No New Supplies)

• SAWS Planned Water Resources

• DOR Outlook (Near-Term)

• Next Steps
Why a New Plan?

Many Changes Since 2009

• 2010 Census Data
• BexarMet Integration
• Termination of LCRA-SAWS Project
• Changes to Regional Carrizo and Brackish Desalination Projects
• Increased Aquifer Storage & Recovery (ASR) Storage
• Edwards Aquifer Recovery Implementation Program (EARIP)
• Water Supply Proposals (RFCSP)
2012 Water Management Plan

Task Force Members

- Robert R. Puente, President/CEO
- Kelley Neumann, P.E., Senior Vice President, Strategic Resources
- Doug Evanson, Senior Vice President/Chief Financial Officer
- Charles Ahrens, Vice President, Water Resources and Conservation
- Greg Flores, Vice President, Public Affairs
- Steve Kosub, Senior Water Resources Counsel
- Hope Wells, Corporate Counsel
Planning Assumptions

Population

Note: Some areas are served by private wells.
Planning Assumptions

Population (SAWS Only)

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>500,000</td>
</tr>
<tr>
<td>2005</td>
<td>700,000</td>
</tr>
<tr>
<td>2009</td>
<td>900,000</td>
</tr>
<tr>
<td>2012</td>
<td>1,100,000</td>
</tr>
<tr>
<td>2015</td>
<td>1,300,000</td>
</tr>
<tr>
<td>2018</td>
<td>1,500,000</td>
</tr>
<tr>
<td>2020</td>
<td>1,700,000</td>
</tr>
<tr>
<td>2022</td>
<td>1,900,000</td>
</tr>
<tr>
<td>2025</td>
<td>2,100,000</td>
</tr>
<tr>
<td>2028</td>
<td>2,300,000</td>
</tr>
<tr>
<td>2030</td>
<td>2,500,000</td>
</tr>
</tbody>
</table>
Planning Assumptions

Population (SAWS + DSP)

<table>
<thead>
<tr>
<th>Year</th>
<th>SAWS Population</th>
<th>DSP Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2030</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2040</td>
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</tr>
<tr>
<td>2050</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2060</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2070</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2080</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Combined Population: [Graph showing population growth from 2000 to 2080]

SAWS Population: [Graph showing population growth from 2000 to 2080]

DSP Population: [Graph showing population growth from 2000 to 2080]
Planning Assumptions

Drought of Record Supply Impacts

<table>
<thead>
<tr>
<th>Year</th>
<th>J-17 Level (m)</th>
<th>Edwards Supply Available (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>660.0</td>
<td>89.81%</td>
</tr>
<tr>
<td>Year 2</td>
<td>657.5</td>
<td>74%</td>
</tr>
<tr>
<td>Year 3</td>
<td>654.0</td>
<td>68.87%</td>
</tr>
<tr>
<td>Year 4</td>
<td>650.5</td>
<td>69.19%</td>
</tr>
<tr>
<td>Year 5</td>
<td>647.0</td>
<td>64.34%</td>
</tr>
<tr>
<td>Year 6</td>
<td>643.5</td>
<td>60.2%</td>
</tr>
<tr>
<td>Year 7</td>
<td>640.0</td>
<td>57.57%</td>
</tr>
<tr>
<td>Year 8</td>
<td>636.5</td>
<td>64.18%</td>
</tr>
<tr>
<td>Year 9</td>
<td>633.0</td>
<td>95.64%</td>
</tr>
</tbody>
</table>
Planning Assumptions

Summary

• Per Capita Water Use
  – 143 GPCD in 2011, the hottest, driest year recorded in Texas, reducing to 135 GPCD

• Population Projection for Entire Service Area
  – 1.2% annual growth or ~20,000 people per year

• Water Supplies
  – As impacted by drought and the deepest restrictions

• Drought of Record
  – Replicate the worst case scenario from the 1950s
SAWS Current Water Resources

Edwards Aquifer

[Diagram of Edwards Aquifer]

SAWS 2012 Water Management Plan
SAWS Current Water Resources

Twin Oaks Facility

- **ASR**
  - 3rd-Largest in Nation
  - “Savings account for a sunny day”
  - Currently ~80,000 acre-feet (AF) in storage, or six months of supply

- **Local Carrizo**
  - Additional 9,000 acre-feet per year (AFY)

**$253M**
SAWS Current Water Resources

Trinity Aquifer

- WECo Stein Tract/Rogers Tract
- DSP Trinity Aquifer wells

- Oliver Ranch: ~3,000 AFY
- BSR: ~500 AFY
- First Non-Edwards Supply for SAWS
SAWS Current Water Resources

