

Texas Water: A Review and Outlook

November 17, 2022

North Texas Water Conservation Symposium

Coppell, TX

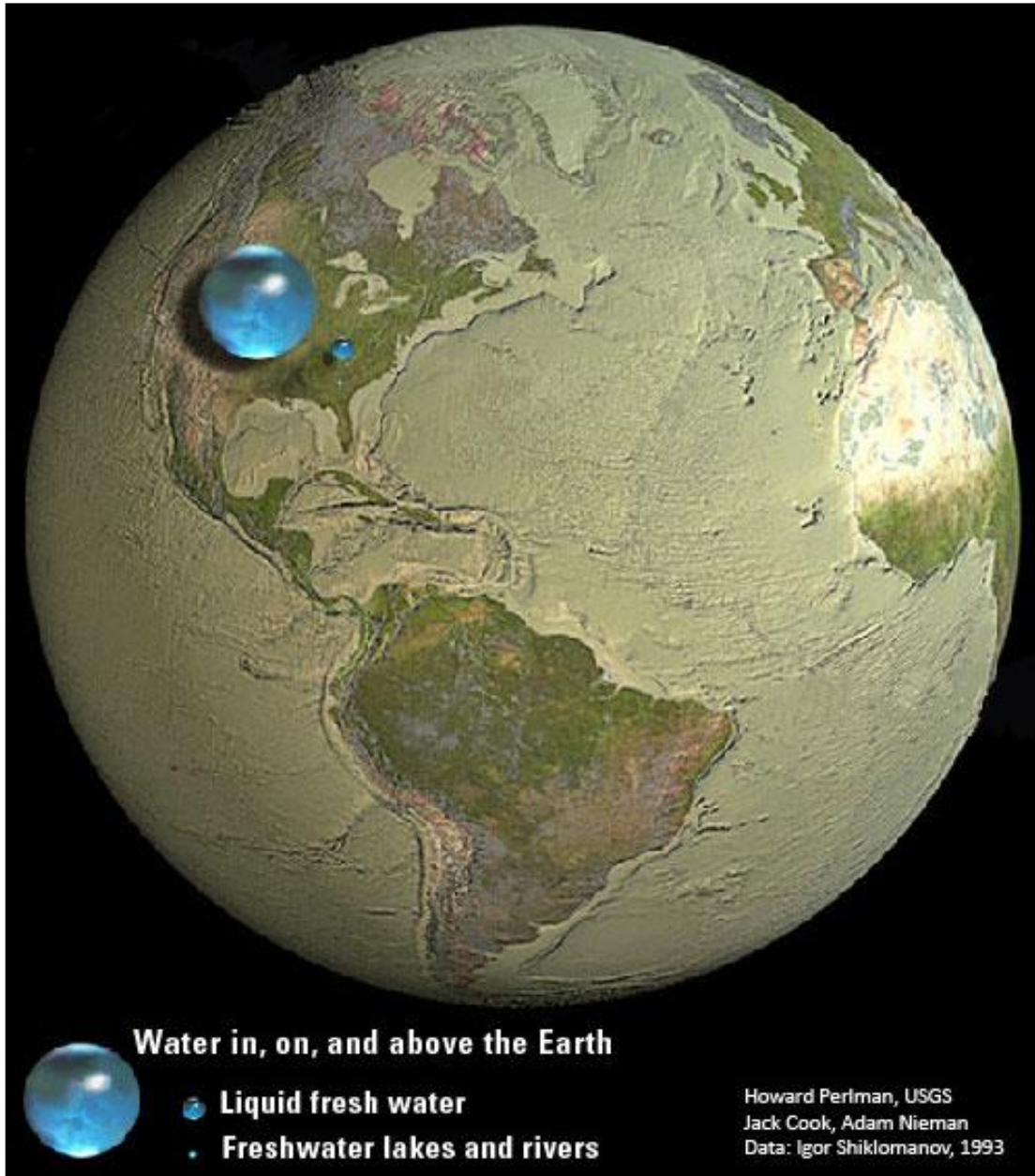
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How do we think about water? It is a matter of your perspective.

Let's start with the big picture . . .



Europa, a moon of Jupiter likely has more liquid water than Earth!

But,
Ganymede
may have
even more
water!!!



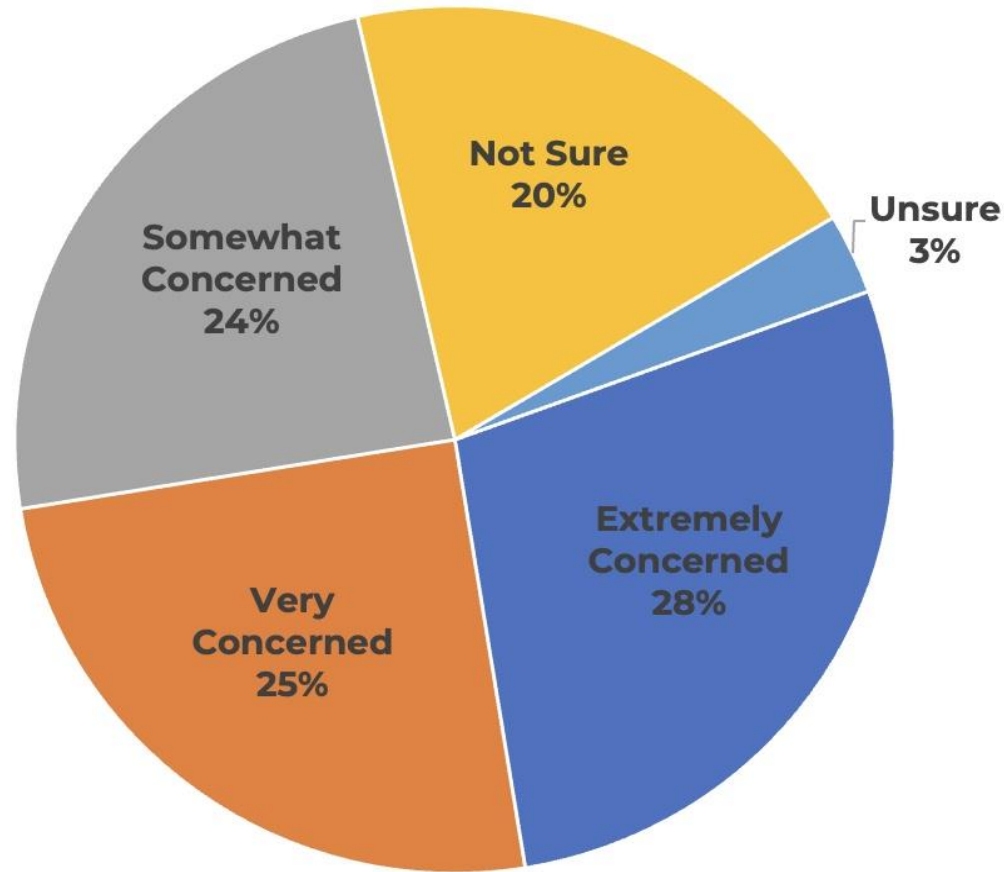
What Do Texans Think About Water?

In September, Texas 2036 asked 1,001 potential voters about a range of issues, including water.

Here is what they learned
...

Texans are concerned about extreme weather.

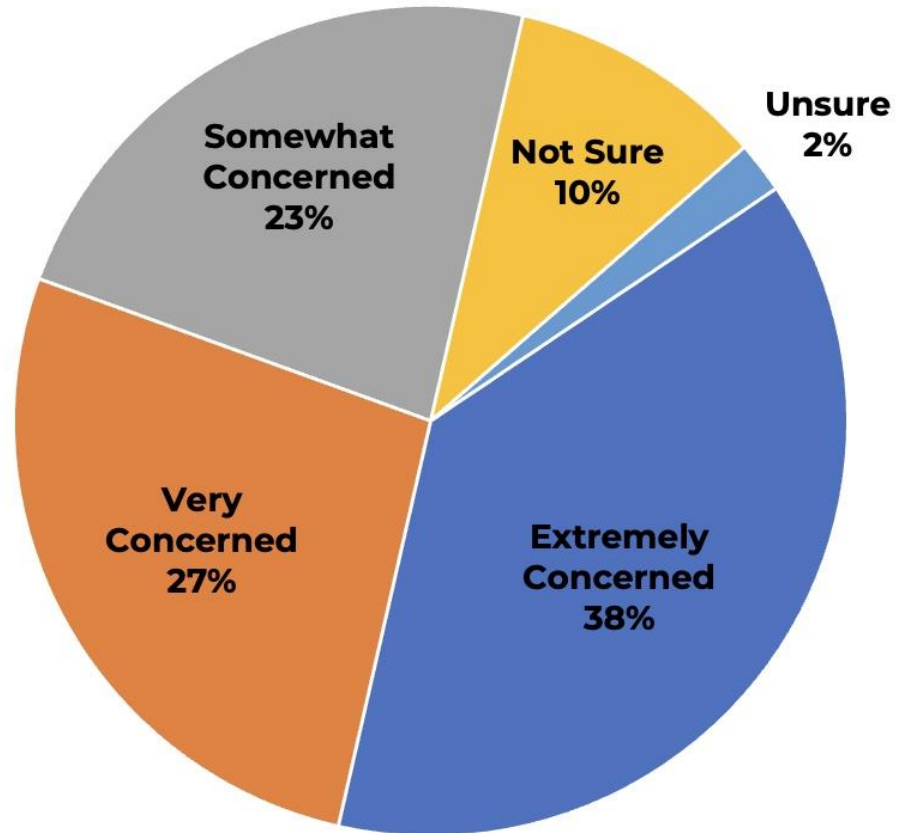
The state's climatologist at Texas A&M estimates that if extreme weather trends continue, Texas will experience more than double the number of 100-degree days, more extreme rainfall, more urban flooding, greater hurricane intensity, and increased drought severity by 2036.



September 2022

Texans worry about their water supplies during drought.

