

Brackish Groundwater Desalination

Robert R. Puente

President/Chief Executive Officer

Texas Desal 2017

September 22, 2017



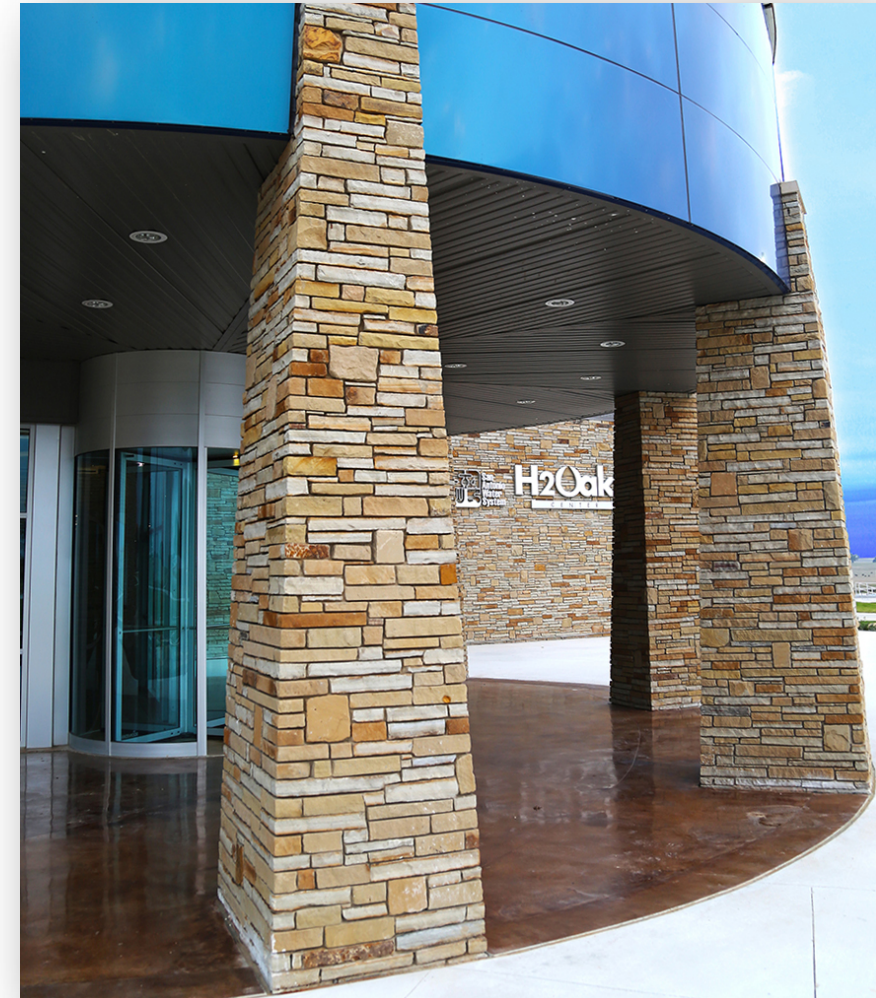
MAKING SAN ANTONIO
WATERFUL



San Antonio Water System

Sustainable, Affordable Water Services

- Municipally owned water and wastewater utility
- 1.8 million water and wastewater customers
- 10,700 miles of water and wastewater lines
- 1,800 employees
- Over \$1 billion in capital expenditures over next three years



Brackish Groundwater Desalination

Innovative Successes

- Largest Recycled System in the US
- First in US to convert methane gas to energy
- Best in the Nation water conservation programs

