GMA 14

Desired Future Conditions Nine Factor Review and Non-Relevant Aquifer Discussion

Groundwater Management Area 14

April 30, 2026

Factor 1: Aquifer Uses or Conditions

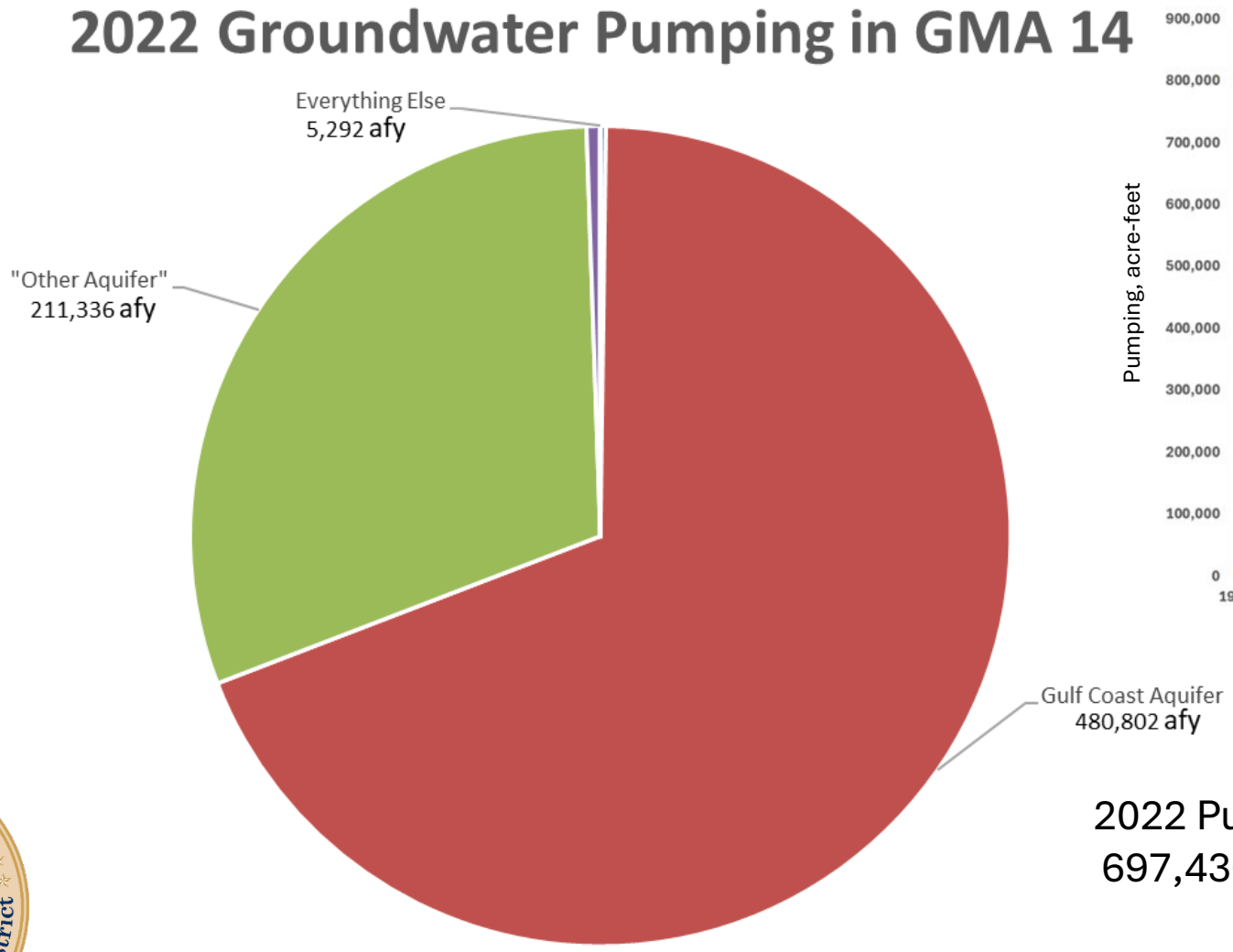
Presented 3/26/2025 [1]

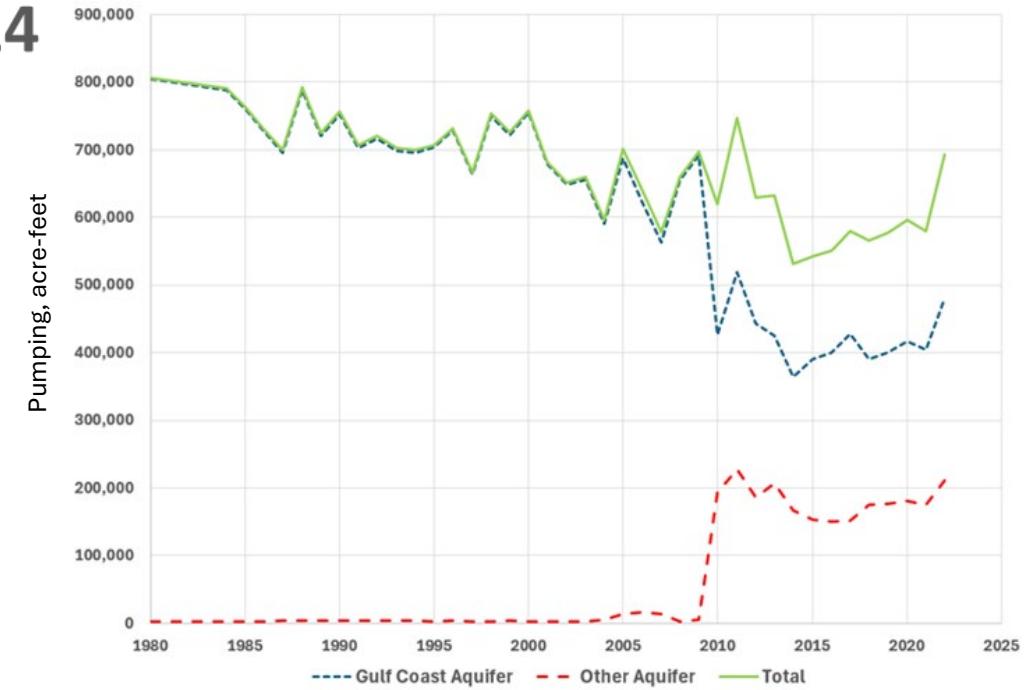
- Most counties use Gulf Coast groundwater for the majority of their municipal supply.
- Only Austin, Jasper, and Walker counties use less than 50% of Gulf Coast groundwater for municipal demands.
- Austin and Walker counties use more than 50% for irrigation.
- Jasper and Orange counties use a large percentage for manufacturing.
- Very little Gulf Coast groundwater used for mining, steam-electric power, or livestock in GMA 14.

