



Groundwater Management Area 12

APRIL 2, 2026

Agenda

1. Invocation
2. Pledge of Allegiance
3. Call meeting to order and establish quorum
4. Welcome and introductions
5. Public Comment on agenda items



Agenda

6. Minutes of March 25, 2026, GMA 12 Meeting
7. Discussion and possible action on establishing Desired Future Conditions (DFCs) for the Yegua-Jackson Aquifer in GMA 12 for the fourth round of joint planning, including evaluations of requirements of Chapter 36.108(d)





Presentation on the Feasibility of Achieving the DFCs for the Yegua- Jackson Aquifer presented to GMA12

April 2, 2026

Feasibility

- TWC Section 36.108(d)(8) - the feasibility of achieving the desired future condition

Feasibility

- 2010-2011 TWDB reviewed multiple petitions regarding the reasonableness of adopted DFCs in GMAs.
- Evaluation of whether or not an adopted DFC was physically possible was based on whether or not the DFC(s) could be reasonably simulated using the TWDB's adopted GAM for the relevant aquifer.

Feasibility

- This presumes that if a GAM simulation, which is based the physical laws of hydrology as incorporated in the mathematical model, can generate the DFC condition by implementing a future pumping scenario then the DFCs can be deemed to be physically possible and compatible.

Feasibility

- The GAMs are tools to assist in the understanding of groundwater flow systems.
- Have been demonstrated to contain error and uncertainty
- GMA12's past philosophy has been that DFCs are feasible if they can be generated by a GAM within a reasonable tolerance.

Feasibility

- “Reasonable tolerance” factors from previous planning:
 - GAM predictive uncertainty/error
 - Errors in starting 2000 or 2010 water level conditions
 - Errors in the aquifer hydraulic properties
 - Uncertainty in future environmental conditions (for example, recharge and rivers levels)
 - Uncertainty in future pumping rates and locations
 - Non-uniqueness of model calibration

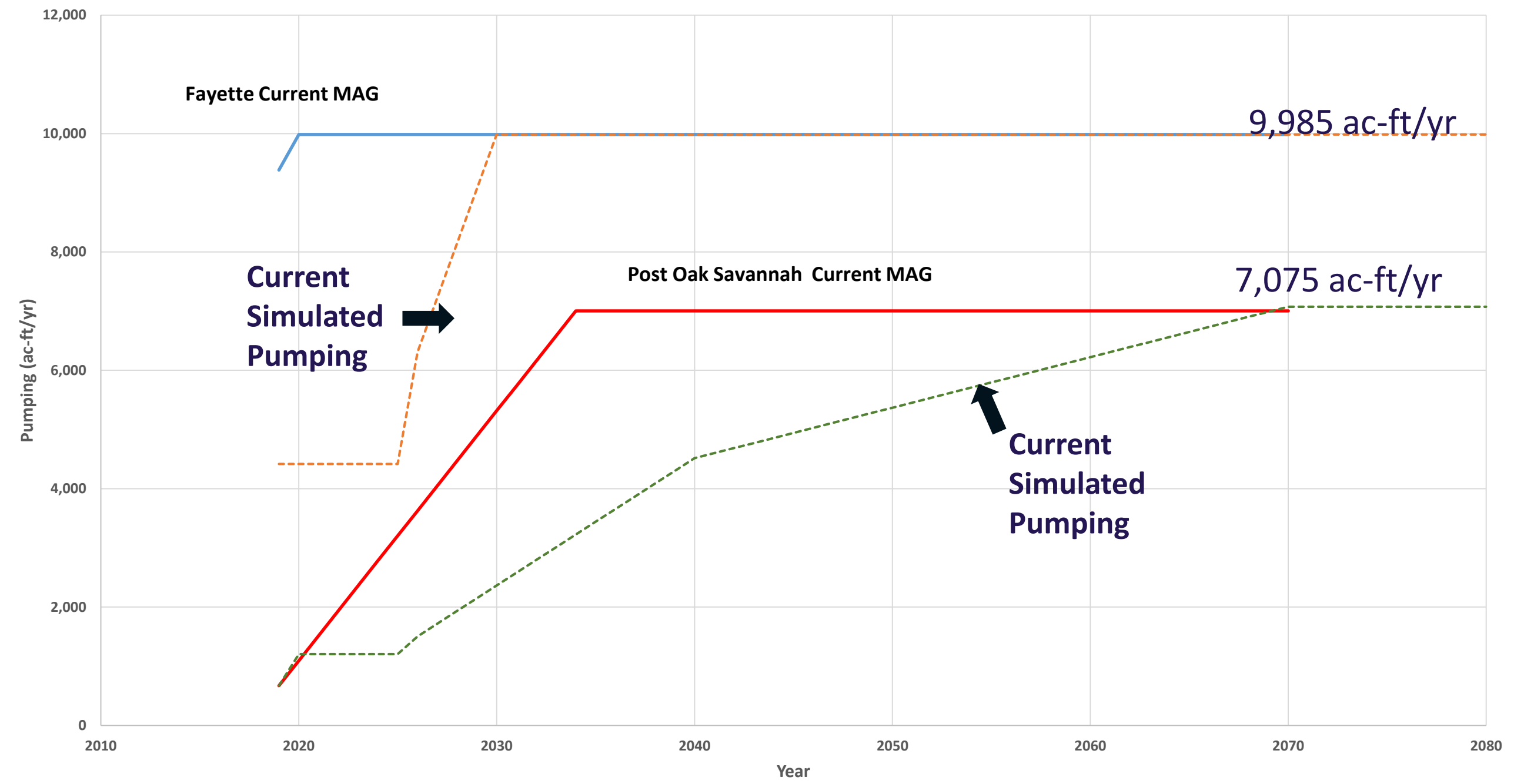
Yegua-Jackson Desired Future Conditions

- No changes from the GCDs from the 2021 adopted DFCs for the Yegua-Jackson

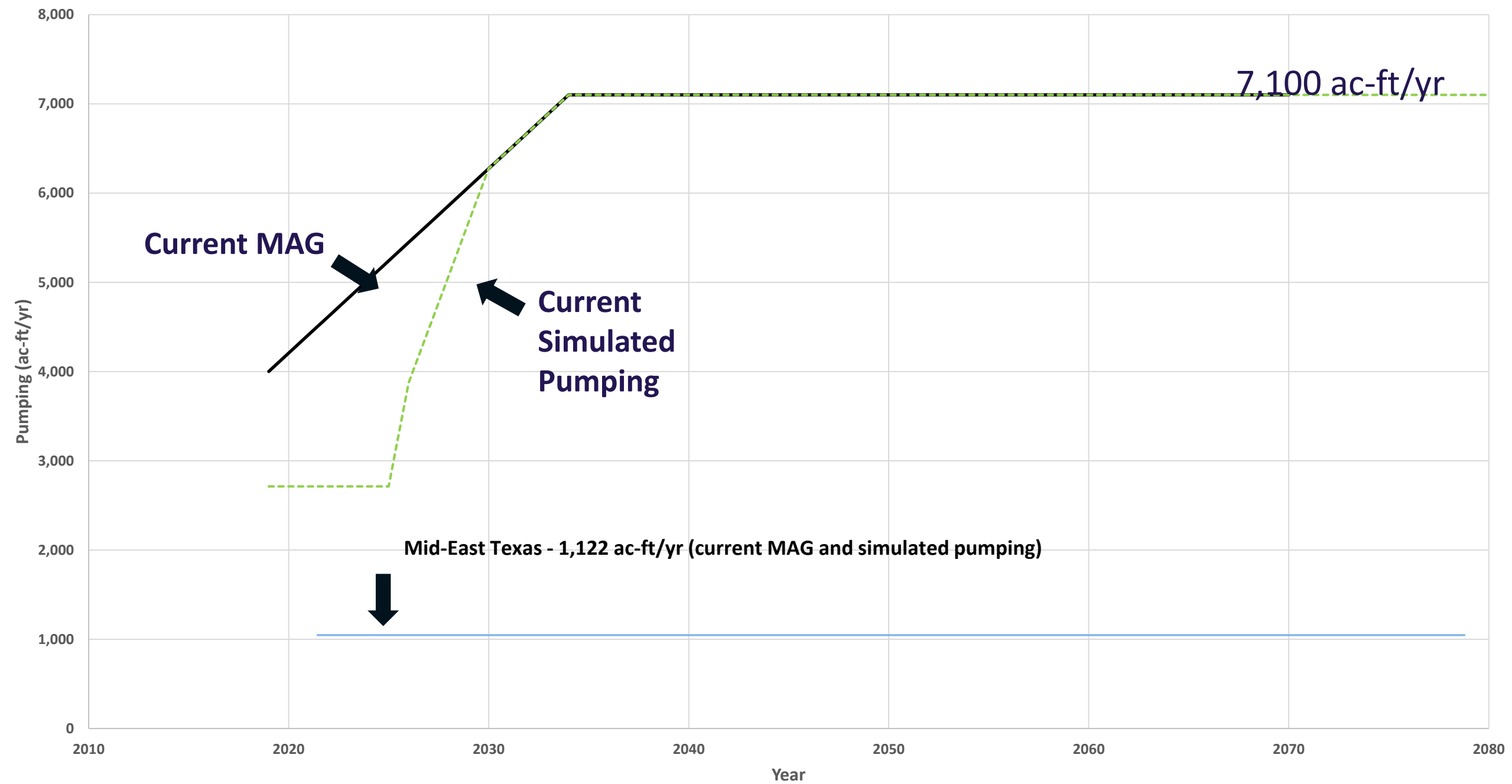
Groundwater Conservation District	DFC 2010 through 2069 Average Drawdown (ft)
Mid-East Texas	8
Brazos Valley	67
Post Oak Savannah	61
Lost Pines	--
Fayette	81

-- Declared non-relevant for purposes of joint planning

Fayette County and Post Oak Savannah Pumping



Brazos Valley and Mid-East Texas Pumping



DFC comparison

County	DFC	
	Adopted DFCs from Last Round (2019 - 2069)	Calculated DFCs for Current Round (2019-2079)
Fayette	81	83
Brazos Valley	67	68
Mid-East Texas	8	9
Post Oak	61	60

Calculated DFCs for current round use pumping numbers shown previously. Using the previously adopted DFC will result in changes to the MAG coming back from TWDB.

Comparison Of Volume of Pumping and Total Estimated Water in Storage from TERS

Groundwater r Conservation District (GCD)	Total Estimated Water in Storage (acre-feet)	Total Predictive Pumping (2010-2080) (acre-feet)	Total Predictive Pumping as Percent of Total Water in Storage
Brazos Valley	30,000,000	416,811	1.4%
Fayette County	27,000,000	584,156	2.2%
Cherokee County - Aquifer designated as non-relevant			
Lost Pines	--	--	--
Mid-East Texas	15,000,000	79,671	0.5%



END



Presentation on Socioeconomic Impacts for the DFC Explanatory Report as they relate to the Yegua-Jackson Aquifer presented to GMA12

April 2, 2026

Socioeconomic Impacts

- TWC Section 36.108(d)(6) - socioeconomic impacts reasonably expected to occur
- TAC, Title 31, Chapter 357.40(a) RWPs shall include a quantitative description of the socioeconomic impacts of not meeting the identified water needs pursuant to §357.33(c) of this title (relating to Needs Analysis: Comparison of Water Supplies and Demands).

Socioeconomic Impacts Analysis

- Data from Regional Water Plans
- Attempt to measure the impacts in the event that water user groups do not meet their identified water supply needs associated with normal and drought conditions
- Impacts examined
 - Sales, income, tax revenue
 - Jobs
 - Population
 - School enrollment
- Results incorporated into final RWP

Water Supply Needs and DFCs

- Socioeconomic impact of not meeting water supply needs vs. impact of proposed DFCs
 - Output: Total production of goods and services measured by gross sales revenues
 - Final sales: Sales to end user in a region and exports out of region
 - Employment: Number of full- and part-time jobs required by given industry
 - Regional income: Total payroll cost paid by industries, corporate income, rental income, and interest payments
 - Business taxes: Sales, excise, fees, licenses and other taxes paid during normal operations

Fayette County GCD

- 2026 Region K Water Plan
 - Appendix 6.A Socioeconomic Impacts of Projected Shortages for Region K
 - The Yegua-Jackson is the sole source of water for the Cities of Flatonia and La Grange.
 - No groundwater strategies identified for Fayette County for any aquifer

Fayette County GCD Impact Examples

		Income losses (\$ millions)						At risk job losses					
County	Water Use Category	2030	2040	2050	2060	2070	2080	2030	2040	2050	2060	2070	2080
Fayette	Municipal	-	\$ 0.02	\$ 0.01	\$ 0.08	\$ 0.21	\$ 0.24	-	0	0	1	2	3
Fayette Total		-	\$ 0.02	\$ 0.01	\$ 0.08	\$ 0.21	\$ 0.24	-	0	0	1	2	3

Brazos Valley GCD

- 2026 Brazos G Regional Water Plan
 - Appendix G: Economic Impacts of Not Meeting Needs
 - Nothing specifically identified for the Yegua-Jackson Aquifer
 - WMS identified
 - Wellborn SUD (WMS 5431)
 - Brazos County Other (WMS 5432)
 - Brazos Mining (WMS 5433)

Brazos Valley GCD Impact Examples

County	Water Use Category	Income losses (\$ millions)						At risk job losses					
		2030	2040	2050	2060	2070	2080	2030	2040	2050	2060	2070	2080
Brazos	Mining	\$ 792.39	\$ 829.38	\$ 865.52	\$ 882.91	\$ 902.15	\$ 929.42	1,636	1,712	1,787	1,823	1,863	1,919
Brazos	Municipal	\$ 249.61	\$ 225.26	\$ 356.28	\$ 487.65	\$ 611.96	\$ 769.47	3,523	3,180	5,029	6,883	8,638	10,862
Brazos	Steam Electric Power	\$ 6.33	\$ 5.97	\$ 5.97	\$ 5.97	\$ 5.97	\$ 5.97	-	-	-	-	-	-
Brazos Total		\$ 1,048.33	\$ 1,060.62	\$ 1,227.77	\$ 1,376.53	\$ 1,520.09	\$ 1,704.87	5,160	4,892	6,816	8,706	10,501	12,781
Robertson	Irrigation	\$1.06	\$1.05	\$1.10	\$1.13	\$1.15	\$1.15	32	32	33	34	34	34
Robertson	Municipal	\$0.12	\$0.06	\$0.08	\$0.21	\$0.34	\$0.38	2	1	1	3	5	5
Robertson	Steam Electric Power	\$176.92	\$181.96	\$187.00	\$192.02	\$197.06	\$202.10	-	-	-	-	-	-
Robertson Total		\$178.10	\$183.07	\$188.19	\$193.35	\$198.55	\$203.63	33	32	34	37	39	40

Post Oak Savannah GCD

- 2026 Brazos G Regional Water Plan
 - Appendix G: Economic Impacts of Not Meeting Needs
 - Nothing specifically identified for the Yegua-Jackson Aquifer
 - WMS identified in RWP
 - none

