



BRAZOS G REGIONAL WATER PLANNING GROUP

WEDNESDAY, March 23, 2022

10:00AM

BRAZOS RIVER AUTHORITY

4600 COBBS DR. WACO, TX 76710



1. Call Meeting to Order

2. Invocation

3. Notice of Meeting

4. Attendance and Announcements

5. Public Input - Public questions and comments on agenda items or water planning issues (limited to 5 minutes each)



6. Report and possible discussion from Texas Water Development Board (TWDB) staff

6.1. Region-Specific Water Demand Projections

TWDB Update

Brazos G Regional Water Planning Group Meeting

March 23, 2022

Jean Devlin

Jean.Devlin@TWDB.Texas.gov



RWP Rule Updates

- The TWDB developed rulemaking materials to address preliminary stakeholder input on the state water planning guidance principles and regional water planning rule topics.
- The TWDB Board approved rulemaking proposal on December 16, 2021
- The proposal was published in the Texas Register on December 31, 2021, and there was a public comment period through January 31, 2022
- The final rule package will be presented to the TWDB Board in the Spring

Interregional Planning Council

- The TWDB is soliciting nominations for the 2nd Interregional Planning Council.
- Each RWPG is requested to take action and submit at least one nomination (and alternate for each nomination) to the TWDB by April 22, 2022.
- We anticipate TWDB Board appointment of the Council to occur in June of 2022.

Mining Water Use Study

- TWDB is contracting with UT Bureau of Economic Geology to assess mining water use and update mining demand projections for 2026 RWPs.
- Draft technical report and data - March 2022
- Final technical report and data dashboard - June 2022
- See website for updates:
<https://www.twdb.texas.gov/waterplanning/data/projections/MiningStudy/index.asp>

RWP Contract Amendments

- Upcoming contract amendments:
 - Anticipated Summer 2022
 - Contract amendments will include anticipated total project cost, full scope of work, and updated contract guidance documents (Exhibits C and D)

6th Round Demand Projections

- Draft projections and supporting materials released 1/20 for livestock, manufacturing, and steam-electric power water demands. Data available online, along with interactive dashboards:
<https://www.twdb.texas.gov/waterplanning/data/projections/2027/projections.asp>
- Anticipated release schedule for remaining projections data:
 - March 2022: release draft Water User Group list + historical population, net use, and gallons per capita daily
 - August 2022: release draft irrigation and mining water demand projections
 - February 2023: release draft population projections, plumbing code savings and municipal demand projections

6th Round Demand Projections

- Projections related deadlines:
 - July 2022 – Deadline for RWPGs to request changes to historical data for municipal Water User Groups.
 - July 2023 – Deadline for RWPGs to request changes to draft non-municipal demand projections.
 - August 2023 – Deadline for RWPGs to request changes to draft population and municipal demand projections.

6th Cycle of Regional Water Planning Web Page

- 6th Cycle of RWP landing page:
<http://www.twdb.texas.gov/waterplanning/rwp/planningdocu/2026/index.asp>
- Page includes planning documents such as the 6th Cycle plan timeline, BMP Guide, rules pamphlet, contract docs, planning newsletters, and Chairs' Conference Call notes
- RegionalWaterPlanning@twdb.Texas.gov is now being used for broadcast communications to RWPGs regarding regional water planning

