

Drought in Texas: *Coming at it from all angles*

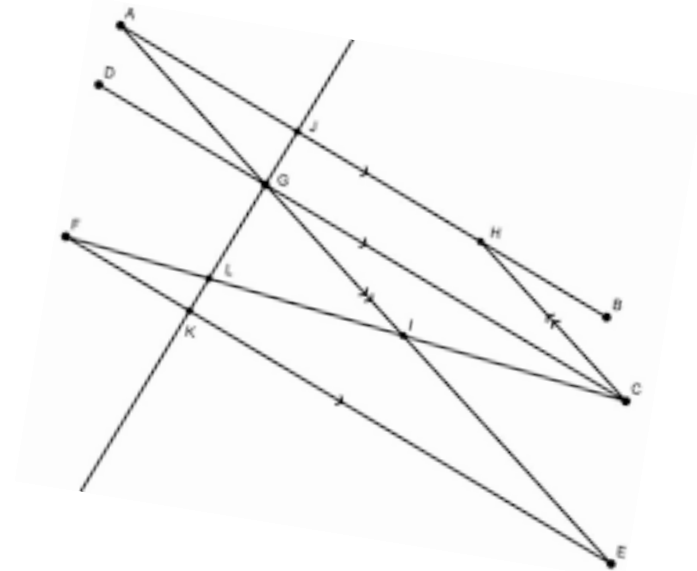
MULTI STATE SALINITY COALITION ANNUAL SALINITY SUMMIT

Sam Marie Hermitte

Assistant Deputy Executive Administrator

Water Science & Conservation

February 23, 2023



IT'S SO HOT IN TEXAS

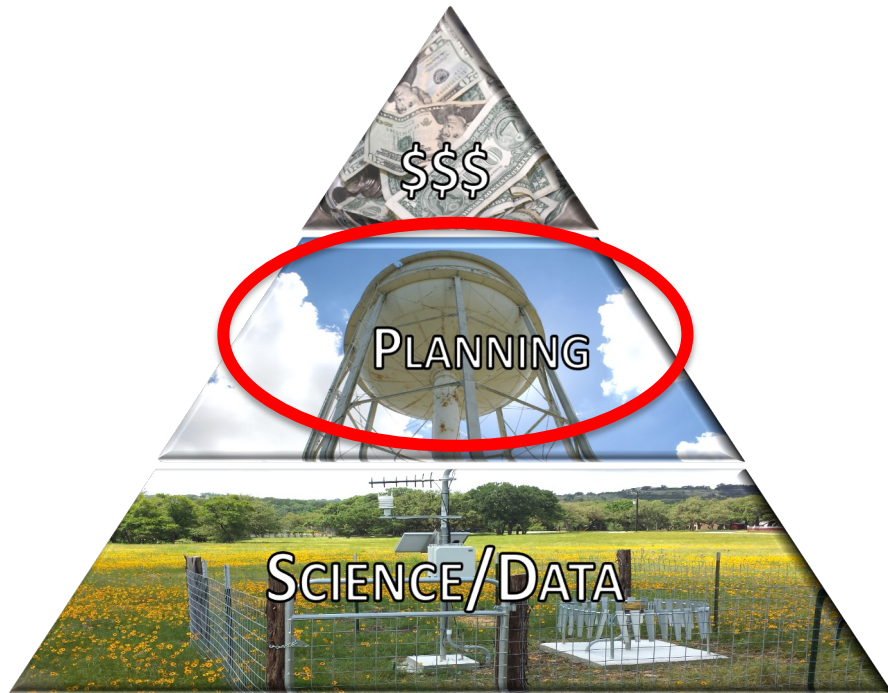


WE'VE INSTALLED FANS OUTSIDE

WeKnowMemes

Texas Water Development Board

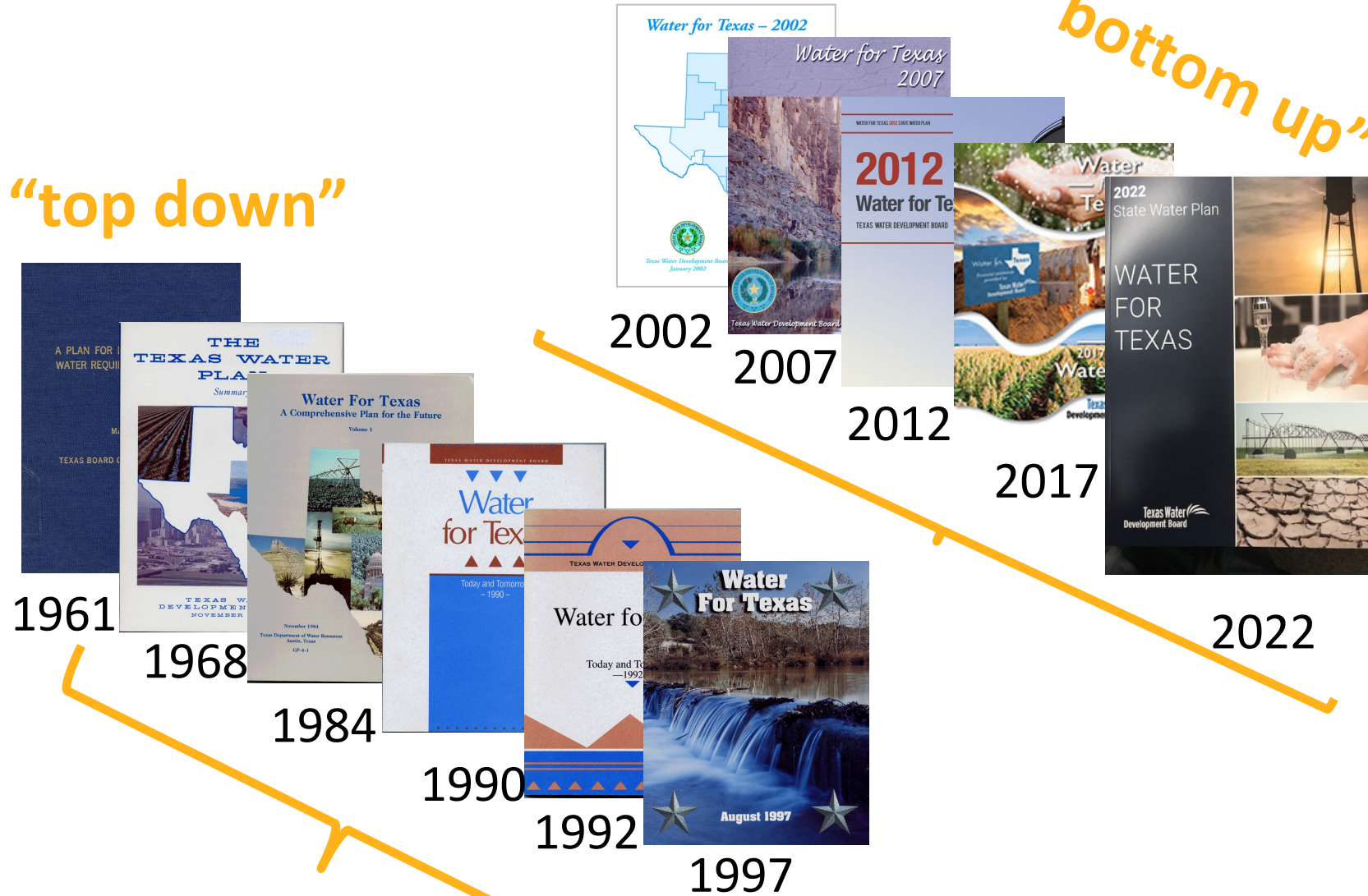