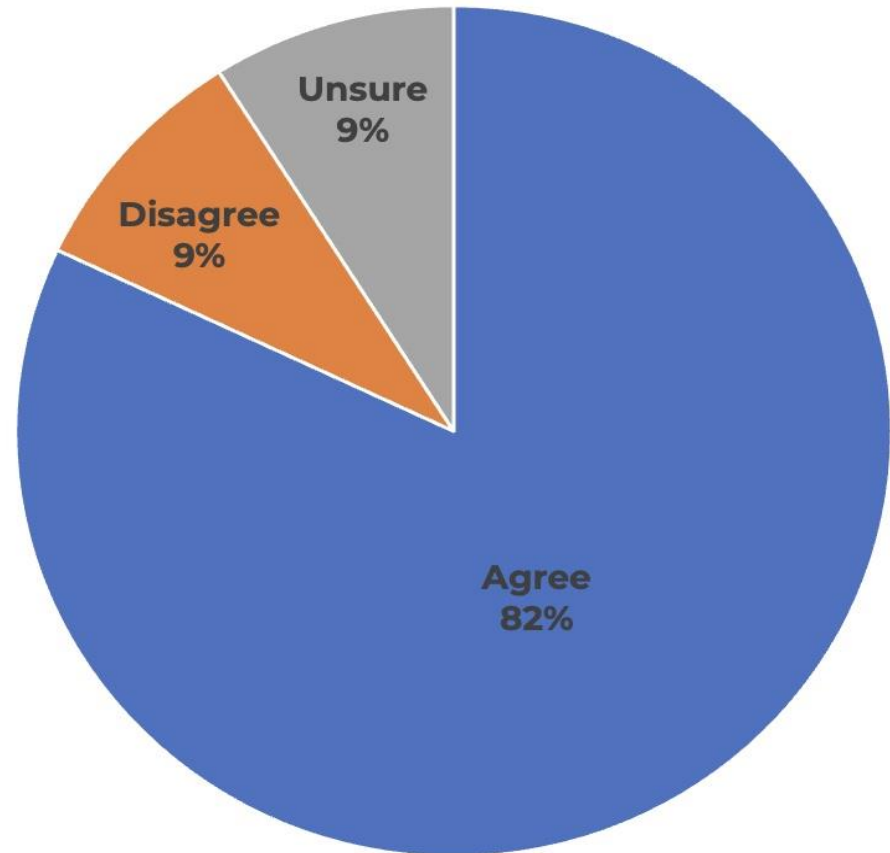
If a severe drought occurs, then Texas will not be able to meet a significant amount of its water needs, meaning some communities may not have any access to water.



September 2022

Voters support greater state funding for water supplies.

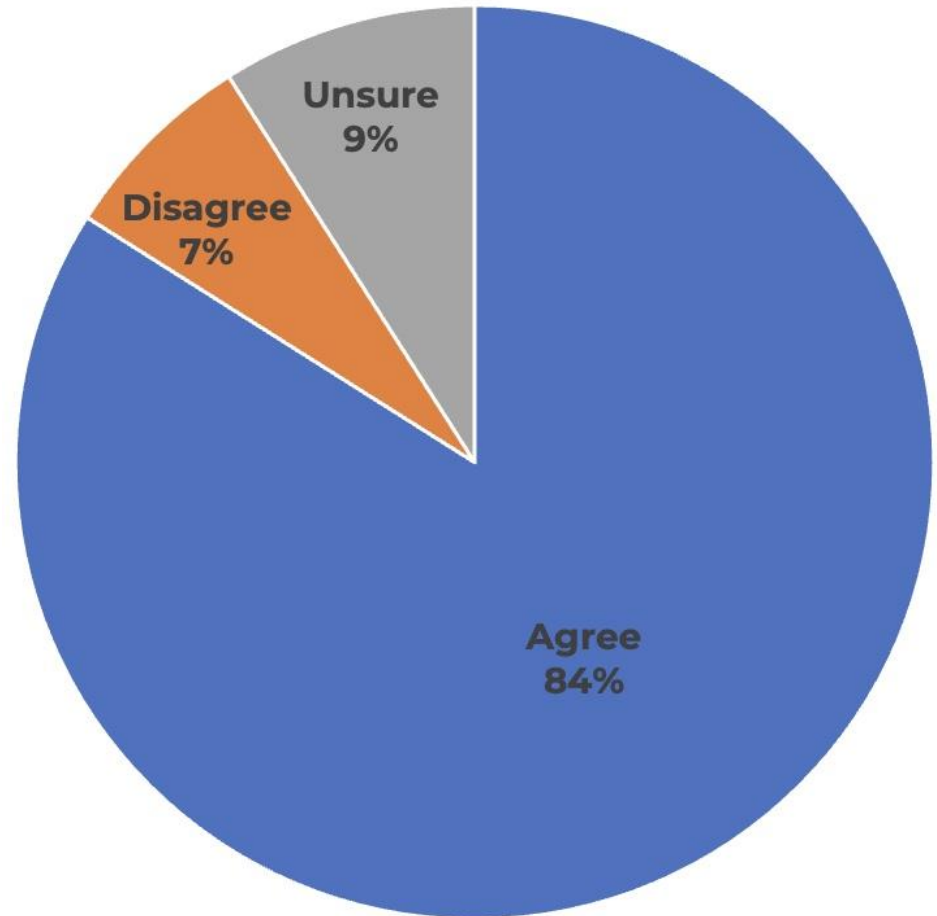
Much of Texas has endure severe drought in 2022. D you agree or disagree tha the state should increase investments to expand ou water supplies?



September 2022

Texans are more worried about their water infrastructure.

Historically, the state's investment in water has focused on increasing **water supplies**. Given aging and depreciating water infrastructure needs across the state, do you favor or oppose the Texas legislature creating a fund to help update the **aging infrastructure** too?



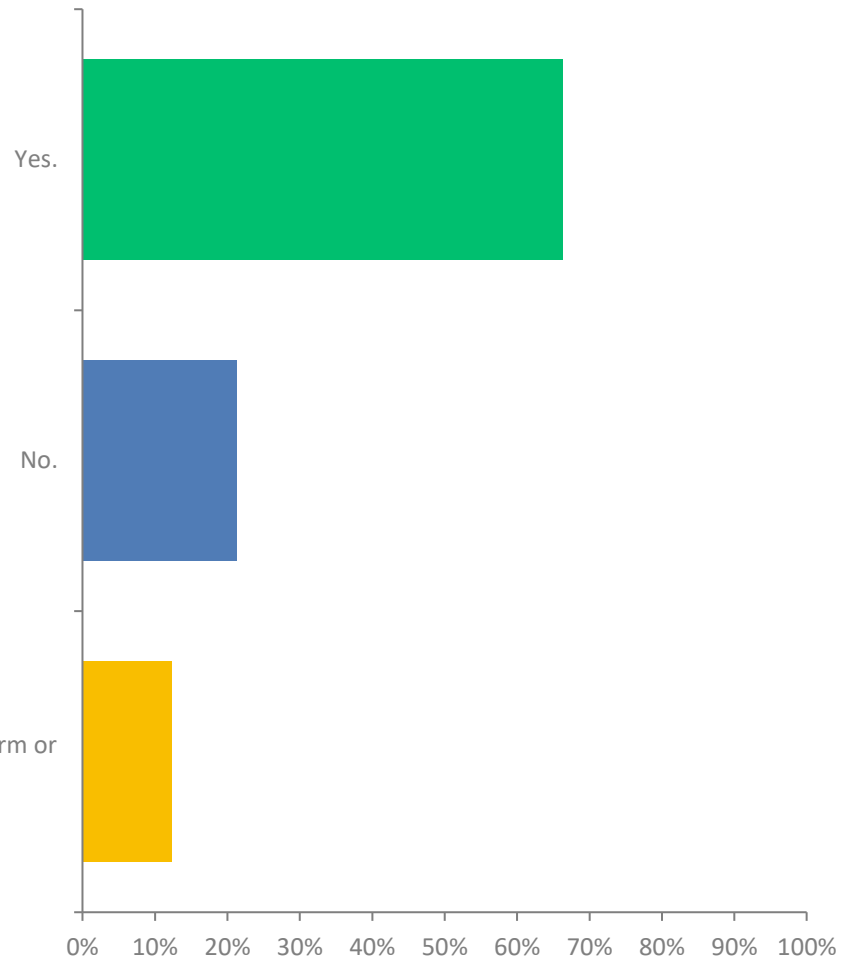
Texas Water Capital Needs Survey (October 2022)