2026 Regional Water Plans Projections Methodology Overview

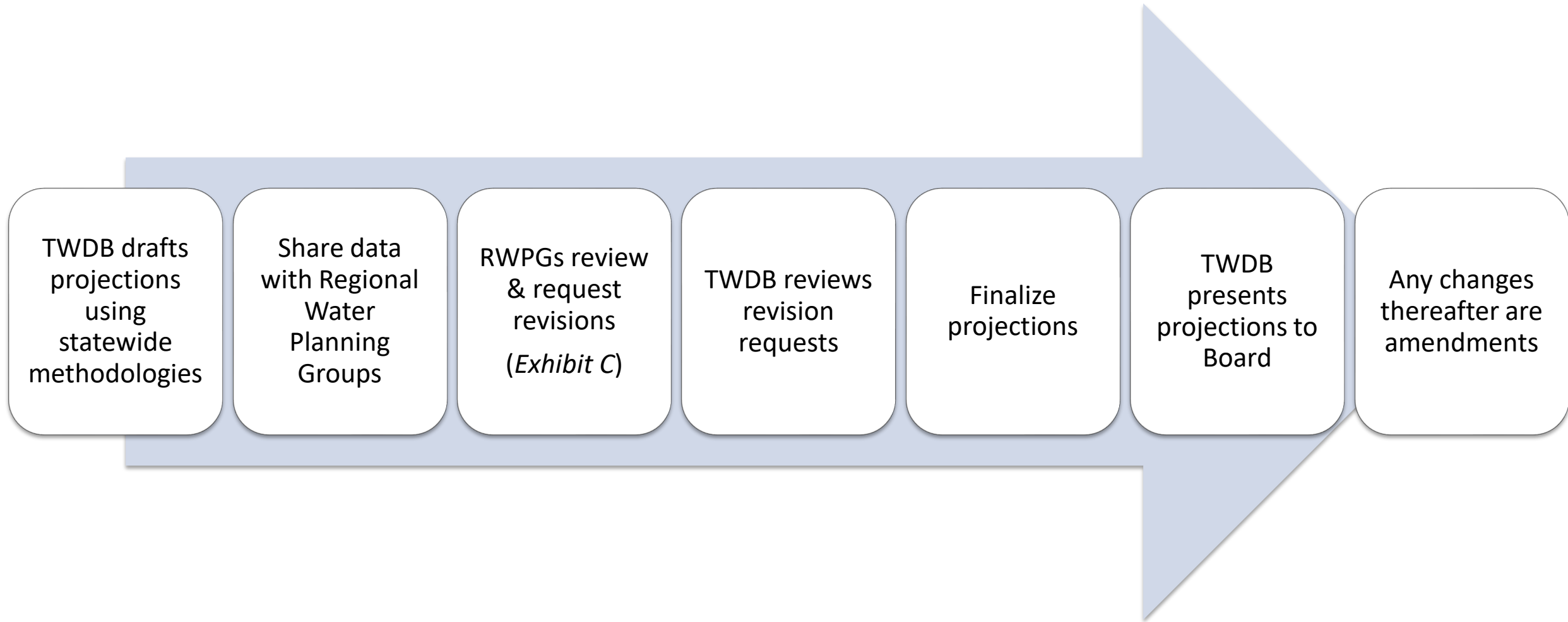
Katie Dahlberg
Manager, Projections & Socioeconomic Analysis
Water Supply Planning

March 23, 2022
Brazos Region G Planning Group Meeting

Agenda

- Overview projections process
- Projections data release schedule
- Projections methodologies
 - Non-municipal water demands
 - Population
 - Municipal water demand

Projections Process



Projections Release Schedule

Draft Water Demand Projections	Timeline
Livestock, Manufacturing, Steam-Electric Projections + Supporting Data	January 20, 2022
Water User Group List + Historical Population, Connections, Net Use, GPCD	March 16, 2022
DUE: RWPGs review WUG list + historical WUG data	July 29, 2022
Irrigation Projections + Supporting Data	August 2022
Mining Projections + Supporting Data	August 2022
Population Projections + Plumbing Code Savings + Municipal Demand	February 2023
DUE: RWPGs request revisions for non-municipal demand projections	July 2023
DUE: RWPGs request revisions for population and municipal demand projections	August 2023

Non-Municipal Water Demand Projections Methodologies

Historical: 2015 - 2019

Projections: 2030 - 2080

Irrigation

Same methodology as 2021 RWP

Baseline = 5-year average (2015-2019)

Water sources: groundwater, surface water, reuse

- Most-recent Modeled Available Groundwater

Irrigation

2030 – 2080 held constant

- Except counties where groundwater availability (MAG) is less than the groundwater-portion of the demand projections
- Decline commensurate with groundwater availability

Draft projections will be released in August 2022

Livestock

Same methodology as 2021 RWPs

Baseline = 5-year average (2015-2019)

- County water use estimates, based on USDA inventory * water use coefficients
- Water Use Survey facilities

