

A photograph of the Southmost Regional Water Authority building and grounds. In the foreground, a stone wall features the text "SOUTHMOST REGIONAL WATER AUTHORITY" and "1255". Three flagpoles stand in a row, flying the SRWA logo flag, the American flag, and the Texas state flag. Several palm trees are planted in the landscape. In the background, a large, modern building with a curved roof is visible under a blue sky with scattered clouds.

**SOUTHMOST REGIONAL
WATER AUTHORITY**
1255

Texas ★ Desal 2017
DEVELOPING A DROUGHT-PROOF WATER SUPPLY

Southmost Regional Water Authority Partners

Valley Municipal Utility District No.2
2.51%



City of Los Fresnos
2.28%



Town of Indian Lake
0.20%



Brownsville Public Utilities Board
92.91%



Brownsville Navigation District
2.10%

Background

- ❖ Conservation and Reclamation District formed in 1981
- ❖ Address long-term regional water supply issues for southern Cameron County
- ❖ Dormant until 2000
- ❖ Partners came together to consider using brackish groundwater as an alternate water supply



Background

Rio Grande at Brownsville



Spring 2001



Summer 2002

Brackish Groundwater Desalination



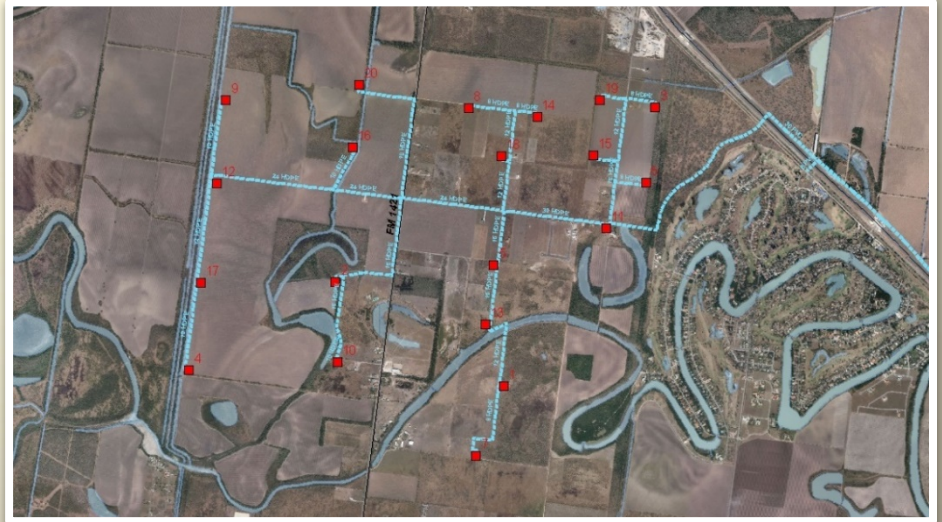
Treatment Facility

- Reverse Osmosis (RO) Membrane Technology
- 7.5 MGD Original Plant Capacity (2004)
- Expanded to 10 MGD (2015)
 - Added MF pretreatment to reduce arsenic and iron levels
 - 11,200 acre-feet of water rights saved (equivalent - \$22.4 Million)

Brackish Groundwater Wells

20 Brackish groundwater wells

- Well depth: 250-300 feet bgl
- Groundwater: 3,000 mg/L total dissolved solids (TDS)
- USBR Well Monitoring Project (2017)



Concentrate Management



Surface Water Discharge

- Cameron County Drainage Ditch
- 13,000 mg/L TDS
- TCEQ Discharge Permit:
TDS daily max—35,339 mg/L

Cost Summary

FY 2016 O&M Costs

- \$4.0 Million
- Electrical: 26% of O&M costs
- Chemicals: 27% of O&M costs

FY2016 Unit Costs

- \$1.42 per kgals (O&M)
- \$2.33 per kgals (Debt Service, Capital, and O&M)



Benefits and Challenges

Benefits

- Alternate water supply
- Independent of Rio Grande
- Water rights savings
- Produces high quality water
- Modular design

Challenges

- Arsenic levels in groundwater
- Higher operating costs
- Discharge permit
- Specialized training (SCMA)





THANK YOU