Lead the State's Efforts in Ensuring a Secure Water Future for Texas and its Citizens



State Water Plans

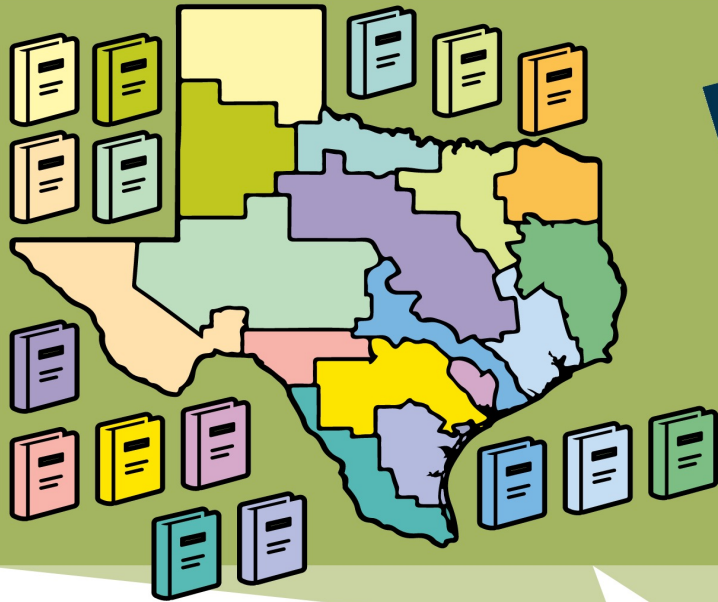
“top down”

“bottom up”

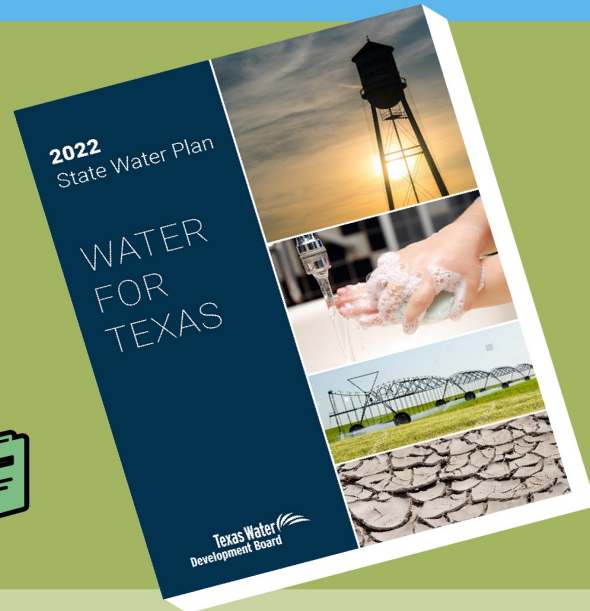


Approved Regional Plans -> Adopted State Plan

**16 Regional
Water Plans = 1 State
Water Plan!**



over
19,500 pages



condensed into
203 pages

- 2021 RWPs approved by TWDB Board January 2021
- 2022 State Water Plan adopted by TWDB Board July 2021

How We Plan



What can we do to get more water?