-Texas Water Infrastructure Network &
Water Opinions

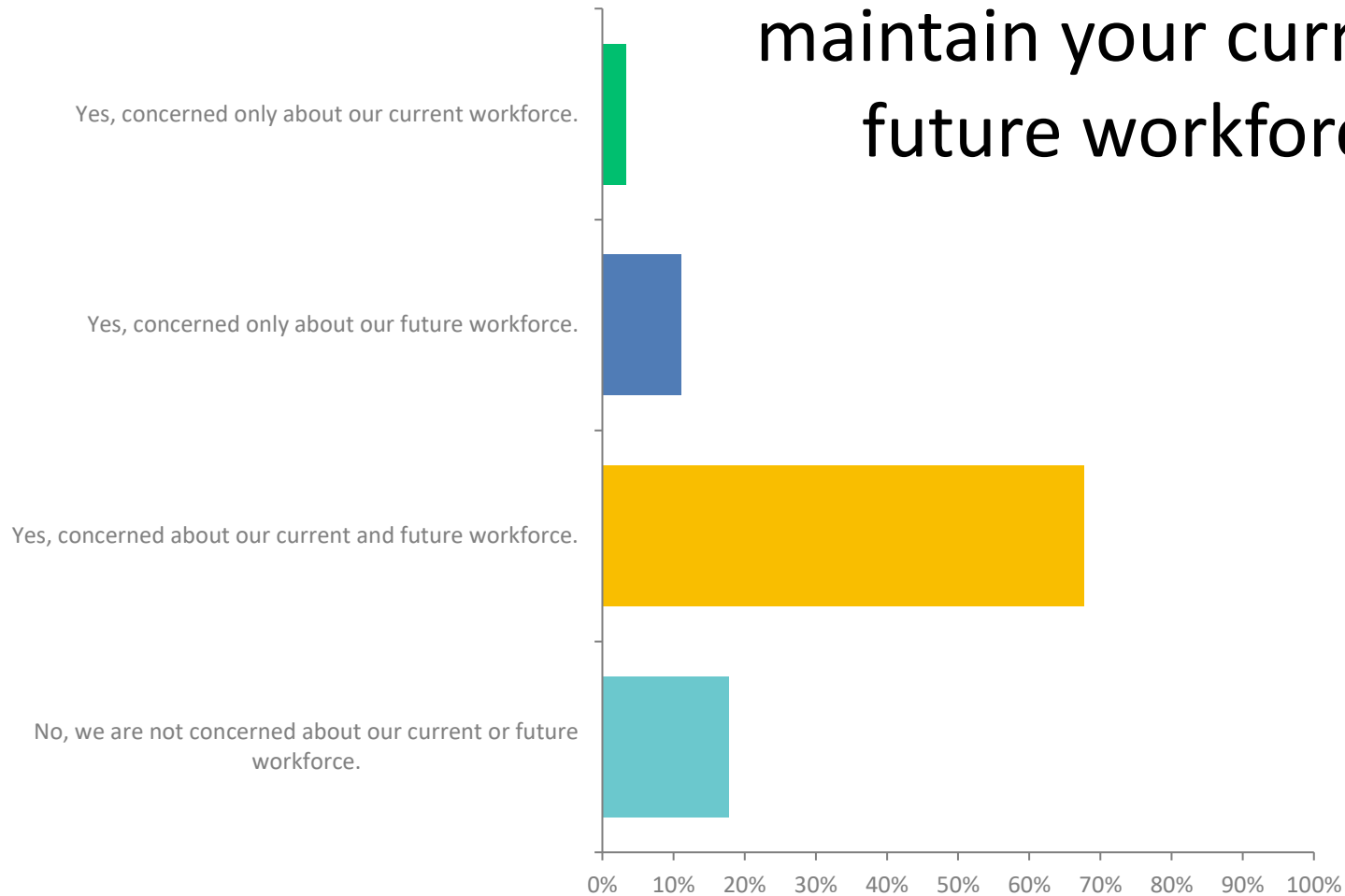


Q4: Is your utility currently implementing conservation measures and/or drought contingency plans?

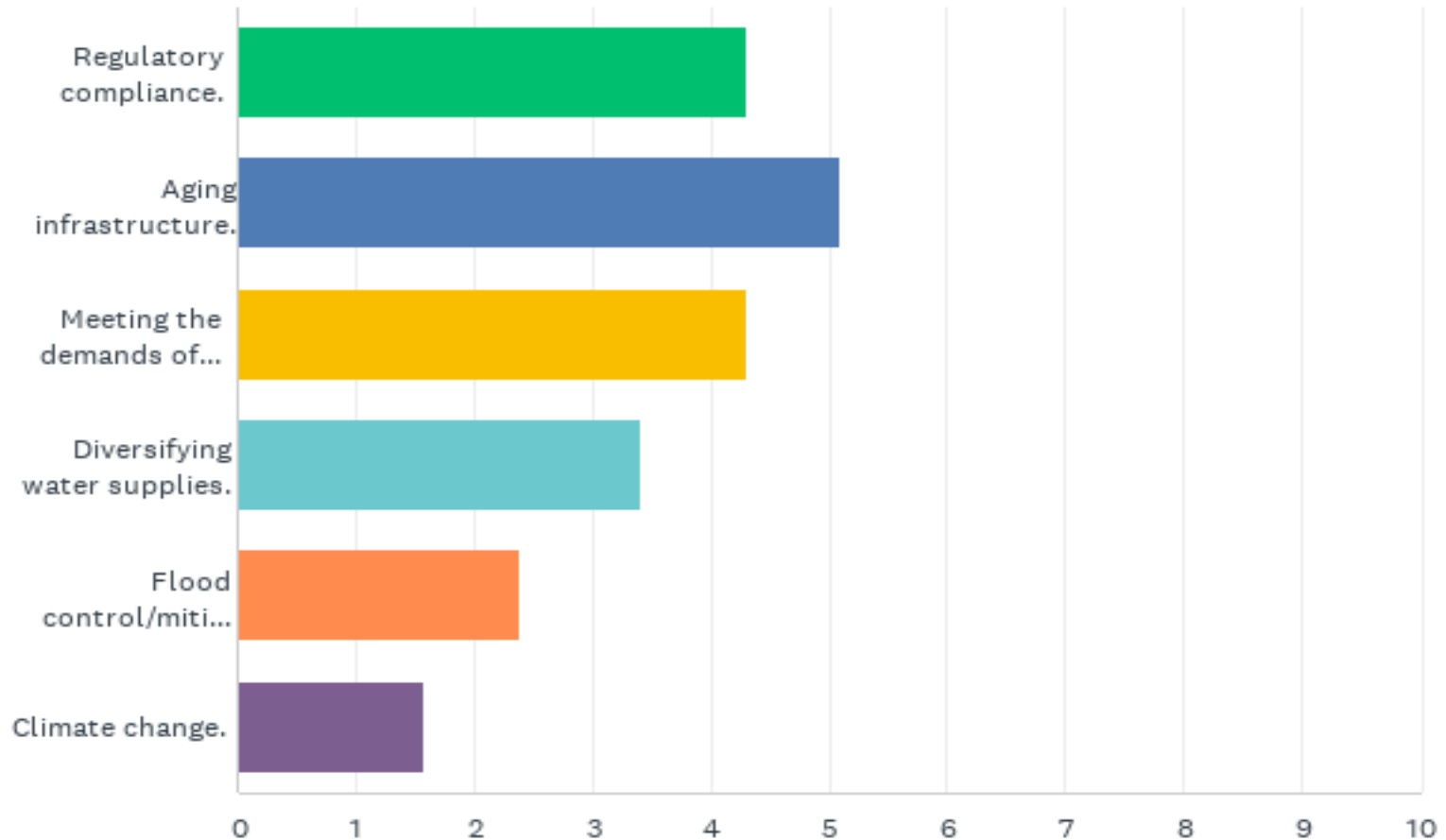
No, but we anticipate the need to do so in the near-term or next year.



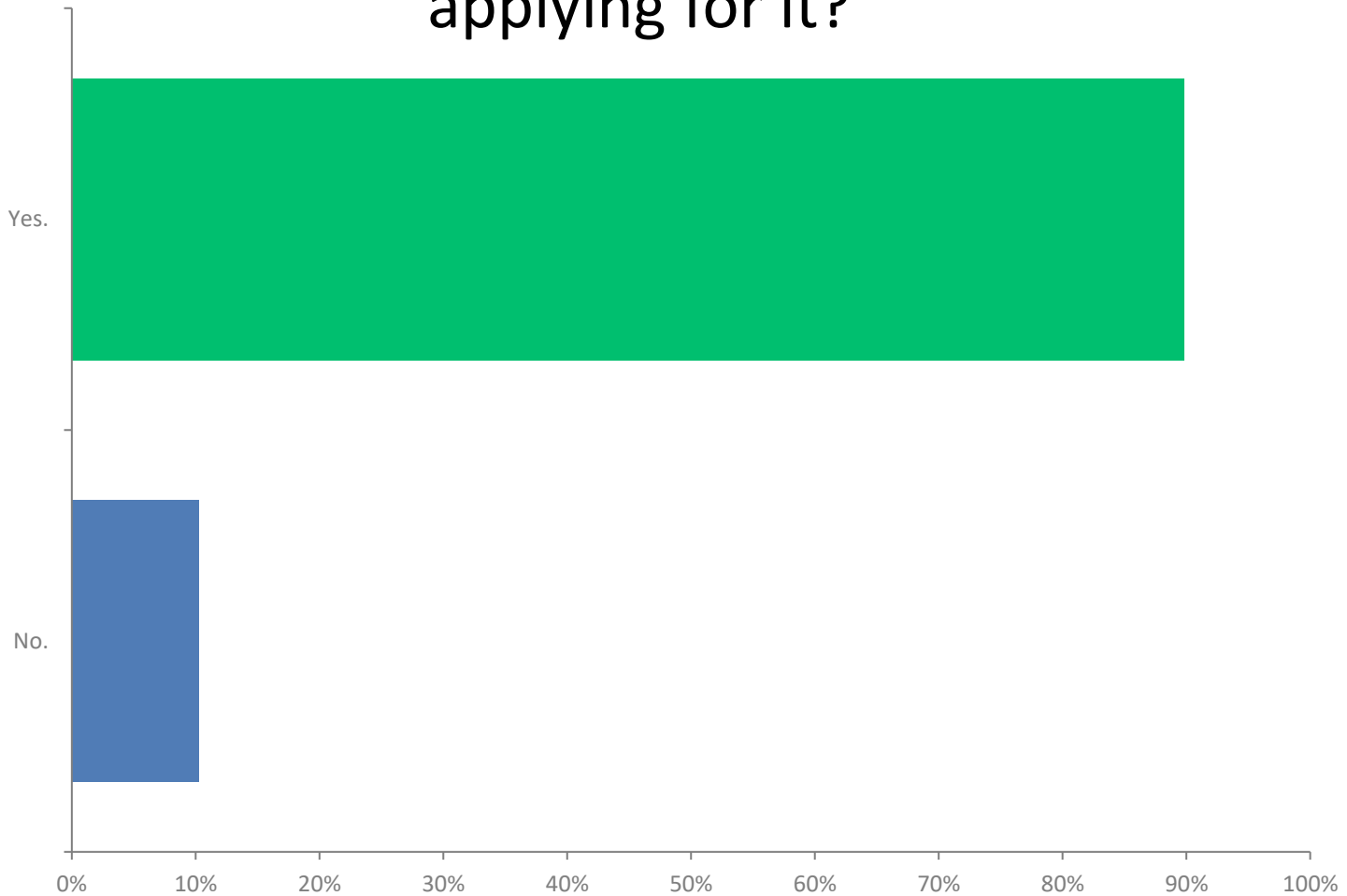
Q5: Are you concerned about the ability to maintain your current or future workforce?