Post Oak Savannah GCD Impact Examples

County	Water Use Category	Income losses (\$ millions)						At risk job losses					
		2030	2040	2050	2060	2070	2080	2030	2040	2050	2060	2070	2080
Burleson	Manufacturing	\$ 0.33	\$ 0.47	\$ 0.61	\$ 0.81	\$ 1.03	\$ 1.26	3	4	6	7	9	11
Burleson	Mining	\$ 2,847.61	\$ 2,847.61	\$ 2,847.61	\$ 2,847.61	\$ 2,847.61	\$ 2,847.61	5,880	5,880	5,880	5,880	5,880	5,880
Burleson Total		\$ 2,847.94	\$ 2,848.08	\$ 2,848.22	\$ 2,848.42	\$ 2,848.64	\$ 2,848.87	5,883	5,884	5,885	5,887	5,889	5,891
Milam	Mining	\$ 598.59	\$ 601.71	\$ 597.81	\$ 596.25	\$ 597.03	\$ 597.81	1,243	1,250	1,242	1,238	1,240	1,242
Milam	Municipal	\$ 0.32	\$ 0.48	\$ 0.71	\$ 0.97	\$ 1.29	\$ 1.48	5	7	10	14	18	21
Milam Total		\$ 598.91	\$ 602.19	\$ 598.52	\$ 597.22	\$ 598.32	\$ 599.29	1,248	1,257	1,252	1,252	1,258	1,263

Lost Pines GCD

- 2026 Brazos G Regional Water Plan - Lee County
 - Yegua-Jackson aquifer is designated as non-relevant with no adopted DFC
- 2026 Region K Water Plan - Bastrop County
 - Yegua-Jackson aquifer is designated as non-relevant with no adopted DFC

Mid-East Texas GCD

- Region H Water Planning Group, 2026 Regional Water Plan
 - Appendix 6-E Socioeconomic Impacts of Unmet Needs
 - WMS needs identified for Yegua-Jackson
 - Expanded use of groundwater (Madisonville)
 - Expanded use of groundwater (TDJC Ferguson Unit)

Mid-East Texas GCD Impact Examples

County	Water Use Category	Income losses (\$ millions)						At risk job losses					
		2030	2040	2050	2060	2070	2080	2030	2040	2050	2060	2070	2080
Madison	Irrigation	\$ 0.04	\$ 0.04	\$ 0.04	\$ 0.04	\$ 0.04	\$ 0.04	3	3	3	3	3	3
Madison	Livestock	\$ 56.86	\$ 56.86	\$ 56.86	\$ 56.86	\$ 56.86	\$ 56.86	1,224	1,224	1,224	1,224	1,224	1,224
Madison	Mining	\$ 482.63	\$ 482.63	\$ 482.63	\$ 482.63	\$ 482.63	\$ 482.63	2,142	2,142	2,142	2,142	2,142	2,142
Madison	Municipal	\$ 5.12	\$ 0.14	\$ 0.02	\$ 0.02	\$ 0.03	\$ 0.03	56	2	0	0	0	0
Madison Total		\$ 544.65	\$ 539.67	\$ 539.55	\$ 539.56	\$ 539.56	\$ 539.57	3,425	3,371	3,369	3,369	3,369	3,369

Potential Socioeconomic Impact of Proposed DFCs

- TWC Chapter 36.108(d) and (d)(6): “The districts shall consider groundwater availability models and other data or information for the management area and shall propose for adoption desired future conditions for the relevant aquifers within the management area. Before voting on the proposed desired future conditions of the aquifers...the districts shall consider **socioeconomic impacts reasonably expected to occur;**”

Potential Socioeconomic Impact of Proposed DFCs (cont.)

- Both positive and negative impacts may potentially result from implementation of proposed DFCs.
 - May require conversion of part of all of a supply to an alternative supply/supplies, which may result in increased costs (infrastructure, O&M)
 - May reduce the costs of groundwater pumping equipment and/or new well construction
 - Should help ensure part or all of a long-term supply for an area.

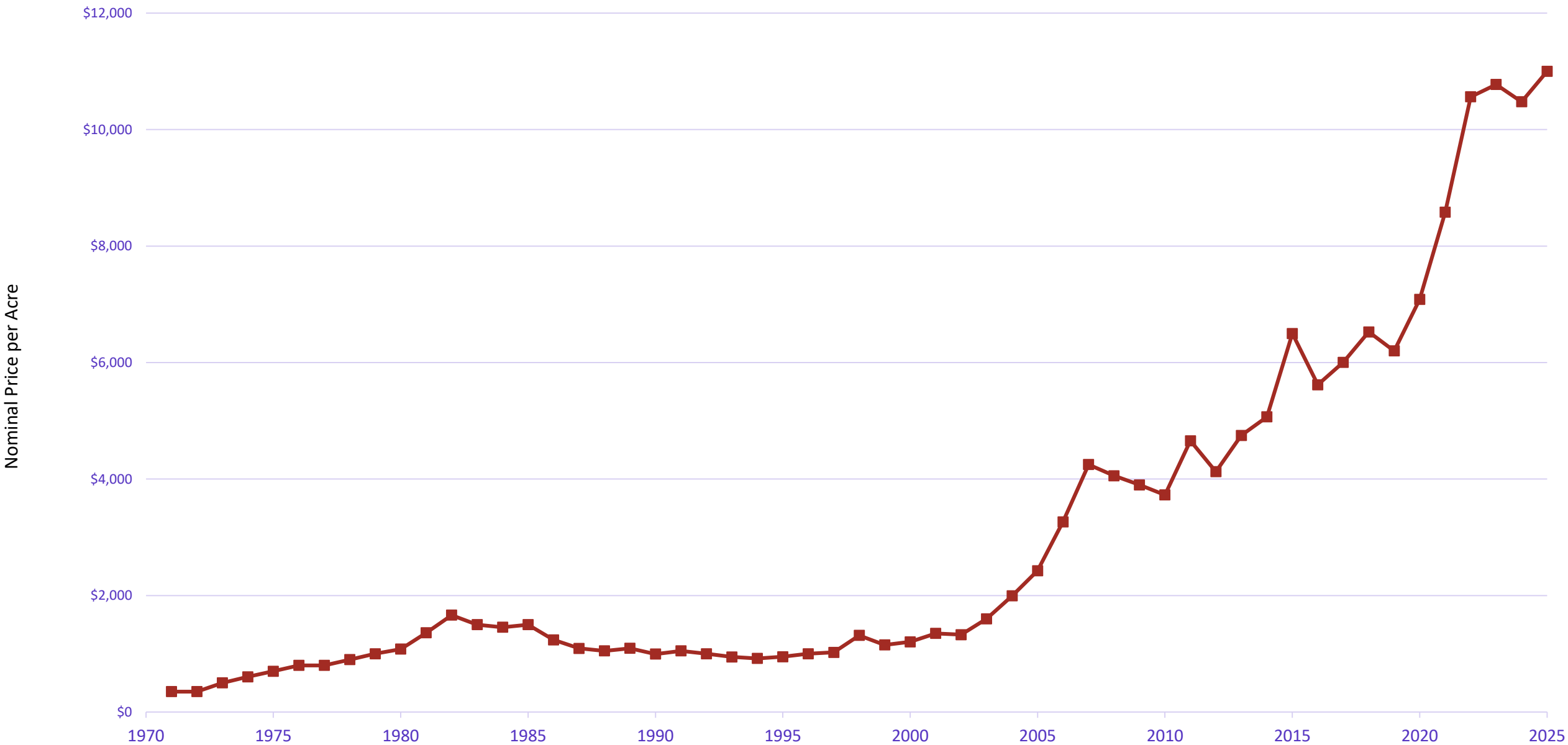
Potential Socioeconomic Impact of Proposed DFCs (cont.)

- Proposed DFCs may serve to sustain/enhance economic growth due to assurances provided by an adequate and/or diversified water portfolio.
- Alternatives to proposed DFCs may result in short-term reduction in utility rates due to reduction in cost of water management strategy implementation.
- Alternatives to proposed DFCs may result in significant but unquantified production costs due to lower pumping rates from wells or continuing lower water levels in wells.
- Alternatives to proposed DFCs may result in a reduced or larger groundwater supply being available on a long term basis.



Rural Land Price Data - Brazos (LMA 27)

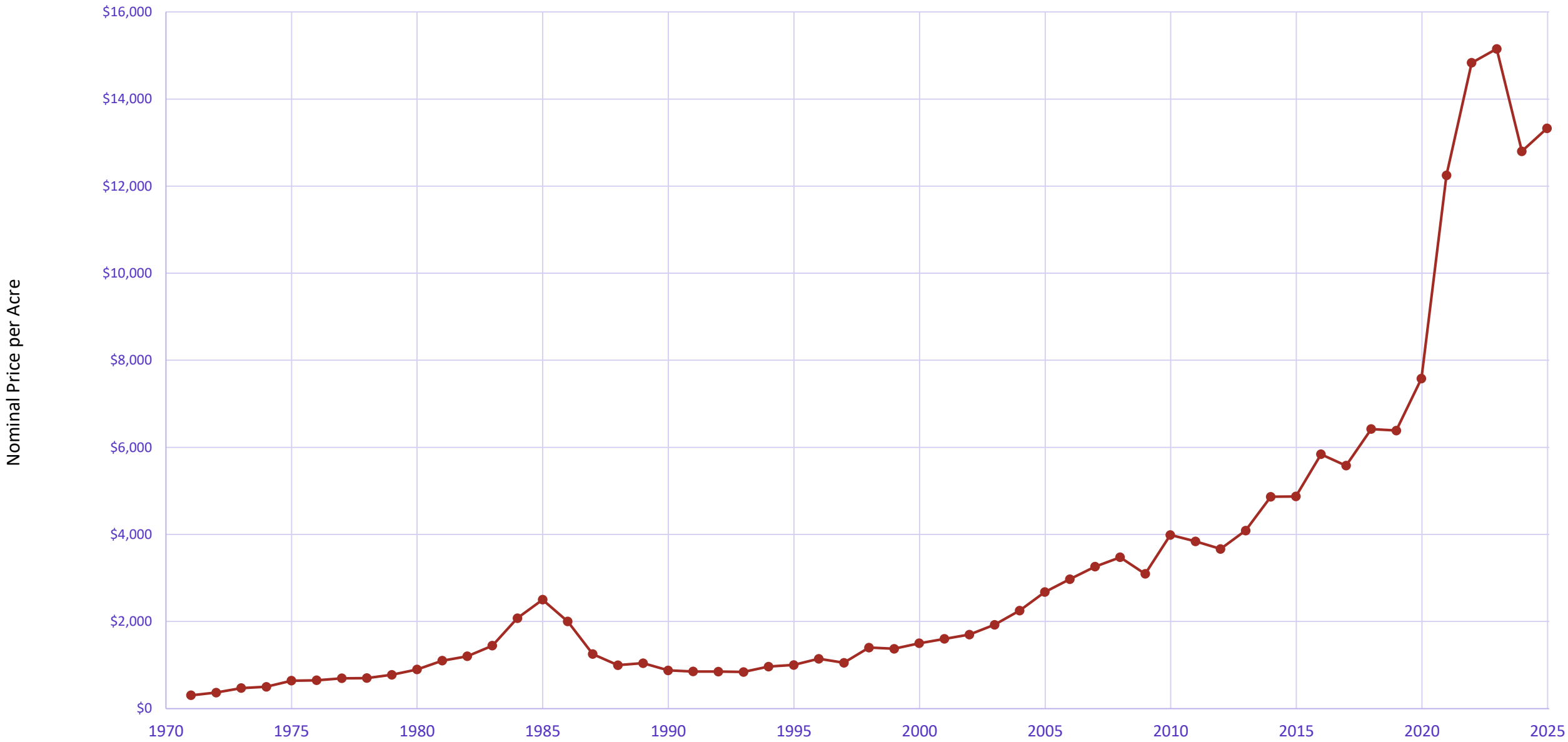
Washington, Burleson, Milam, Brazos, Robertson, Grimes, Madison, and Leon Counties





Blacklands - South (LMA 26)

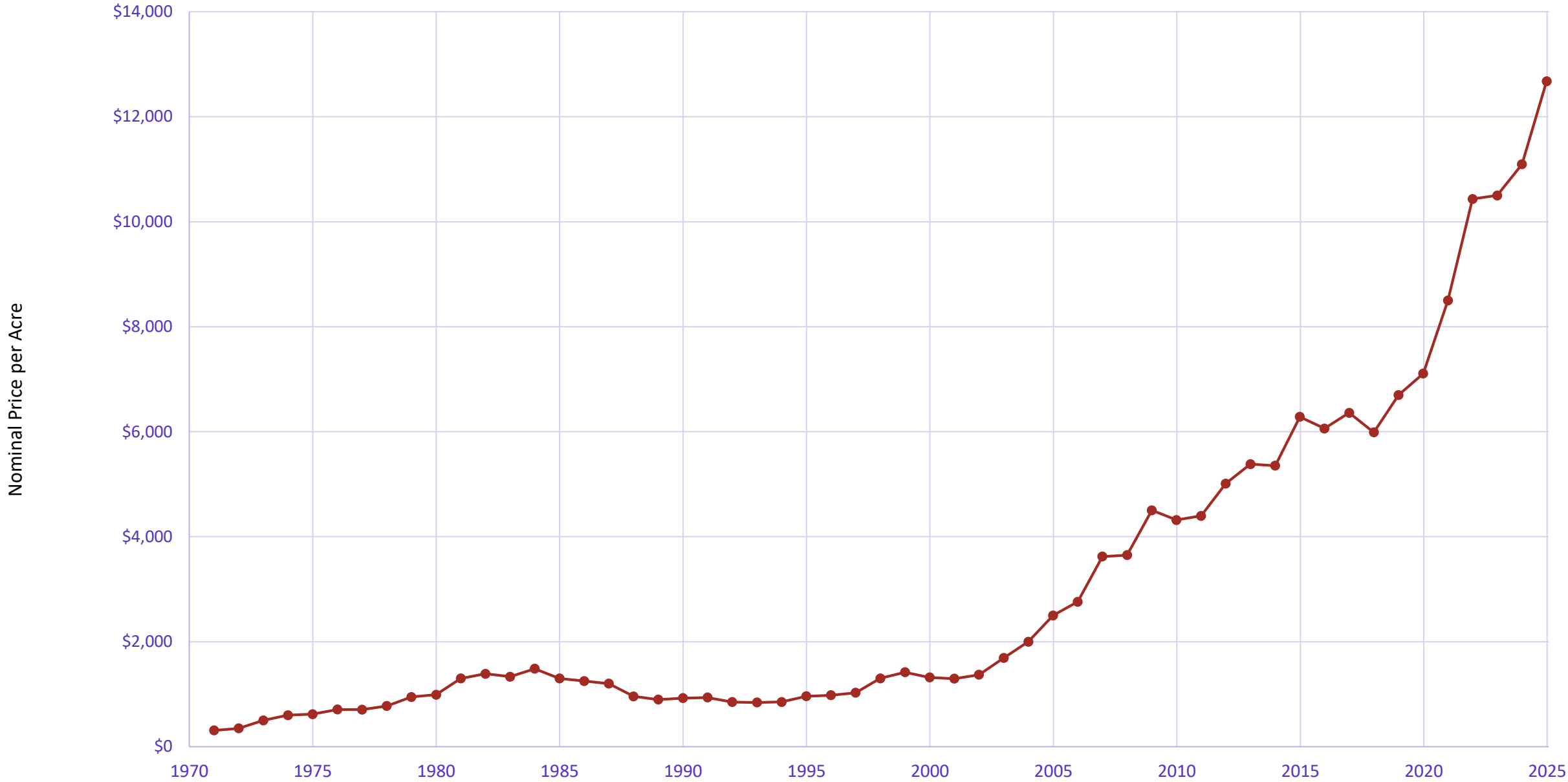
Hays, Travis, Williamson, Milam, Caldwell, Bastrop, and Lee Counties





