Desalination and San Antonio's Water Future

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September 11, 2014

Texas Desal 2014

San Antonio Water System

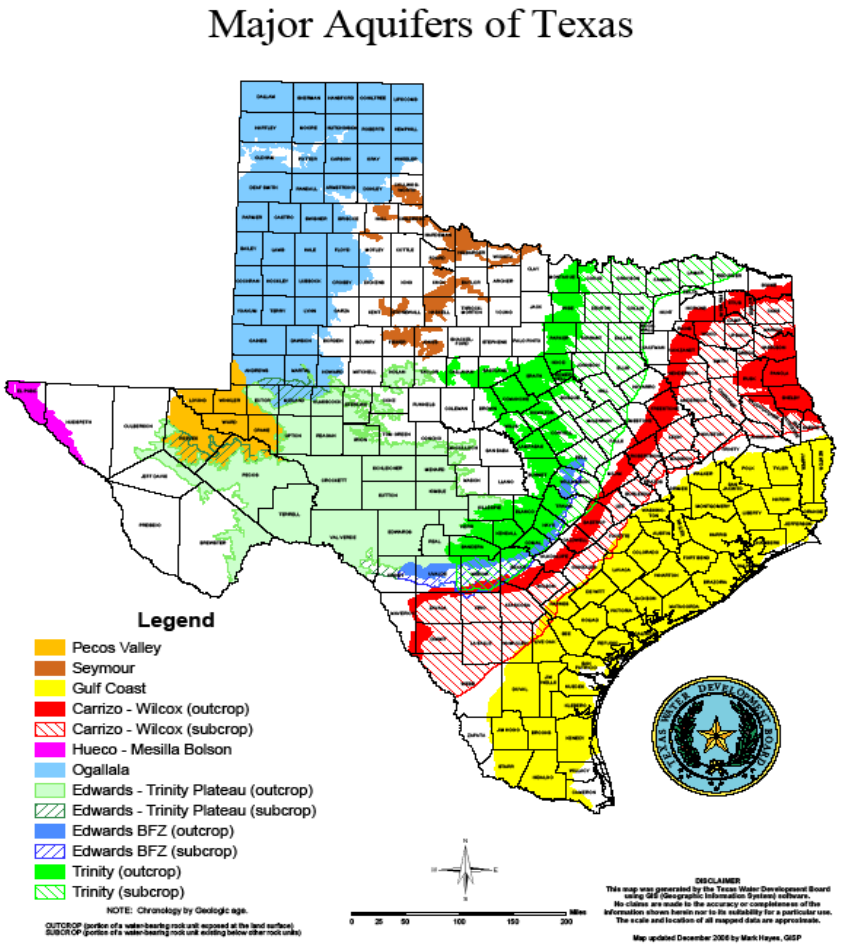
San Antonio Water System

Successful Innovation

- Award-winning Environmental Trifecta
  - Nation's Largest Direct Recycle System
  - Public/Private Partnership for Gas to Energy
  - Compost diverted from landfills
- Nation's 2nd largest ASR facility
  - Stored water even during drought
  - Key to regional endangered species solution
- International Model of Water Conservation
- Rates amongst lowest in the state

Why Brackish Desalination?

- 2.7 billion acre feet in Texas, over 400 million acre-feet in Region L alone
- The Lower Wilcox Aquifer is "*one of the best potential sources for brackish water in Texas*" (TWDB)
- Un-tapped, abundant and reduces freshwater demand



Brackish Groundwater Desalination

Project Background

- Project introduced in 2005 Water Management Plan
- Original Project - 28,000 acre-feet located in three counties (Atascosa, Wilson, Bexar)
- Opposition in Atascosa and Wilson Counties
- Changed project to do initial phases all within Bexar County

