2017 Water Management Plan

Darren Thompson
Director / Water Resources

Capital Improvements Advisory Committee
February 21, 2018
Planning for our Future, Benefitting Today

S.A. tackling how to plan for a million more people
Express-News

The Economic Impact of Potential Water Shortages on San Antonio’s Economy

Texas economy faces rough waves if water shortages ignored
Austin Business Journal

The link between long-term water needs and San Antonio’s economic future
Texas Public Radio

San Antonio Chamber of Commerce

2017 Water Management Plan
Water Management Plan Overview

• Updated on 5-year intervals

• Drought of Record Planning
  – Duration of 1950s drought
  – Intensity of 2011-2014 drought

• Planning variables
  – Population & Demand projections
  – Firm supply yield in drought
  – Timing of Supplies
Projecting Population

New Neighbors

- Fastest growing city in Texas, third fastest in the nation
- 800,000 more people by 2040
- 80% increase in projected population by 2070
SAWS and Surrounding CCNs
Population Comparison

<table>
<thead>
<tr>
<th>Year</th>
<th>Population Est.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>1,659,593</td>
</tr>
<tr>
<td>2013</td>
<td>1,671,625</td>
</tr>
<tr>
<td>2014</td>
<td>1,712,446</td>
</tr>
<tr>
<td>2015</td>
<td>1,743,559</td>
</tr>
<tr>
<td>2016</td>
<td>1,783,426</td>
</tr>
<tr>
<td>2017</td>
<td>1,819,116</td>
</tr>
</tbody>
</table>

EOY Population Estimates vs. 2012 WMP Pop Proj
Population Projection Comparison

2017 Pop Estimate: 1,819,116

2070 Pop Projection: 3,278,889

<table>
<thead>
<tr>
<th></th>
<th>2017 WMP</th>
<th>2070 WMP</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pop Change</td>
<td>27,694</td>
<td>27,694</td>
<td>27,694</td>
</tr>
<tr>
<td>Perc Change</td>
<td>1.13%</td>
<td>1.13%</td>
<td>1.13%</td>
</tr>
</tbody>
</table>

2017 Water Management Plan
Water Management Plan Guiding Principles

Conservation  Technology

Diversified Water Sources  Regional Partnerships
Early Nationwide Leader in Water Conservation
Conservation as a Business Model

~50% Reduction

1982
182K AF
225 GPCD

2016
451K AF
215K AF
117 236K AF

GPCD Reduced to 117

225 225 GPCD

2017 Water Management Plan
Progressive Conservation Goals to Continue

27% General Class reduction
42% General Class irrigation reduction

(55 GPCD residential)
Utilizing Technology
Progress through Modern Tools

• Automated Metering
• Smart Phone Apps
• Personalized Customer Reports
• Infrastructure Assessment
• Data Analysis
Supply Diversification

Optimizing Local and Regional Sources

• 15 water supply projects from 8 water sources
  – Largest groundwater-based ASR in the nation
  – Newest inland desalination plant in the nation
Securing San Antonio’s Water Future

Projected Supply Gap without Vista Ridge Project (13,130 AF)
Increasing Supply Diversification

• Near Term
  – Vista Ridge by 2020

• Long Term
  – Expansion of Local Carrizo
  – Additional phases of brackish groundwater desalination
Increasing Supply Diversification

Vista Ridge Project

- 18 Wells
- 140 miles
- 3 pump stations
Construction Underway
Leveraging Regional Partnerships

• Plan for local management of groundwater sources

• Commitment to Edwards Aquifer Habitat Conservation Plan

• Protecting instream flows through Bed and Banks Project

• Wholesale water opportunities
Addressing Extreme Climatic Conditions

WMP Shows San Antonio is Well-Positioned

• Rising temperatures and flashy rainfall

• Resiliency via diversification

• ASR, groundwater sources, conservation
Supply Portfolio Diversification (average year)

2017 Water Management Plan

- Edwards Aquifer: 60%
- Non-Edwards Aquifer: 40%

- 2017: 470,000 AF
- 2070: 540,000 AF

- Non-Edwards Aquifer: 48%
- Edwards Aquifer: 52%

- Recycled Water (CPSE)
- Recycled Water (Direct)
- ASR Recovery
- Expanded Carrizo
- Vista Ridge
- Brackish Desal
- Regional Carrizo
- Medina System
- Canyon Regional
- Canyon Lake
- Local Carrizo
- Trinity Aquifer
- Edwards Aquifer
Supply Portfolio Diversification (drought year)

- **Edwards Aquifer**: 42% (280,000 AF in 2017, 376,000 AF in 2070)
- **non-Edwards Aquifer**: 58% (Recycled Water (CPSE), Recycled Water (Direct), ASR Recovery, Expanded Carrizo, Vista Ridge, Brackish Desal, Regional Carrizo, Medina System, Canyon Regional, Canyon Lake, Local Carrizo, Trinity Aquifer, Edwards Aquifer)

**2017 Water Management Plan**
# Summary of 2017 Water Management Plan

## Progressive Conservation and Continued Diversification

<table>
<thead>
<tr>
<th>Planning Source/Variable</th>
<th>Yield/Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vista Ridge</td>
<td>50,000 acre-feet per year (AFY) in 2020</td>
</tr>
<tr>
<td>Brackish Groundwater Desalination</td>
<td>Additional 20,000 AFY by 2050s</td>
</tr>
<tr>
<td>Expanded Carrizo</td>
<td>Additional 21,000 AFY by 2050s</td>
</tr>
<tr>
<td>Progressive Conservation</td>
<td>88 GPCD by 2070 (55 GPCD residential)</td>
</tr>
<tr>
<td>Nonrevenue Water</td>
<td>14% by total volume</td>
</tr>
<tr>
<td>Population Projections</td>
<td>800,000 additional 2017-2040, 1.5 million additional 2017-2070 (80% increase)</td>
</tr>
<tr>
<td>Total Demand Projections</td>
<td>253,000 AFY in 2017, 324,000 AFY in 2070 (only 25% increase)</td>
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Securing San Antonio’s Water Future

![Graph showing water management plan for 2017 to 2070](image)

- **ASR**
- **Edwards Aquifer**
- **Planned Supplies**
- **Non-Edwards Aquifer**
- **Proj Demand**
- **High Proj Demand**
- **Low Proj Demand**

2017 Water Management Plan
2017 Water Management Plan

Supporting a Thriving Economy

• Commitment to Conservation

• Diversified Water Supply already underway or under construction

• Progress through Technology

• Water security for decades
2017 Water Management Plan

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