How much will it cost?

Water Use Categories



Municipal



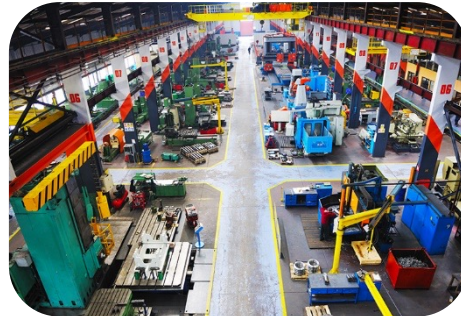
Irrigation



Livestock



Mining

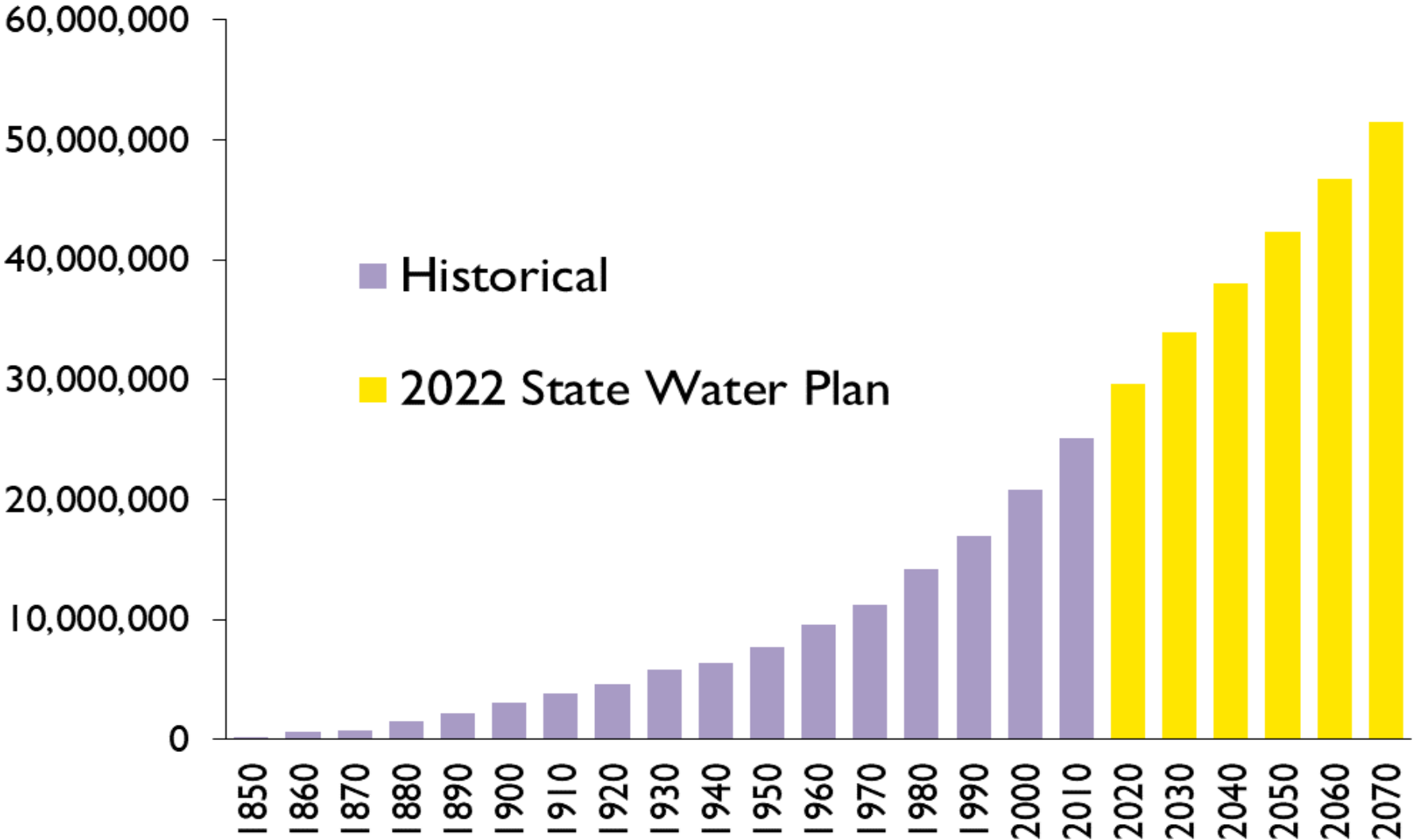


Manufacturing



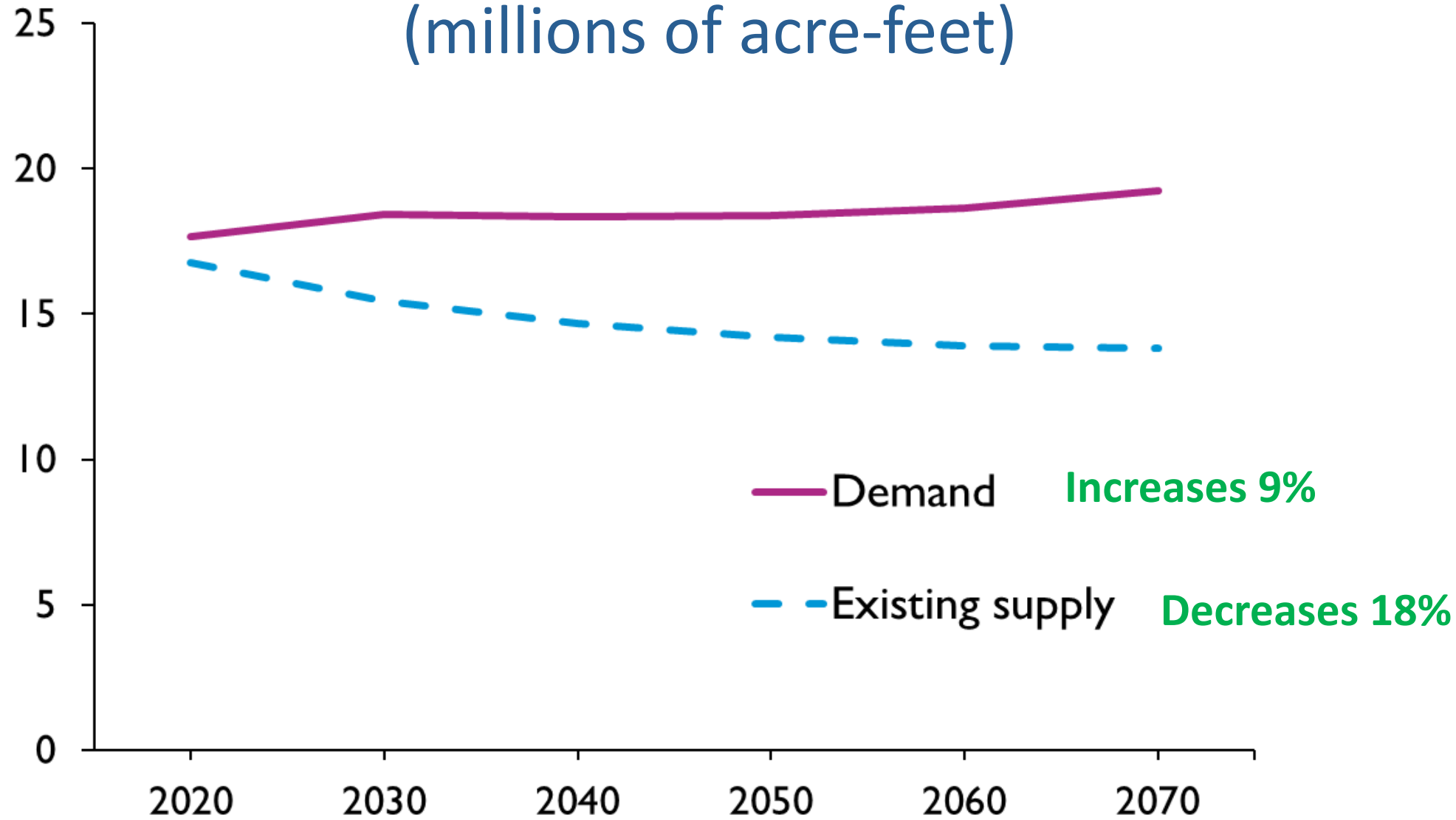
Steam Electric

Projected Texas population (millions)