Follows same projection trend as 2021 RWPs

- 2070 – 2080 held constant

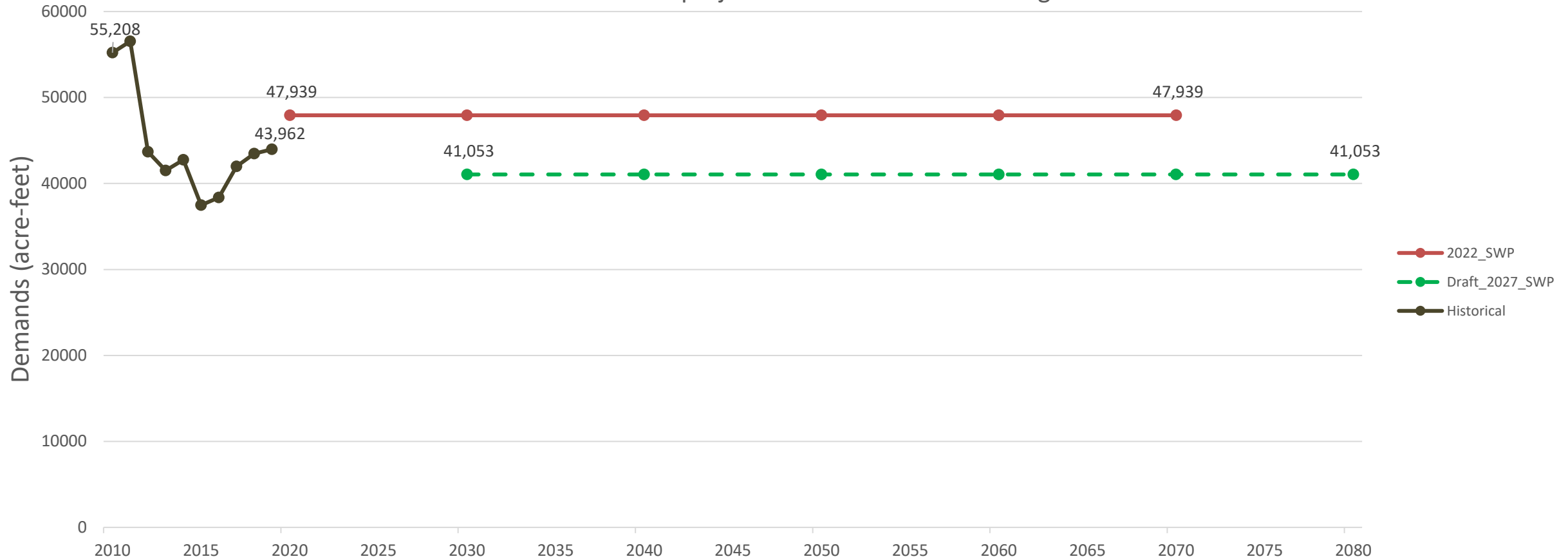
Draft projections released in January 2022

Livestock Water Use Coefficients

TWDB Category	USDA Data Type	2026 RWP Water Use (gallons/head/day)	2021 RWP Water Use (gallons/head/day)
Cattle	Milk	55	75
	Fed & Other Cattle	15	15
Chickens	Layers	0.09	0.086
	Pullets, Replacement		
	Roosters	0.09	0.077
	Broilers		
Equine	Horses & Ponies	12	12
	Mules, Burros, & Donkeys		
Hogs	Hogs	5	11
Sheep	Sheep	2	2
Goats	Milk	2	0.5
	Meat & Other		
	Angora		
Turkeys	Turkeys	0.2	0.2

Livestock Projections: Compare 2021 RWP to Draft 2026 RWP

Livestock water use and demand projections for all counties in Region G.



Manufacturing

Baseline = highest county water use (2015-2019) + unaccounted water use estimates

- Historical water use survey
- U.S. Census Bureau County Business Patterns (CBP) historical number of establishments