Coastal Prairie North (LMA 19)

Fayette, Gonzales, DeWitt, Lavaca, and Colorado Counties



Source: TAMU Real Estate Research Center
<https://trerc.tamu.edu/data/rural-land/?data-LMA=Coastal+Prairie+-+North+%28LMA+19%29>



END

Agenda

8. Discussion and possible action on activities by consultants of GMA 12 GCDs on modifications and updates made to groundwater availability model (GAM) Run PS4-2 for use in establishing DFCs for the Carrizo-Wilcox, Queen City, and Sparta aquifers in GMA 12, and considerations using requirements of Chapter 36.108 (d-2) in adopting DFCs during the fourth round of joint planning:

(1) aquifer uses or conditions within the management area, including conditions that differ substantially from one geographic area to another;



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- (2) the water supply needs and water management strategies included in the state water plan;*
- (3) hydrological conditions, including for each aquifer in the management area the total estimated recoverable storage as provided by the executive administrator, and the average annual recharge, inflows, and discharge;*
- (4) other environmental impacts, including impacts on spring flow and other interactions between groundwater and surface water;*



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(5) the impact on subsidence;

(6) socioeconomic impacts reasonably expected to occur;

(7) the impact on the interests and rights in private property, including ownership and the rights of management area landowners and their lessees and assigns in groundwater as recognized under Section [36.002](#);

(8) the feasibility of achieving the desired future condition; and

(9) any other information relevant to the specific desired future conditions.





BRAZOS VALLEY GROUNDWATER CONSERVATION DISTRICT

Socioeconomic Impact Study

March 2026

WestWater
RESEARCH

Overview

Goal:

- Estimate the economic effects within Brazos and Robertson Counties due to the establishment of different GMA 12 DFC levels.
- Findings will inform DFC decision-making process at GMA 12

Approach:

- Apply the change in modeled groundwater pumping from 2030-2080 under two scenarios to project future water supply available for development
- Apportion the supply among residential, commercial, and industrial water uses (data centers, power, home building)
- Estimate direct impacts for each scenario
- Estimate secondary impacts for each scenario
- Calculate the difference in economic output over the modeling period

Direct impacts:

- Higher construction activity including data centers, power (nuclear and CC), residential homes.
- Higher annual spending in each of the growing sectors.
- Higher groundwater pumping costs

Indirect and Induced Impacts (IMPLAN):

- More jobs
- Higher indirect spending (B2B)
- Higher induced output (household and business spending)

Regulatory Framework

- Texas Water Code (TWC) § 36.108 – Joint Planning
 - Districts shall consider “the nine factors” when developing DFCs
 - “socioeconomic impacts reasonably expected to occur”
 - Report accompanying a DFC adoption must provide the policy and technical justifications for each DFC
- TWC § 36.1083 – Appeal Process
 - Requires the Texas Water Development Board (TWDB) to:
 - consider the administrative completeness of the proposed DFC
 - conduct a study containing scientific and technical analysis of the desired future condition, including:
 - consideration of the explanatory report provided to the TWDB under § 36.108
 - the nine factors described under § 36.108
 - any relevant information provided in the petition or available to the TWDB

Scenario Framework

PS4-2 Pumping

- DFC Drawdown: 284 feet
- Baseline scenario, more restrictive.
- Less groundwater available for development. Represents the more water-restrictive alternative under consideration by GMA 12

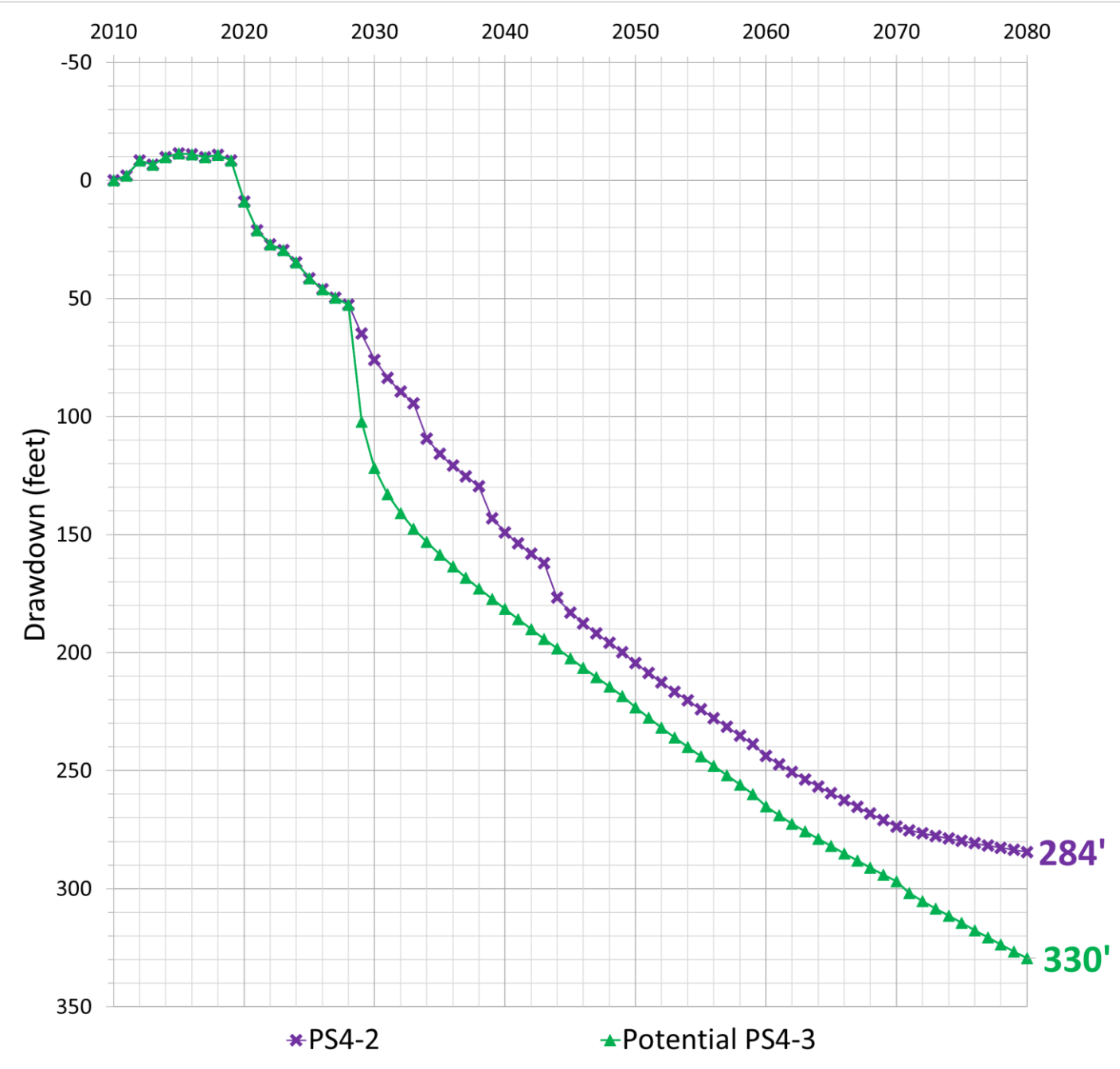
Potential PS4-3 Pumping

- DFC Drawdown: 330 feet
- Alternative scenario, less restrictive.
- More groundwater available for development. Enables additional pumping capacity to support housing, power generation, and data centers.

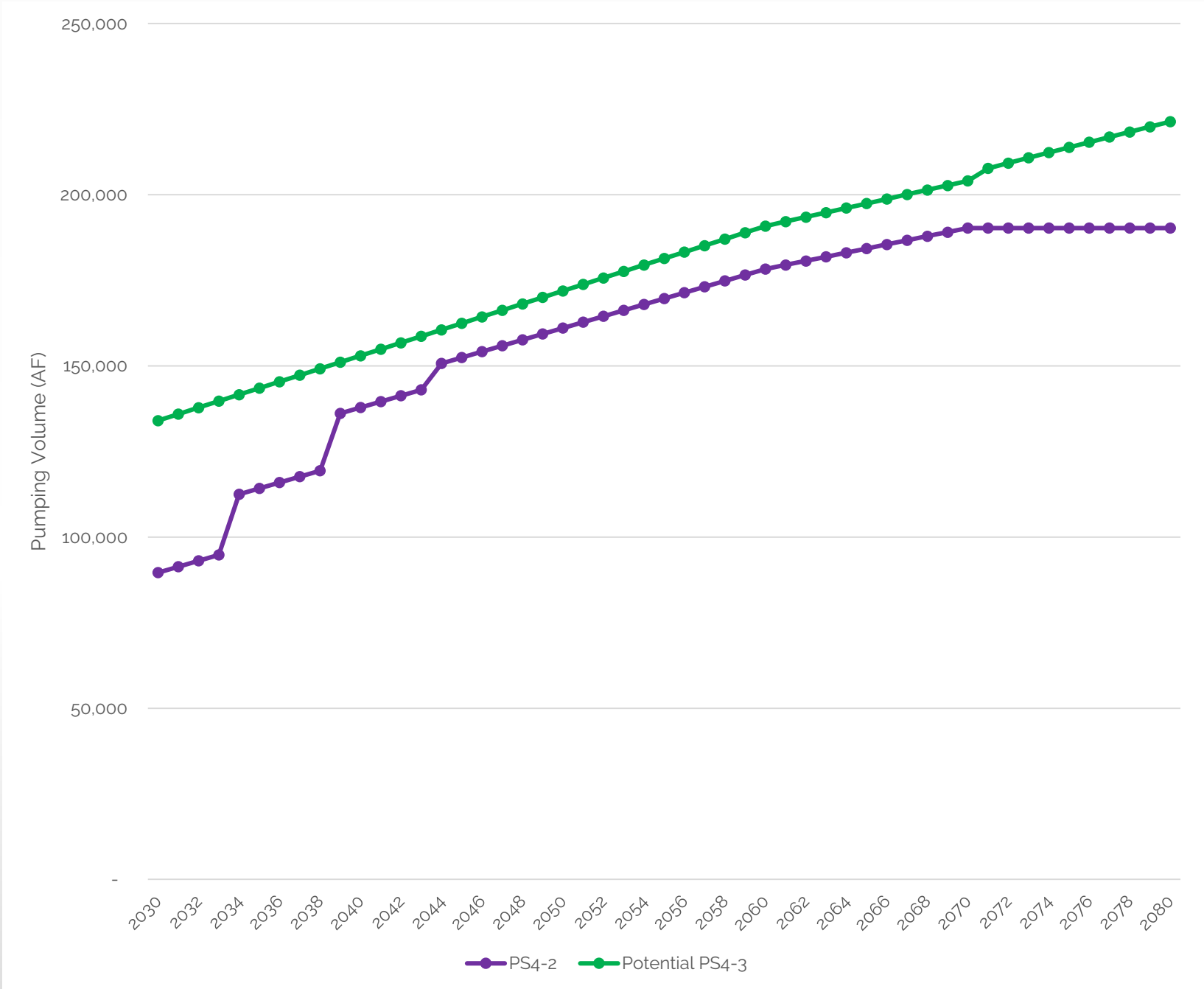
Incremental Supply: Nearly 1 million AF additional groundwater over a 50-year analysis period (2030-2080), or approximately 19,000 AF/yr, on average.

