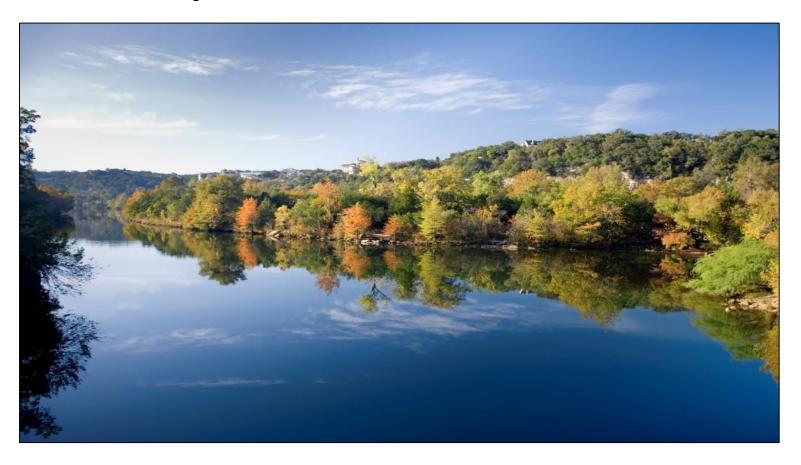
WATER for TEXAS

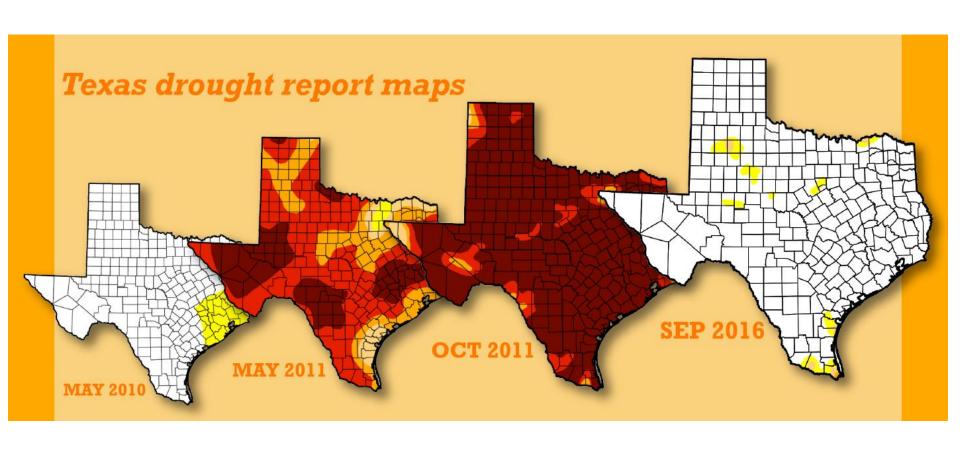
TAMEST Shale Task Force

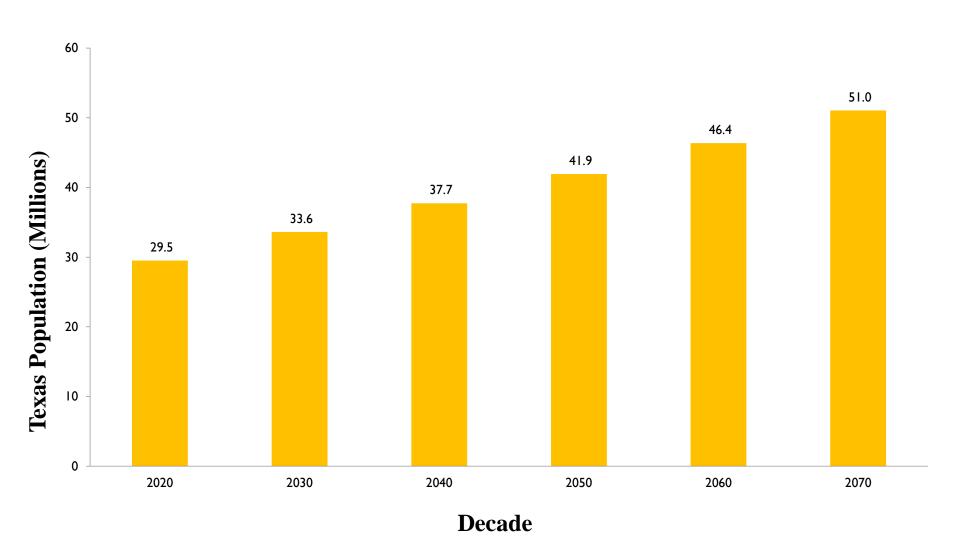
Water for the Future



Kathleen Jackson, Director







REGIONAL WATER PLANNING GROUPS



Region K

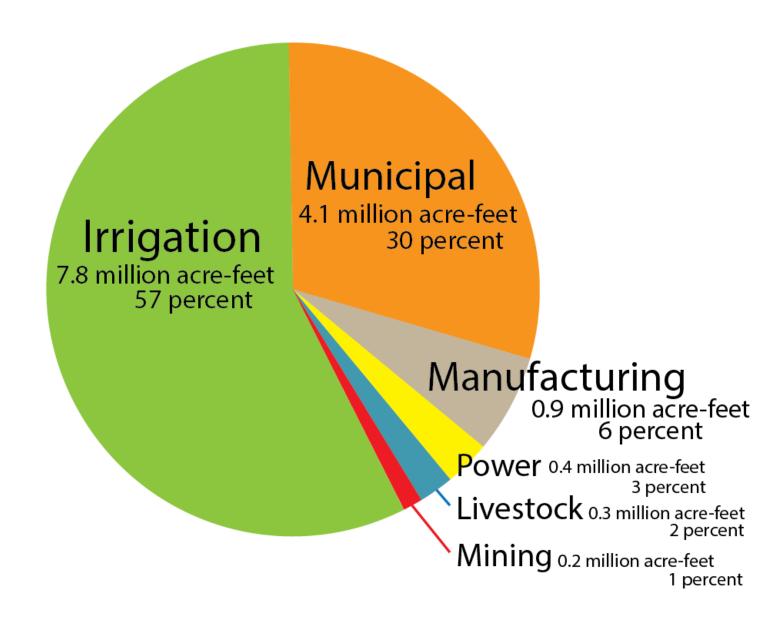
- Local Political Subdivision serves as administrator
- Public, consensus-driven
- Local/regional decision making process