Water Sources: fresh and brackish groundwater, fresh surface water, reuse

- Total intake

Draft projections released in January 2022

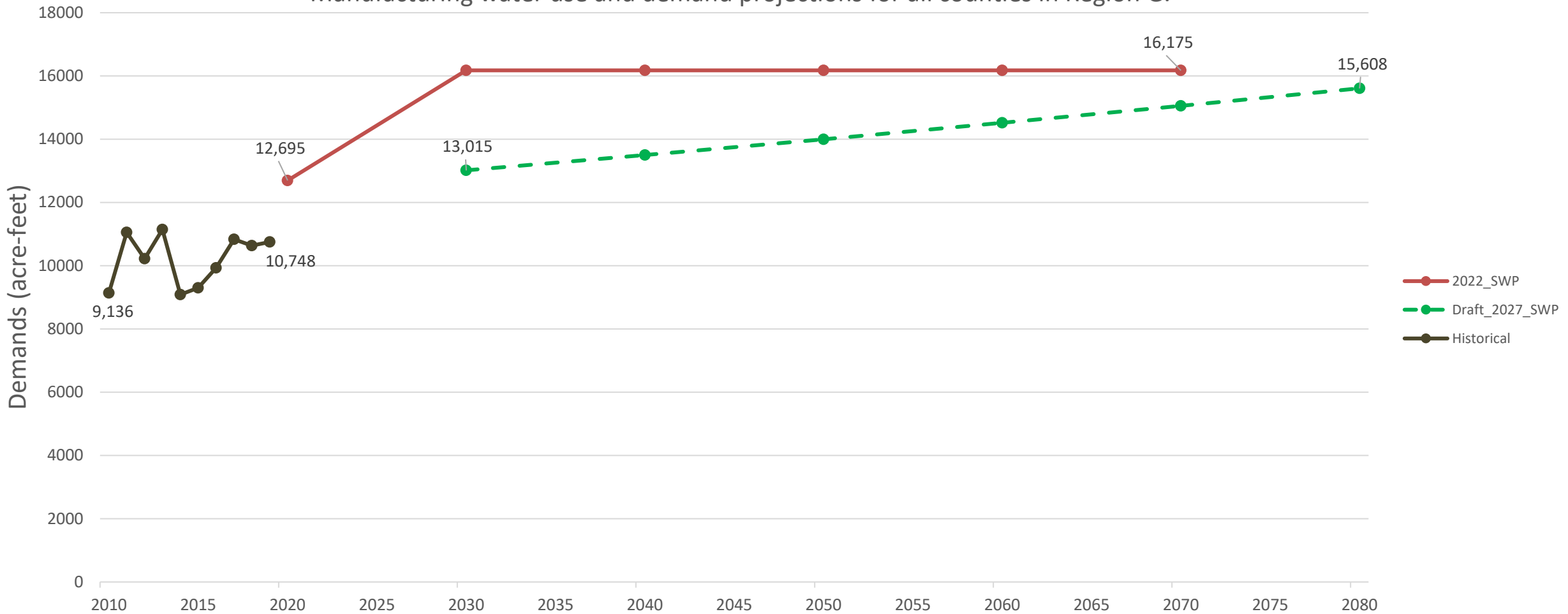
Manufacturing

Baseline * 2010-2019 historical water use survey rate of change = 2030

CBP 2010-2019 historical number of establishments rate of change used to project each decade 2040-2080

Manufacturing Projections: Compare 2021 RWP to Draft 2026 RWP

Manufacturing water use and demand projections for all counties in Region G.



Mining

Study funded by USGS

Contracted UT Bureau of Economic Geology

Update to the 2011 study

Comprehensive and quantitative assessment of mining water use in Texas

- Oil and gas, aggregates, and coal and lignite
- Historical estimates
- Projections for the 2026 Regional Water Plans

August 2022

<https://www.twdb.texas.gov/waterplanning/data/projections/MiningStudy/index.asp>

Steam-Electric Power

Baseline = highest county water use (2015-2019) + estimated water use for non-responses and proposed facilities

- Historical water use survey
- U.S. Energy Information Administration 860 form – NAICS: 22

If a facility retires before 2020, then the water use is removed from the projections

If RWPGs requested to remove a facility in the previous plan, then facility was removed in the new draft projections