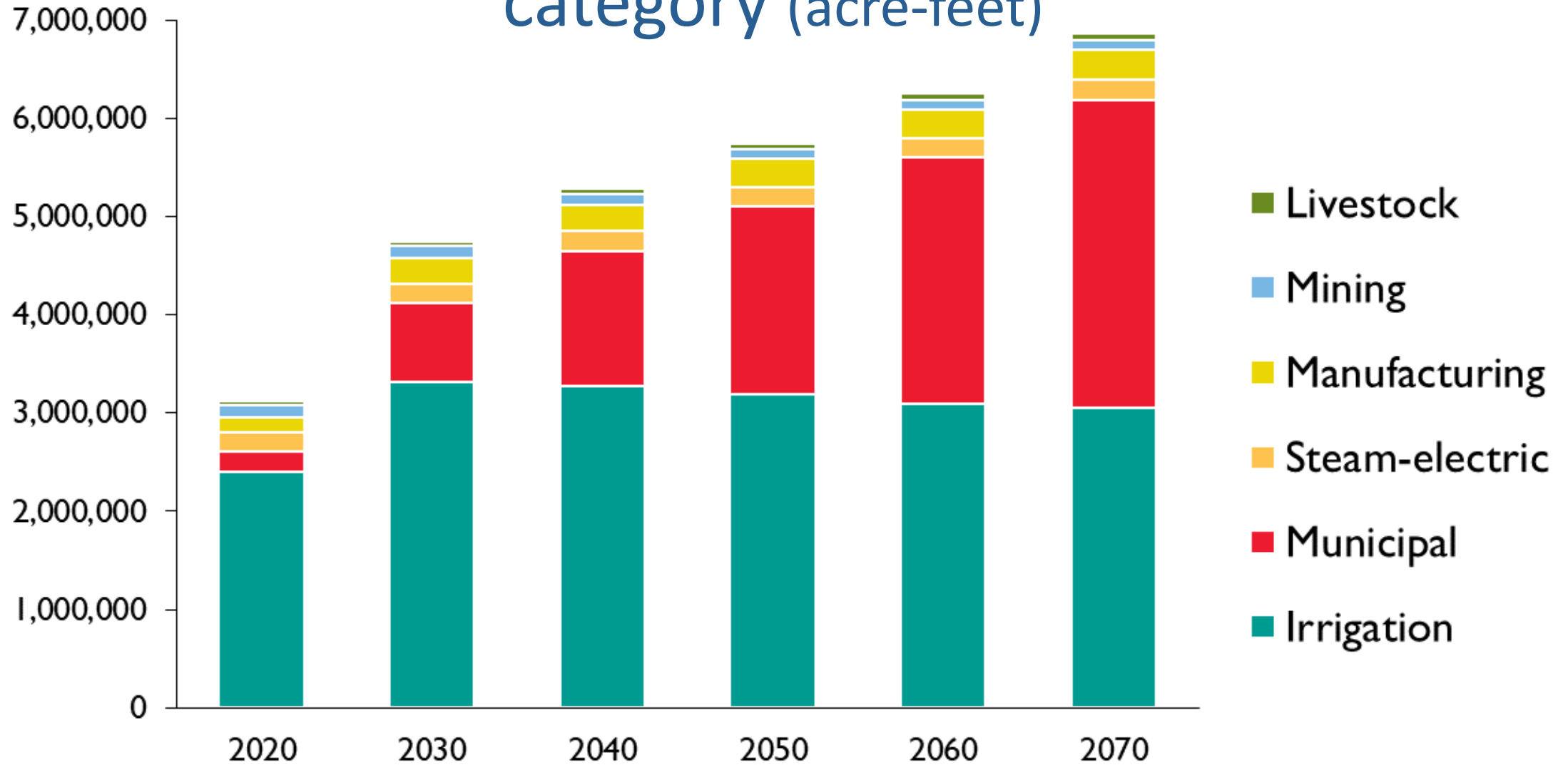


Projected water demand vs existing water supplies

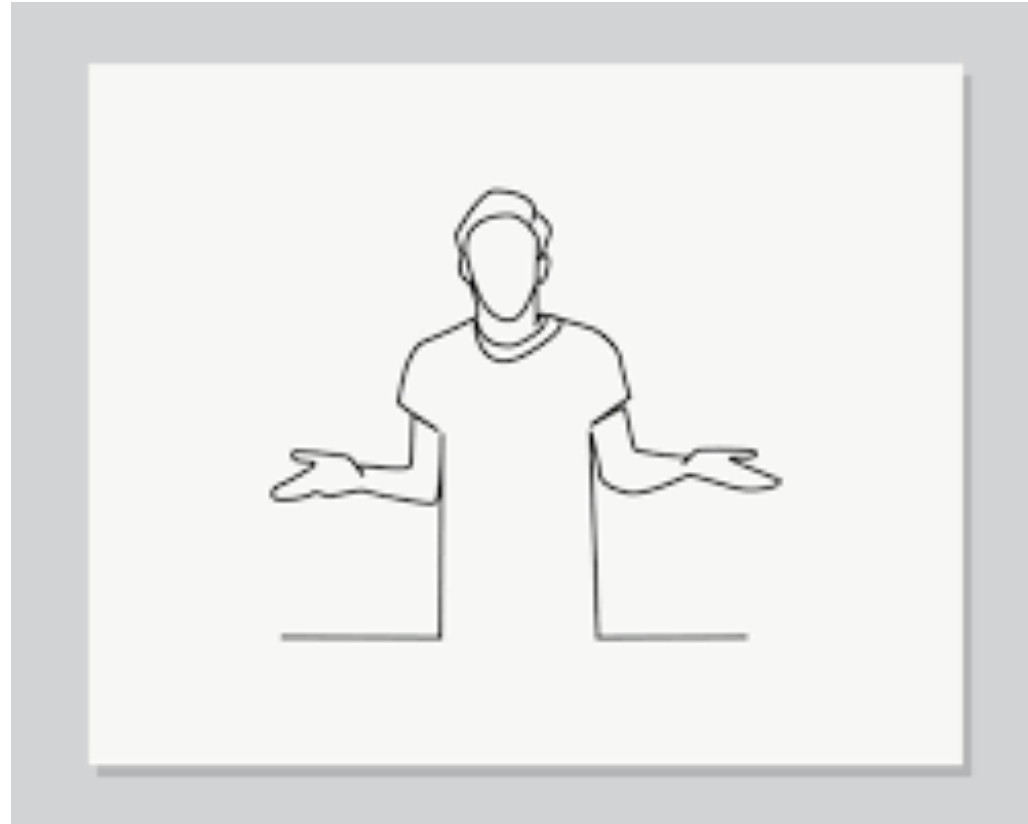
(millions of acre-feet)