Three Phase Brackish Project

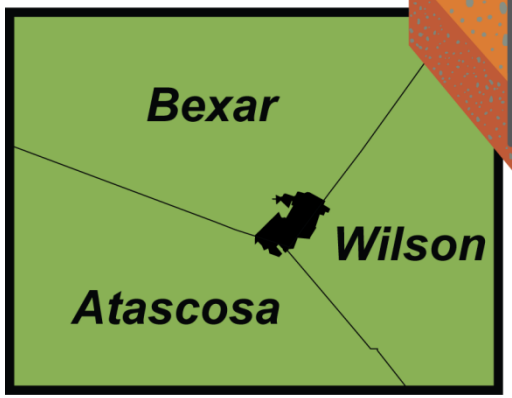
First Phase on-line by 2016

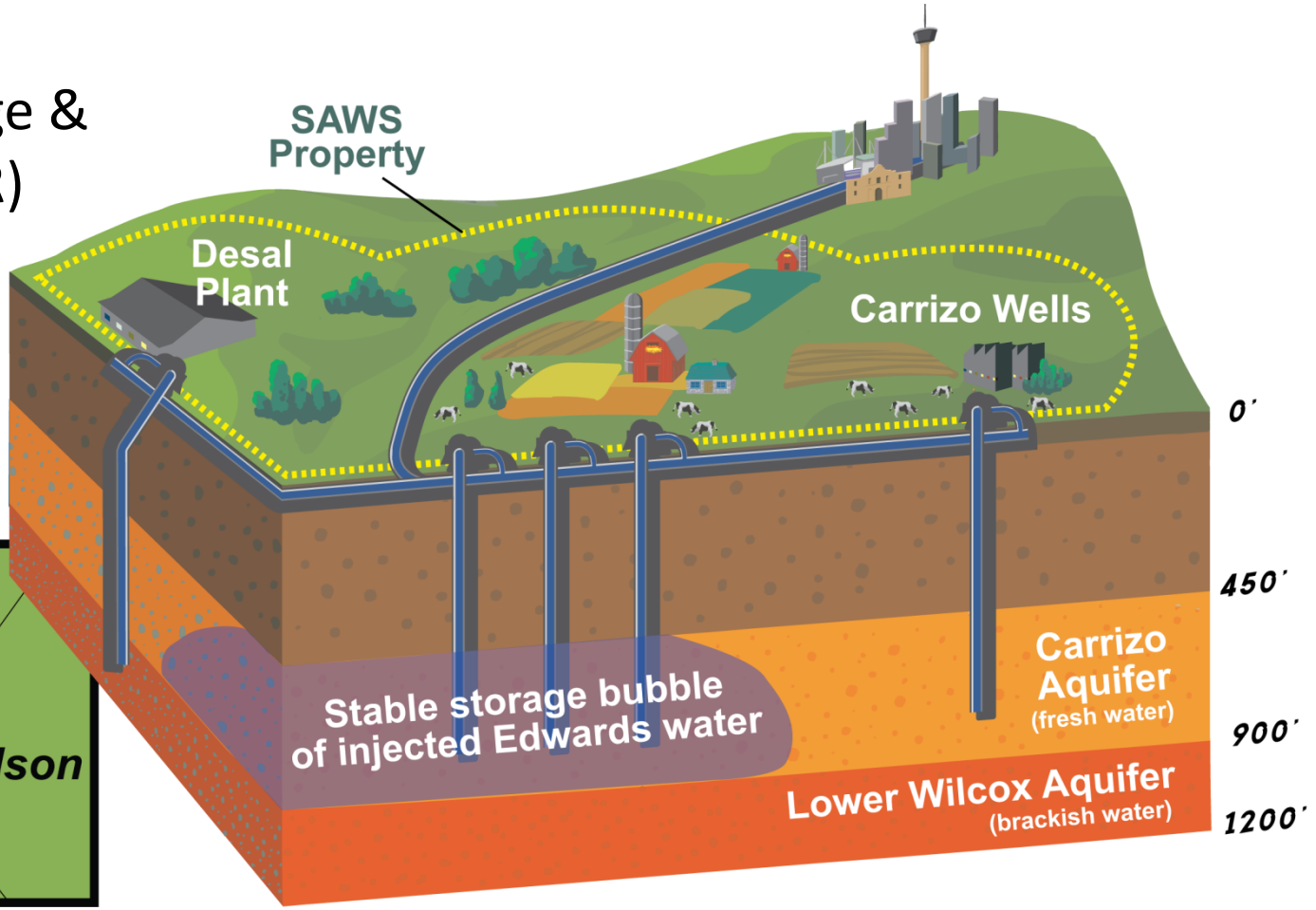
- Project on-line in 2016
- $109 million in Texas Water Development Board (TWDB) low interest loans
- 33,600 ac-ft/yr by 2026
  - 15% of SAWS current water supply
- **Largest inland brackish groundwater facility in the nation**