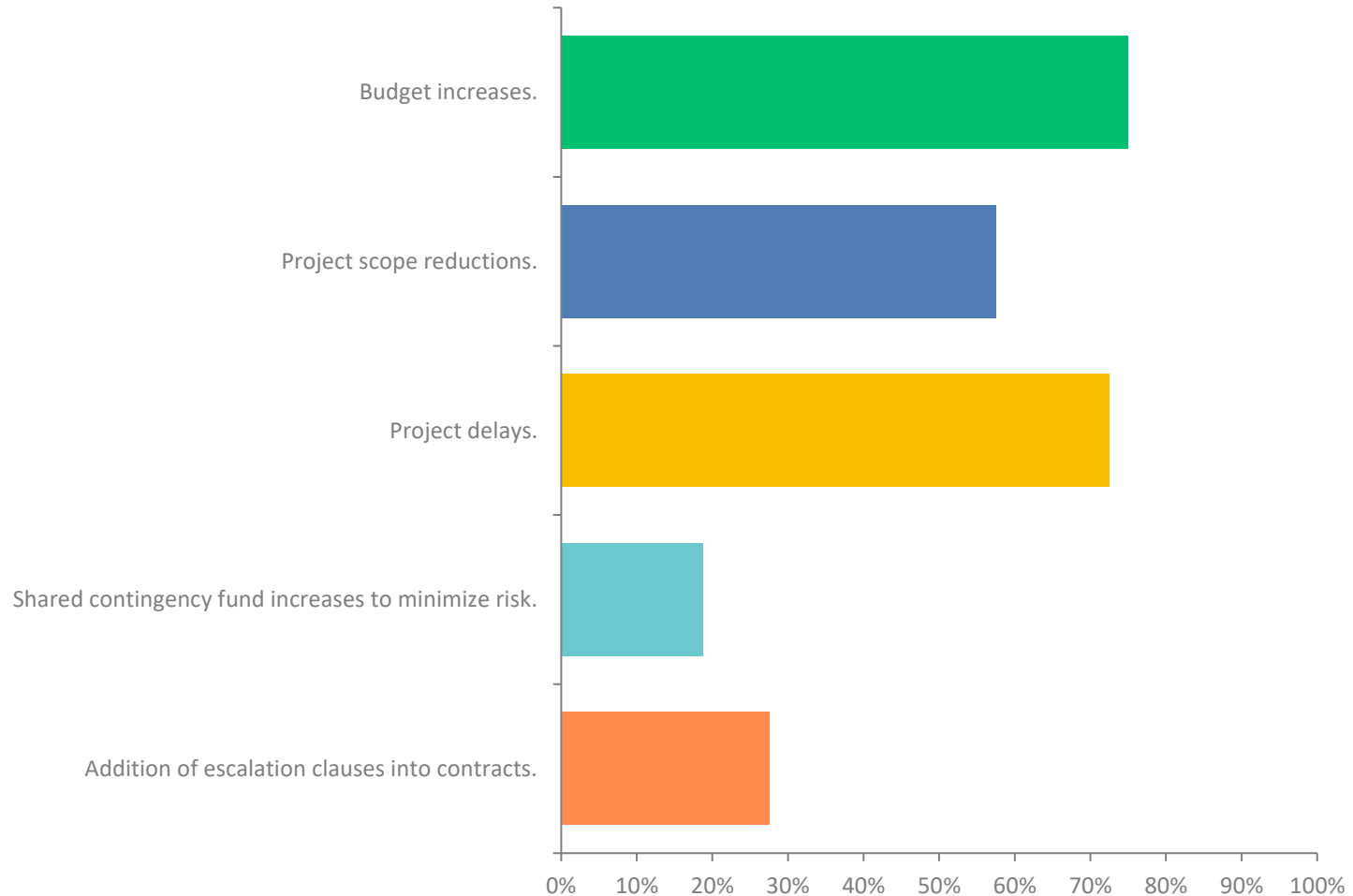
Q7: Please rank the greatest drivers for your future infrastructure and capital projects?



Q20: If the Texas Legislature made additional non-federal funding assistance available through the Texas Water Development Board, would you consider applying for it?



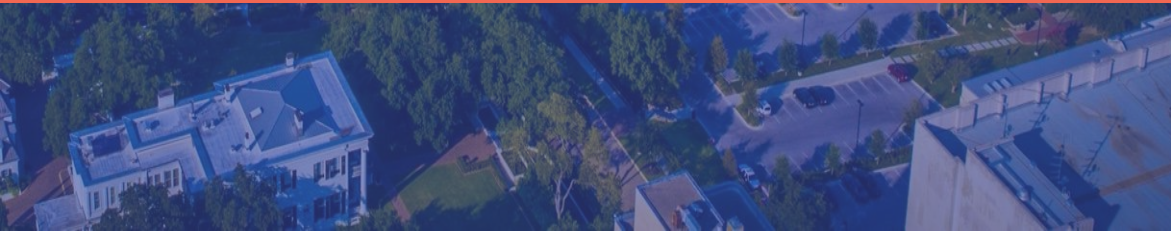
Q24: Have increased construction costs due to inflationary conditions and supply chain issues caused you to consider any of the following? (Please select all that apply).



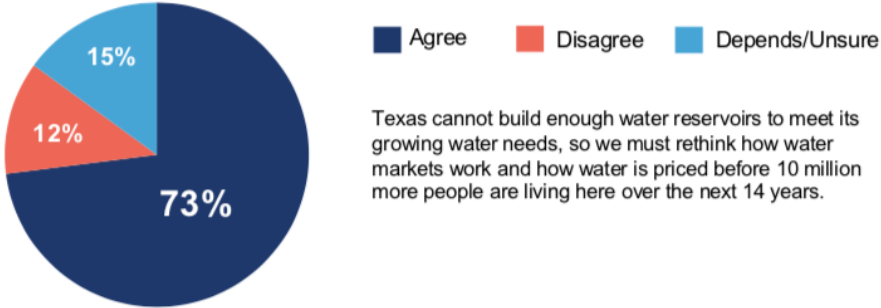


TEXAS 20
23
30

January 2022 Poll



Texas voters are open to thinking differently about water policy as a way to ensure there will be enough water for our growing state's needs.



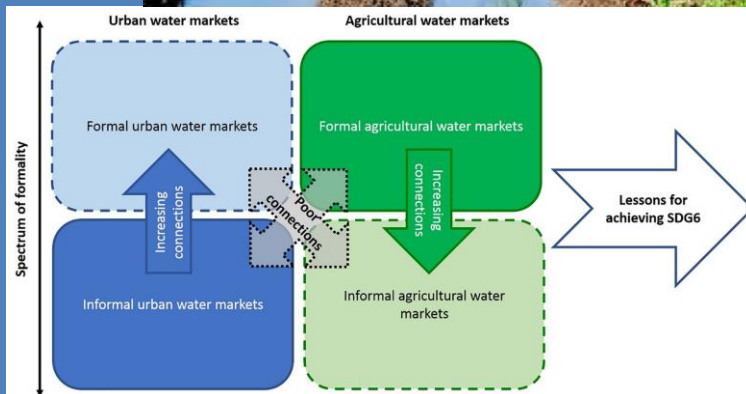
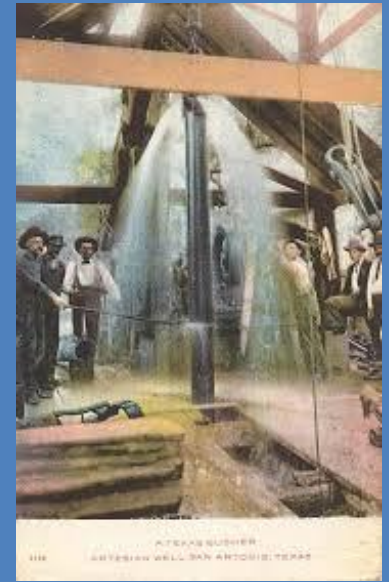
January 2022 poll.

This is how the water market study began.

Base		Agree	Disagree	Depends/Unsure	Net Agree
1001	Total	73%	12%	15%	60%
TX Media Markets					
300	Dallas-Ft. Worth	72%	12%	16%	60%
248	Houston	68%	16%	16%	52%
135	Austin/Waco/Bryan	78%	7%	15%	71%
192	San Ant/South/EI Paso	79%	10%	11%	70%
68	West Texas markets	68%	15%	17%	53%
68	East Texas markets	64%	15%	21%	49%
Urban/Suburban vs Rural Counties					
594	Urban/suburban	74%	12%	14%	63%
407	Rural	70%	13%	17%	56%
Partisan Vote					
423	Republican	67%	17%	17%	50%
212	Independent	71%	12%	17%	59%
366	Democratic	80%	8%	12%	73%