1. Summary is based on 2022 TWDB Historic Data

Factor 1: Aquifer Uses or Conditions

Presented 3/26/2025



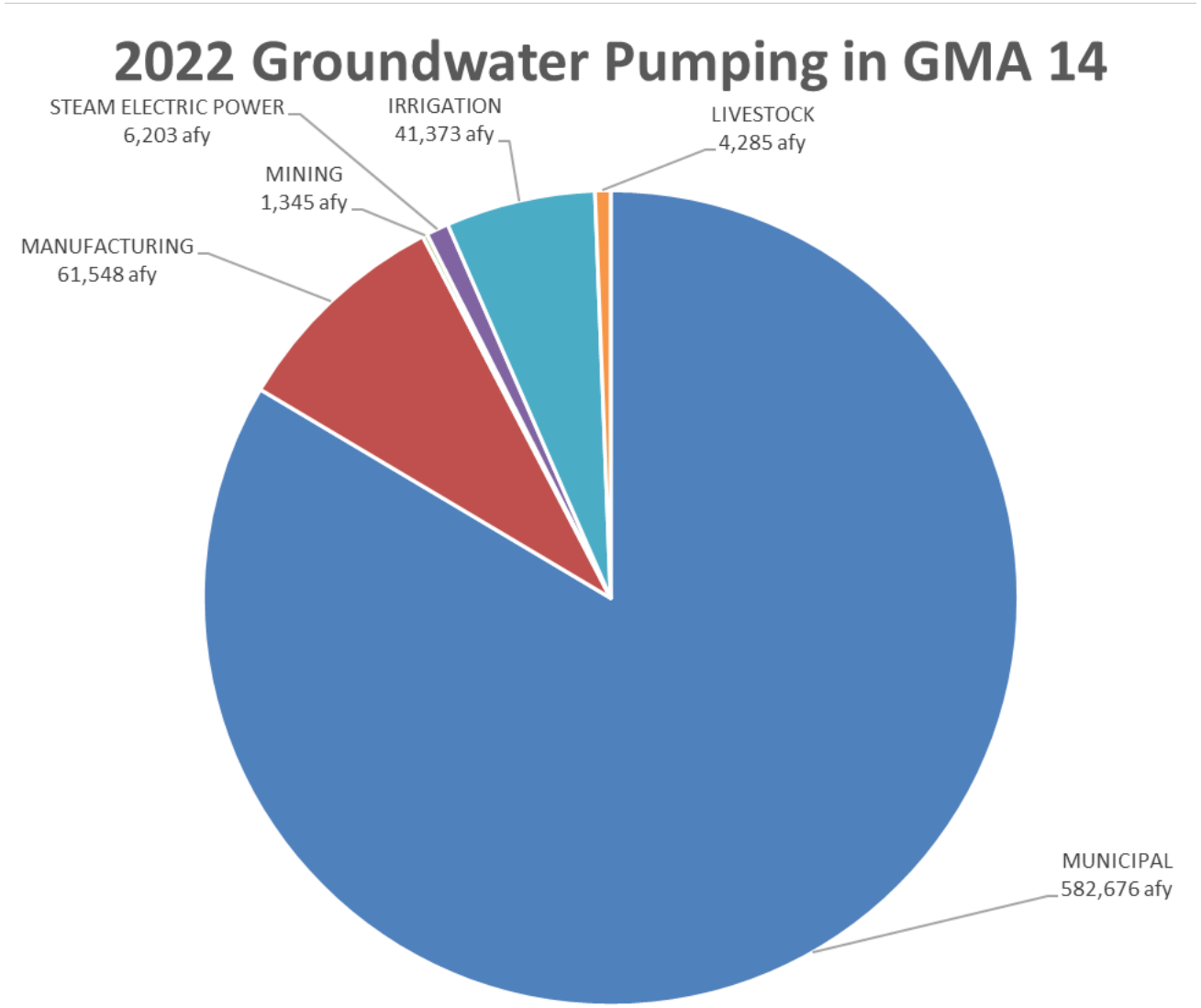


2022 Pumping =
697,430 acft/yr

"Other Aquifer" is used by survey respondents to denote uncertainty regarding groundwater source aquifer

Factor 1: Aquifer Uses or Conditions

Presented 3/26/2025



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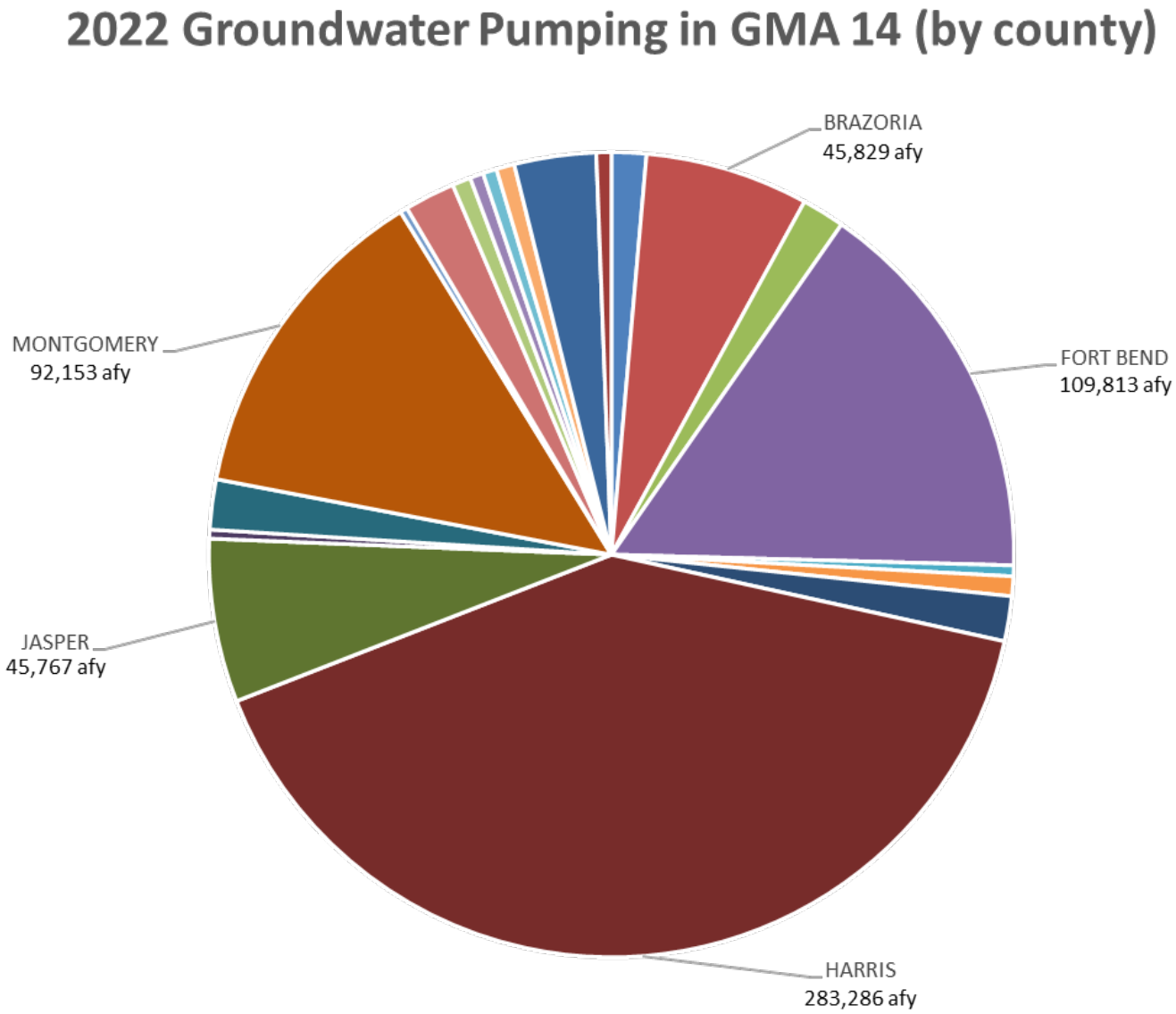


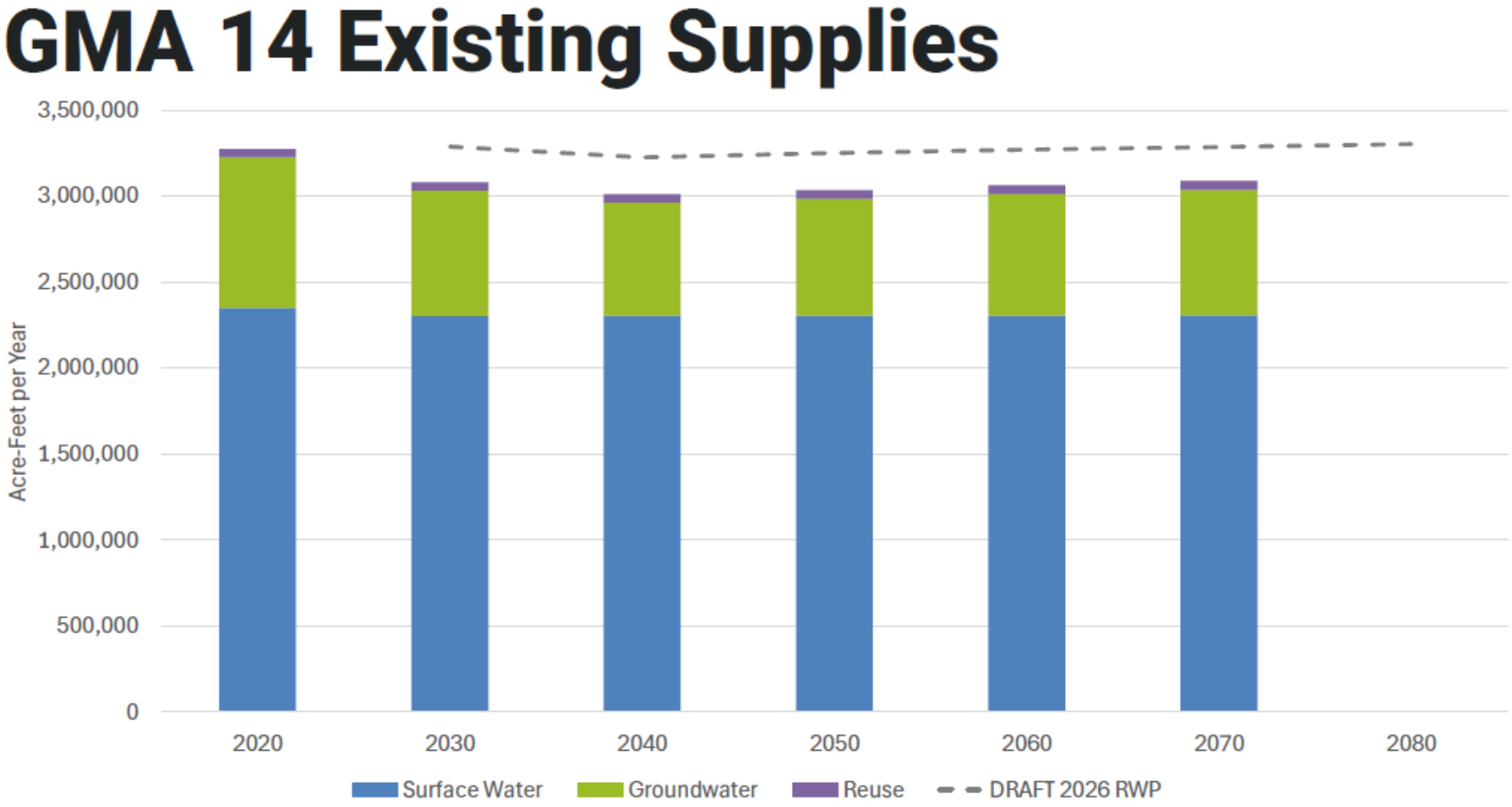
Factor 2: Supply Needs and Water Management Strategies