Model Run Comparison

SIMSBORO ANNUAL DRAWDOWN

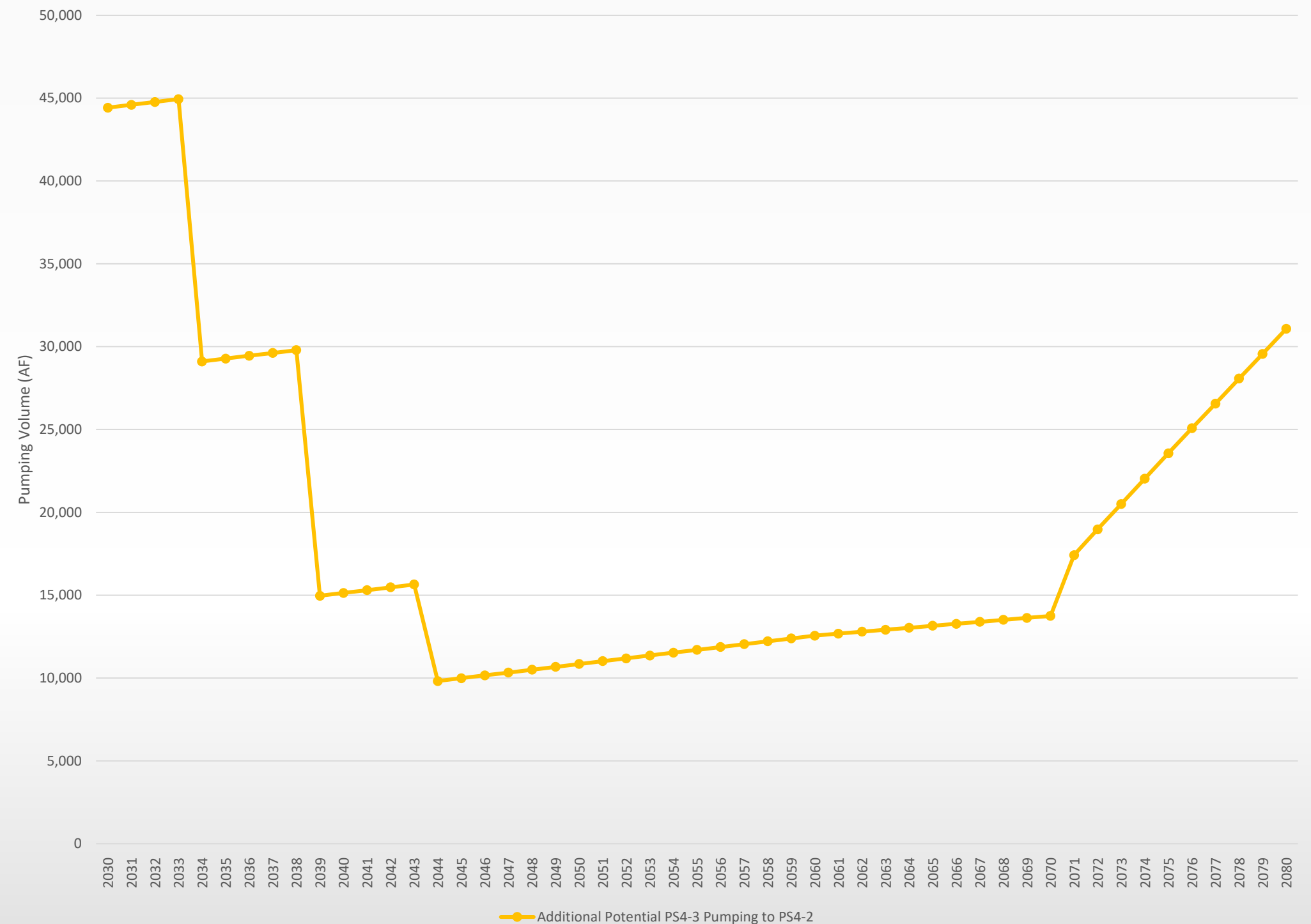


SIMSBORO ANNUAL PUMPING



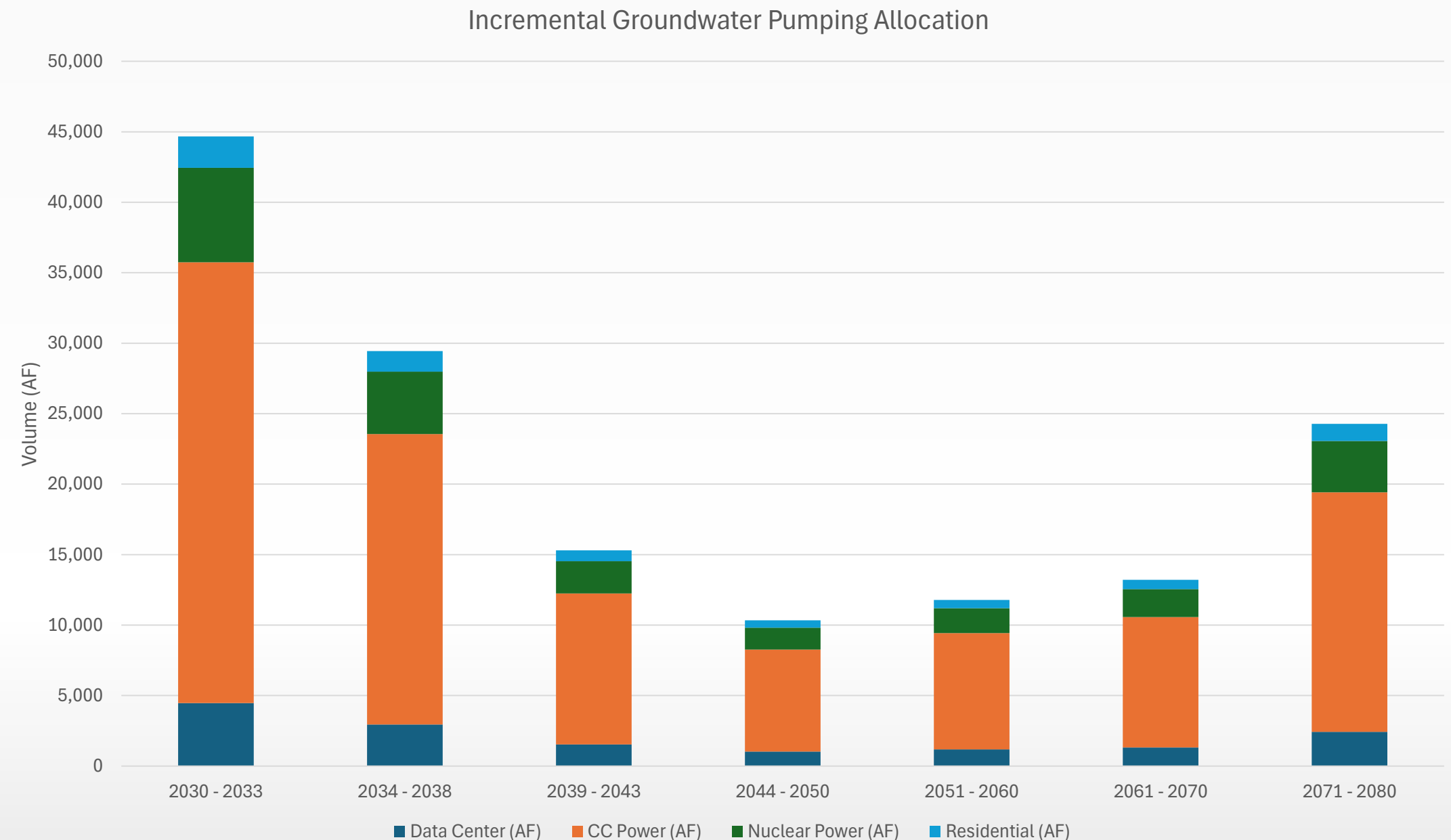
Additional Simsboro Pumping

- Potential PS4-3 is treated as the incremental demand scenario—reflecting the pumping volumes that would occur if water users were able to meet their reasonably anticipated needs from the Simsboro Aquifer
- The larger groundwater pumping in early years means that economic development activity occurs sooner under Potential PS4-3 than PS4-2 although that impact lessens in future years as groundwater pumping increases in PS4-2.



Simsboro Groundwater Allocation

- The incremental groundwater supply within each period was allocated as follows:
 - Data Centers = 10%
 - CC Power = 70%
 - Nuclear Power = 15%
 - Residential = 5%
- Total allocation to data centers of nearly 3,100 AF/yr (by 2080) is equivalent to approximately 2.4 GW of new capacity (TX reportedly has approximately 6.5 MW currently under construction).
- Additional 22,000 AF/yr to CC Power would provide approximately 680 MW of new capacity. Assumes some development of "behind the meter" facilities to support data center needs.
- 15% allocation to nuclear totals 4,700 AF/yr, on average. Would provide an estimated capacity of 170 MW.
- Incremental water available for residential use is equivalent to approximately 4,400 new homes. Allocation was set to capture the expected increase in employment at new data centers and power facilities.



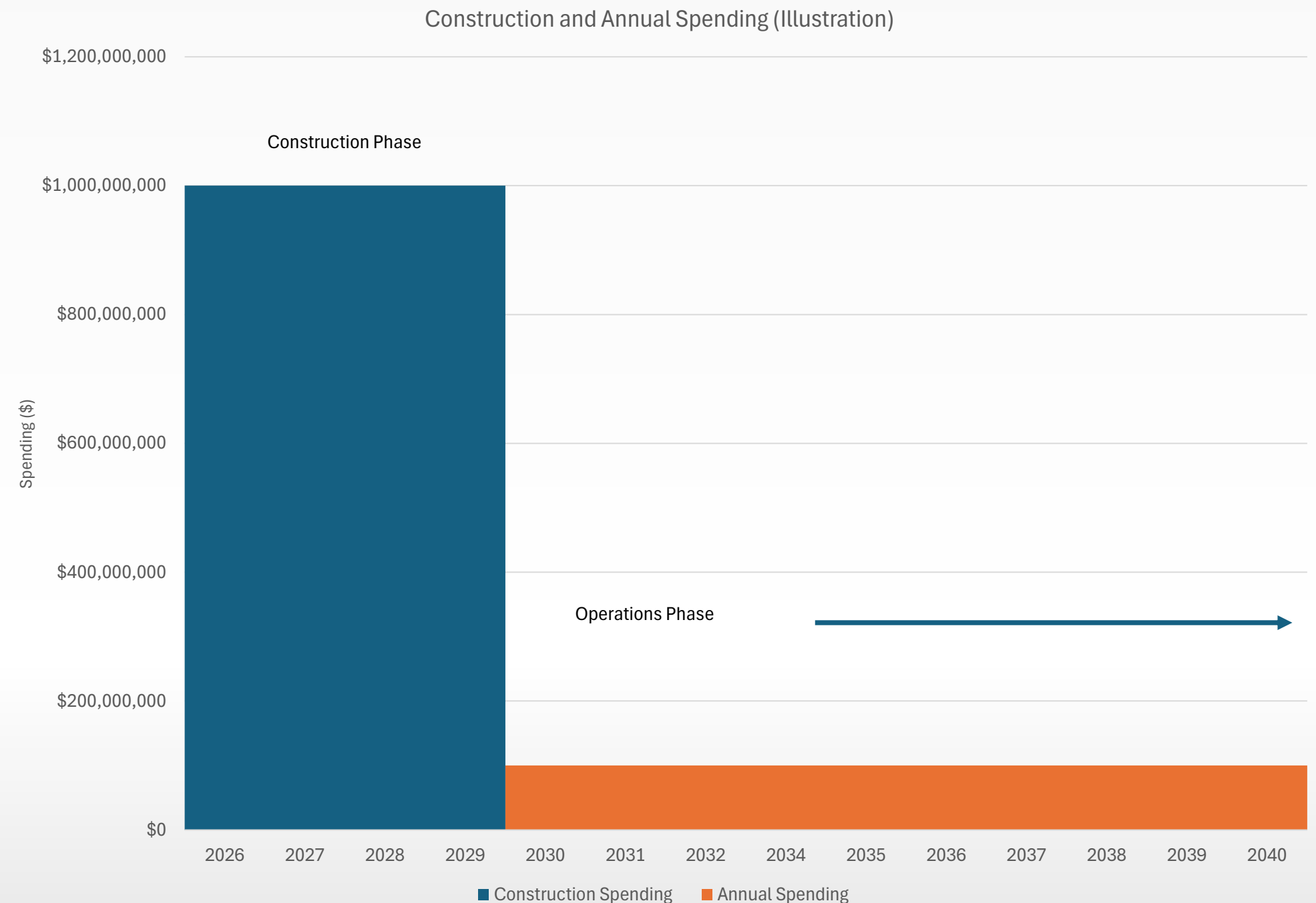
Direct Economic Impacts

- **Construction Spending**

- Incurred in the period prior to groundwater pumping
- Estimated for each sector using published sources
- Converted to \$/AF
- Applied during the assumed construction period

- **Annual Spending**

- Estimated annual operating costs for each sector
- Converted to \$/AF
- Applied to cumulative pumping for each sector throughout analysis period



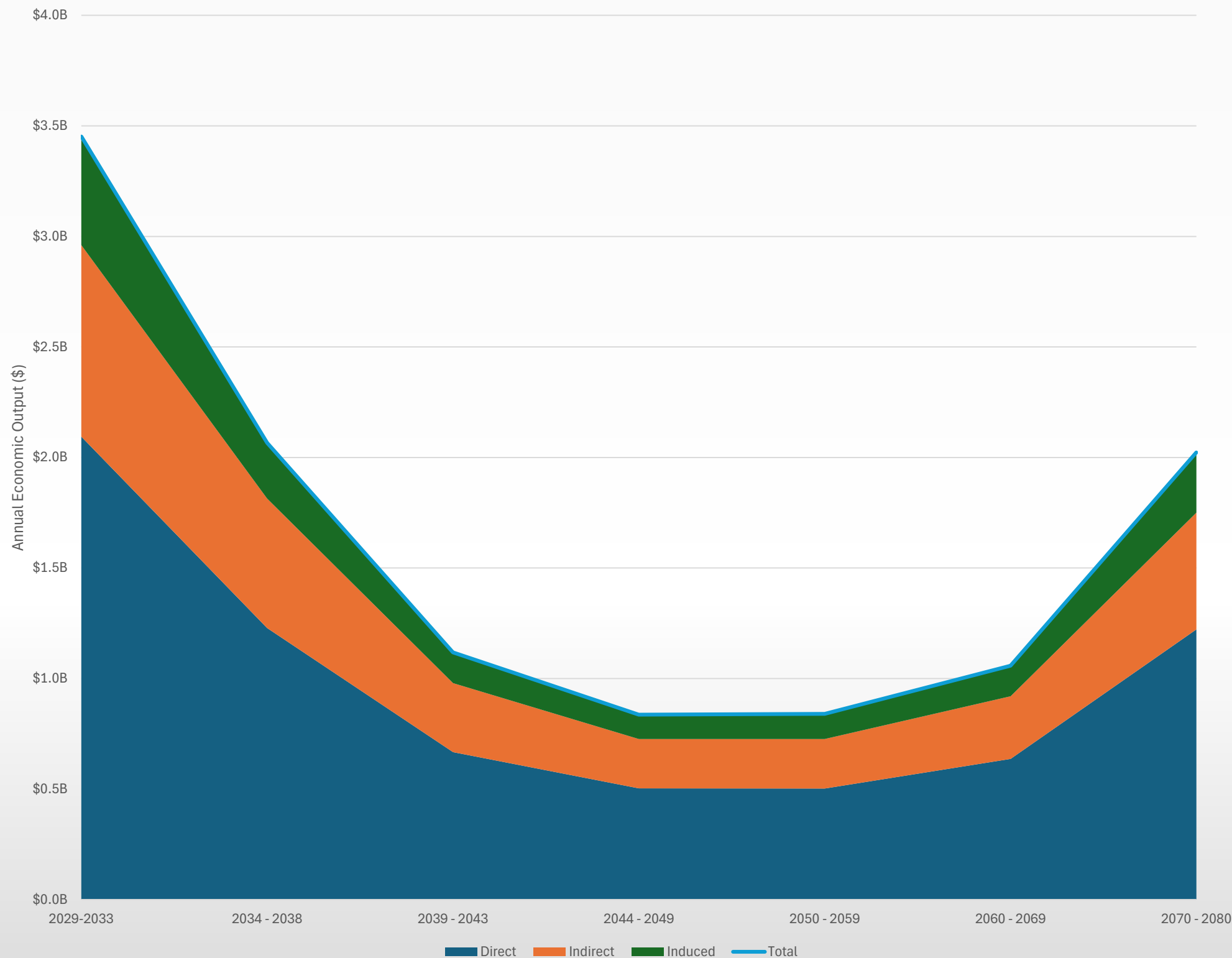
Direct Economic Impacts

- **Pumping Costs**
 - Potential PS4-3 generally results in deeper projected depth-to-water conditions and higher pumping volumes than PS4-2, which increases pumping costs overall
 - Overall impact is small relative to the economic gains unlocked by additional groundwater
- **Annual Direct Output by Sector**

	2030	2040	2050	2060	2070	2080
Average additional change in depth to water	45	24	20	22	34	45
Average annual additional lift cost	\$784,874	\$557,211	\$805,442	\$1,341,847	\$3,168,564	\$5,040,263