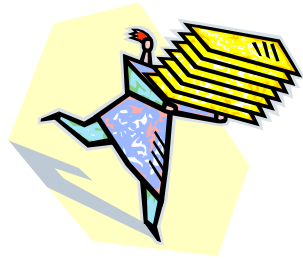


Water needs (potential shortages) by water use category (acre-feet)



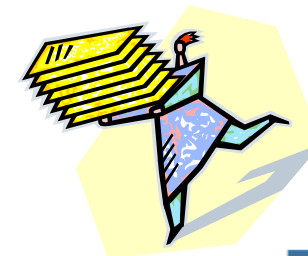
What else???





Here a plan, there a plan, everywhere a plan plan!

- Regional water plans ✓
- State water plan ✓
- Water conservation plans
- Drought contingency plans
- State emergency management plan
- Drought annex





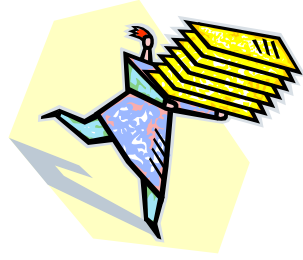
Drought Contingency Plans

- What?
 - What happens (locally) when the rain stops
- Who?
 - All retail public water providers
 - All wholesale public water providers
 - All irrigation districts
- When?
 - Everyone: every five years



Drought Annex

- What?
 - What happens (statewide) when the rain stops
- Who?
 - Consortium of state agencies and stakeholders
 - Texas Department of Emergency Management leads
 - Texas Commission on Environmental Quality often takes lead on local response
- When?
 - Whenever. Now's a good time...



implement water plan

**implement water
conservation plan**



before the drought

**implement drought
preparedness plan**



**implement drought
contingency plan**



**declare drought
disaster**



**implement state
emergency
management plan**



drought

Only plans???



2022 Interactive Texas State Water Plan

2022 Texas State Water Plan

Texas Water Development Board

View data for: All of Texas GO

TEXAS

Population

| Year | Population |
|------|------------|
| 2020 | 28,000,000 |
| 2030 | 30,000,000 |
| 2040 | 32,000,000 |
| 2050 | 34,000,000 |
| 2060 | 36,000,000 |
| 2070 | 38,000,000 |

SHOW DATA TABLE

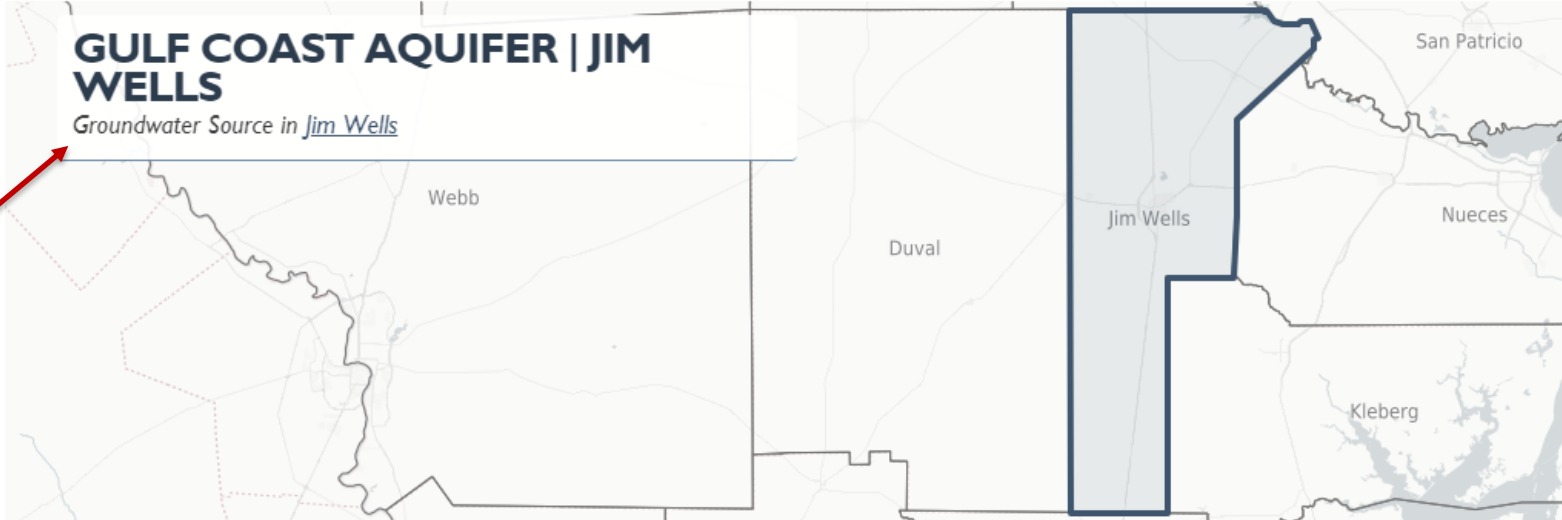
Region A, Region O, Region B, Region C, Region E, Region F, Region G, Region I, Region J, Region K, Region M, Region N, Region P