Steam-Electric Power

Water sources: fresh and brackish groundwater, fresh surface water, reuse

- Consumptive use

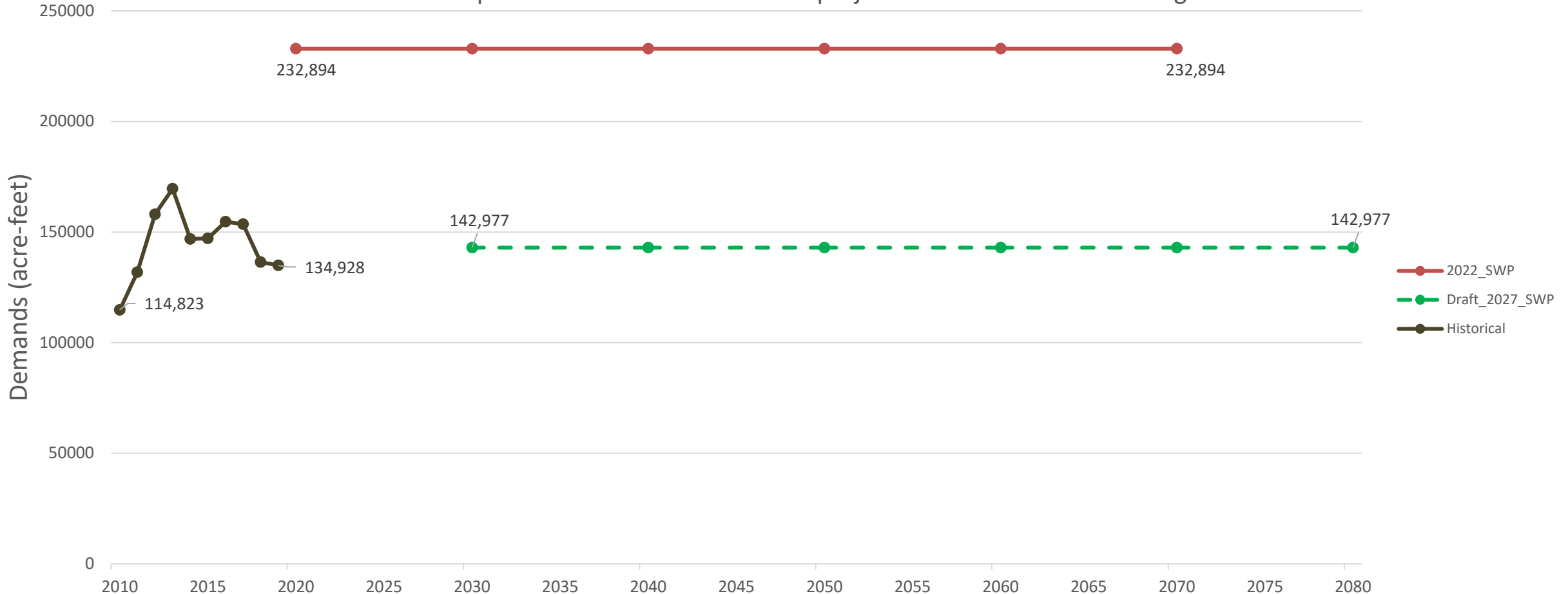
2030 – 2080 held constant

Same methodology as the 2021 RWPs

Draft projections release in January 2022

Steam-Electric Power Projections: Compare 2021 RWP to Draft 2026 RWP

Steam-electric power water use and demand projections for all counties in Region G.



2026 RWP Draft Projections

<https://www.twdb.texas.gov/waterplanning/data/projections/2027/projections.asp>

The screenshot shows the Texas Water Development Board website. The header includes the logo, a search bar, and social media icons. The navigation menu is highlighted on 'Water Planning'. The main content area is divided into four columns: STATE WATER PLAN, REGIONAL WATER PLANNING, PLANNING DATA, and WATER USE SURVEY. The 'Population & Water Demand Projections' link is highlighted in the 'PLANNING DATA' column.

STATE WATER PLAN	REGIONAL WATER PLANNING	PLANNING DATA	WATER USE SURVEY
Interactive State Water Plan	Planning Group Meeting Schedule	Regional Water Planning Database	Online Water Use Survey
2022 State Water Plan	Planning Group Information	Planning Data Dashboard	Printable Water Use Survey
2017 State Water Plan	6th Planning Cycle Information (2026 RWPs)	Population & Water Demand Projections	Historical Water Use Estimates
2012 State Water Plan	2021 Regional Water Plans & Previous Plans	Socio-Economic Impact Analysis	Data Dashboard
2007 State Water Plan	Educational Information	Other Data Resources	Historical Groundwater Pumpage
2002 State Water Plan	Frequently Asked Questions		Service Boundary Editor
1997 State Water Plan			

Municipal Projections Methodology

Historical: 2010 - 2020

Projections: 2030 - 2080

Water User Groups

- Municipal WUGs: utility water use of 100 acre-feet or more
 - 31 TAC § 357.10(43)
- WUGs in the 2021 RWPs will be carried over, as long as they have active public water systems
- All new utilities will be evaluated based on water use from 2015-2019