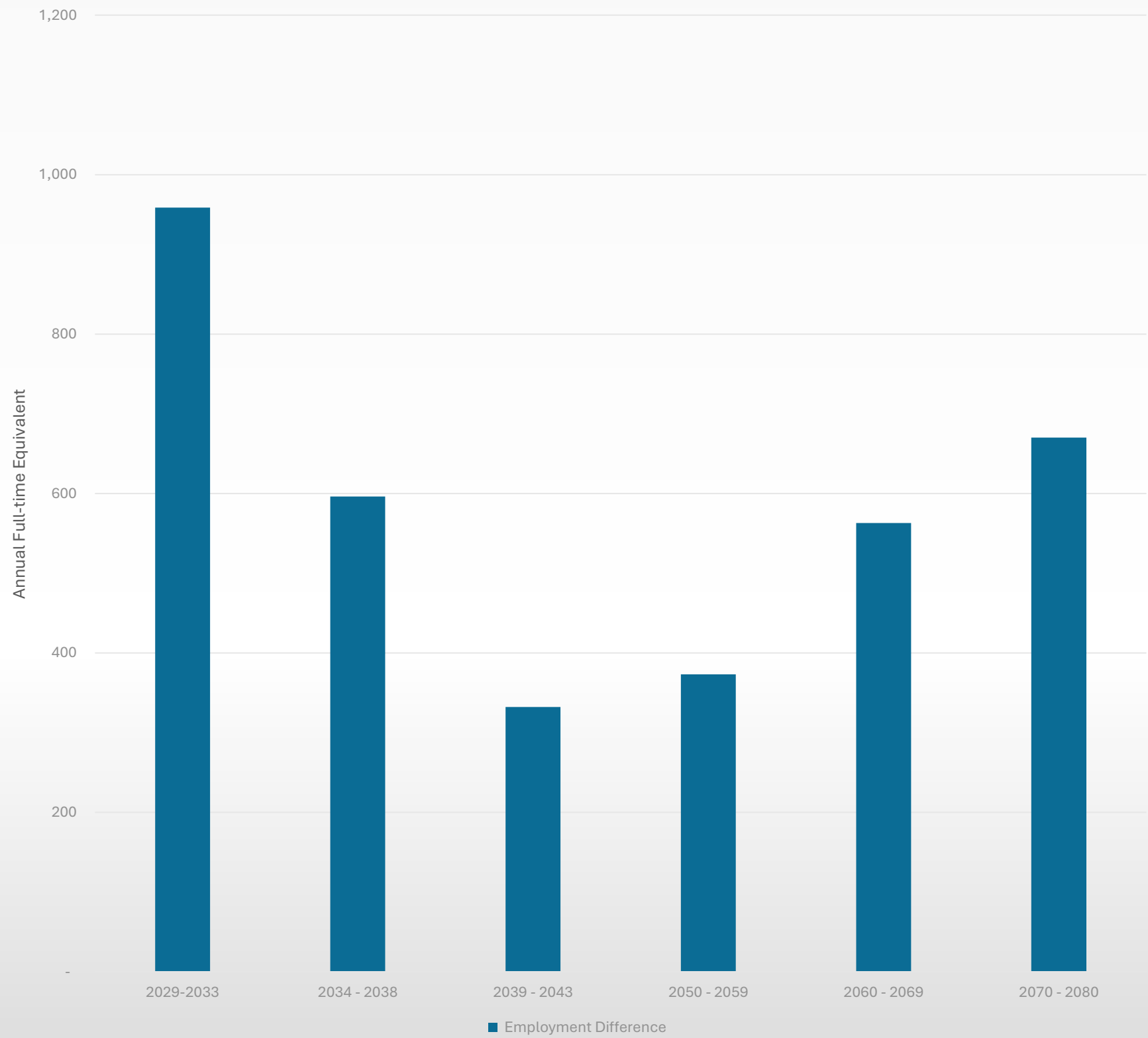
Scenario	Impact Sector	2029 - 2033	2034 - 2038	2039 - 2043	2044 - 2049	2050 - 2059	2060 - 2069	2070 - 2080
PS4-2	Construction	\$0.54 B	\$0.31 B	\$0.19 B	\$0.11 B	\$0.11 B	\$0.08 B	\$0.00 B
	Residential Op	\$0.06 B	\$0.15 B	\$0.23 B	\$0.29 B	\$0.33 B	\$0.39 B	\$0.41 B
	Data Centers Op	\$0.68 B	\$1.80 B	\$2.74 B	\$3.36 B	\$3.92 B	\$4.51 B	\$4.78 B
	Power Op	\$0.08 B	\$0.20 B	\$0.30 B	\$0.37 B	\$0.44 B	\$0.50 B	\$0.53 B
	Total	\$1.35 B	\$2.46 B	\$3.47 B	\$4.14 B	\$4.80 B	\$5.48 B	\$5.72 B
Potential PS4-3	Construction	\$0.92 B	\$0.12 B	\$0.12 B	\$0.12 B	\$0.12 B	\$0.09 B	\$0.10 B
	Residential Op	\$0.18 B	\$0.25 B	\$0.29 B	\$0.32 B	\$0.37 B	\$0.43 B	\$0.49 B
	Data Centers Op	\$2.11 B	\$2.98 B	\$3.36 B	\$3.77 B	\$4.38 B	\$5.04 B	\$5.71 B
	Power Op	\$0.23 B	\$0.33 B	\$0.37 B	\$0.42 B	\$0.49 B	\$0.56 B	\$0.63 B
	Total	\$3.44 B	\$3.68 B	\$4.14 B	\$4.64 B	\$5.36 B	\$6.11 B	\$6.93 B

Total Economic Impacts



- Total impacts to output over time in Brazos and Robertson Counties.
- The **largest impacts occur in the 2030 decade**, with earlier construction of data centers, nuclear and combined cycle power plants in Potential PS4-3.
- Impacts lessen as PS4-2 catches up with Potential PS4-3 in terms of pumping, economic benefit due to Potential PS4-3 pumping is <\$1 B in these timesteps.
- Additional pumping result in a total economic impact **\$79.4 billion** (unadjusted) through 2080.

Employment



- Following similar trends to output, employment in the district is greatly augmented by additional water supplies under Potential PS4-3 pumping.
- Employment is measured in IMPLAN by full-time equivalents (FTEs).
- Through 2080, the additional groundwater pumping provides **268,000** job-years.

Conclusions

**Total
Output
Impact:**

\$79.4 Billion

**Total
Employment
Impact:**

**268,000 Job-Years
~ 5,150 FTEs**

**Total
Tax Revenue
Impact:**

\$9.8 Billion

**Total
New Homes
Supported:**

4,400 Homes

- Potential PS4-3 accelerates and enables economic development in the near term by enabling earlier construction of data centers, power facilities and housing that PS4-2 delays or inhibits.
- Impacts narrow in the middle of the analysis period as PS4-2 catches up in pumping, but rebounds in later periods as the permanent pumping gap widens.
- Pumping costs are increased in Potential PS4-3 due to the higher ground pumping lift required, however the estimated effects on rate-payer income are a small fraction of the economic output the additional water enables.

Thank You

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West Water
RESEARCH

The Desired Future Condition Affects GMA- 12 and Region G's Long- Term Economic Capacity



CARACAL
COMMODITIES, LLC

Gabriel Collins, J.D.

18 February 2026

Today's Water Policy Decisions Determine Tomorrow's Jobs, Housing Costs, and Tax Base.

- **What Happens If GMA-12 Does Not Increase the DFC?**

- Lost local projects
- Earlier potential for curtailment of local water supplies
- Reduced monitoring and science investment
- Missed generational opportunity to align urban and rural interests in Central Texas
 - For example, there are socioeconomic benefits of using available water to support growth where it is already in motion or most desired while supporting continued rural land use

- **What Happens If GMA-12 Increases the DFC?**

- Better control
- More revenue – Texas economic miracle can continue without water as a bottleneck
- Substantial investment
- Sustainable management – cities that depend on groundwater will not be forced to curtail production
- Supports investment-backed expectations and the socioeconomic benefits of those investments

This map displays the central region of Texas, highlighting the following counties and their major cities:

- Hamilton:** Hamilton
- Lampasas:** Lometa
- Coryell:** Coryell
- McLennan:** Waco, Bellmead, Hills, Woodway, Robinson, Hewitt, Lorena, Golinda, Bruceville-Eddy, Lott, Rosebud, Franklin, Calvert, Hearne, Wixom Valley, Kurten, Bryan, College Station, Anderson, Navasota, Todd Mission
- Limestone:** Limestone
- Falls:** Falls
- Bell:** Temple, Little River-Academy, Rogers, Holland, Bartlett, Granger, Taylor, Thrall, Thorndale, Rockdale, Lexington, Giddings, Burton, Brenham
- Williamson:** Georgetown, Leander, Cedar Park, Round Rock, Hutto, Liberty Hill, Weir
- Milam:** Milam
- Robertson:** Robertson
- Brazos:** Brazos
- Grimes:** Grimes
- Burleson:** Burleson
- Lee:** Lee
- Washington:** Washington

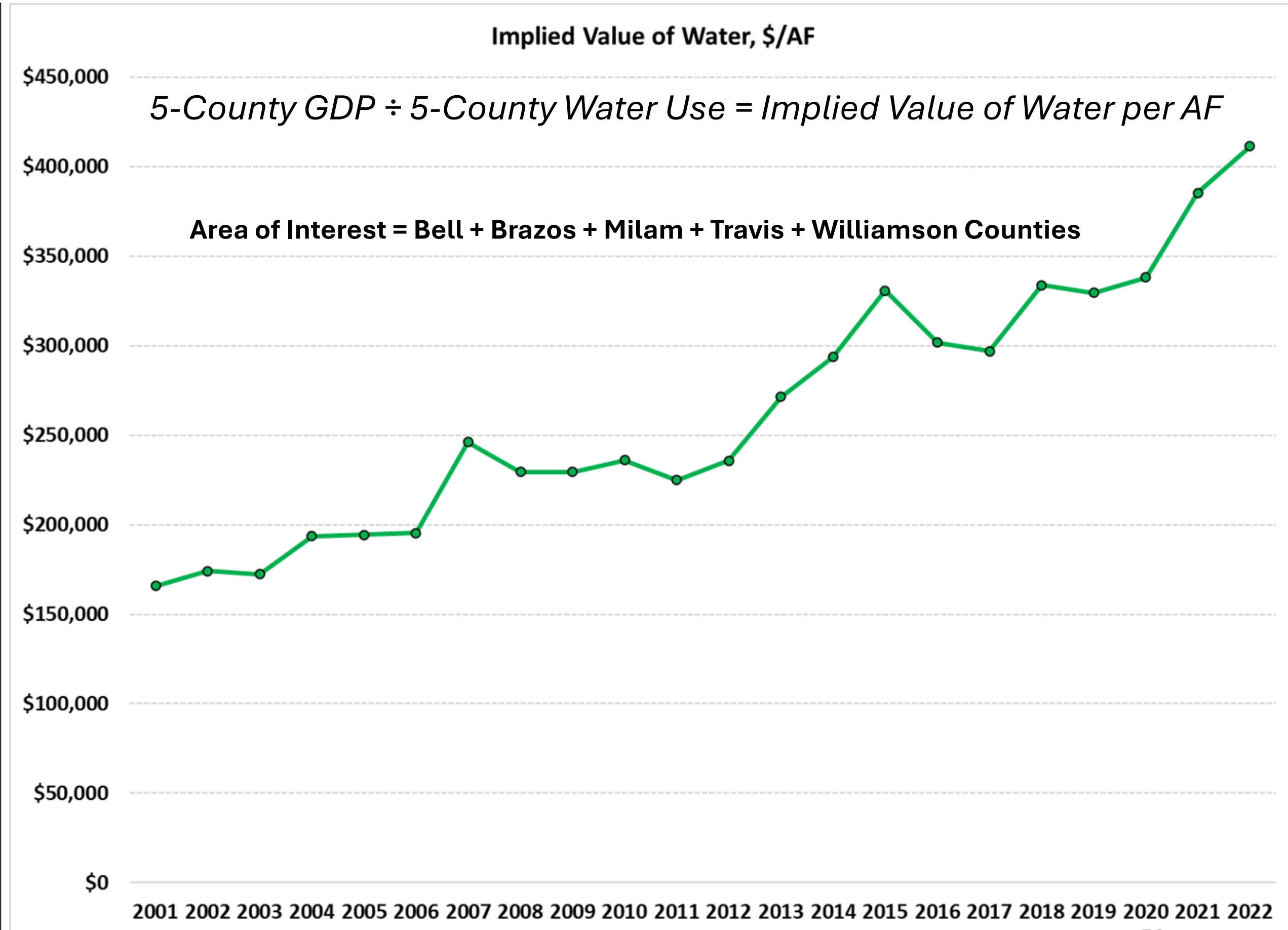
Water bodies shown include Lake Waco, Lake Creek Lake, Lake Limestone, Lake Belton, Stillhouse Hollow Lake, Lake Georgetown, Granger Lake, Alcoa Lake, Somerville Lake, and the Brazos River. Reservoirs such as Tradinghouse Creek, Twin Oak, and Camp Creek are also marked. The San Jacinto River is shown flowing through the eastern part of the region.

Firm Water Supply Creates Economic Opportunity

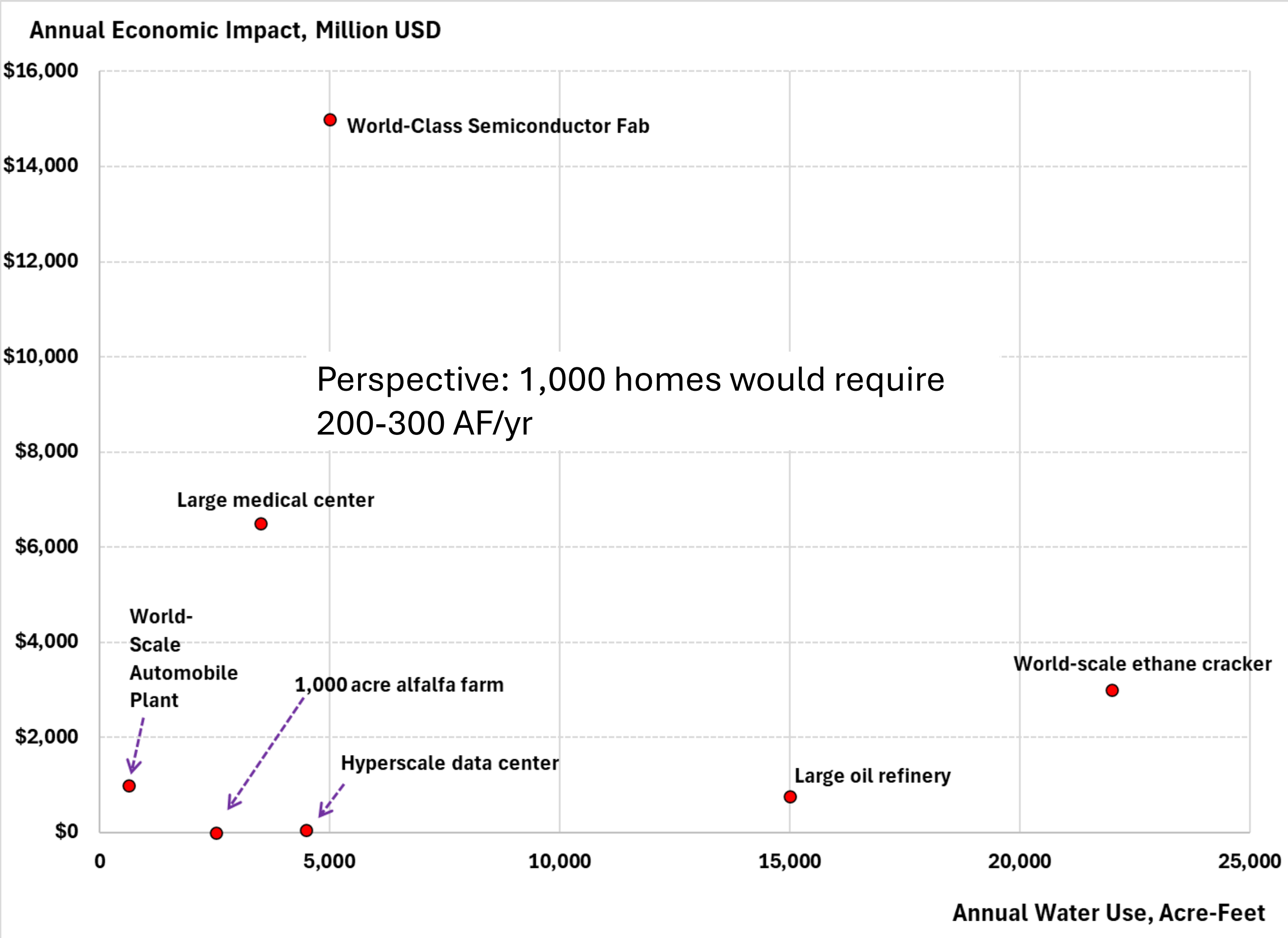
- **GMA-12 Example: Sandow Lakes development.** MUD boards have approved roughly \$3 billion in infrastructure investments to date.
- SLR's first tenant at its Advanced Manufacturing & Logistix Campus aims to begin operations in 2027 and is projected to spend more than \$850 million in capital investment and create over 1,000 jobs.
- **The growth opportunities in the Bryan-College Station area could plausibly match or even exceed SLR's given the potential for manufacturing and other high-impact economic activity that draws on the large, high-skilled local population and the intellectual anchor provided by Texas A&M University.**
- But investors must be confident in a multi-decade, secure water supply base.