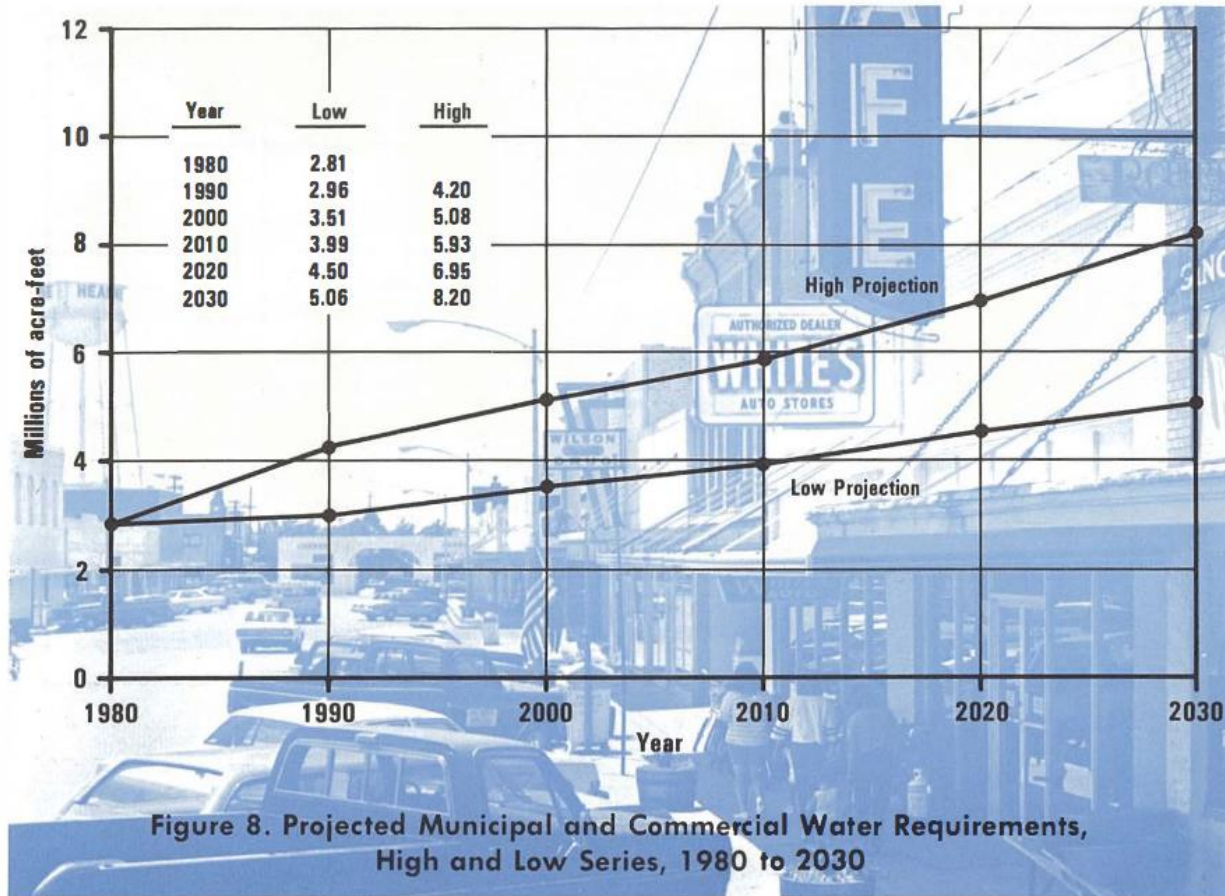
Texas Water Markets Study (January 2023)

-Texas 2036 & Collaborative Water Resolution



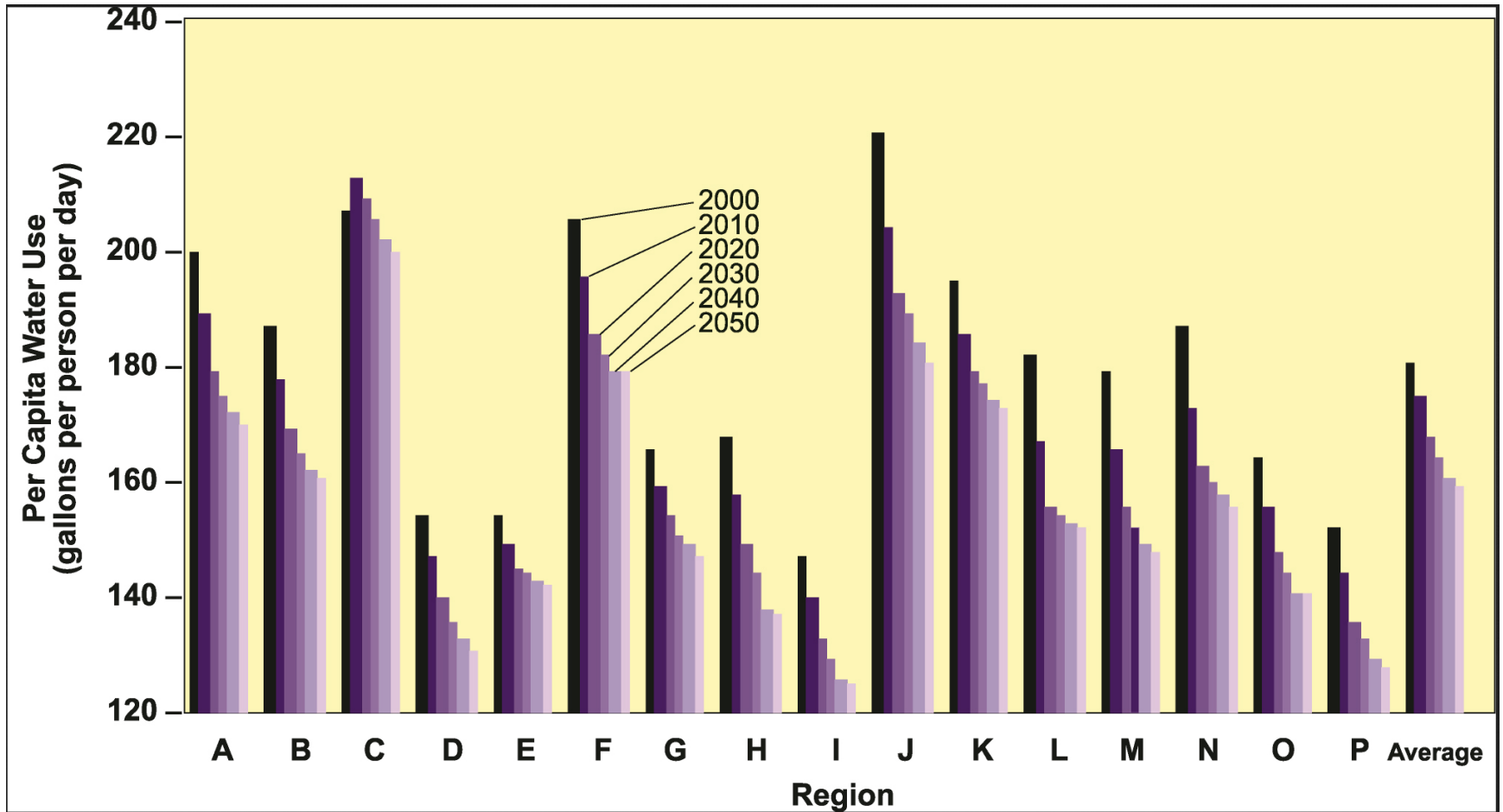
ed by

Water for Texas 1984



	Low	High	Actual
Population	25.1 M	29.1 M	29.7 M
Municipal & Commercial Water Use	4.5 M acft	7.0 M acft	5.2 M acft

Water for Texas 2002



Water for Texas 2007

Table 4.4. Per capita water use for the 40 largest cities of Texas for 2003-2060
(gallons per capita per day)

City	2003	2020	2040	2060
10 highest use				
Richardson	275	278	274	272
Amarillo	241	201	201	201
Dallas	238	262	257	256
Abilene	232	161	155	154
Plano	225	253	250	249
Longview	226	120	115	115
Beaumont	223	209	203	201
Midland	219	254	248	247
Brownsville	214	221	217	216
Irving	212	223	218	217
20 intermediate use				

Water for Texas 2007

City	2003	2020	2040	2060
10 lowest use				
Corpus Christi	150	171	166	165
Mesquite	146	157	153	152
Baytown	146	140	134	133
Denton	144	179	176	176
Bryan	144	140	135	134
San Angelo	143	193	187	186
San Antonio	142	139	135	134
Pasadena	128	110	105	104
Grand Prairie	125	145	142	141
Killeen	125	179	174	167

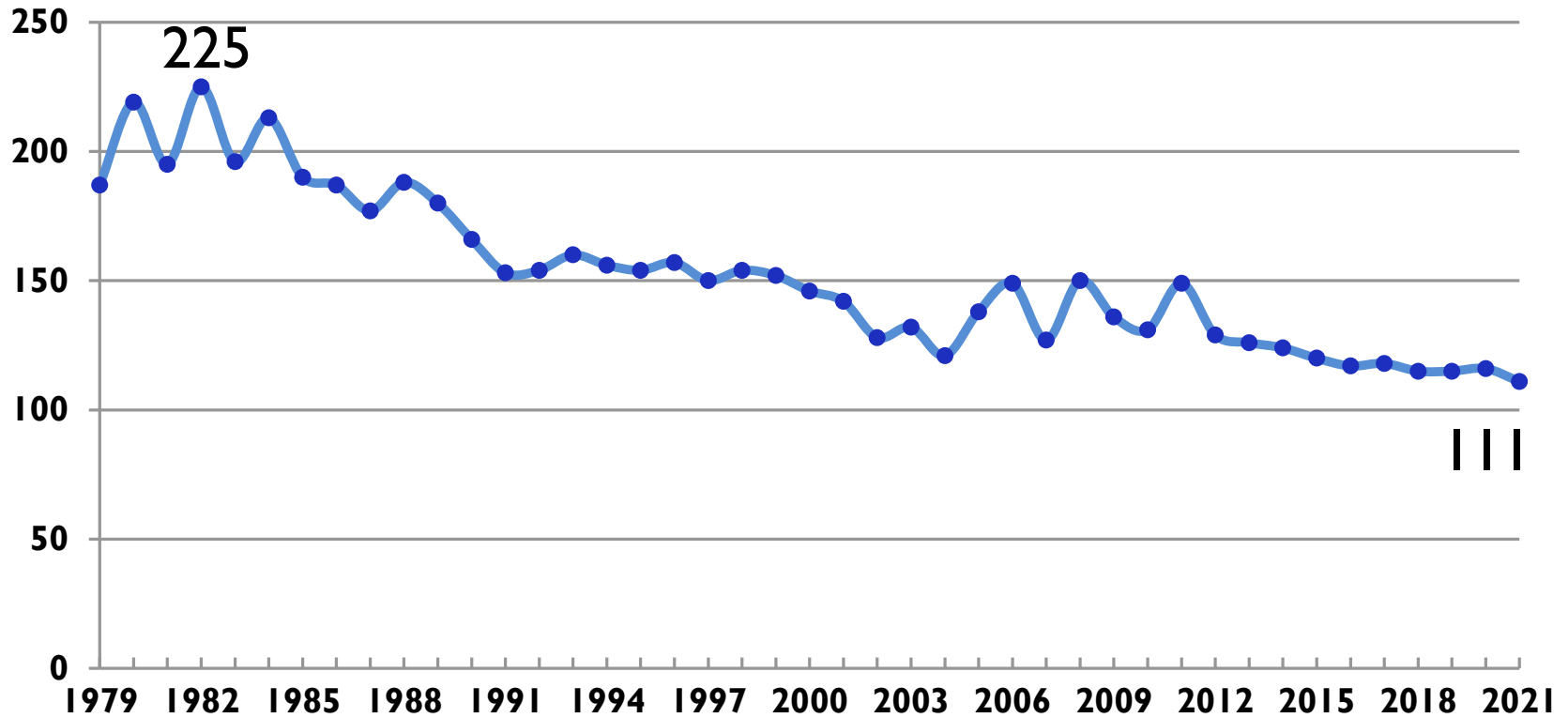
Note: Water use in 2003 is based on data self reported by the city to TWDB and may vary from the trend of projected future values (2020, 2040, 2060) due to atypical 2003 weather conditions, reporting errors, or other variable factors.