Presented 3/26/2025

- Beneficial links between GMA and SWP processes
- 2022 SWP as primary Factor 2 reference
- Status of ongoing RWP and SWP
- Total projected demands similar -
  - higher manufacturing, lower municipal
- Needs and strategies lower -
  - implementation and localized differences-Population and water demands

Factor 2: Supply Needs and Water Management Strategies

Presented 3/26/2025



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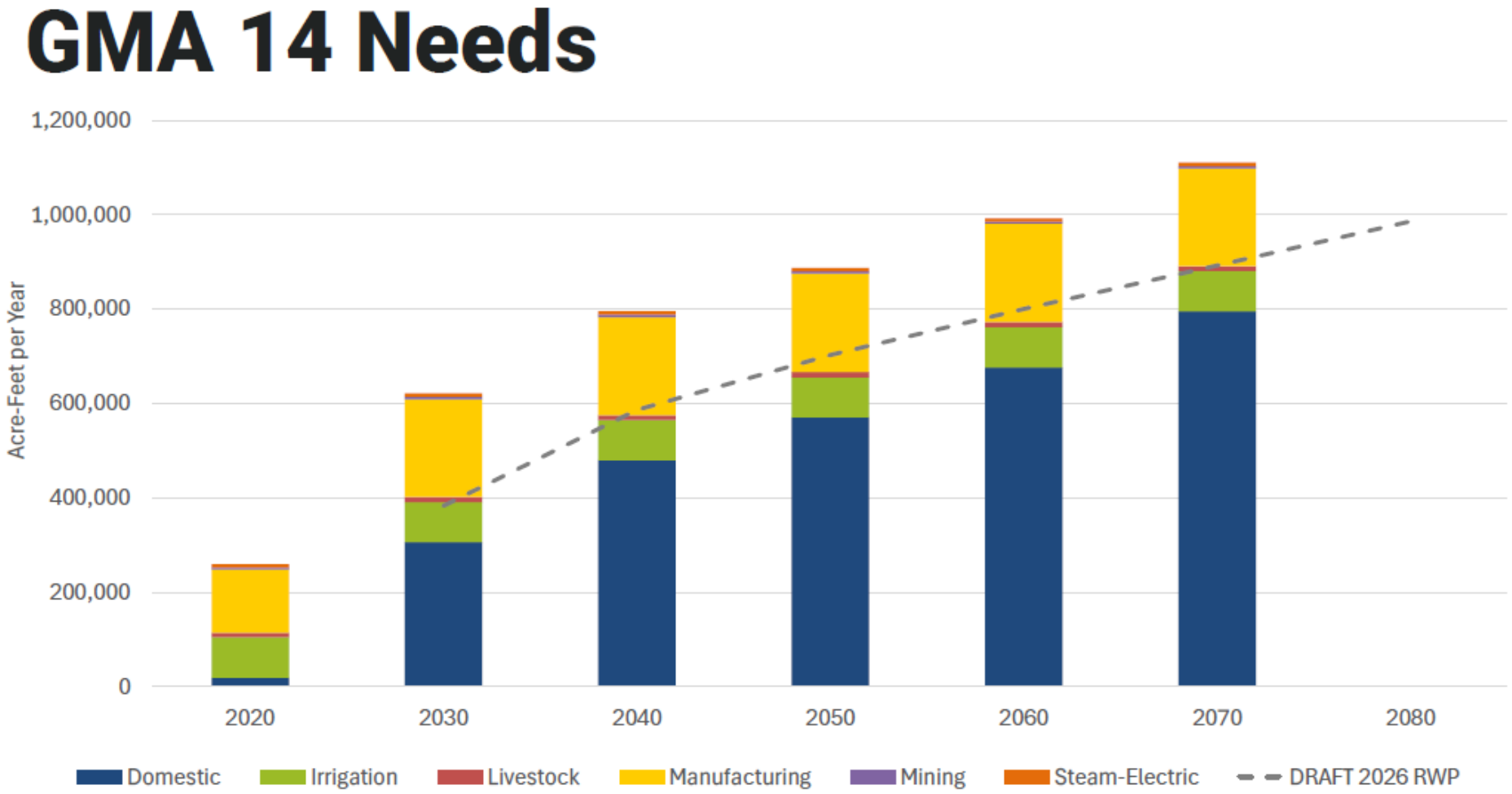

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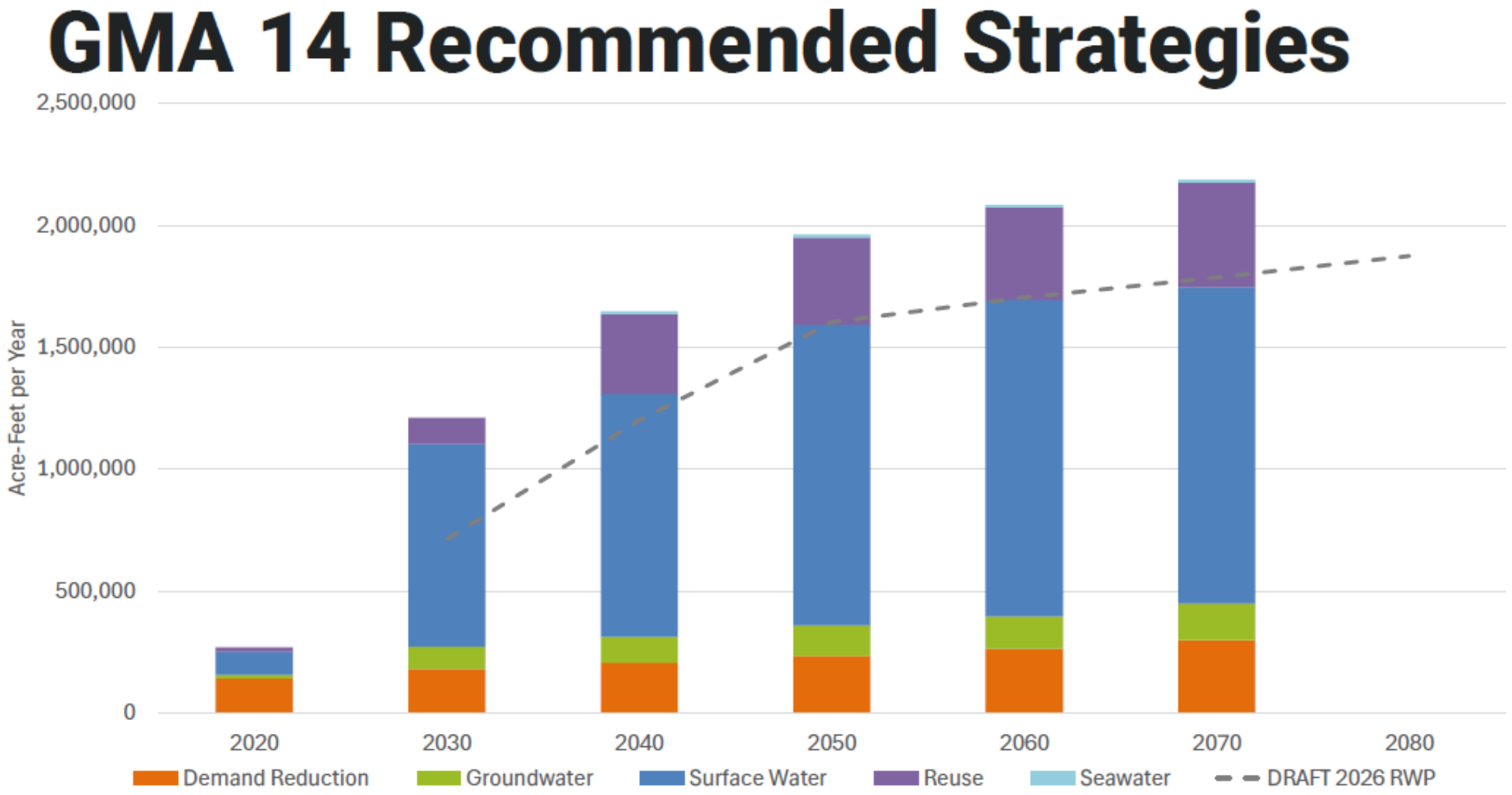