Water Unlocks Significant Economic Value

- In the Area of Interest, economic value generated per acre-foot of water is estimated between \$400k and \$500k.
- This falls between the water use/GDP relationship in the highly industrial Houston Metro of approx. \$300k/af and that for tech and service-oriented Dallas County, which was approx. \$650k per AF in 2022.
- These numbers suggest that in the area of interest, each 10,000 AF of additional firm water supply would support up to \$4-to-\$5 billion in annual economic activity.
- It is important to recognize that the financial costs of long-distance water transportation create a natural balance whereby water is supplied at prices capable of sustaining growth, but which are also likely high enough to encourage conservation and wise usage.

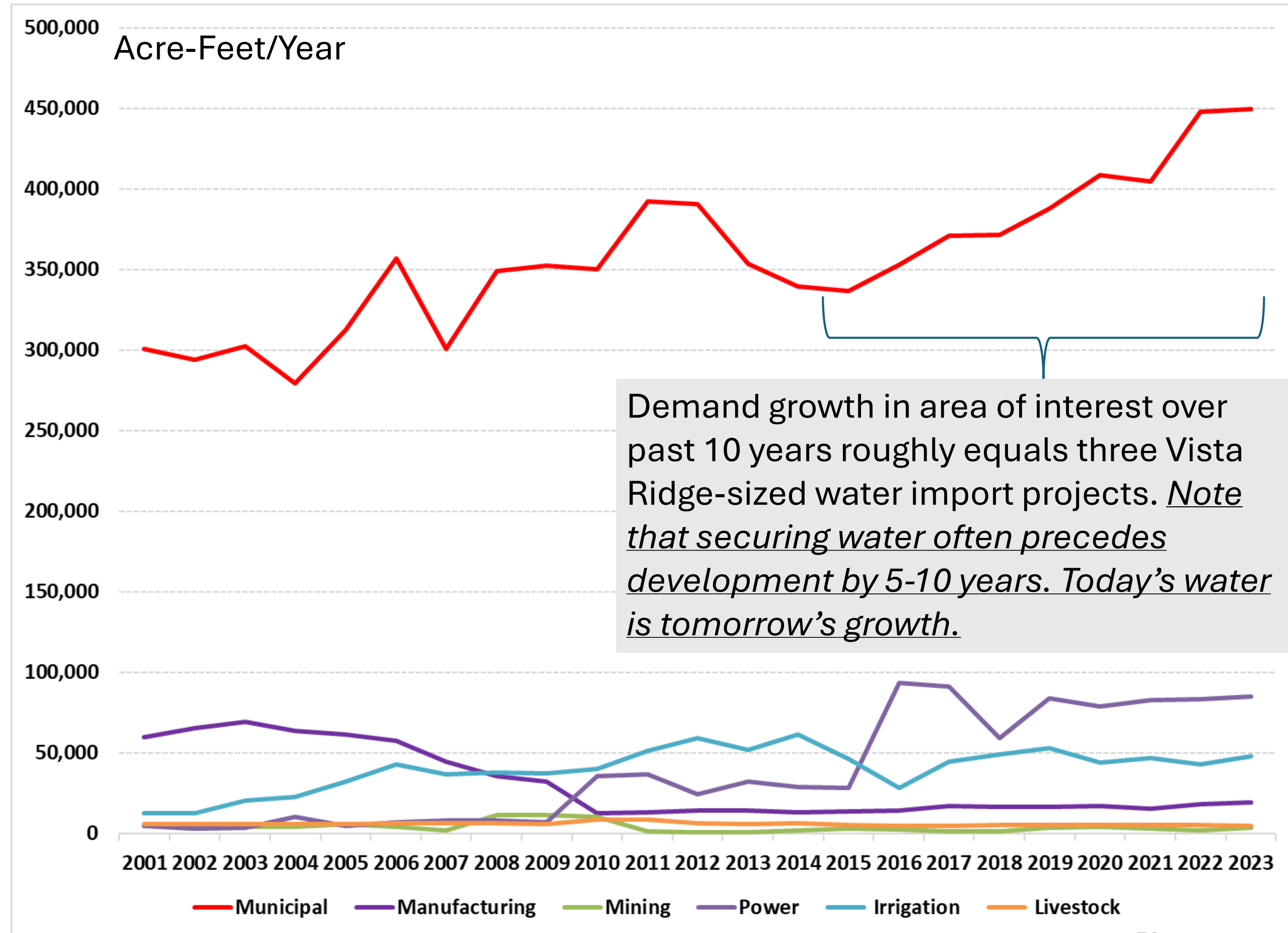


**People,
Manufacturing,
Power
Generation,
and
Opportunity in
General All
Require Ample
Water**



Water Demand Risks Outstripping Supply

- Municipal water use dominates. This includes industrial users on city systems.
- Water use declined immediately after the 2011 drought and bottomed in 2014-2015.
- Since that point, use has increased nearly every year and has accelerated since 2021.
- Since 2015, municipal water use has grown by about 150,000 AF/yr—enough to supply 400,000 or more households.



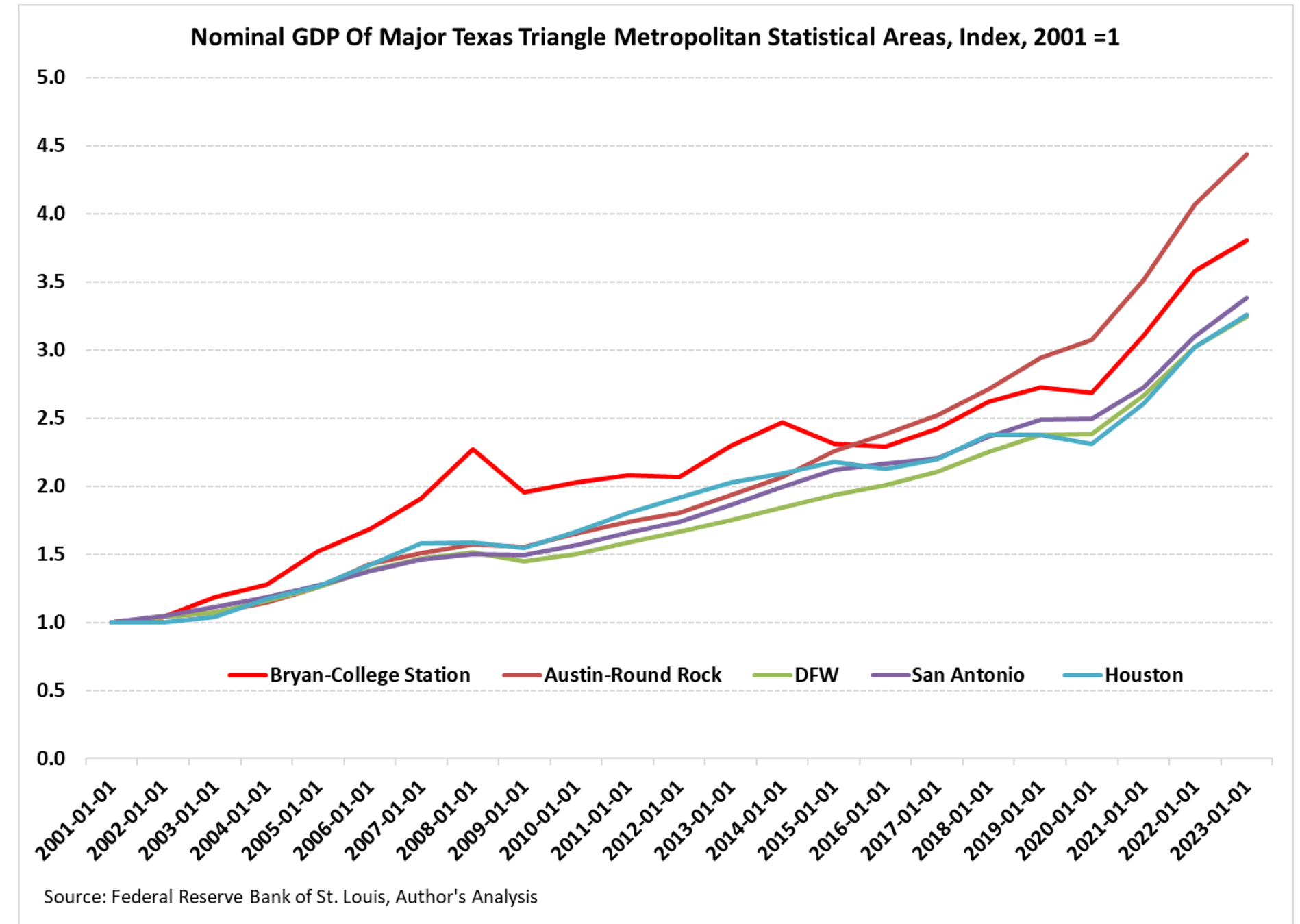
Source: Local Media, TWDB, Author's Analysis

Water Uncertainty Discourages Investment and Shrinks Opportunity

- Uncertainty about water supply security will lead to adverse socioeconomic impacts by failing to support the long-term investment that would otherwise locate in or near GMA 12.
- The 2021 DFC reversion from 295 ft to 262 ft for the Simsboro Aquifer signals physical and political water scarcity to investors.
- In GMA-12, this does not just impact export projects; it impacts local development opportunities as well given the area's human capital base and proximity to huge Triangle metros and port, rail, and road systems that make global markets accessible.
- GMA-12 and proximate portions of Region G have significant latent growth potential.
- Aligning the DFC to better reflect water availability in the significant Simsboro resource, as well as known permits and plans for investment in development, avoids interference with the anticipated socioeconomic benefits of those and future investment dollars—it supports local prosperity.

GMA-12 Can Harness Global Capital Sources to Underwrite Local Water Abundance and Gain Socioeconomic Benefits

- Export buyers cross-subsidize local water supply expansions and resilience efforts.
- The I-35 corridor is the most likely place to provide such capital contributions.
- GMA-12 cities and institutions prosper when the larger Triangle Metros do
- A DFC reflective of the reality of groundwater abundance unlocks the upside.

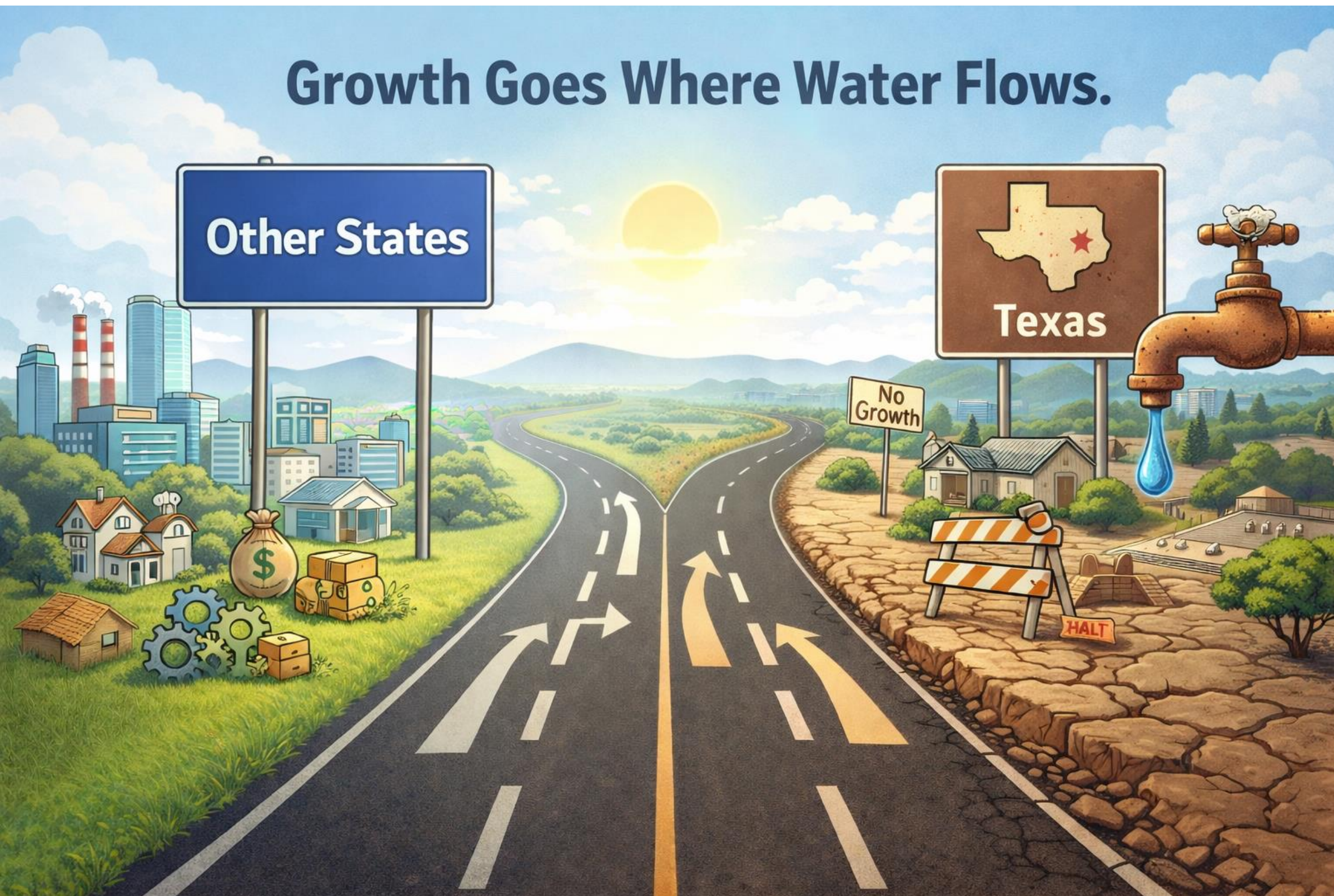


Water scarcity can disconnect the synergy: a GMA-12 DFC that throttles future water supplies would (1) induce innovators to pilot their projects at TAMU and then move somewhere else; (2) lead established manufacturers to choose other places; and (3) force the Triangle Mega-Metros to source water from somewhere else at higher cost, which would likely crimp regional growth prospects.