^aThe city of Tyler did not submit a Water Use Survey for 2003. The data reported for 2002 has been substituted.

SAWS Daily Per Capita Water Use

1979 to 2021

Gallons
Per Person
Per Day



Water for Texas 2022

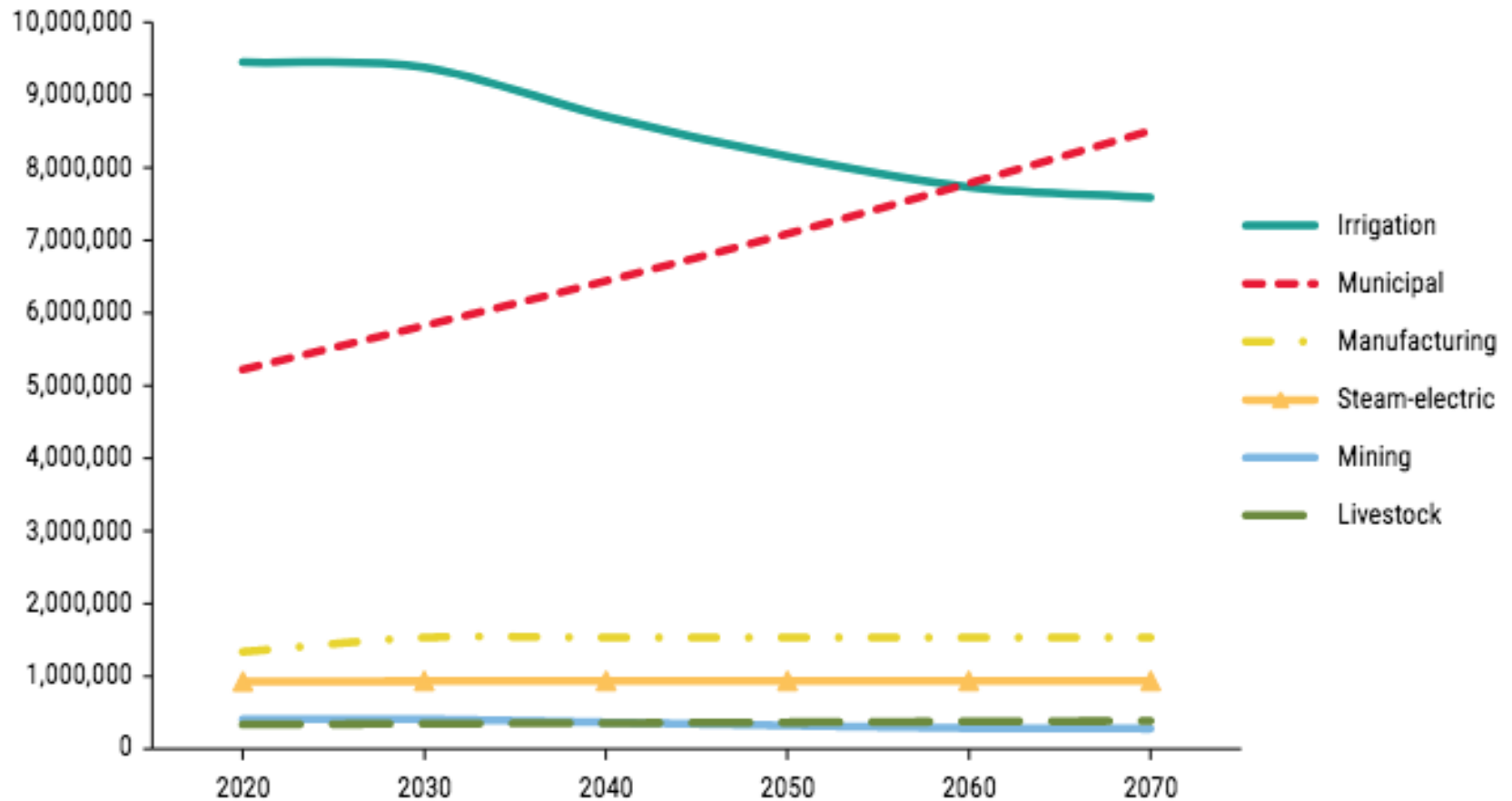
Figure 6-1. Projected annual water needs by water use category (acre-feet)*



* Water use categories are presented in the order listed in the legend.

Water for Texas 2022

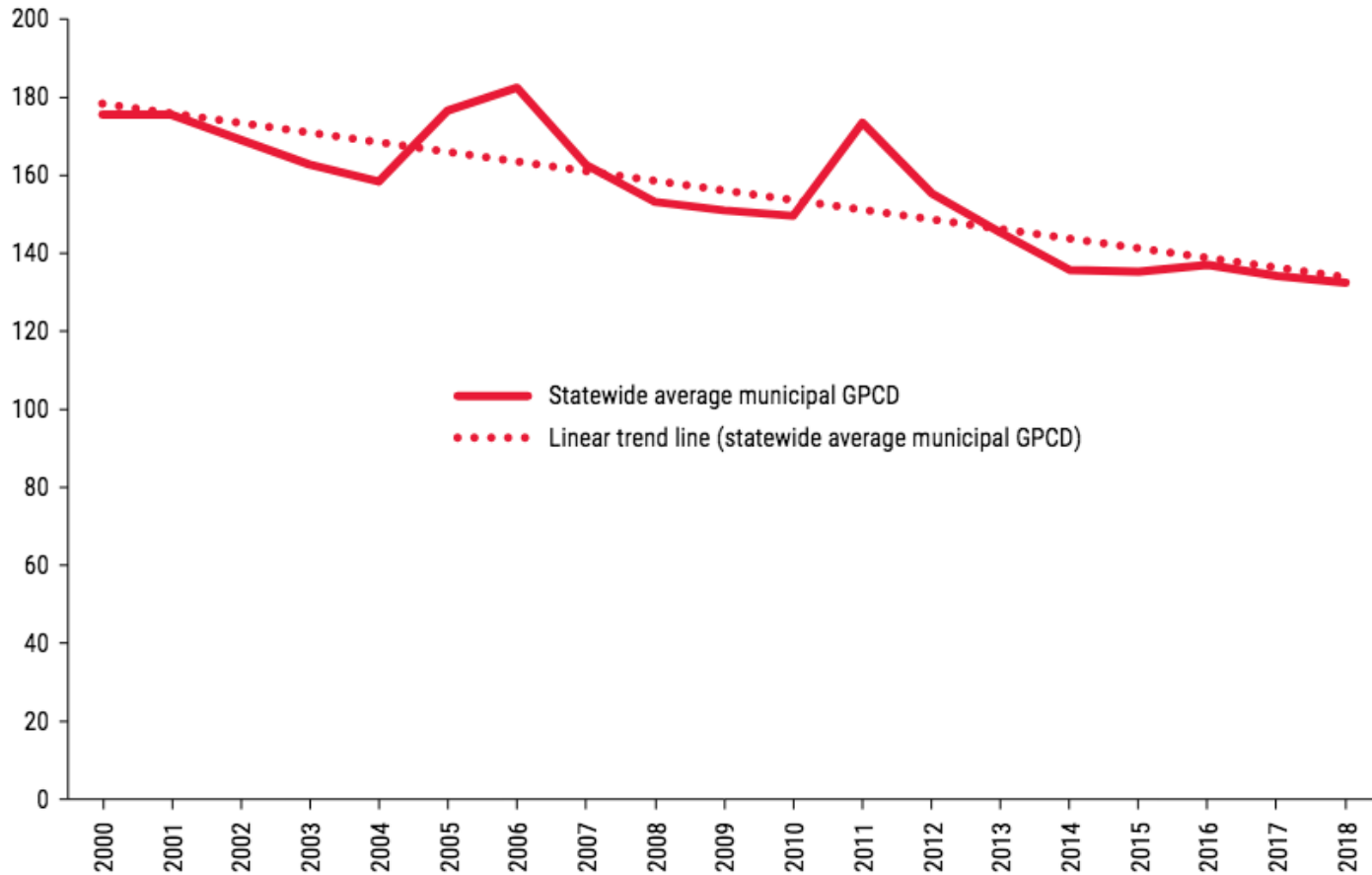
Figure 4-5. Projected annual water demand by water use category (acre-feet)*



Water for Texas 2022

TEXAS WATER DEVELOPMENT BOARD

Figure 8-2. Historical statewide average municipal gallons per capita per day (2000–2018)