This website lets water users statewide take an up-close look at the 2022 State Water Plan data and how water needs change over time by showing:

- projected water demands,
- existing water supplies,
- the relative severity and projected water needs (potential shortages),
- the water management strategies recommended to address potential shortages, and
- recommended capital projects and their sponsors.

Development of the state water plan is central to the mission of the Texas Water Development Board. Based on 16 regional water plans, the plan addresses the needs of all water user groups in the state – municipal, irrigation, manufacturing, livestock, mining, and steam-electric power – during a repeat of the drought of record. The regional and state water plans consider a 50-year planning horizon: 2020 through 2070.

View data for Water Source Select Water Source GO

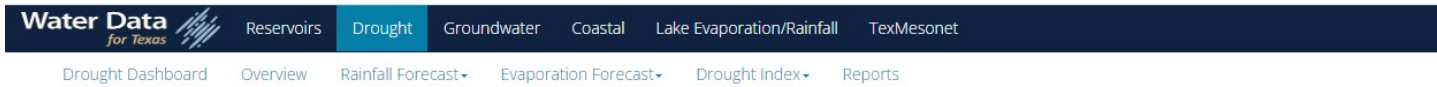


WATER SOURCE - GULF COAST AQUIFER | JIM WELLS
Recommended Projects Associated with Source

Total capital cost of recommended projects: **\$35,771,000.**

| Project ▲ | Decade Online | Sponsor | Capital Cost |
|---|---------------|---------------------------|--------------|
| CITY OF ALICE - BRACKISH GROUNDWATER DESALINATION | 2020 | ALICE | \$23,983,000 |
| GULF COAST SUPPLIES - JIM WELLS COUNTY OTHER | 2020 | COUNTY-OTHER (JIM WELLS) | \$10,704,000 |
| GULF COAST SUPPLIES - JIM WELLS IRRIGATION | 2020 | IRRIGATION (JIM WELLS) | \$753,000 |
| GULF COAST SUPPLIES - JIM WELLS MANUFACTURING | 2020 | MANUFACTURING (JIM WELLS) | \$129,000 |
| GULF COAST SUPPLIES - JIM WELLS MINING | 2020 | MINING (JIM WELLS) | \$202,000 |