DFC Discipline + Capital Promotes Stability, Not Overproduction

- In the long-term, water investment capital facilitates resilience and sustainability by helping to fund:
 - More comprehensive monitoring
 - Supply source redundancy
 - Regionally impactful economic opportunities
 - Potential mitigation programs
- The trend will be toward risk-reduction, not volume maximization.

What If GMA-12 Uses DFC Policy Choice to Constrain Water Supplies?



- Earlier potential for curtailment of local GMA 12 water supplies
- Central Texas loses manufacturing and tech site selection competitions
- Growth moratoriums like the ones imposed in the Phoenix, AZ area
- Growth goes to the places that invest to ensure water supply security

Water Supply Concerns Discourage Investment

- **Micron Technologies'** decision to site a chip manufacturing complex with a potential lifetime investment value of \$100 billion in Upstate New York instead of Texas offers a wakeup call as to the importance of affordable, secure, and timely available water as part of the Texas business climate equation.
- Water was not the sole decision factor but Micron publicly stated that “...*availability and access to carbon free, reliable power and water*” were very important.

Source: <https://www.micron.com/us-expansion/ny#accordion-cca3e1cab5-item-7446fb070c>

Micron Fab Site Selection — Critical Requirements

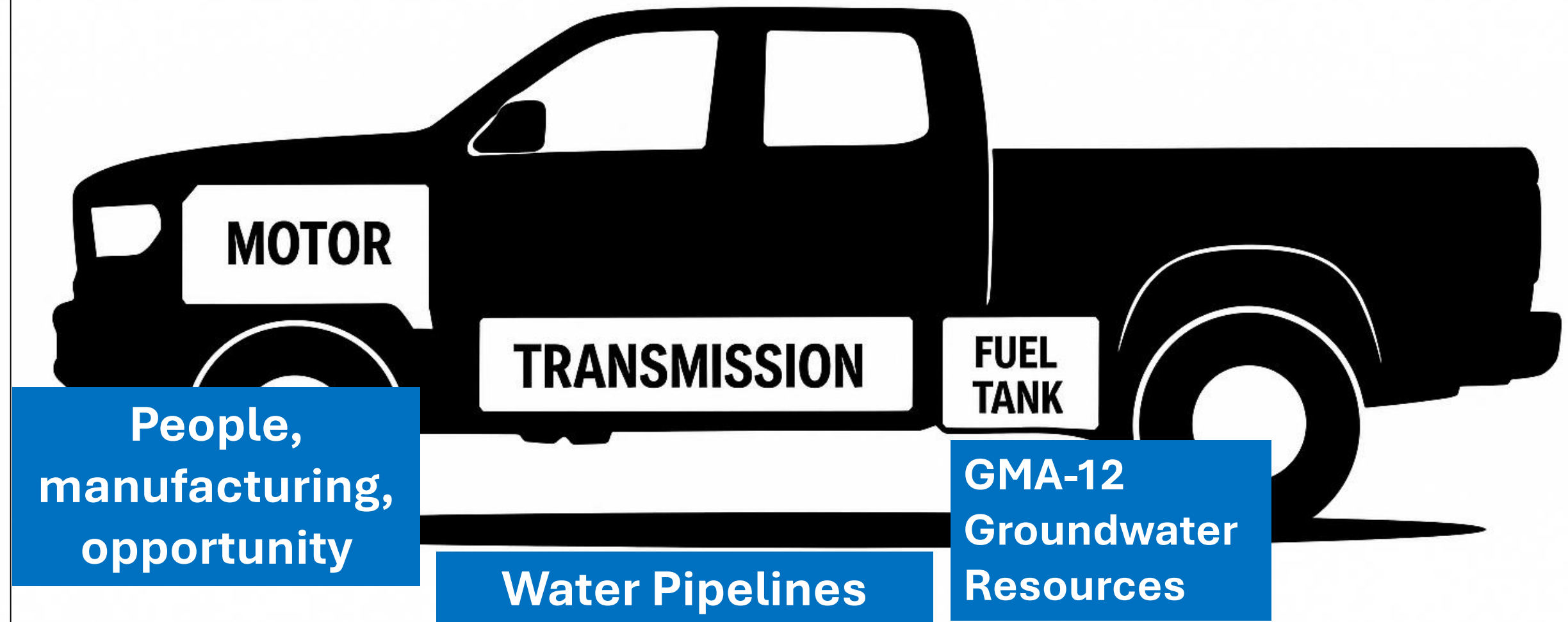
- **Immediate site availability** to support urgent CHIPS Act and national security priorities
- **Minimum 1,000-acre footprint** (preferred: up to 1,400 acres)
- **Single unified site** supporting four advanced semiconductor fabs
- **Adequate infrastructure capacity:**
 - Water supply
 - Electricity supply
 - Natural gas supply
 - Wastewater treatment and pretreatment
- **Suitable topography and site conditions**

Local and regional water policy decisions have national and global investment implications.

Source: Micron Technology, Inc. Micron Semiconductor Fabrication, Clay, NY: USACE/NYSDEC Joint Permit Application, Permit Application Appendix, Volume I: Final Public Comment Version. Application No. LRB-2000-02198. July 7, 2025. <https://assets.micron.com/adobe/assets/urn%3Aaaid%3Aaem%3Afb6fd92c-4e70-4836-bc3e-35cc363cb585/renditions/original/as/micron-ny-jpa-appendix-volume-i-600-07142025.pdf>

Central Texas Is At a Water Risk Inflection Point

- Central Texas growth at risk of becoming water-limited
- Carrizo-Wilcox water secured today can harmonize rural and urban interests and underwrite decades of growth and human wellbeing
- Adverse socioeconomic impacts to GMA 12 counties and Region G will flow from failure to align the DFC with known permits and plans to support existing and anticipated investments.



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Thank you!

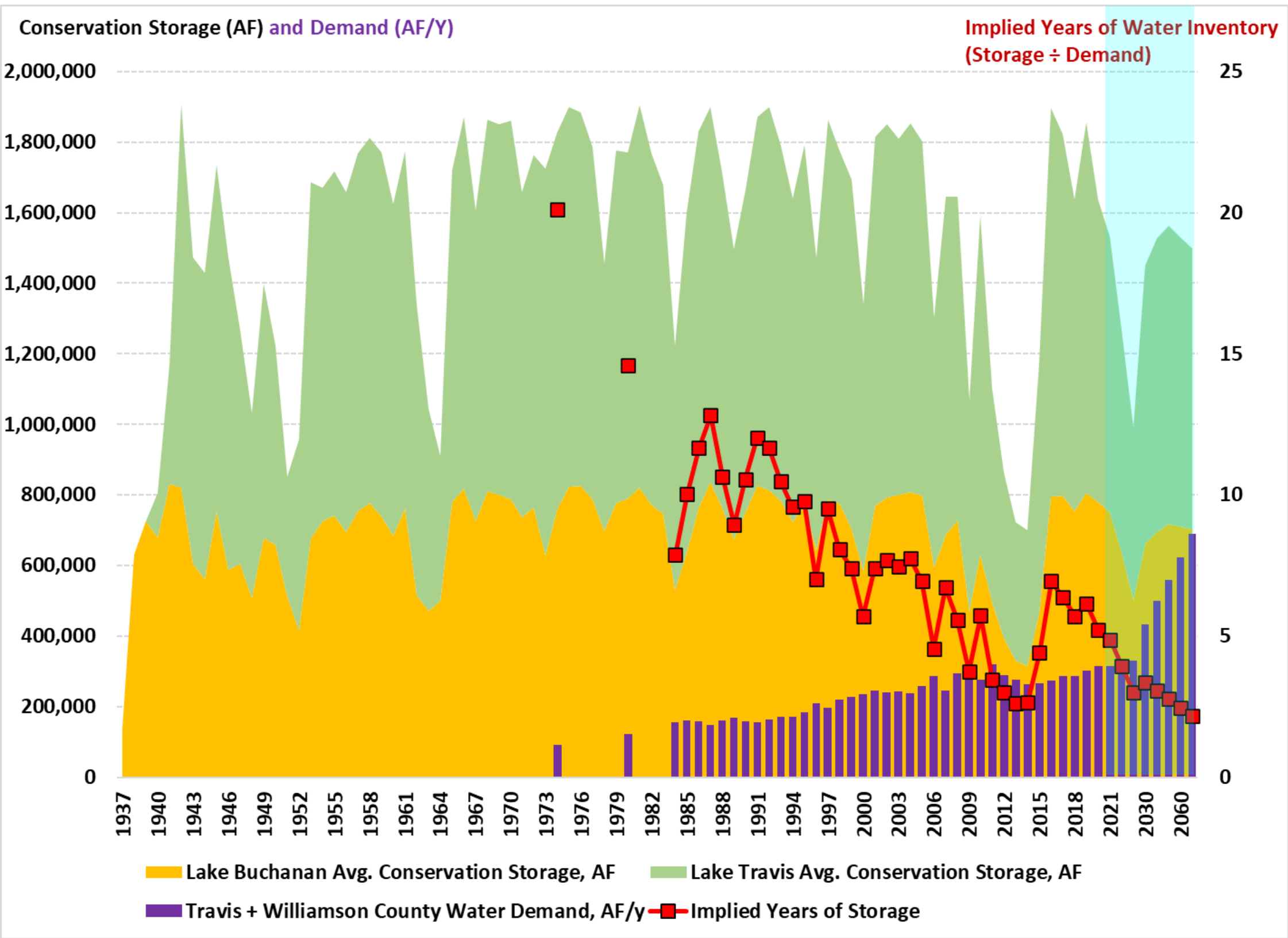
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Supporting Data

Regulatory Constraints on Supply Should be Cautious Because the Regional Storage Buffer Is Shrinking

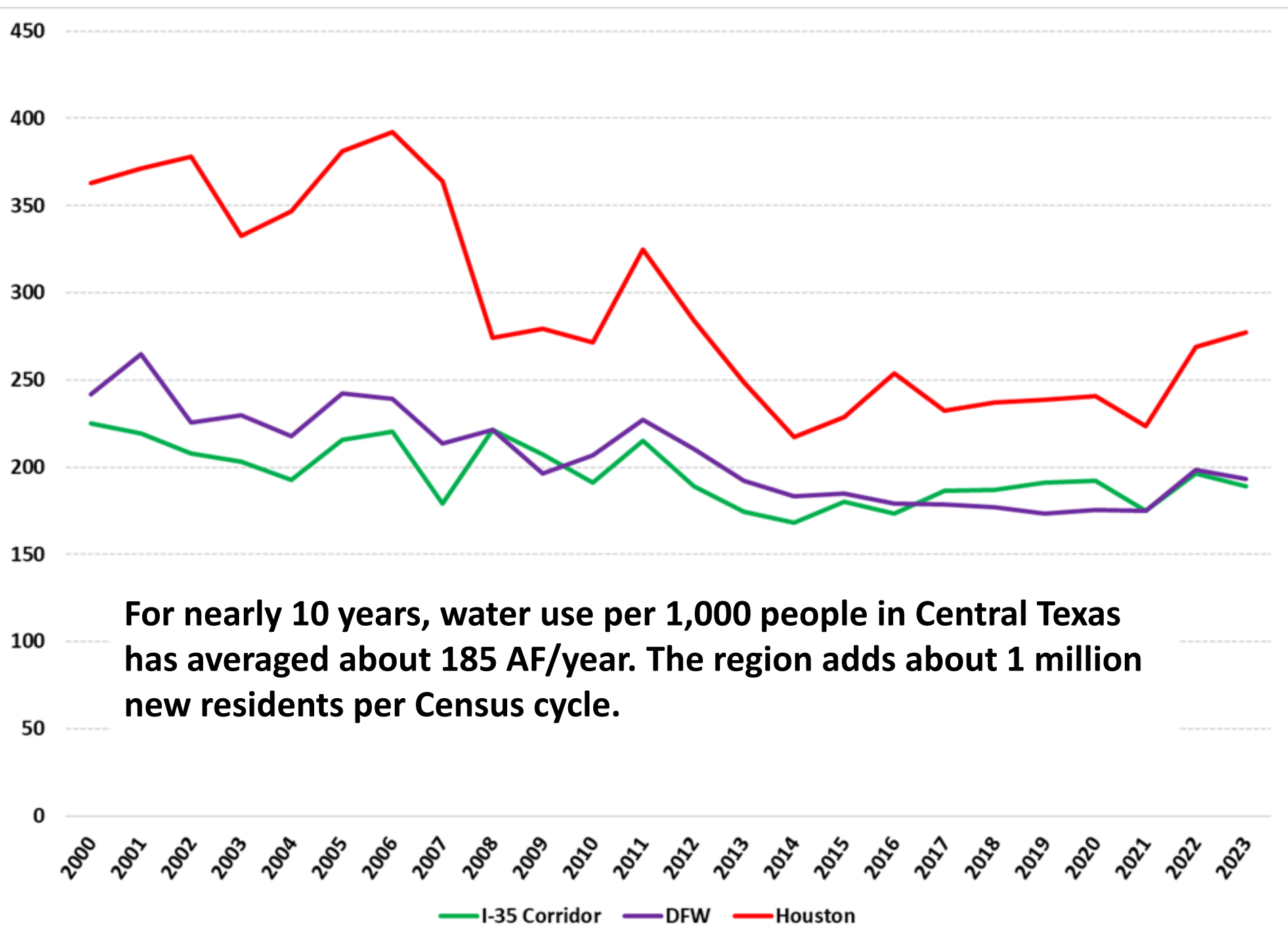
Highlighting one example, Water Storage in Lakes Buchanan and Travis vs. Local Demand