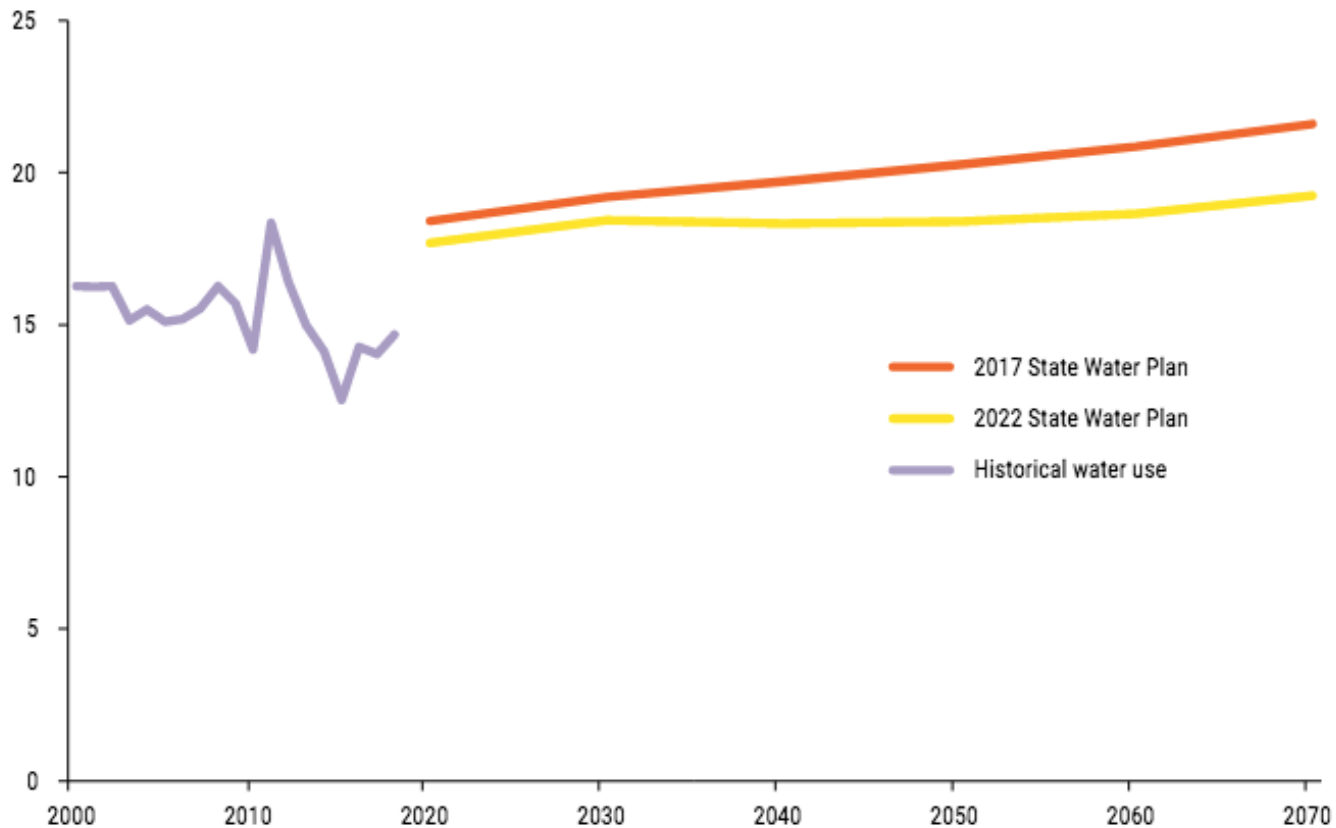


GPCD = gallons per capita per day

Water for Texas 2020

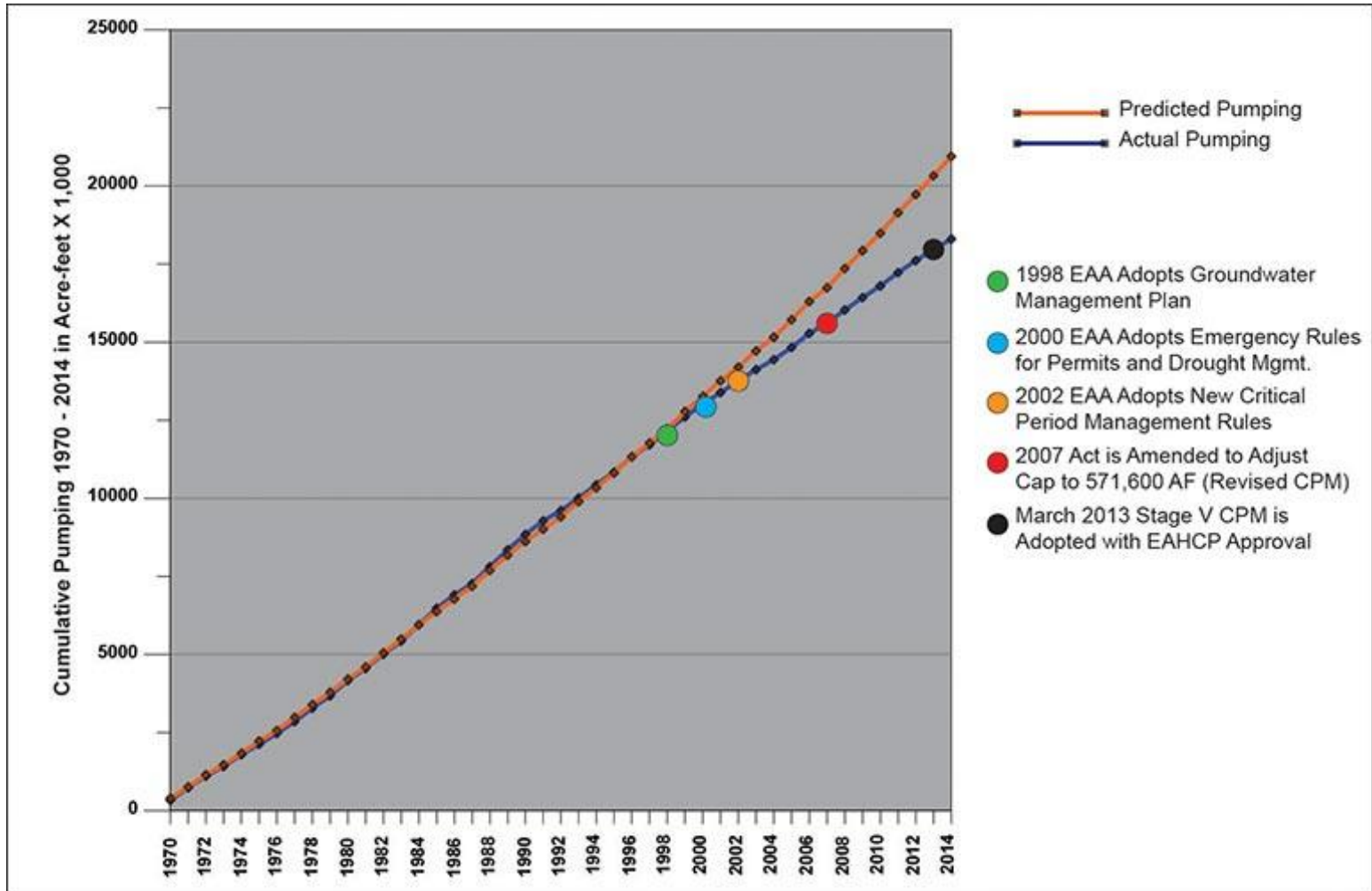
TEXAS WATER DEVELOPMENT BOARD

Figure 4-10. Comparison of water demand projections between 2017 and 2022 state water plans (millions of acre-feet)



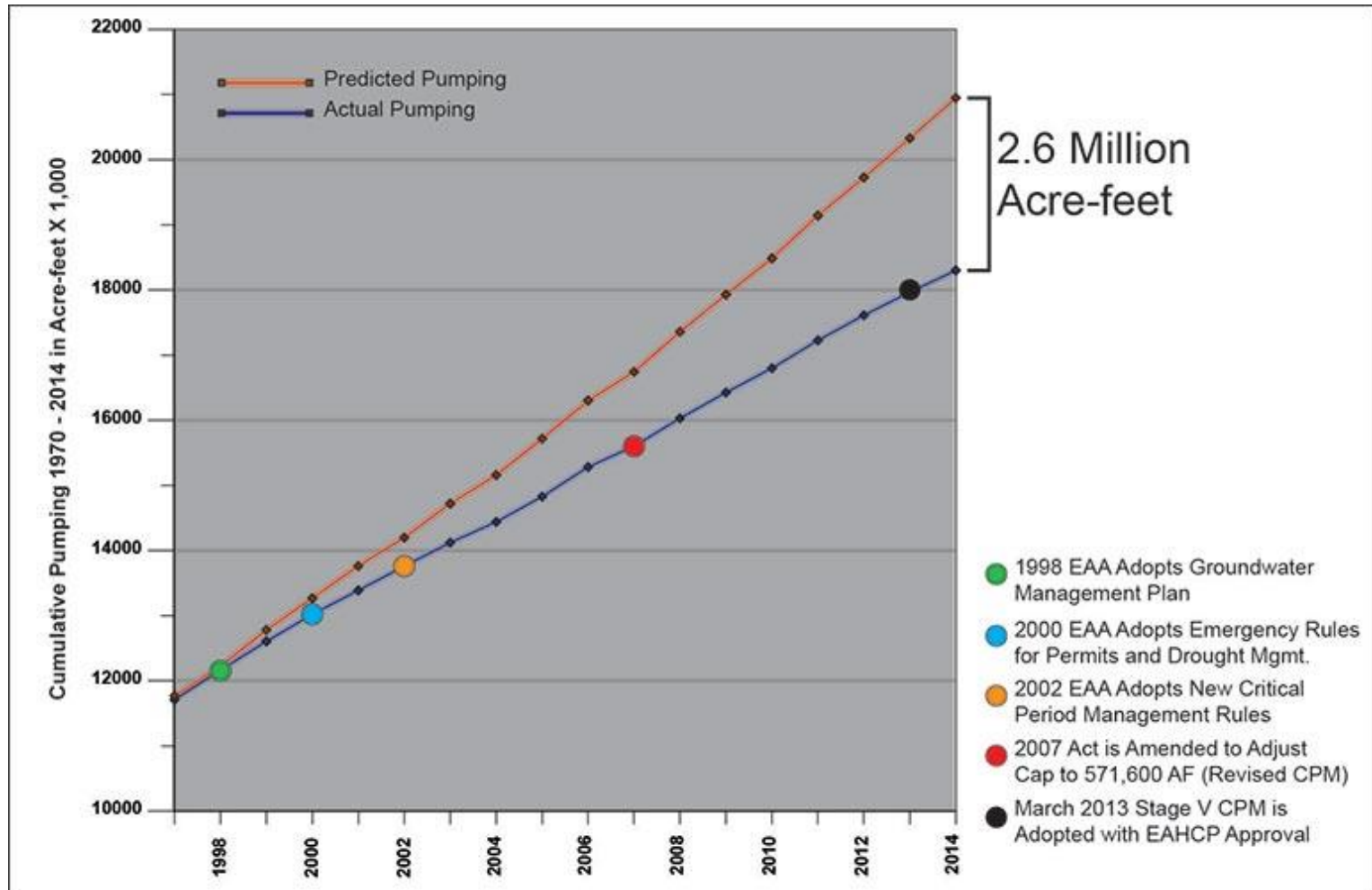
Note: Historical water use and projected demand can be further explored through the TWDB's state water plan comparison tool, www.twdb.texas.gov/waterplanning/data/dashboard/index.asp

