

# Texas Desalination Association

TWCA March 9<sup>th</sup> 2018



# Recovery of Stranded Costs in a Deregulated Electricity Market





# Texas Desalination Past, Present, and Future





**PAST**







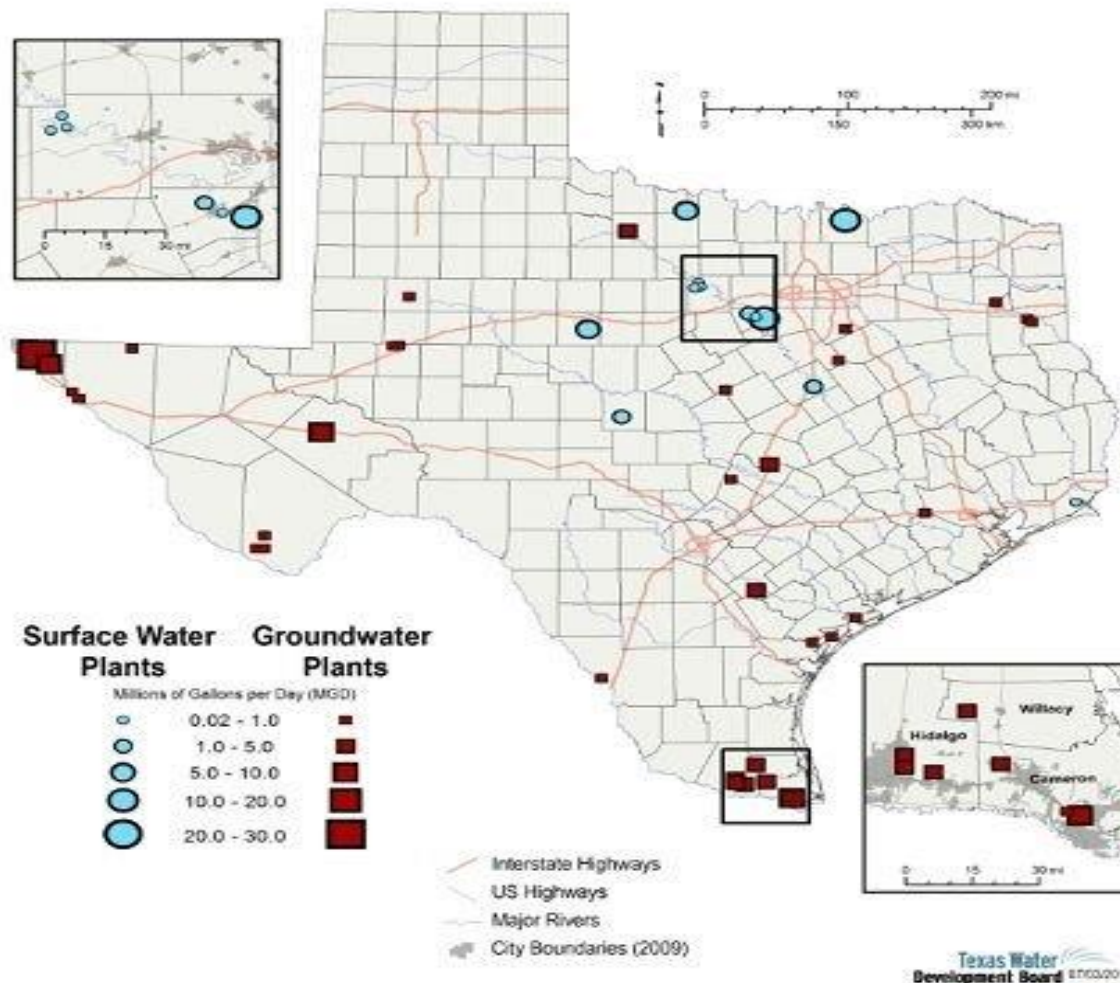


**PRESENT**



# Desalination in Texas

## Desalination Plant Capacities



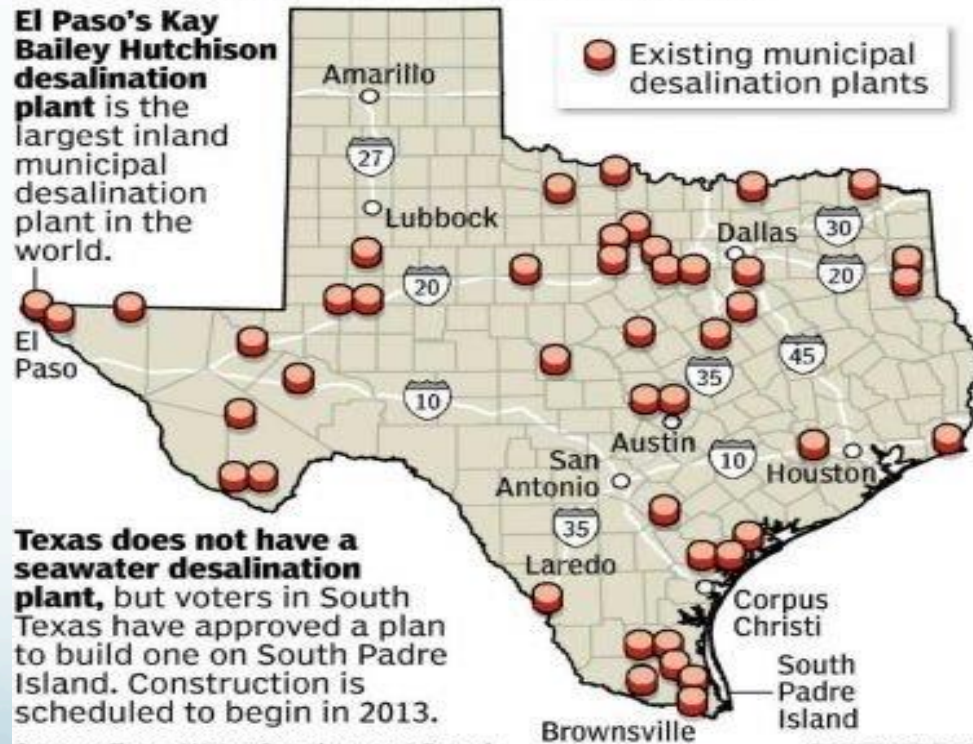


# Municipal Water Supply Desalination in Texas

## DESALINATION IN TEXAS

*With 44 public water supply desalination plants currently operating throughout the state, Texas has an estimated total municipal desalination capacity of about 120 million gallons per day. The plants deal exclusively with brackish water sources, both above and below ground.*

**El Paso's Kay Bailey Hutchison desalination plant** is the largest inland municipal desalination plant in the world.



**Texas does not have a seawater desalination plant,** but voters in South Texas have approved a plan to build one on South Padre Island. Construction is scheduled to begin in 2013.

Source: Texas Water Development Board

CHRONICLE



# Southernmost Regional Water Authority Brackish Desalination Plant – Brownsville



# Southmost

Southmost Regional Water Authority, Brownsville, Texas  
2004

Project Size: 7.5 MGD

Project Cost: \$26 million

NRS Consulting Engineers (NorrisLeal)

20 wells and raw water transmission lines, NRS (NorrisLeal) provided design and project management services. NRS also managed the permitting process, working with state and federal agencies as the project proceeded.

Note: When constructed, this \$26 million regional desalination facility was the largest of its kind in Texas.



















# Kay Bailey Hutchinson Desalination Plant – El Paso



# Kay Bailey Hutchinson

El Paso Water Utilities, El Paso, Texas

Project Size: 27.5 MGD

Project Cost: \$91 million

Opened in 2007 to deal with drought, emergency situations, growth, and brackish water intrusion. Operated at full capacity for the first time in May 2012