Factor 3: Hydrological Conditions

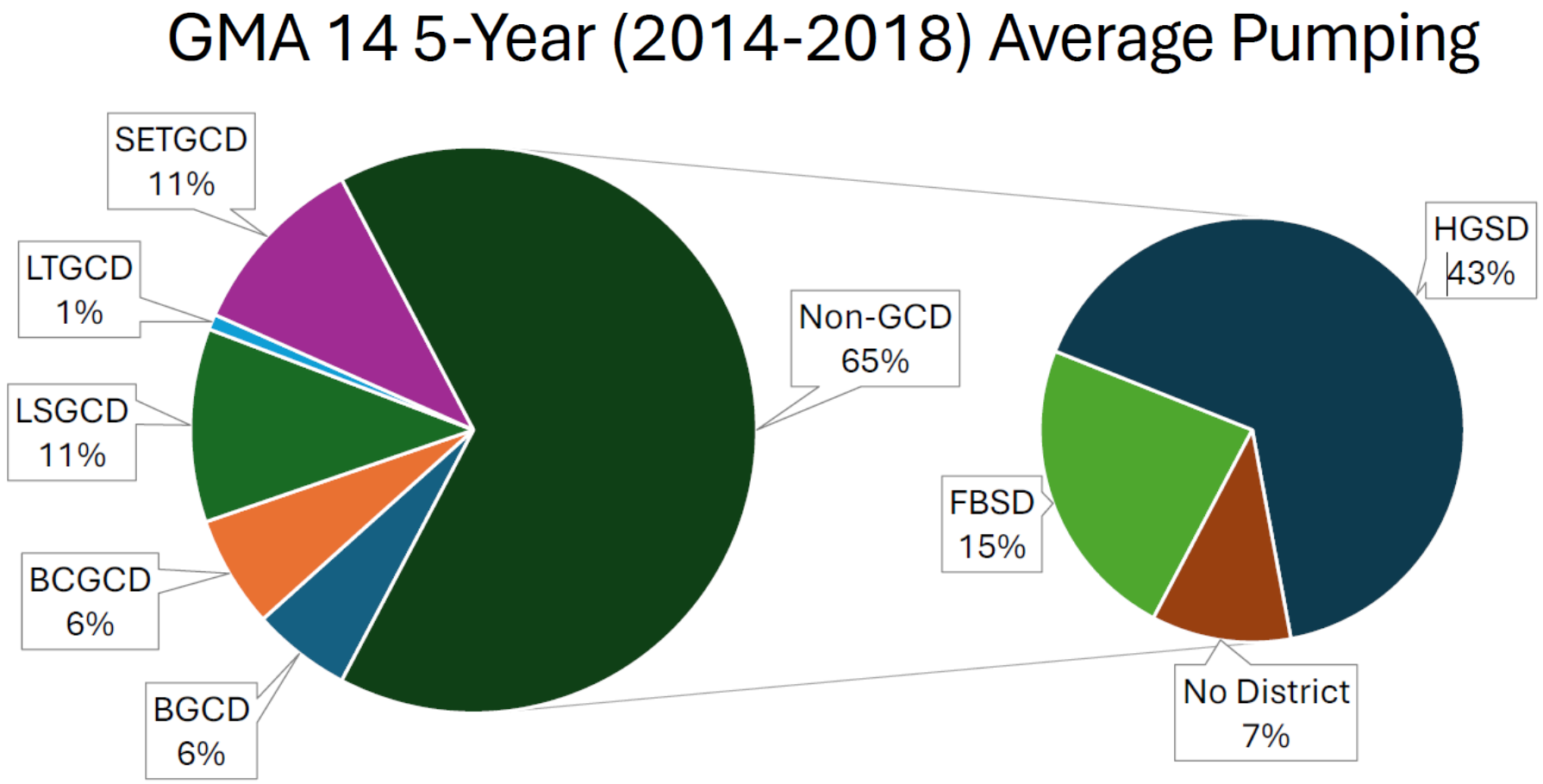
Presented 4/30/2025

Gulf Coast Aquifer System:

- Total Estimated Recoverable Storage (“TERS”)
  - Total for GMA 14 = 2.8 billion acre-feet
    - 25% = 0.7 billion acre-feet
    - 75% = 2.1 billion acre-feet
- Recharge: Greatest Inflow
- Outflow: Largest outflow is stream leakage
- Updated Volumetric Calculations (Current GAM)
  - 6.57 billion acre-feet (11.27 billion acre-feet w\Catahoula layer)
    - 25% = 1.64 billion acre-feet (2.82 billion acre-feet w\Catahoula layer)
    - 75% = 4.93 billion acre-feet (8.45 billion acre-feet w\Catahoula layer)
  - Same calculation approach as TERS report

Factor 3: Hydrological Conditions

Presented 4/30/2025



5-Year Average = 550,000 Acre-Feet per Year

Factor 4: Environmental Conditions

Presented 4/30/2025

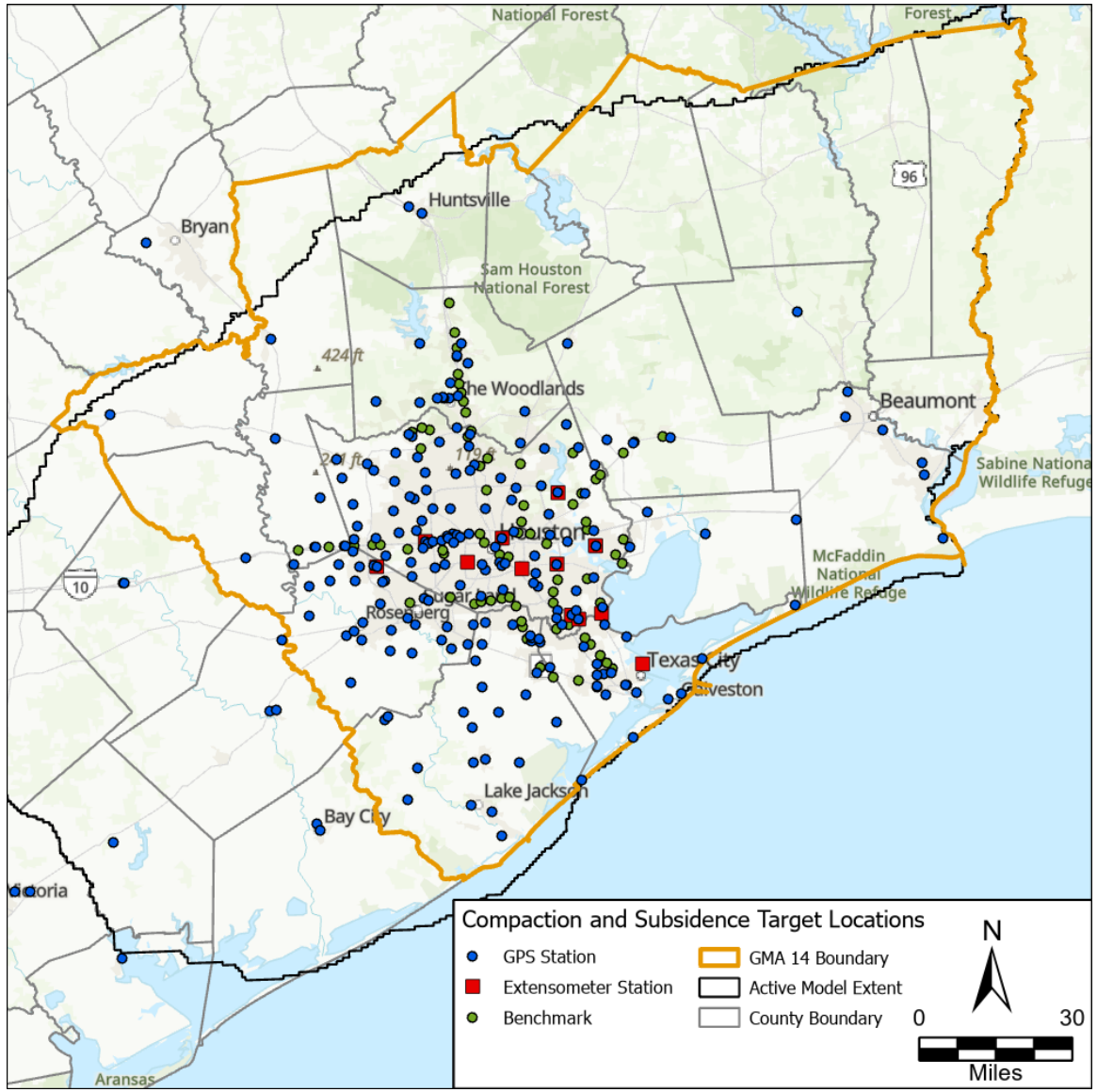
Considerations:

- Impact on streamflow as it relates to the interaction between surface water and groundwater
- Models for the GCAS are not designed to simulate stream / groundwater interactions
- For GMA 14 counties (2016 Texas Aquifers Study)
  - Average baseflow > 3,000,000 acre-feet per year
  - Median baseflow nearly 1,000,000 acre-feet per year