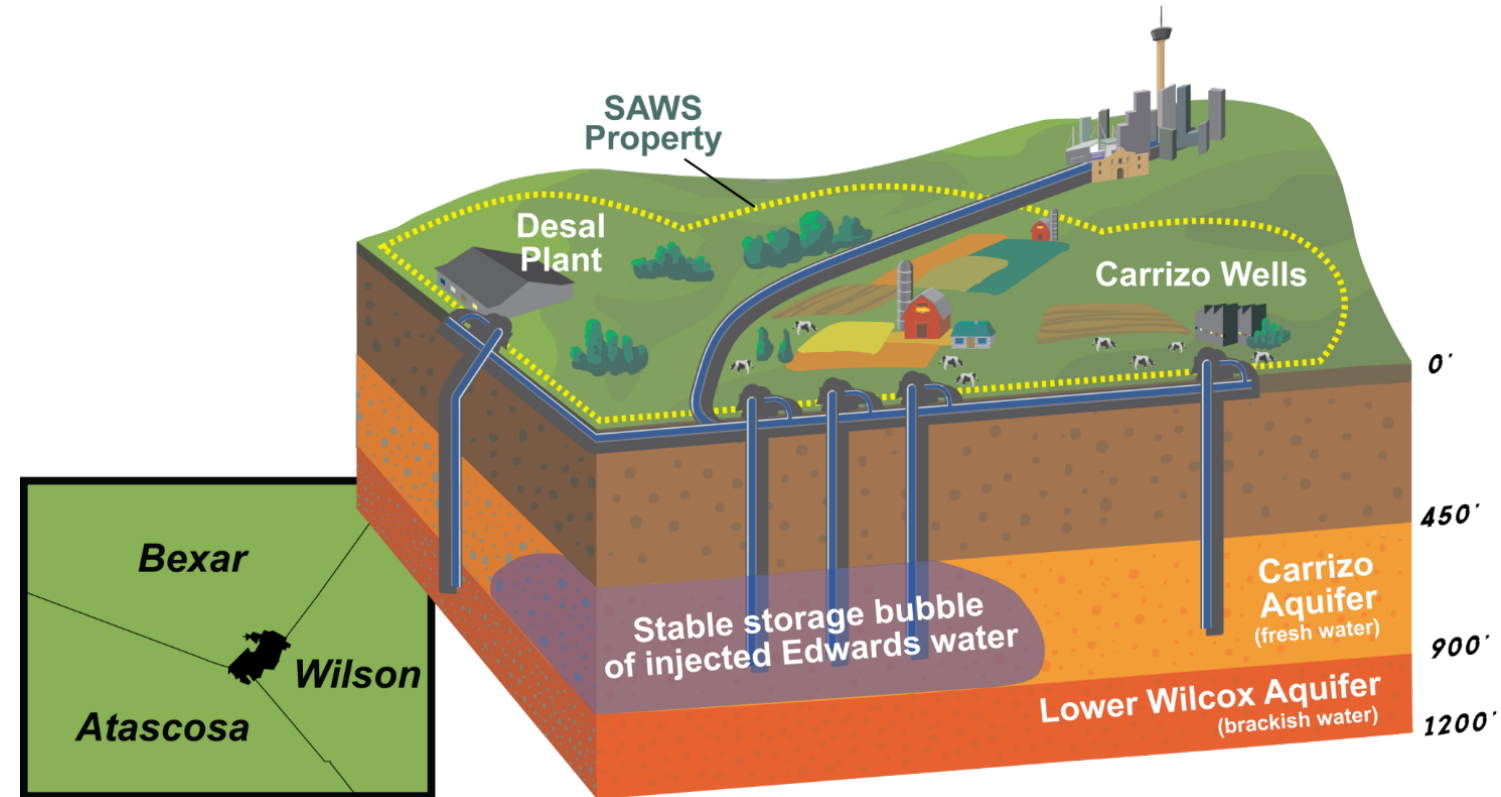


Brackish Groundwater Desalination

Innovative Successes

Three Water Projects in One Location

- Largest groundwater based ASR system in US
- State of the Art brackish groundwater desalination plant
- Carrizo Aquifer



Brackish Groundwater Desalination

Project Background

- Introduced in 2005 Water Management Plan
- Original project to be located in Atascosa, Wilson, Bexar Counties
- Projected yield 33,500 acre-feet