Utilizes 5 reverse osmosis skids, year round usually runs at 1-2 skids

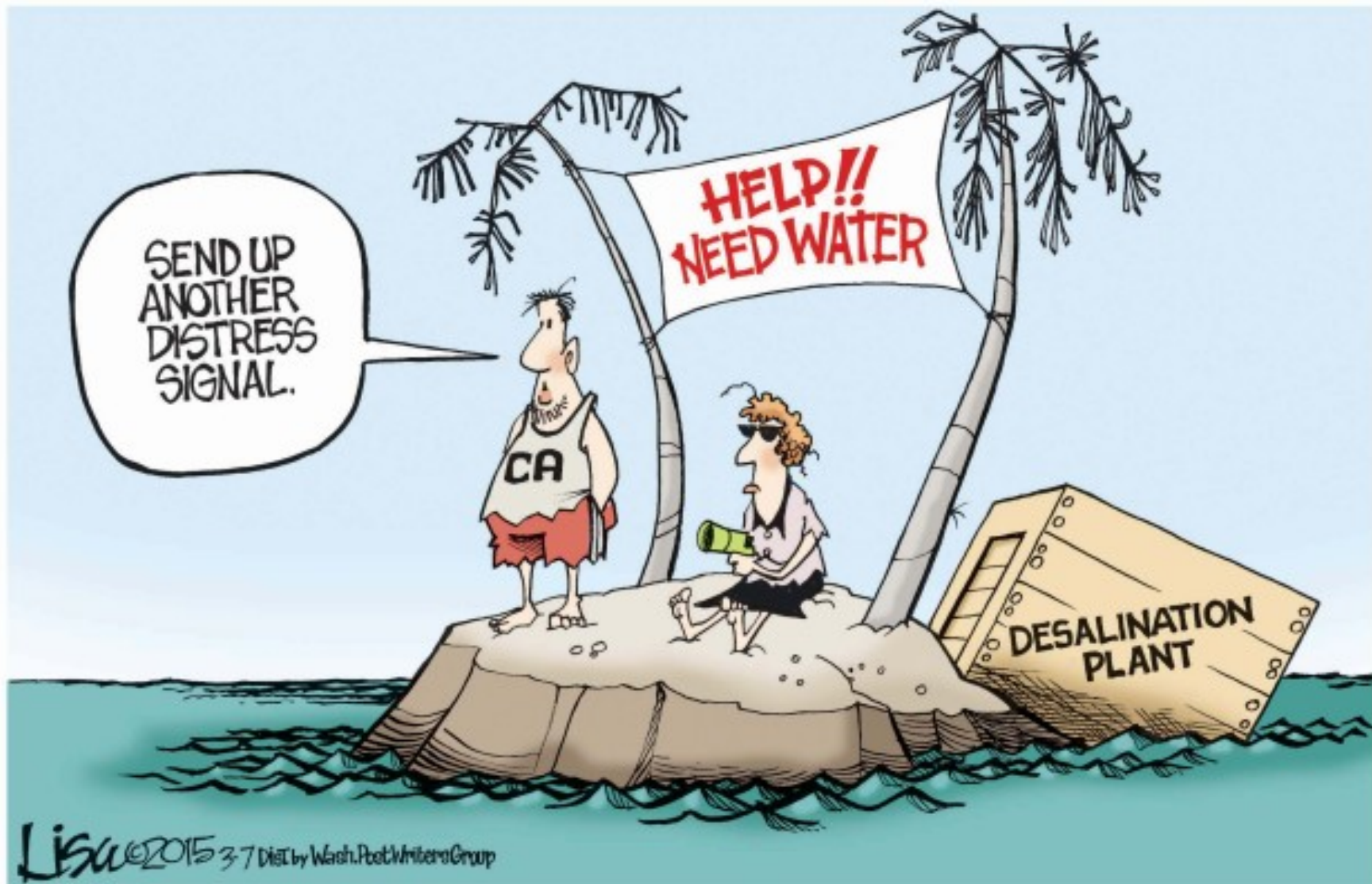














# Brazos River Authority Lake Granbury Surface Water Treatment Plant – Granbury



# Brazos River Authority

Brazos River Authority, Texas

2008

Project size: 6 MGD (rehabilitation)

Project Cost: \$975,000

NRS Consulting Engineers (NorrisLeal)

The Brazos River Authority uses both conventional and membrane technology treatment at its surface water and treatment system (SWATS) facility in Granbury. NRS (NorrisLeal) was retained to prepare the engineering drawings to secure the permitting required by TCEQ to comply with the requirements necessary for the construction of the UF modifications the plant needed. After permitting and construction, pilot testing was needed to confirm the design performance, during which time the plant remained on-line.















# San Antonio Water Systems (SAWS) Brackish Water Desalination Plant



# SAWS

San Antonio Water System, San Antonio, Texas

Project Size: 12 MGD

Phase (2016) – 12 MGD – 13,440 acre-feet/year

Project Cost: Phase 1 \$192.7 million / \$1,177 \$/AF

Began Producing water, November 9, 2016

Source Water – Lower Wilcox Formation, 12 production wells

Treatment Process – RO









Pump Room









# FUTURE



# M&G (Mossi & Ghisolfi) Chemicals – Corpus Christi



# M&G

Nueces Bay on the Gulf of Mexico - Port of Corpus Christi, Texas

Jan 2018 Update:

Commissioners at the Port have voted to bid for the desalination plant that's for sale following the bankruptcy. If the offer is successful, ownership of the asset would be transferred to the City of Corpus Christi, with the city covering associated fees.

22 MGD – Project is yet to complete. Port officials are working with consulting engineers in support of the acquisition process, including how much it will cost to complete construction, and determining the facility's value as an industrial water source.











# Enviro Water Minerals – El Paso (Projected Opening – TBD)















# Global Water Awards

- Water/Wastewater Project of the Year: Short list of Nominees
  - El Paso Zero Discharge Plant, Texas
- Municipal Desalination Plant of the Year: Shortlist of Nominees
  - H2Oaks Center BWRO Plant, Texas



# Questions?