Factor 5: Subsidence Impacts

Presented 5/28/2025

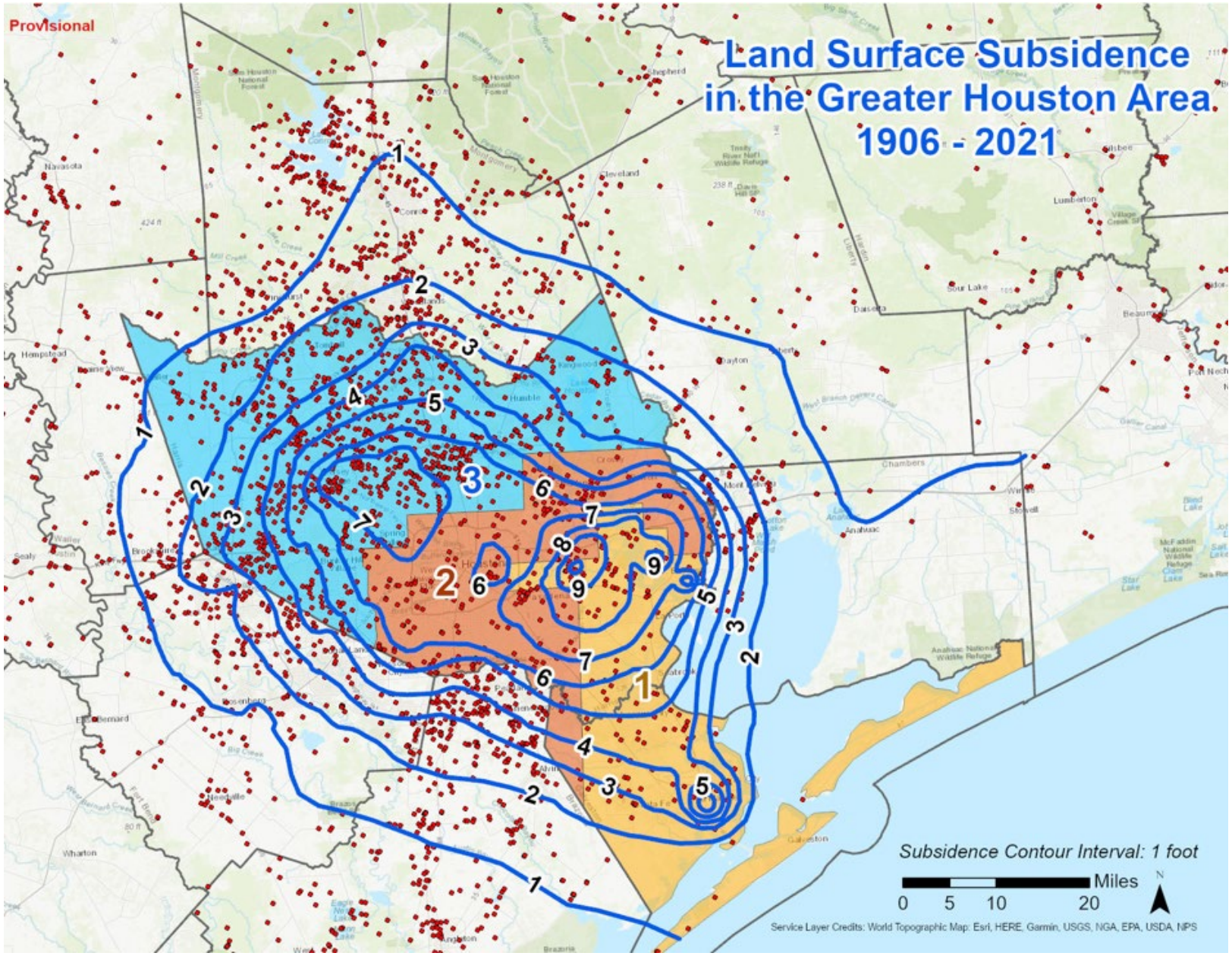
- Declining water levels increase effective stress
- Total compaction is not immediate and can be mitigated through water level recovery
- Based on the reported GPS values, average subsidence monitoring period rates are about ⅓ inch per year or less in member districts



Modified from the GMA 14 Model Report

Factor 5: Subsidence Impacts

From the LSGCD Regional Subsidence Presentation 5/28/2025



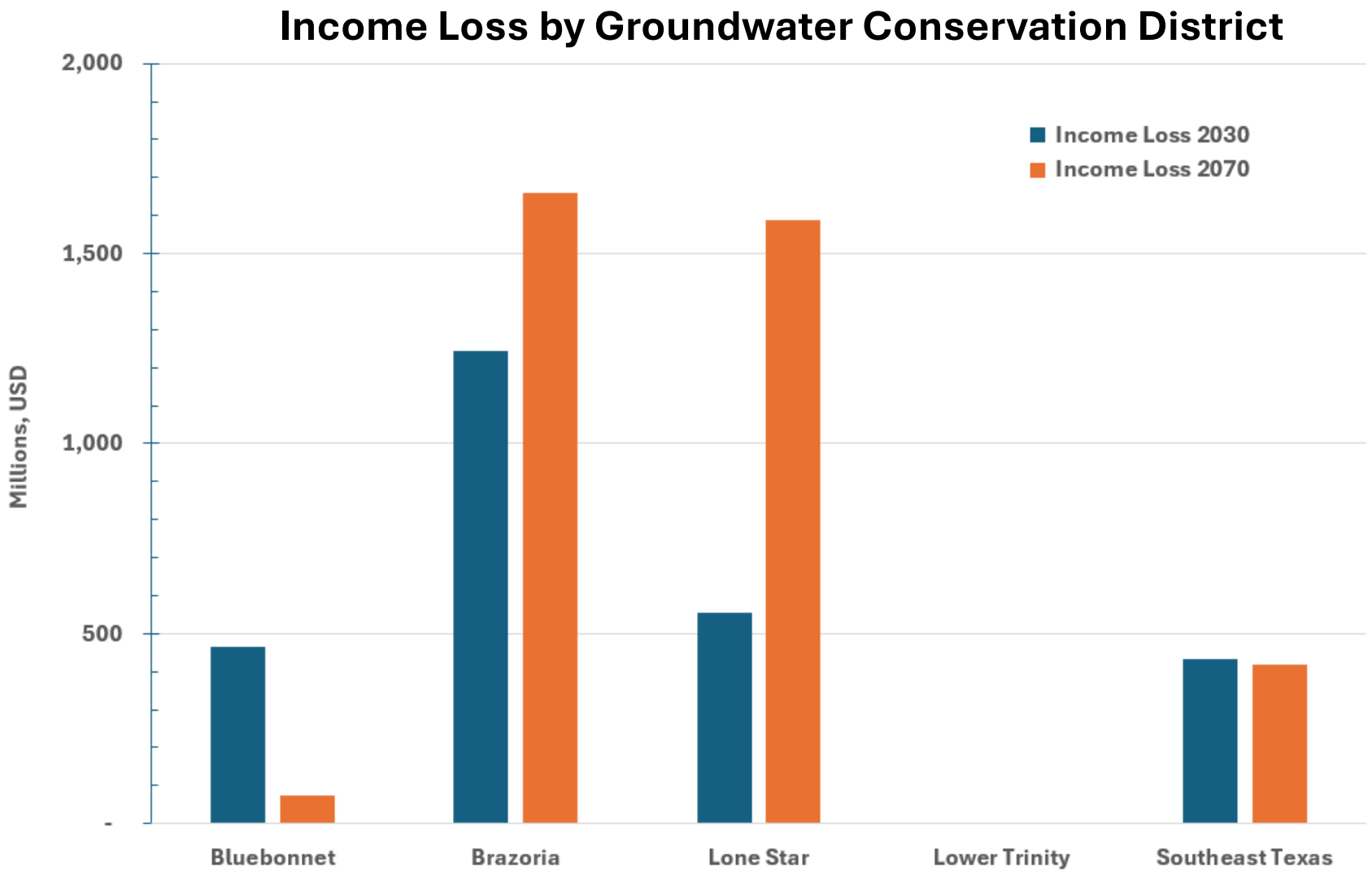
Factor 6: Socioeconomic Impacts

Presented 5/28/2025

- Analysis performed by Texas Water Development Board as requested by Regional Water Planning Groups
  - Based on water supply needs from Regional Water Plan
  - 2021 Regional Water Plan / 2022 State Water Plan
- Discussion Focused on Income and Job Loss within GMA 14