TWDB Rainfall (“Drought”) Forecast Tool

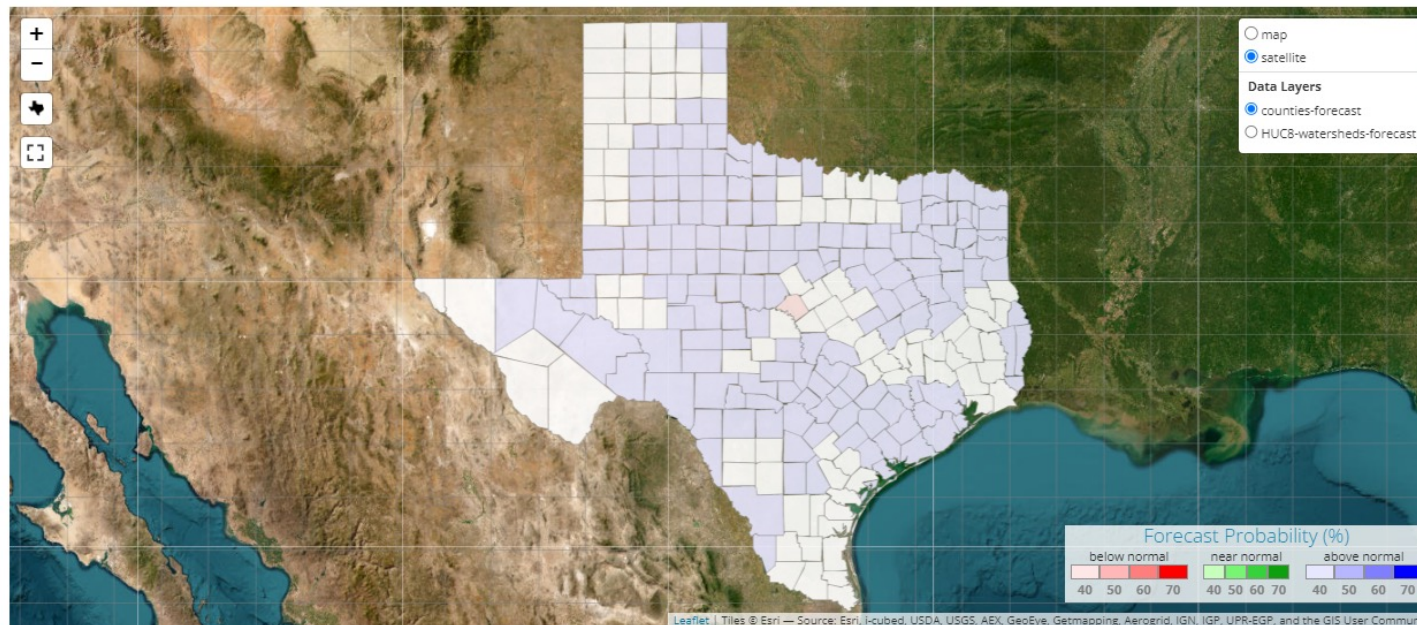


Forecast of Average May–July 2023 Rainfall

Current (6.0-Month Lead) Forecast Past Lead-time Forecasts

Click on county for forecast details

Issued on 2023-02-02



- County-level forecasts
- Interactive capability

Source: <https://waterdatafortexas.org/drought/rainfall-forecasts>
<https://waterdatafortexas.org/drought/rainfall-forecast-info>

Reference: Fernando, D.N., et al. 2015. Early warning of summer drought over Texas and the south central United States: spring conditions as a harbinger of summer drought. Texas Water Development Board. 41 pp. http://www.twdb.texas.gov/publications/reports/technical_notes/doc/TechnicalNote15-02.pdf

ENSO Outlook

Drought Dashboard

Drought Monitor

Monthly Rainfall Conditions

Monthly Temperature Conditions

Streamflow Conditions

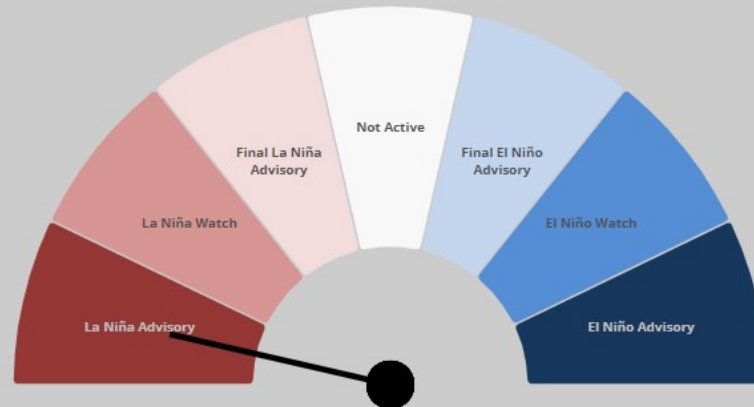
Daily Soil Moisture

Drought Indices

Drought Outlook

ENSO Outlook Precipitation | Temperature Outlook

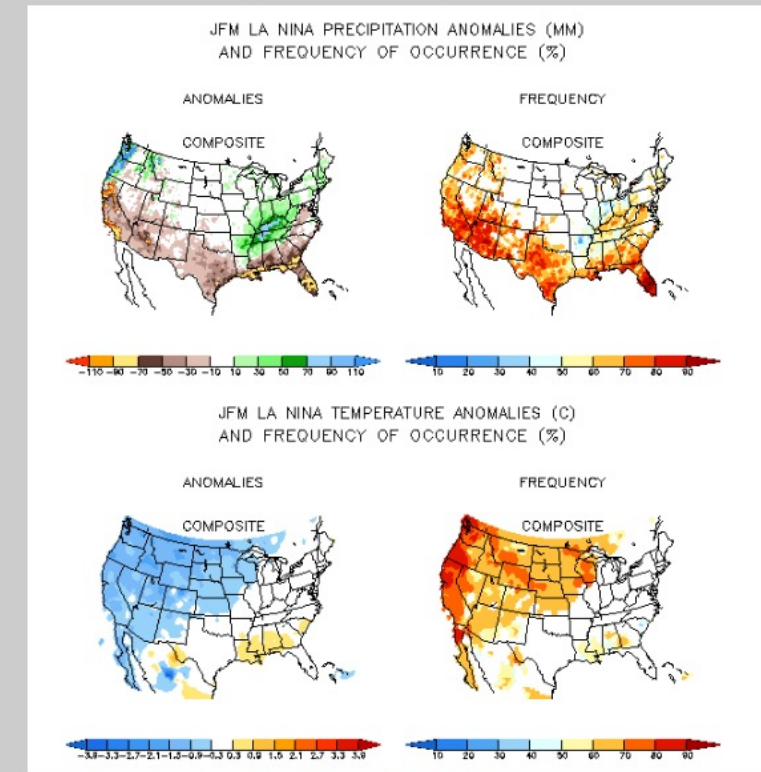
El Niño Southern Oscillation Outlook (Released on: 2023-01-12)



A transition from La Niña to ENSO-neutral is anticipated during the February-April 2023 season. By Northern Hemisphere spring (March-May 2023), the chance for ENSO-neutral is 82%.

[Alert Status Definitions](#)

January-February-March (JFM) Temperature and Precipitation



Source: NOAA/National Weather Service/Climate Prediction Center



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Texas Water **Development Board**