Brackish Groundwater Desalination

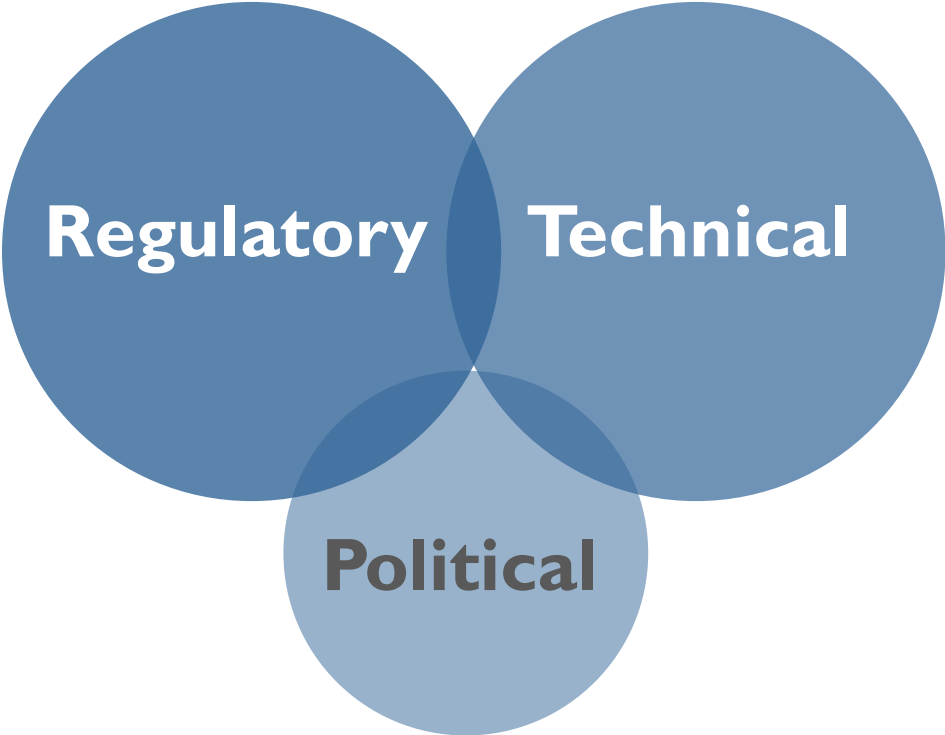
Project Location



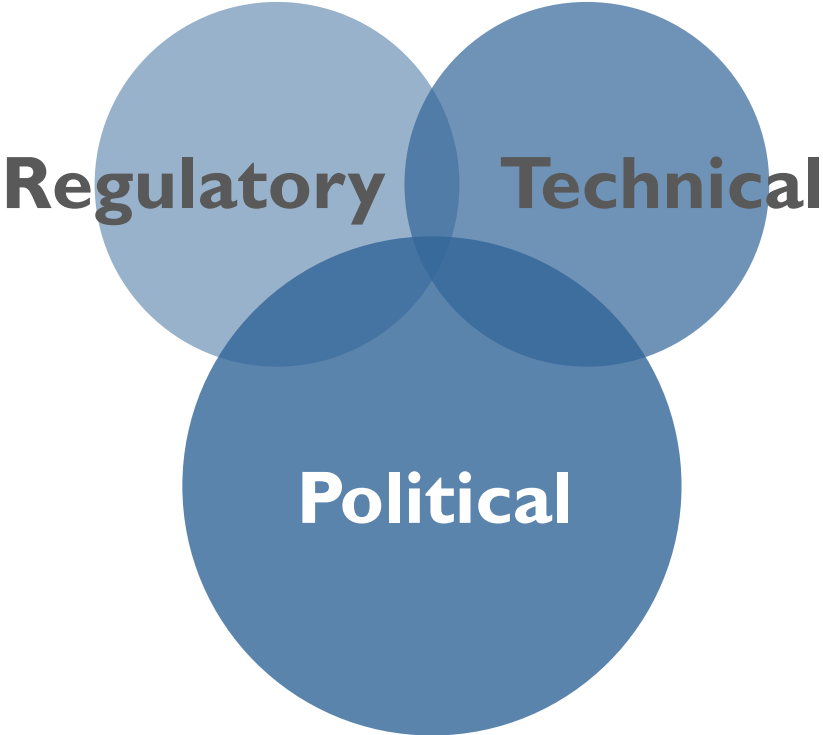
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Project Challenges