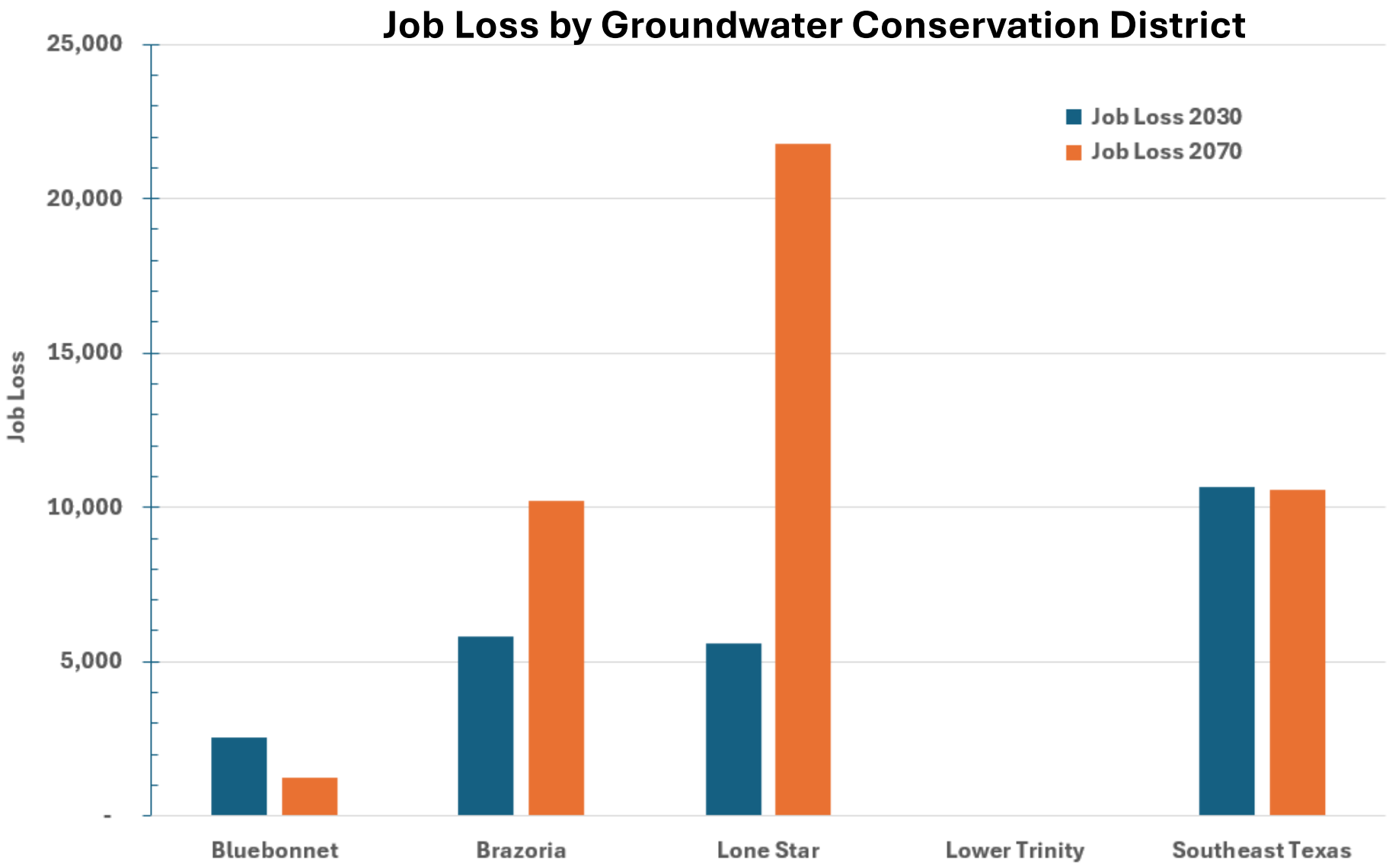
Factor 6: Socioeconomic Impacts

Presented 5/28/2025



Factor 6: Socioeconomic Impacts

Presented 5/28/2025



Factor 7: Private Property Rights

Presented 9/17/2025

Discussion Topics:

- Background of Joint Planning and DFCs
- Property Rights in Joint Planning
- DFC Metrics v. Factors in Balancing Test
- Highest Practicable Level of Production
- Planning v. Regulatory Effect of DFCs

Factor 8: DFC Feasibility

Presented 9/17/2025

Considerations:

- As demonstrated in the model run, the DFCs being considered in GMA 14 can each be achieved simultaneously
- The DFCs being considered in GMA 14 can be achieved using the existing regulatory tools available to the GCDs
- Measurability
- District Management Plans (36.1071(e)(5) from HB 2078)
  - How will GMA members monitor and track DFCs?
  - How will GMA members evaluate performance in achieving DFCs?

Factor 9: Other Relevant Information

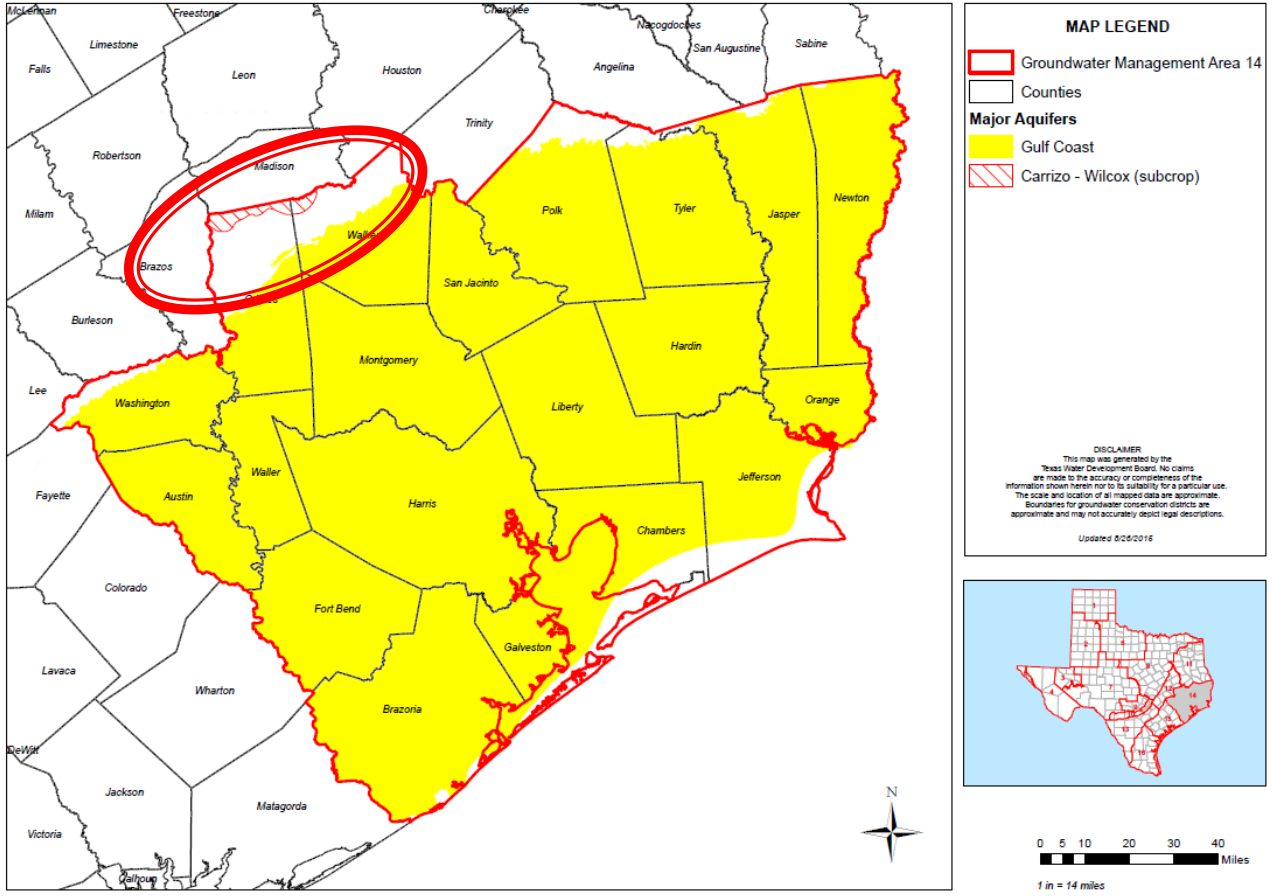
- Discussion

GMA 14 Non-Relevant Aquifer Discussion

Carrizo-Wilcox Aquifer

- Counties: Grimes and Walker
- Characteristics – Deep, brackish to saline
- Use & demands (2023) – 0 to 7 acre-ft
- TERS (GAM Task 13-037)

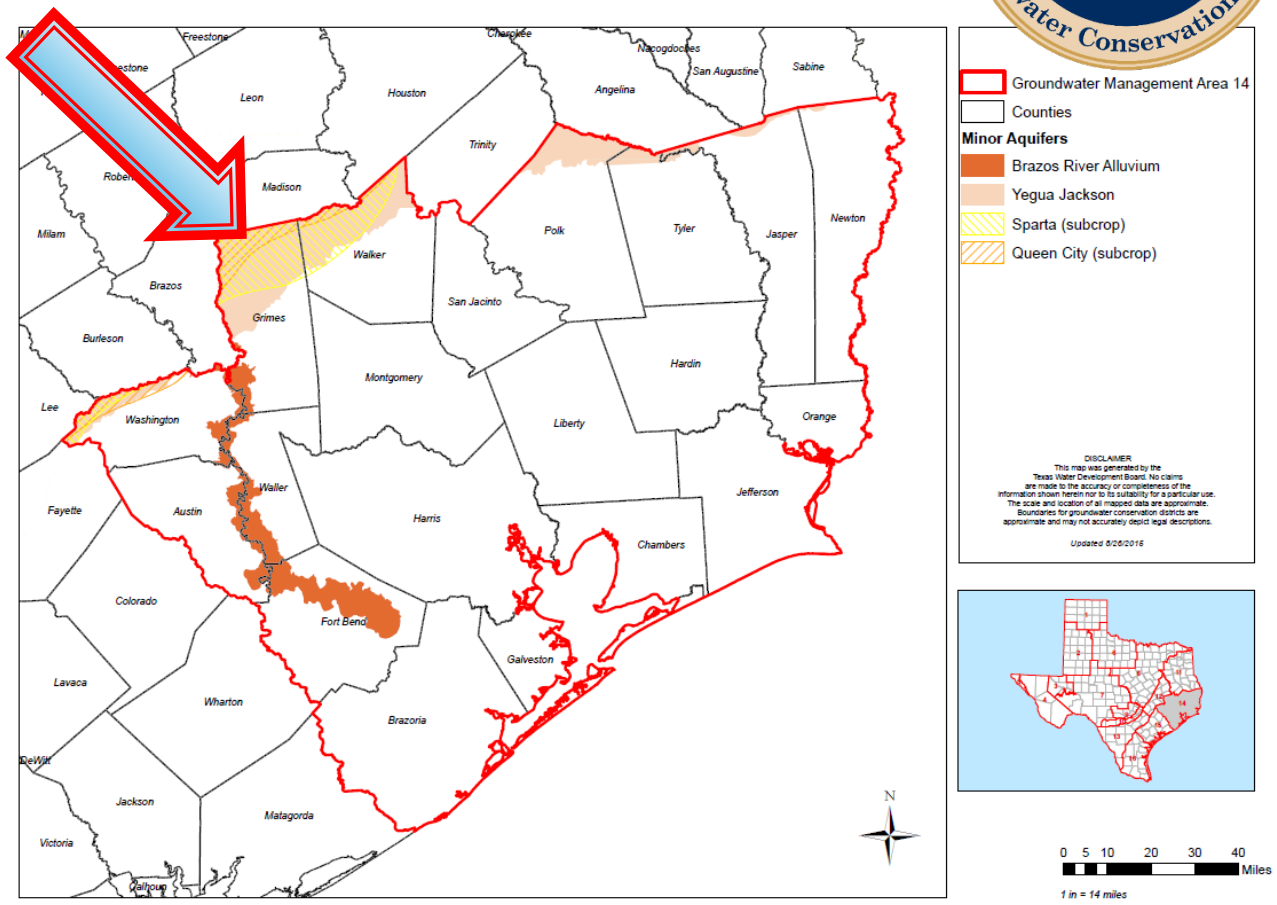
County	Total Storage (acre-feet)	25 percent of Total Storage (acre-feet)	75 percent of Total Storage (acre-feet)
Grimes	14,500,000	3,625,000	10,875,000
Walker	5,040,000	1,260,000	3,780,000
Washington	264,000	66,000	198,000
Total	19,804,000	4,951,000	14,853,000