Decoupling of Water Use from Population Growth – Edwards Aquifer



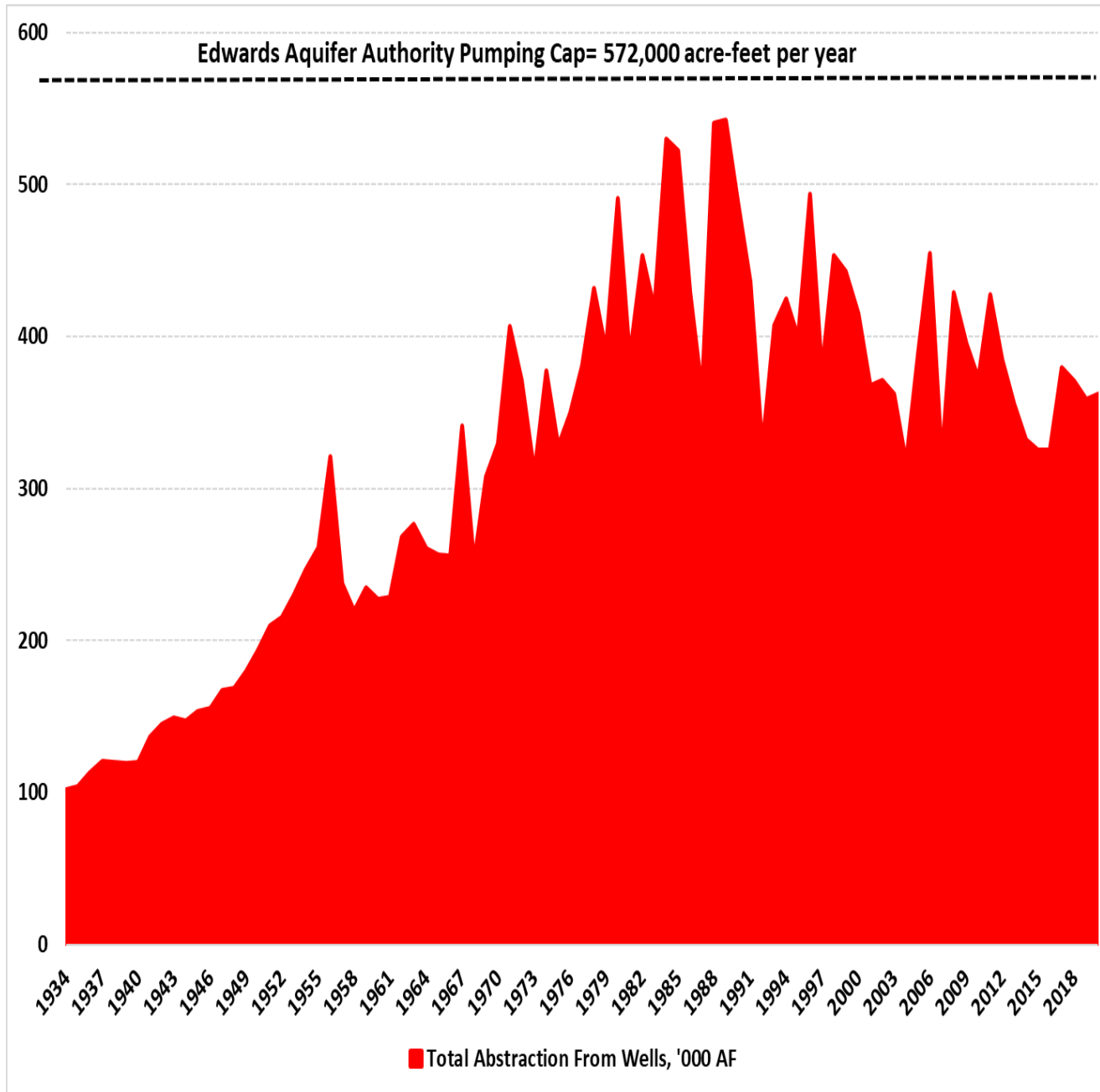
Source: Edwards Aquifer Authority

By the end of 2014, actual permitted pumping from the Edwards was 2.6 million acre-feet less than predicted by a population growth model for the period 1997 through 2014.



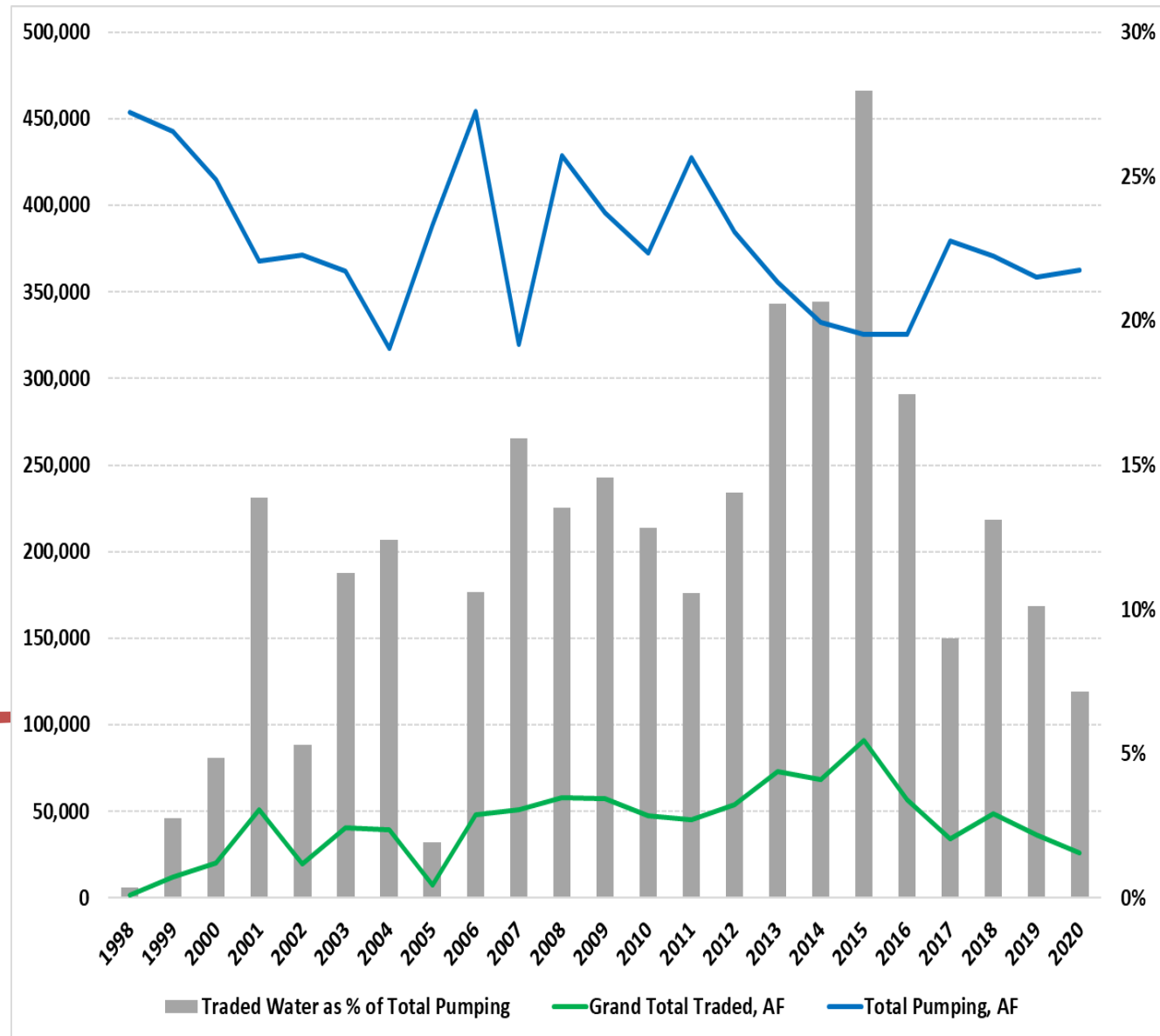
Source: Edwards Aquifer Authority

Edwards Aquifer Pumping vs. Cap: 1934-2020 (‘000 AF)



Traded Water Volumes

Volumes and percentage of pumping, Leases + Sales



Questions?

**Interested in learning more about Texas water?
Check out these free sources:**

**The Texas Water Journal at
texaswaterjournal.org**

**Texas+Water at
texaspluswater.wp.txstate.edu**

Talk+Water podcast via Apple Podcasts, TuneIn, etc.