Municipal Water Supply: Vital Strategies and Relationships for Success

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2013 TML Annual Conference
Future of Water in Texas

$53 Billion to Fund 2012 State Water Plan

Dilemma

• 82% population growth between 2010 and 2060
  – 25.4 million to 46.3 million

• 22% increase in water demand between 2010 and 2060
  – 18 million acre-feet per year to 22 million acre-feet per year

Solution

• 562 unique water management strategies, totaling nine million additional acre-feet per year by 2060
  – $53 billion
Future of Water in Texas

New Supplies Needed in Drought

Dilemma

• Numerous Demands
  – Agricultural  – Fracking
  – Municipal  – Environmental
  – Power Generation

• Surface Water completely allocated
  – Owned by the State of Texas
  – Managed through seniority-based permits issued by TCEQ

Solution

• Texas cities will look to Groundwater
Managing a Historic Drought

San Antonio’s Challenges

• Hot, Dry and Windy
• Edwards Aquifer supplies cut by 30% in 2013
• Medina Lake under 5% capacity
• Trinity Aquifer levels decline
Managing a Historic Drought

San Antonio is Prepared

• Largest Aquifer Storage & Recovery in Texas
  – San Antonio has avoided Stage 3

• Nation’s Largest Direct Recycled Water System
  – Water Reuse
  – Gas to Energy
  – Compost diverted from landfills

• Nationally Recognized Water Conservation
Managing Customer Demand

67% More Customers
0% More Water
Planning For The Future

Population Growth

• Innovative water management and development of new supplies will meet future demand
• Regional Partnerships will help
• Investment will be required
• Changing the regulatory environment will be required
Groundwater Conservation Districts

Regulation of Brackish and Freshwater Supplies

- Proliferation since 1997
  - Close to 100 Districts in Texas
  - Underfunded

- Largely along rural County lines
  - Aquifers don’t recognize political boundaries

- Local Control vs Regional Planning

- Lack of standardized rulemaking
  - Desired Future Conditions (DFCs)
  - Permit Length
Groundwater Conservation Districts

A Challenging Regulatory Environment

• Generally grant permits with 1 to 5 year terms
  – Lack of certainty for planning and financing

• Legal appeals process for permitting decisions is in local court
  – Standard of review is low

• Generally set Desired Future Conditions that are not conducive to the development of large water projects
  – Lack of funding and science
  – No binding appeals process

• No distinction between brackish and fresh water
Brackish Groundwater Desalination

Background

• Un-tapped ‘Ocean’ under our feet
• Carrizo-Wilcox Aquifer is “one of the best potential sources for brackish water in Texas” – TWDB
• Original Project - located in three counties Atascosa, Wilson, Bexar
• Opposition in Atascosa and Wilson Counties influenced the Evergreen Underground Water Conservation District
• Changed project to do first three phases all within Bexar County
"Atascosa rejects SAWS contributions

Many residents considered the offers “bribes” by a utility eager to explore future drilling opportunities.

July 19, 2008"
Three Phase Brackish Desal Project

First Phase Online 2016

• Project completion scheduled to deliver 30,525 ac-ft/yr by 2026
• Project will provide approximately 15% of SAWS current water supply
• Total Cost: $297 Million
• $109 million in low interest loans from Texas Water Development Board (TWDB)
Regional Carrizo Aquifer Project

General Timeline

• Original project scaled at 56,000 ac-ft
• Applied for a permit in 2005 with the Gonzales UWCD and the District then changed the rules
• Permit was challenged and required a contested case hearing
• Finally received a permit in 2010 for 11,688 ac-ft
  – Permit has to be renewed every 5 years
• Historic Regional Water Partnership with Schertz-Seguin
  – Saving ratepayers over ~$88 million
Groundwater Districts

A Need for Reasonable Reforms

Texas cities need:

– Long Term certainty in Groundwater District Regulation

– Adequate voice in Desired Future Conditions

– Incentives for alternative supplies such as Brackish Desalination and Aquifer Storage & Recovery projects
Legislative Initiatives

Groundwater Regulation

• Require long-term stability in groundwater permits
  – 30-year term or automatic renewals if conditions are met
  – Appeals process in Travis County with higher standard of review

• Establish a fair appeals process for “unreasonable”

Desired Future Conditions

• Incentivize the use of Brackish water to remove
  future pressures on fresh groundwater
Summary

Water Solutions

• Texas water projects must be built to scale
  – 9 million ac-ft in the State Water Plan
  – SAWS projects limited by regulation to 47,000 ac-ft

• Funding the State Water Plan is the first step
  – Proposition 6 and local investment

• Groundwater Regulatory Reform is the necessary second step, particularly for brackish water
  – TML should make this a legislative priority
Next Steps

Cities Working Together

• Be Prepared
  – Water Conservation is not a Drought Response

• Plan Ahead and Plan Jointly
  – Project future regional demand and seek the necessary supplies to meet growing demand

• Invest
  – New supplies are expensive

• Advocate through TML
  – Reform the Texas groundwater regulatory environment
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Pleasanton chamber declines $10K from SAWS as HC sponsor

Resident Arth Whitley: “I feel like we don’t need SAWS here, we don’t need their advertisement here and we don’t need their banners here.”

July 23, 2008
The Pleasanton Express
SAWS BGD Program

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<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
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<td>12 MGD</td>
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<td>RO Capacity</td>
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<tr>
<td>Injection Wells # (for concentrate disposal)</td>
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<td>5 (cumulative)</td>
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- Currently, SAWS is designing phase 1 of the project
- Eight production wells and one injection well have already been constructed
- Production wells are 1400 – 1700 feet deep
- Injection well is ~5,000 feet deep
- Average total dissolved solids concentration in production well water is ~1,525 mg/L