Queen City Aquifer

- Counties: Grimes, Walker, Washington
- Characteristics – Deep, brackish to saline
- Use & demands (2023) – 0 to 19 acre-ft
- TERS (GAM Task 13-037)

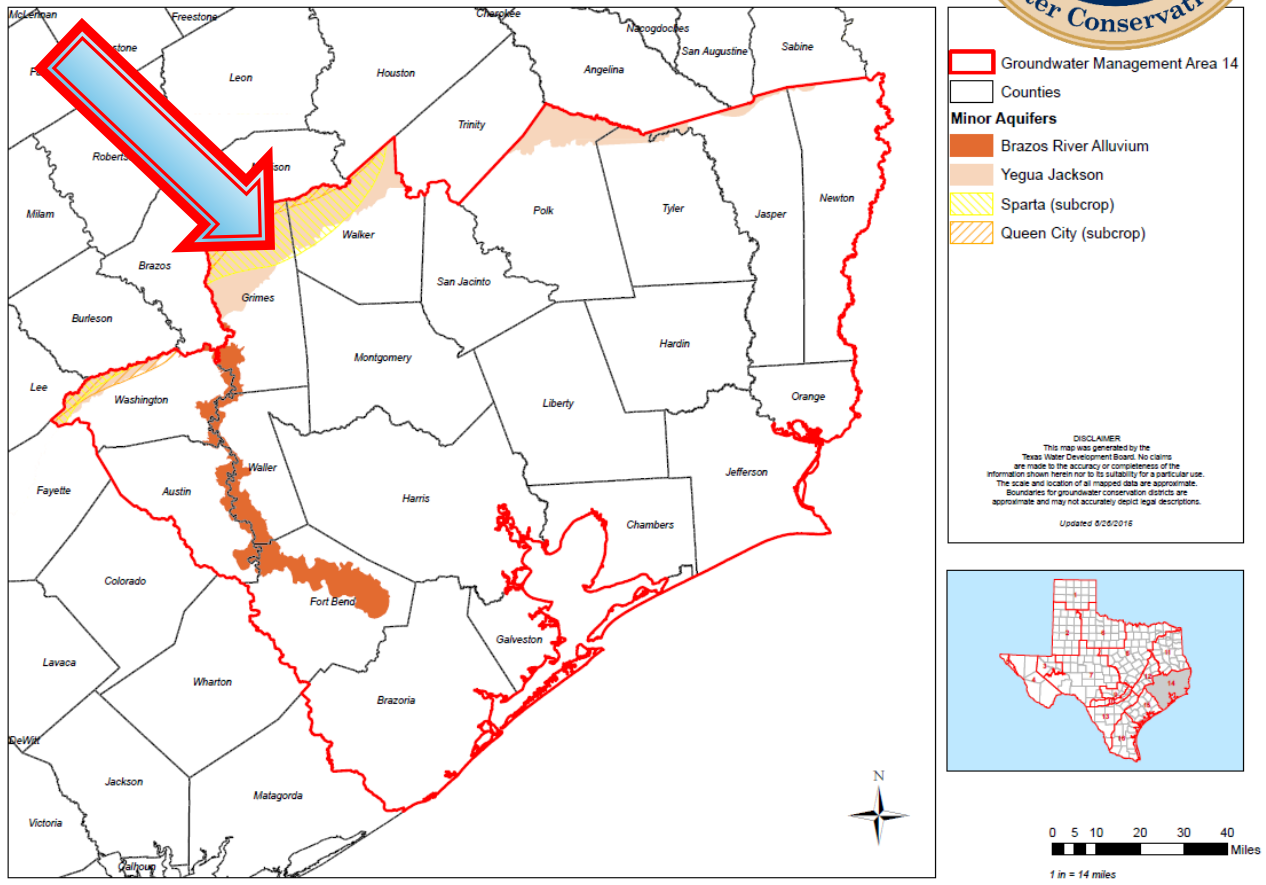
County	Total Storage (acre-feet)	25 percent of Total Storage (acre-feet)	75 percent of Total Storage (acre-feet)
Grimes	4,970,000	1,242,500	3,727,500
Walker	624,000	156,000	468,000
Washington	4,330,000	1,082,500	3,247,500
Total	9,924,000	2,481,000	7,443,000



Sparta Aquifer

- Counties: Grimes, Walker, Washington
- Characteristics – Deep, brackish to saline
- Use & demands (2023) – None to negligible
- TERS (GAM Task 13-037)

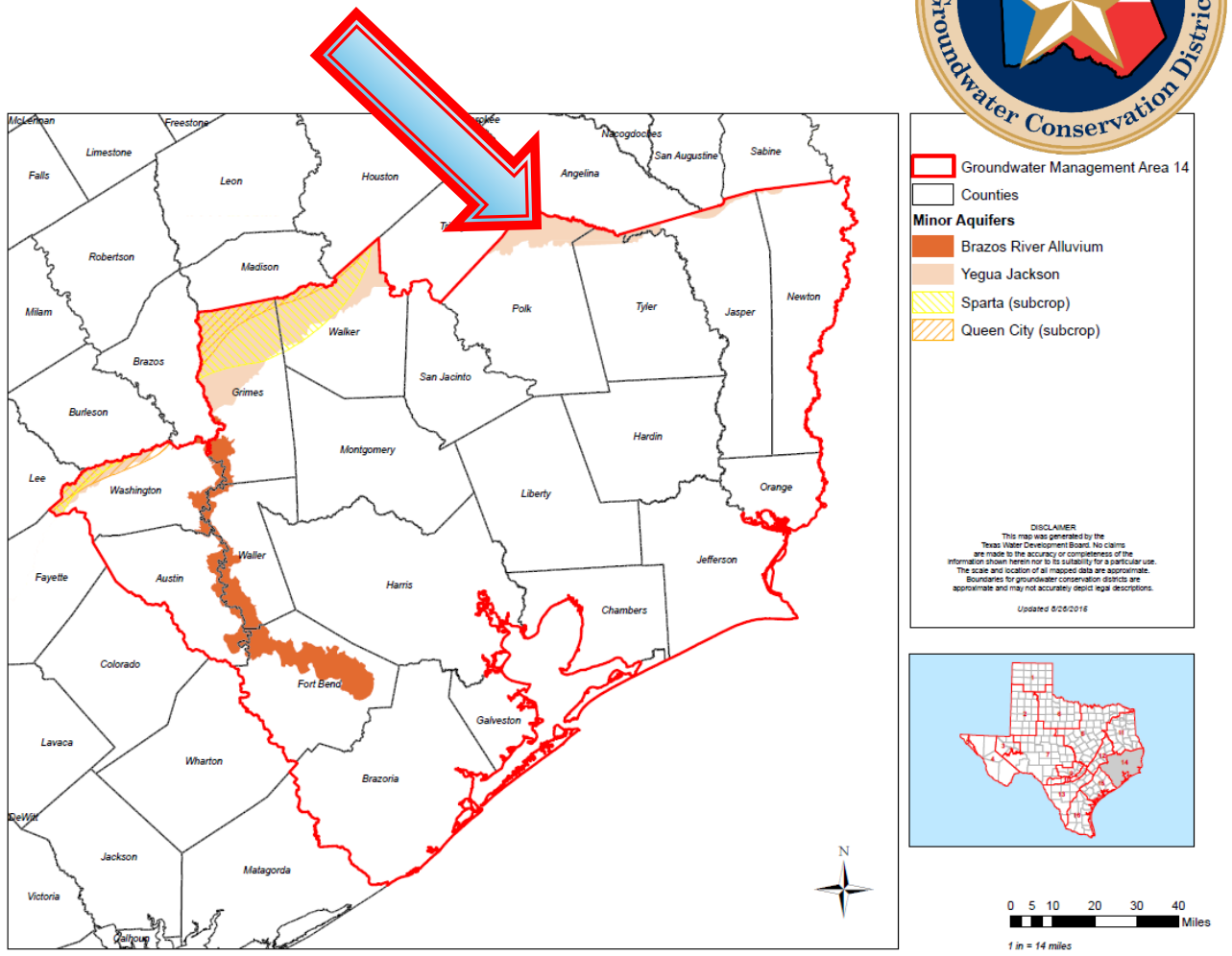
County	Total Storage (acre-feet)	25 percent of Total Storage (acre-feet)	75 percent of Total Storage (acre-feet)
Grimes	11,600,000	2,900,000	8,700,000
Walker	8,550,000	2,137,500	6,412,500
Washington	1,860,000	465,000	1,395,000
Total	22,010,000	5,502,500	16,507,500