El Paso



San Antonio



Brackish Groundwater Desalination

Public Opposition

“ **Atascosa rejects SAWS contributions**

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

July 19, 2008

Express-News

Brackish Groundwater Desalination

State & National Model

- Phase I 13,441 acre-feet
- Future Phases 20,000 acre-feet and more



Phase I & Future Phases



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Construction – Building Success



Brackish Groundwater Desalination

H2Oaks Center

Three Water Supply Projects

- Aquifer Storage & Recovery
- Desalination
- Local Carrizo



H2Oaks Education and Outreach



Brackish Groundwater Desalination

H2Oaks Education and Outreach

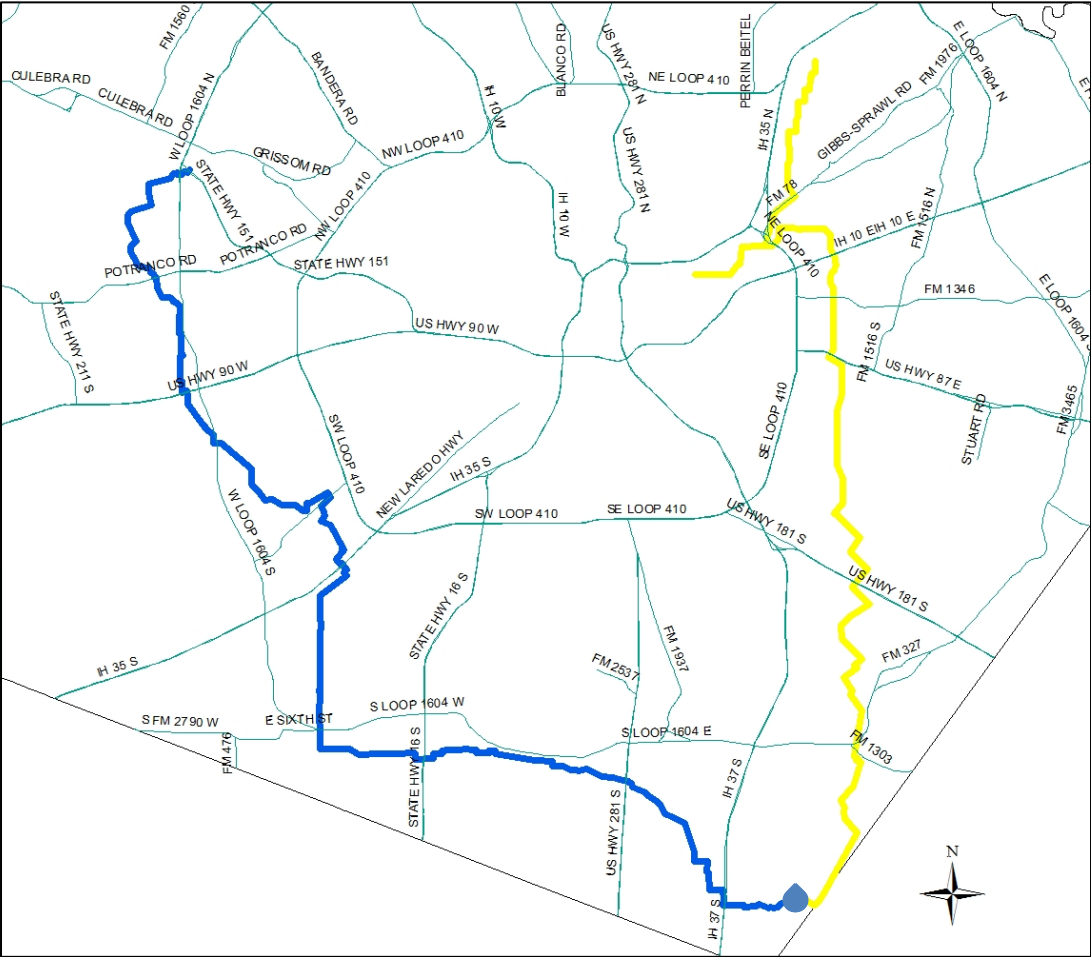


Brackish Groundwater Desalination

H2Oaks Center

Flexibility & Optimization

Normal
Conditions

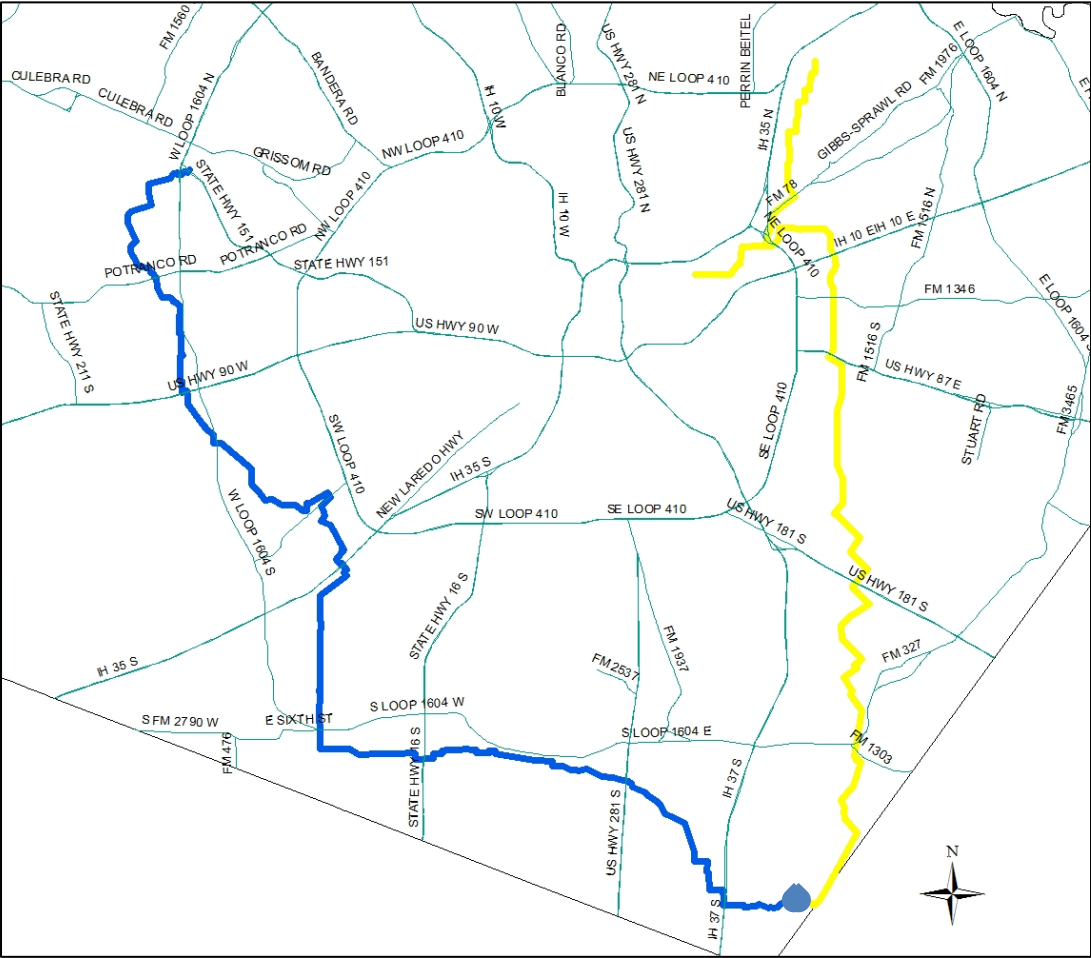


Brackish Groundwater Desalination

H2Oaks Center

Flexibility & Optimization

Drought
Conditions



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