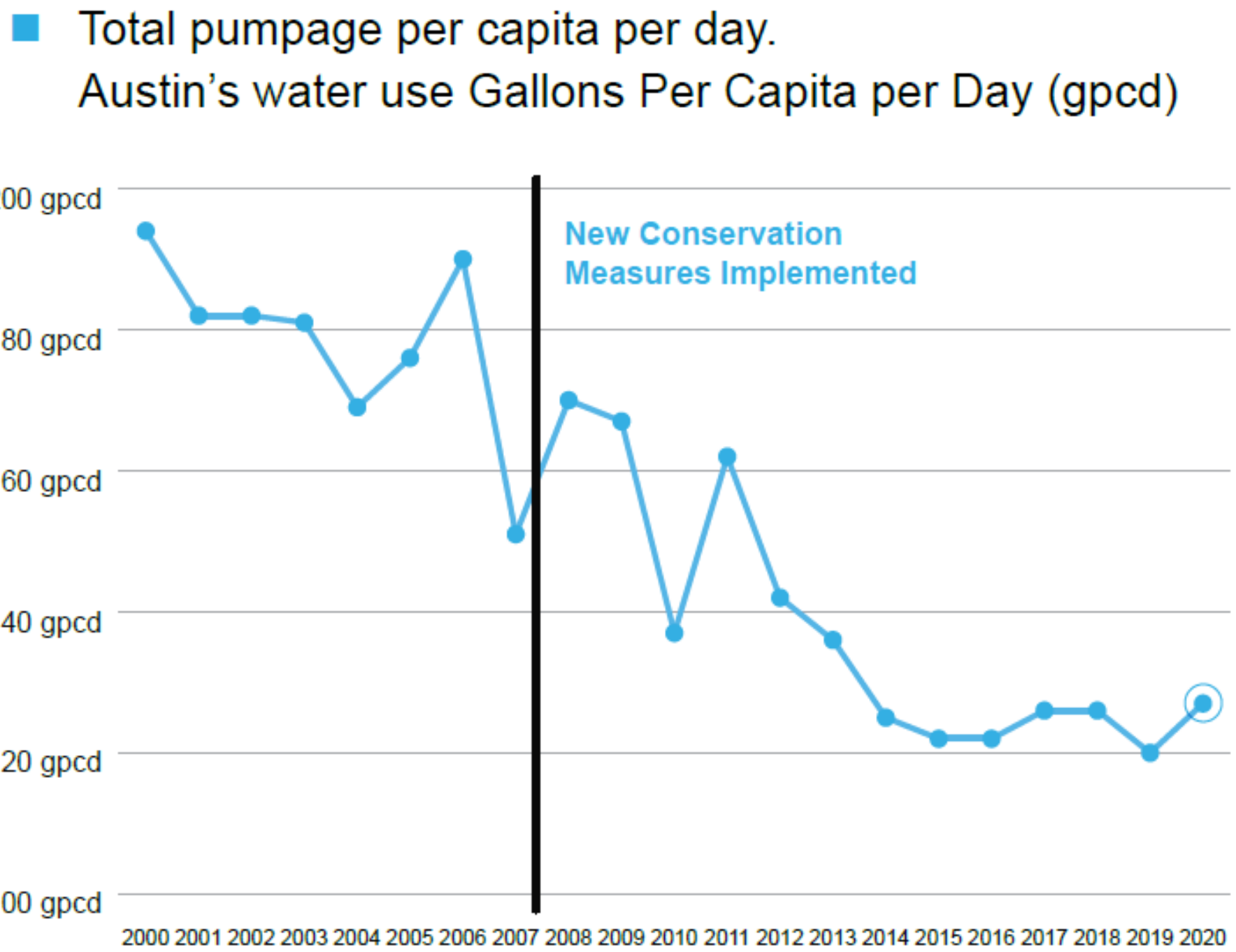
- Central Texas depends substantially on surface water supplies. But storage capacity has not kept pace with demand growth.
- From 1984 to 2004, Lakes Buchanan and Travis—the largest municipal water surface water storage base in Central Texas—on average held about 9 years’ worth of Travis and Williamson Counties’ combined annual water usage. This inventory reflects average reported conservation storage in a given year divided by annual demand.
- During the 2011 drought, inventory dipped to 3.4 years and during a subsequent dry period in 2013-2013, approached 2.5 years.
- Recent local water demand trends suggest that the key Highland Lakes’ storage is on pace to consistently hover at between 2 and 3 years of local water use from the present time into the foreseeable future.
- This means drought exposure will be far higher than was the case in prior decades, when the lakes held a major storage cushion.
- A 2011-type drought under today’s conditions, especially if it persisted for more than a year, could rapidly foment a water supply crunch in the 5 County area of interest.

Water Conservation Stretches Supplies But Doesn't Replace Redundancy

Water Use Per 1000 People in Central TX, Acre-Feet/Year



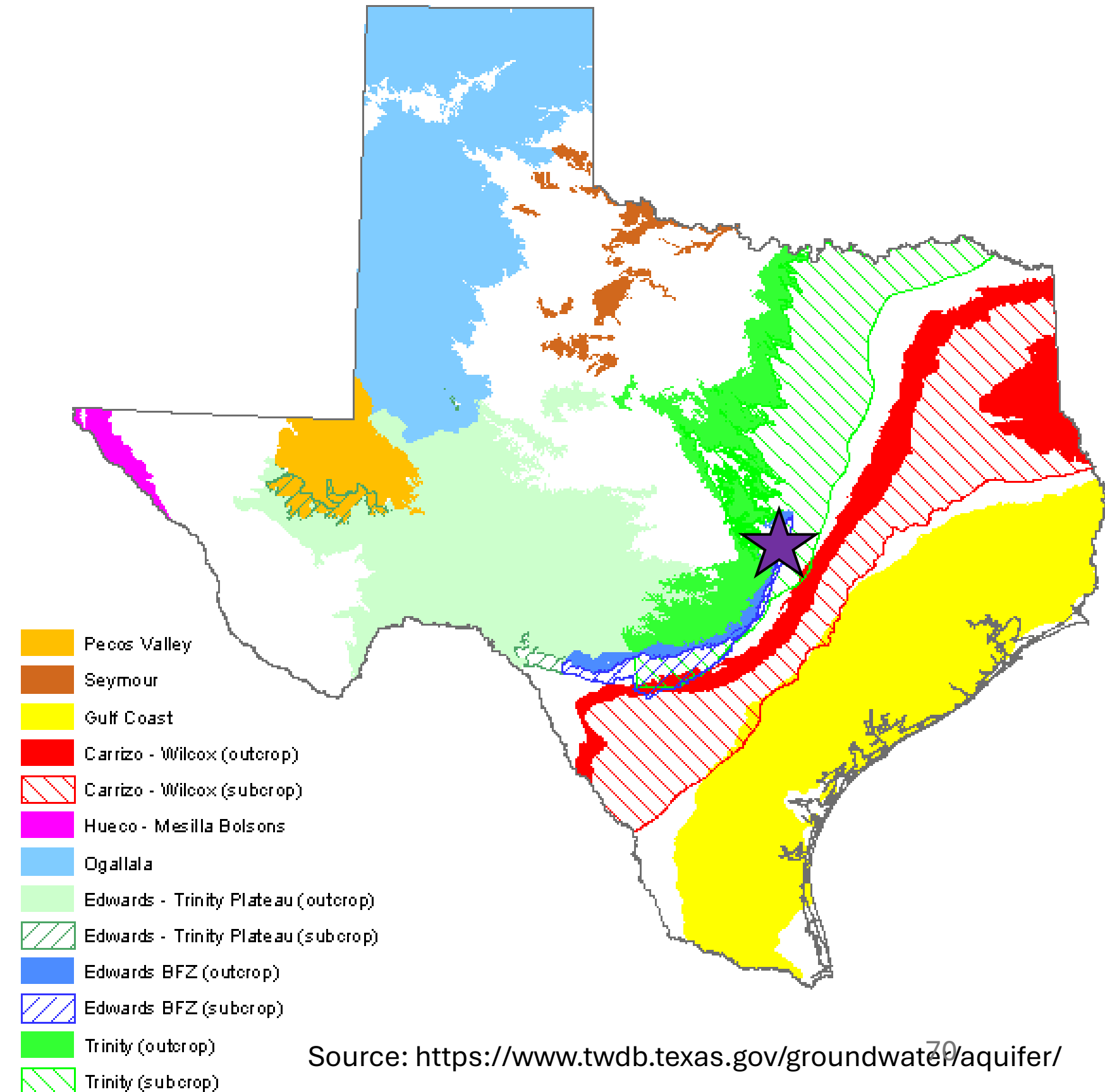
Source: TWDB, Author's Analysis



Source: Austin Water 2020 Progress Report

Carrizo-Wilcox Groundwater Is The Most Easily Scalable Near-Term Supply Option

- Brazos River surface water system and Highland Lakes are tapped out.
- Trinity Aquifer is heavily drawn along the I-35 Corridor
- No major nearby groundwater resources west of the area of interest.
- **This leaves the prolific Carrizo-Wilcox Aquifer east of the I-35 Corridor.**
- **Bringing drought-resistant supplies into the portfolio enhances resilience not just a utility level, but a regional level.**



High Stakes When High-Paying Jobs Are Won or Lost Based on Water Availability

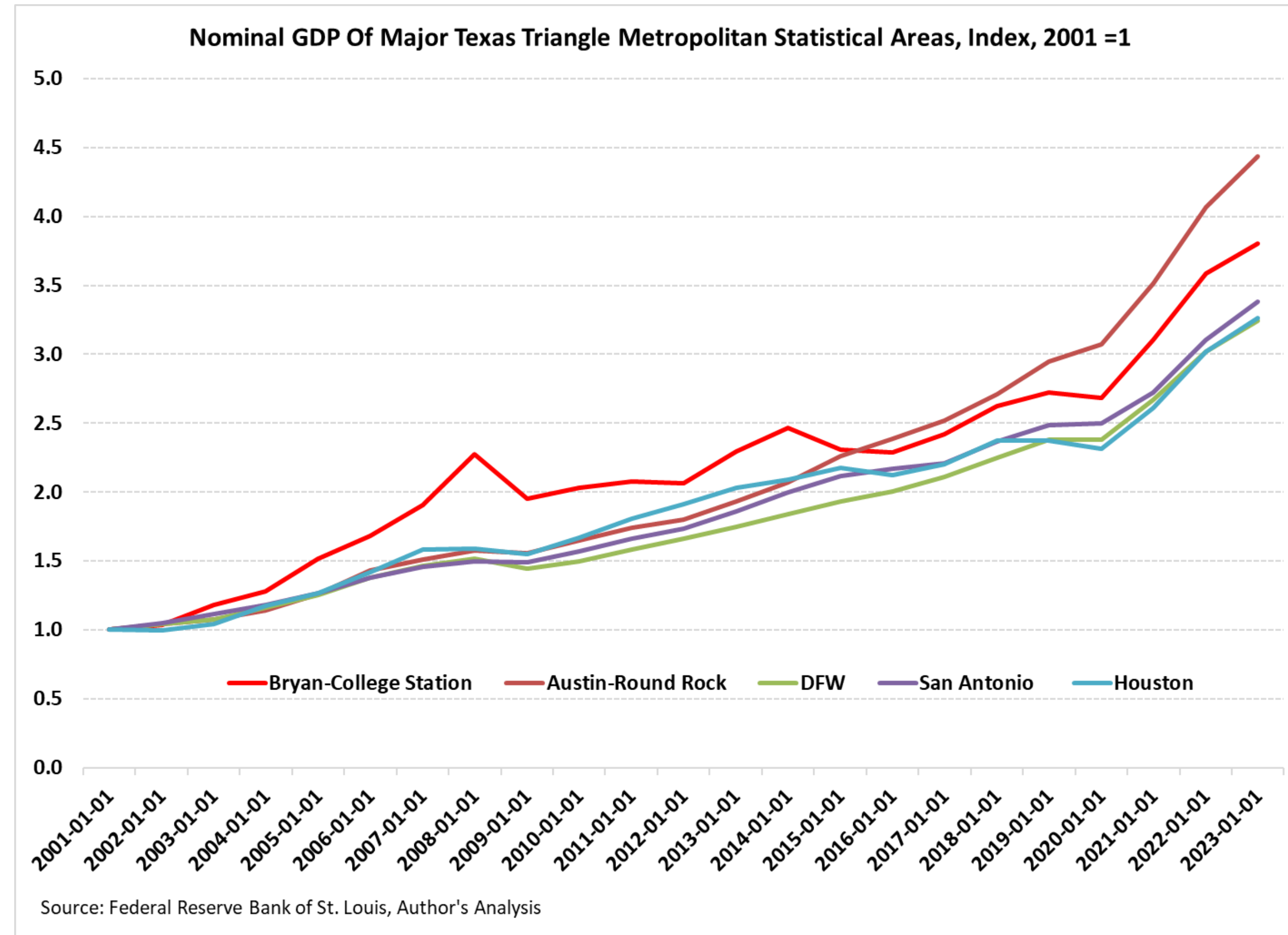
- Tech sector jobs pay like oil field jobs but are longer-term and more insulated from commodity price swings—see this Samsung agreement with City of Austin circa 2017-18

Samsung Austin Semiconductor, LLC Project Summary

Job Category	Number of Jobs (employed by company)	Number of Jobs (vendor or contract)	Average Annual Wages	Percent to be Locally Hired
Executive	6	0	\$327,203.50	N/A
Manager	15	0	\$229,339.67	N/A
Supervisor	78	0	\$122,912.56	N/A
Staff	2,152	0	\$89,719.63	N/A
Entry Level	752	0	\$47,230.04	N/A
Total	3,003	0	\$81,104.99	N/A

Central Texas Is An Economic Growth Engine

- Central Texas is an economic growth outlier.
- Population in the Central Texas core counties has nearly doubled since 2000. It could double again in the next 45-to-50 years.
- People come in pursuit of economic opportunity: GDP in the area of interest has roughly quadrupled since 2001.
- Bell, Brazos, Milam, Travis, and Williamson Counties, together, already have a Greece-sized economy and on a standalone basis, would be among the 50 largest economies in the world if compared to entire countries.
- Major industrial investments anchored by the tech sector are attaining critical mass.
- The recent explosion in investment and economic activity has been driven by Samsung and other digital hardware makers. These are highly water-dependent facilities.



Source: FRED St. Louis, Author's Analysis

Data Sources Used

- ***Objective: Illuminate the direct and indirect economic impacts of water supply from the Carrizo-Wilcox Aquifer to Bell, Brazos, Milam, Travis, and Williamson Counties.***

Data sources used include the following:

- Region G, K, and L 2022 Water Plans
- TSMC 2020 Corporate Social Responsibility Report
- Google Earth
- Records from Stratta v. Roe, 961 F.3d 340, 346 (5th Cir. 2020)
- City of Georgetown municipal financial reports
- GDP data from Federal Reserve Bank of St. Louis
- Austin Water data on supplies to semiconductor fabrication facilities in city's service area
- Samsung press releases
- Wall Street Journal
- Texas Water Development Board historical water usage, production, and surface water data
- U.S. Census Bureau population data
- Austin Water Progress Report 2020
- Author's prior academic publications

Agenda

9. Discussion and possible action regarding existing DFCs, alternate DFC methods and parallel tracks, and expression of DFCs including methodology for determining and calculating DFCs from GAM runs and possible use of variances in GMA 12 for the fourth round of joint planning.
10. Update from Texas Water Development Board
11. Public Comment on items not included on the agenda



Agenda

12. Agenda items and date for next meeting

13. Adjourn