Yegua-Jackson Aquifer

- Counties: Grimes, Jasper, Newton, Polk, Tyler, Walker, Washington
- Characteristics – Outcrop, small extent
- Use & demands (2023) – Less than 5,000 acre-ft
- TERS (GAM Task 13-037)

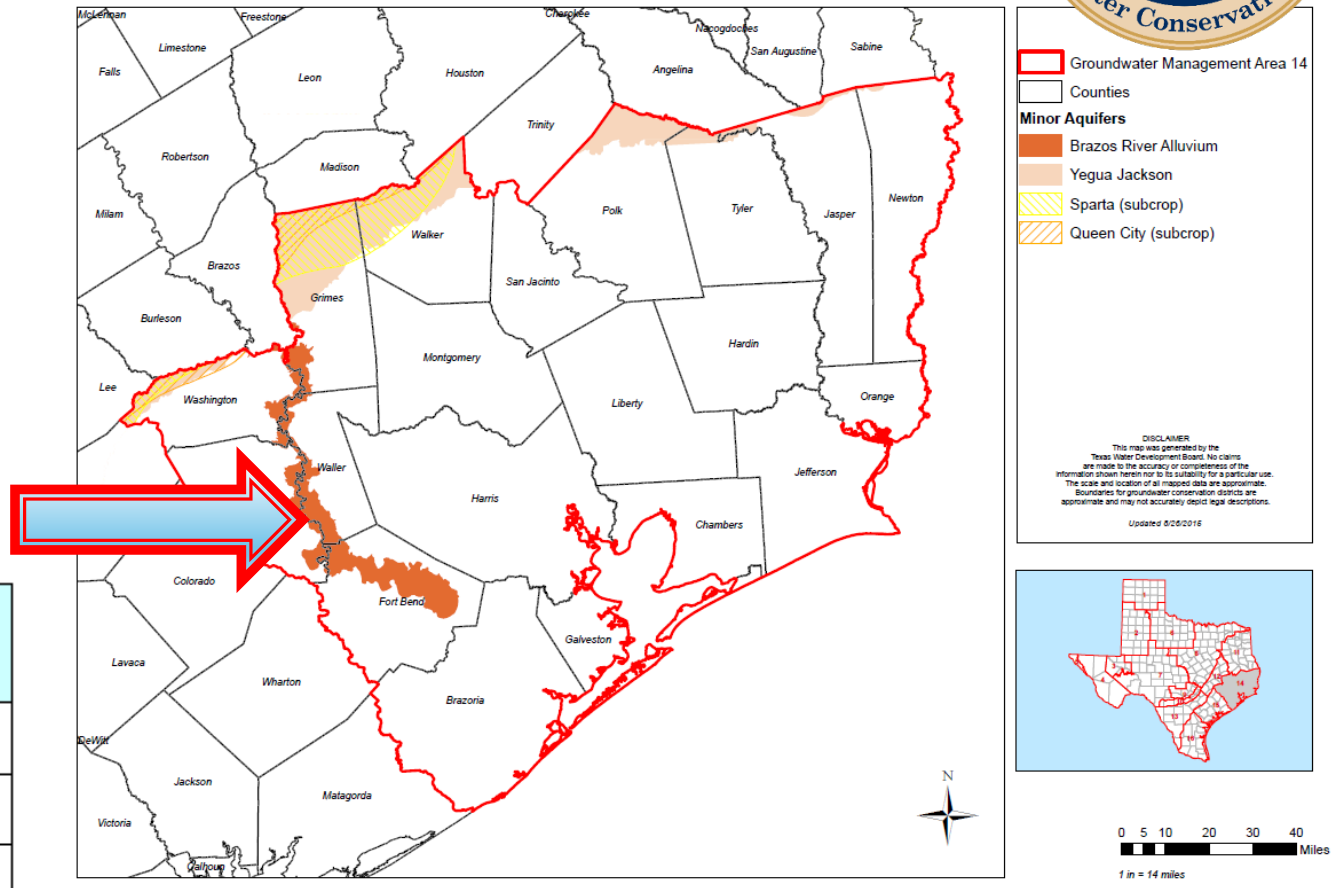
County	Total Storage (acre-feet)	25 percent of Total Storage (acre-feet)	75 percent of Total Storage (acre-feet)
Grimes	94,900,000	23,725,000	71,175,000
Jasper	6,930,000	1,732,500	5,197,500
Newton	1,270,000	317,500	952,500
Polk	27,900,000	6,975,000	20,925,000
Tyler	8,650,000	2,162,500	6,487,500
Walker	103,000,000	25,750,000	77,250,000
Washington	12,400,000	3,100,000	9,300,000
Total	255,050,000	63,762,500	191,287,500



Brazos River Alluvium Aquifer

- Counties: Austin, Fort Bend, Grimes, Waller, Washington
- Characteristics –
- Use & demands (2023) – Less than 1,500 acre-ft
- TERS (GAM Task 13-037)

County	Total Storage (acre-feet)	25 percent of Total Storage (acre-feet)	75 percent of Total Storage (acre-feet)
Austin	220,000	55,000	165,000
Fort Bend	1,010,000	252,500	757,500
Grimes	74,700	18,675	56,025
Waller	412,000	103,000	309,000
Washington	179,000	44,750	134,250
Total	1,895,700	473,925	1,421,775



GMA 14 Schedule

		2025												2026												2027
Task	Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
1	**GMA 14 Model Update (addressing the regional issues highlighted in comments to GULF2023)**	Draft model files provided to GCDs	Updated Draft Model Presented at GMA 14	Submit to TWDB for Review																						
2	**DFC Process and Factor Considerations (meeting the statutory deadlines of the 4th joint planning cycle for proposed and adopted DFCs)**															Proposed DFCs	Send to TWDB	Deadline 5/1							Adopted DFCs	Deadline: 1/5/2027
	a - GCDs Discuss Management Priorities/Approaches			GCDs discuss approach/ method/ metrics																						
	b - Discuss 9 Factors			Factors 1, 2	Factors 3,4	Factors 5,6	Factors 7,8			Factor 9 and other review		Revisit All 9 Factors														
	c - Run Current MAGs/DFCs in updated Model				Run MAG/DFCs in GMA-14 Updated																					
	3d - Make simulations and discuss potential DFCs	Consultants meet to discuss model	Consultants Submit Results to GCDs for Review		Consultants Submit Results to GCDs for Review		Consultants Submit Results to GCDs for Review		Consultants Submit Results to GCDs for Review		Consultants Submit Results to GCDs for Review		Consultants Submit Results to GCD's for Review													
	3e - Draft Explanatory Report Chapters				Factors 1, 2		Factors 3,4		Factors 5,6		Factors 7,8,9						Draft Explanatory Report									
	3g - GCD hearings on Proposed DFCs																									
	3h - GMA 14 review comments and adopt																									
	3i- Submit to TWDB																Proposed DFCs and Draft ER								Final DFCs and Explanatory Report	Process Complete

GMA 14 should come back together in late Oct/early November to discuss District summaries that must be available for at least 30 days before GMA can reconvene.

Proposed GMA 14 DFC Statement

STATEMENT OF PROPOSED DESIRED FUTURE CONDITIONS FOR GROUNDWATER MANAGEMENT AREA 14

The Member Districts of Groundwater Management Area 14 ("GMA 14") propose the following Desired Future Conditions ("DFCs") for each county in GMA 14 in the Gulf Coast Aquifer[1] in 2080 from 2018 to 2080:[2]

- **Austin County**: no less than 82 median percent remaining available drawdown
- **Brazoria County**: no less than 83 median percent remaining available drawdown
- **Chambers County**: no less than 82 median percent remaining available drawdown
- **Fort Bend County**: no less than 56 median percent remaining available drawdown
- **Galveston County**: no less than 91 median percent remaining available drawdown
- **Grimes County**: no less than 75 median percent remaining available drawdown
- **Hardin County**: no less than 82 median percent remaining available drawdown
- **Harris County**: no less than 67 median percent remaining available drawdown
- **Jasper County**: no less than 72 median percent remaining available drawdown
- **Jefferson County**: no less than 88 median percent remaining available drawdown
- **Liberty County**: no less than 80 median percent remaining available drawdown
- **Montgomery County**: no less than 70 median percent remaining available drawdown
- **Newton County**: no less than 71 median percent remaining available drawdown
- **Orange County**: no less than 88 median percent remaining available drawdown
- **Polk County**: no less than 91 median percent remaining available drawdown
- **San Jacinto**: no less than 87 median percent remaining available drawdown
- **Tyler County**: no less than 79 median percent remaining available drawdown
- **Walker County**: no less than 70 median percent remaining available drawdown
- **Waller County**: no less than 72 median percent remaining available drawdown
- **Washington County**: no less than 85 median percent remaining available drawdown

Any supporting materials, such as the documentation of factors and groundwater availability model run results are available at https://www.dropbox.com/scl/fo/4xqap864k4ujk7czyt55f/h?rlkey=6s1d8z5nw6zrrx93zexur8gcx&e=2&st=e8cjen4c&dl=0.

[1] Excludes Catahoula in Montgomery, Walker, and Grimes Counties
[2] Using cleaned up version of GMA 14 Model Scenario "14.3 SD B6" renamed as "GMA 14 Proposed DFC Run 2026."