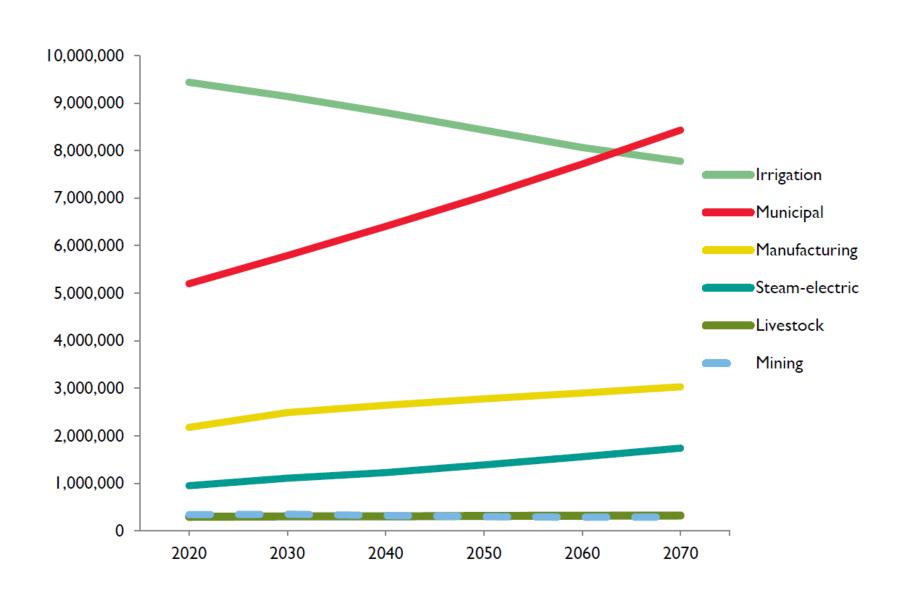


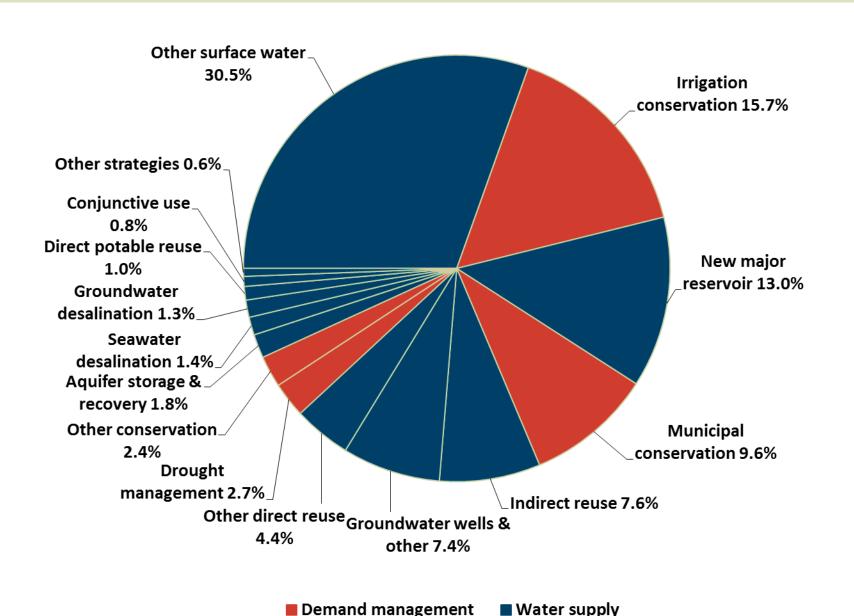
Region G



Region L







- Conservation
- Reuse
- Brackish groundwater desal
- Seawater desal
- Aquifer storage and recovery
- Aquifers
- Reservoirs

CONSERVATION & REUSE



Russell Schreiber
Director of Public Works
City of Wichita Falls
Lake Arrowhead



Tom Kula
Executive Director, NTMWD
John Bunker Sands Wetland Center
Seagoville

ENERGY RESOURCES & NATURAL RESOURCES TAMEST Shale Task Force JOINT HOUSE HEARING:





• Enhanced oil & gas activity using brackish groundwater

- Brackish groundwater sought as municipal supply
 - (> 100 desal plants in 2017 State Water Plan)
- House Bill 30

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AN ACT

2 relating to the development of seawater and brackish groundwater.

3 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF TEXAS:

4 SECTION 1. (a) With this state facing an ongoing drought,

5 continuing population growth, and the need to remain economically

6 competitive, this state must secure and develop plentiful and

8 for water.

9 (b) Brackish groundwater is a potential new source of water

10 for municipal, industrial, and other purposes. This state has an

11 estimated 880 trillion gallons of brackish groundwater, much of

12 which is untapped, For many years this water was considered largely

13 useless for most purposes, but advances in technology and pressures

15 fact a vital resource. In addition to providing potentially wast

16 new supplies have revealed that brackish groundwater is in

17 pressures on the use of fresh groundwater.

18 (c) Many in the oil and gas industry in this state have made

20 their operations with brackish groundwater. This is a positive