Western Canyon

- Base 4,000 AFY (up to 11,000 AFY)
- 2005 – 2007
- First surface-water supply for SAWS
- Supplies north San Antonio
- Contract currently expires in 2037
SAWS Current Water Resources

Canyon Regional Water Authority (CRWA)

• Lake Dunlap – 4,000 AFY*
• Wells Ranch – 2,800 AFY (Carrizo)
• Total – 6,800 AFY*

• Supply Assumptions
  – *500 AFY lease to Cibolo through 2018
  – Lake Dunlap supply may go away in 2024 as per agreement with Guadalupe-Blanco River Authority
  – Agreement with Canyon Regional Water Authority concerning Wells Ranch expires in 2047, extendable
SAWS Current Water Resources

Medina Lake

- Inherited from Bexar Met
- SAWS Lease from BMA = 19,974 AFY
- SAWS Run-of-River Rights = ~9,000 AFY
- SAWS Treatment Capacity = ~13,000 AFY
SAWS Current Water Resources

Regional Carrizo

- Regional Partnership with Schertz-Seguin Local Government Corporation (SSLGC)
- SAWS Permit 11,688 AFY
- Excess from SSLGC and Gonzales Water Supply Corporation 5,512 AFY
- Total **17,200 AFY** (up to amount)
- Delivery late 2013
SAWS Current Water Resources

Regional Carrizo

• Mutual Regional Water Supply Contract
  – Reserves space for SAWS water in existing pipeline
  – Gives SAWS ability to purchase SSLGC surplus water
  – Provides SSLGC an emergency supply
  – *Reduces cost* for all parties

• $133 million estimated total cost

• $82 million committed, as of July 2013
DOR Outlook (No New Supplies)

No New Supplies
Drought of Record 2012-2020

![Graph showing water supply projections from 2012 to 2020 with various supply categories and demand levels.]

- Current Supplies
- EAHCP Commitment
- ASR Supply
- Permitted Supply Gap
- Dry Demand (143 GPCD)
Planned Supplies

Brackish Groundwater Desalination

• On SAWS property in Bexar County

• Three-Phase Program
  – Phase 1: 13,440 ac-ft/yr (2016)
  – Phase 2: 13,440 ac-ft/yr (2021)
  – Phase 3: 6,720 ac-ft/yr (2026)
  – Total: 33,600 ac-ft/yr

• $296.8 million estimated total cost
  – $179 million for Phase 1
  – $74 million committed, as of July 2013
SAWS Planned Water Resources

Expanded Carrizo

- New project concept
- Works in cooperation with the ASR Local Carrizo off-site wells
- May be able to utilize infrastructure that DSP started
- Geology and preliminary feasibility indicate up to 21,000 AFY of production
  - Groundwater Management Area 13 Desired Future Conditions not exceeded
SAWS Planned Water Resources

Water Resources Integration Pipeline (WRIP)

• 45-mile integration pipeline
  – Phase I complete by 2016
  – Phase II complete by 2022

• Provides transport flexibility
  – Desal supply
  – Local Carrizo Aquifer supply
  – Expanded Carrizo Aquifer supply
  – ASR supply

• $205 million estimated program cost, as of July 2013
Regional Water Supply Project

• Request for Competitive Sealed Proposals for 50,000 AFY by 2018

• SAWS currently evaluating four proposals:
  – Abengoa
  – Dimmit Utility Water Supply Corporation
  – Oscar Renda Contracting
  – V.V. Water Company, L.L.C.
Regional Water Supply Project

The locations of the projects illustrated on this map are approximate and are not meant to show the actual location of the submitted projects.

Delivery Requirements
Up to 25,000 AF by 2020 &
Up to 50,000 AF by 2060
4 Proposals Received

San Antonio Water System

SAWS 2012 Water Management Plan
DOR Outlook (Near-Term)

- Current Supplies
- EAHCP Commitment
- Advanced Conservation
- Additional Edwards
- Expanded Carrizo
- RFCSP
- ASR Supply
- Brackish Desalination
- Dry Demand (143 GPCD)
Managing the Drought of Record (DOR)

Supply Diversification

Canyon Lake
Trinity Aquifer
CRWA Lake Dunlap
Regional Carrizo & CRWA Wells Ranch (2013)

Medina River & Lake
Local Carrizo Aquifer, Stored Edwards (ASR) & Brackish Desal (2016)
Next Steps

Implementation

• Regional Carrizo coming online late 2013
• Brackish Desal design and construction in progress, expected online by 2016
• Expanded Carrizo design and construction in planning stages, expected online by 2017
• RFCSP proposals being evaluated
• 2012 WMP represents a sustainable, affordable water supply strategy through 2040
• Adaptive management crucial to plan’s success