Current Water Supply Projects

Three Projects on One Site

- Aquifer Storage & Recovery (ASR)
- Desalination
- Expanded Local Carrizo





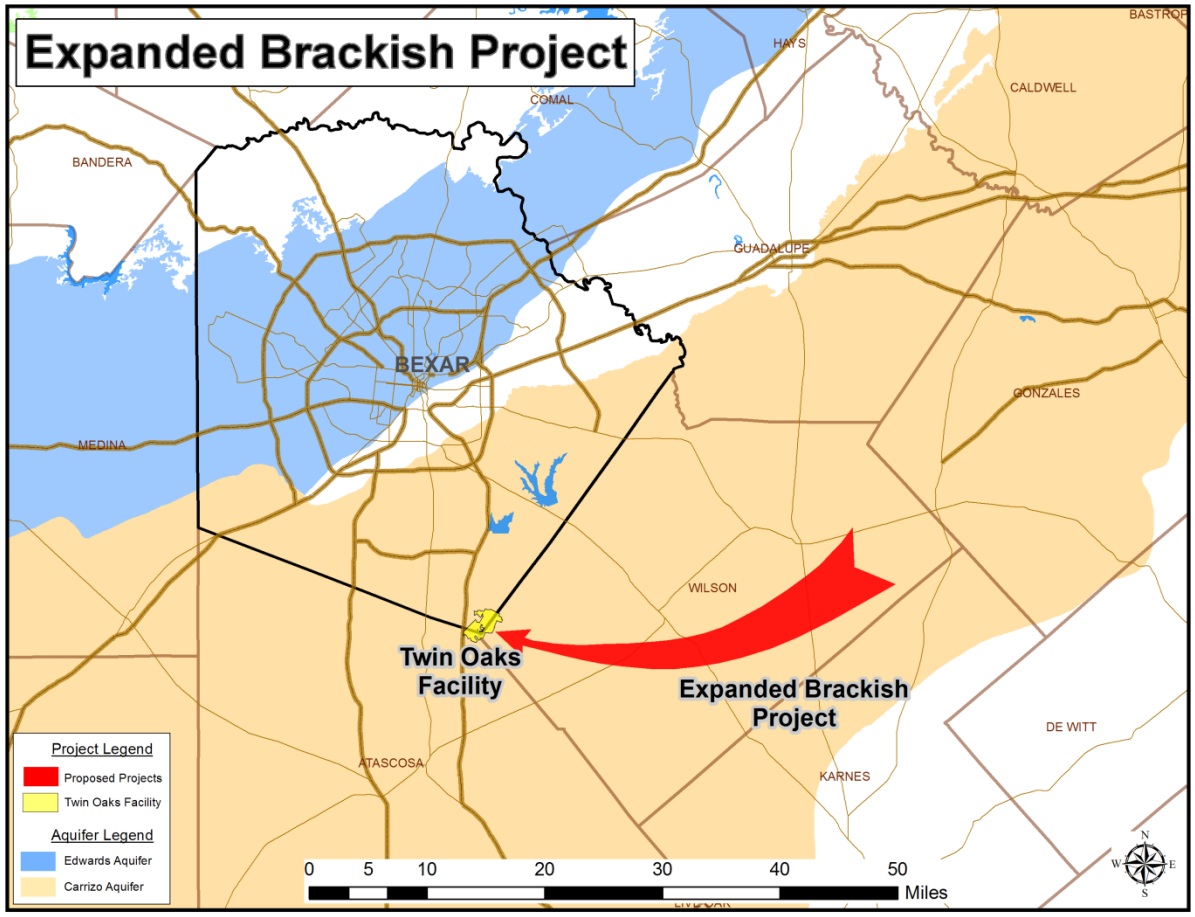
Expansion of Brackish Desalination

Meeting future demand

- Up to 50,000 ac-ft of new Brackish groundwater adjacent to Bexar County
- Drought-proof supply
- Phase the project to meet demand
- Eligible for Prop 6 loans

Expansion of Brackish Desalination

Project Location



Expansion of Brackish Desalination

Challenges

- Uncertain legal and regulatory structure
  - Texas Water Code does not distinguish between fresh groundwater and brackish groundwater for purposes of management and regulation
  - Uncertainties associated with development of fresh groundwater are **magnified** for brackish groundwater because of high cost

Legislative Initiative

Brackish Groundwater Development

- Incentivize use of Brackish to meet future water needs of Texas:
  - Allow production to start developing science through creation of zones
  - Consistent and long term permits and rules
    - Allow for limited changes to protect from un-sustainable pumping and to mitigate any water quality impacts
  - Meaningful appeals process

Expansion of Brackish Desalination

Opportunities on the horizon

- Continuing drought brings growing public awareness that change in water management is required
- Increasing willingness by state leaders to change laws
- Growing local recognition that development of brackish groundwater reduces pressure for development of fresh groundwater
- Ongoing work by Texas Water Conservation Association Groundwater Committee
- Continuing to build statewide coalition of allies

Conclusions

- Oceans of brackish groundwater available, yet underutilized
- Drought-proof supply
- Future expansion possible
- Eligible for Prop 6 loans
- Long Term certainty needed

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