21 sepanded use of brackish groundwater. This is a positive

22 sepanded use of brackish groundwater for oil and gas development or

23 to establish regulatory barriers or permitting requirements for the

10 use of brackish groundwater for oil and gas development or
```

House Bill 30 (84th Legislature) - Brackish Groundwater Mapping



- December 2016: Four aquifers must be completed
- September 2017: Funded studies completed
- December 2022: Remaining aquifers must be completed
- Designate brackish groundwater production zones
- Estimate 30- and 50-year production without causing significant impact to fresh water aquifers

*Geologic strata used for Chapter 27 injection excluded from zone designation

Rig/Frac brackish groundwater supply wells:

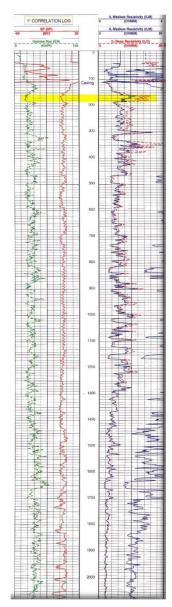


- Water quality data (help us calibrate our log interpretations)
- Geophysical logs
 (help us interpret salinity zones)
- Aquifer test data / well yields
 (help us determine aquifer productivity)

HOW WE WILL USE IT

TAMEST Shale Task Force

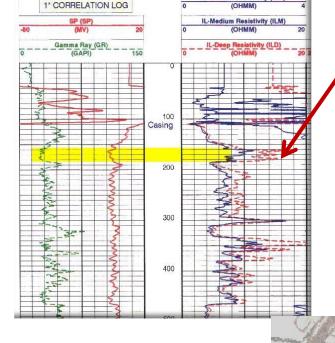
(Water Quality Data Used to Calibrate Geophysical Logs)



Moderately Saline

Slightly Saline

Moderately Saline



At 160 ft = 15 ohm-meter

Rwa Minimum Method interpreted TDS = 2,500 mg/L

Water Well TDS concentration = 2,264 mg/L (well screen 170-349 ft)

Hidalgo

Salinity AreaK

Geophysical Well Log: 42889

TDS: 2264

Very Saline

Brine

• Living data set that can grow, increasing scientific understanding of the aquifer as a whole



- Better data for industry
- Better science for policy makers
- Better information for businesses and communities to make decisions
- Creating jobs and economic growth for Texas





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