Region G – Municipal WUG Counts

- 2021 RWP: 266 WUGs
- 2026 RWP draft: 272 WUGs
- Including 37 County-Other WUGs

Population Projections

- Based on Texas Demographic Center's projections for counties in Texas
 - 3 migration scenarios
- Distributed to WUGs
 - Historical 2010-2020 share of growth or share of population
- Difference this planning cycle: if a county's population is projected by TDC to decline, then the TWDB's county population projections will also decline
- 2030 – 2080

Municipal Demand Projections: GPCD

- Gallons per Capita Daily
- Dry-year
- Baseline GPCD = historical
 - Draft: 2021 RWP WUG GPCD
 - New WUGs draft: 2018
- Baseline GPCD minus plumbing code savings already implemented
 - Account for passive savings between historical and projected (2030)
- Water sources: groundwater + surface water
 - Water Use Survey

Municipal Demand Projections: PC Savings

- Plumbing Code Savings
- Update this planning cycle
- Residential:
 - Toilets
 - Showerheads
 - Dishwashers
 - Clothes washers
- Will include commercial toilet and urinal water efficiency savings
- 2030 – 2080

Municipal Demand Projections

$$\text{Projected Demand} = (\text{Population} * (\text{GPCD} - \text{PC Savings}) * 365) / 325,851$$

Water Sources

Source	Groundwater		Surface Water				Reuse
	Fresh	Brackish	Fresh	Saline	Consumptive Use Percentage	Seawater	Reuse
Irrigation	X	X	X	X			X
Livestock	X	X	X	X			
Manufacturing	X	X	X				X
Mining	X	X	X	X			X
Steam-electric	X	X	X		X		X
Municipal	X	X	X	X			

Questions?

Contact:

Katie Dahlberg

katie.dahlberg@twdb.texas.gov

512-463-2449

Stay connected:





7. Report, discussion, and possible action on report from the Executive Committee

7.1. Water Districts representative vacancy

“The Executive Committee recommends to the members of the Brazos G Regional Water Planning Group appointment of Patrick Shaw representing Water Districts Interests to serve as a voting member of the Brazos G Regional Water Planning Group.”



8. Report, discussion, and possible action on report from Nominating and Bylaw Committee

8.1. Interregional Council Representative

Committee Recommends: Gail Peek

Alternate: Luci Dunn

“The Executive Committee makes the recommendation to appoint Gail Peek to represent Brazos G on the Interregional Planning Council and name Luci Dunn as an alternate.”



8.2. Adoption of Brazos G Bylaw Amendments

Draft redline edits included in meeting materials.

Action: The Brazos G RWPG adopts the draft changes as presented to amend the Bylaws of the Brazos G Regional Water Planning Group.



9. Report, discussion, and possible action from on report from Technical Consultant - Carollo

9.1. Update on livestock, manufacturing, and steam-electric power generation projections released for the RWPG's review, and timelines for development and review of remaining water use projections and water supply assessments.

Brazos G Water Planning

Non-Municipal Demands (Part 1)
and Path Forward



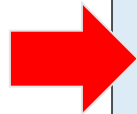
WACO, TX FEBRUARY 23, 2022

2026 Planning Budget Progress

Task #	Task	Contract Amount	Expended to Date	% Complete
1	Planning Area Description	\$30,418	\$0	0%
2A	Non-Municipal Water Demand Projections	\$57,806	\$1,116.00	2%
2B	Population and Municipal Water Demand Projections	\$80,330	\$0	0%
3	Water Supply Analyses	n/a	n/a	0%
4A	Identification of Water Needs	n/a	n/a	0%
4B	Identification of Potentially Feasible WMSs and WMS Projects	n/a	n/a	0%
4C	Prepare and Submit Technical Memorandum	n/a	n/a	0%
5A	Evaluation and Recommendation of WMSs and WMS Projects	n/a	n/a	0%
5B	Water Conservation Recommendations	n/a	n/a	0%
6	Impacts of Regional Water Plan	n/a	n/a	0%
7	Drought Response, Activities & Recommendations	n/a	n/a	0%
8	Recommendations Regarding Unique Stream Segments and/or Reservoir Sites and Legislative & Regional Policy Issues	\$13,415	\$0	0%
9	???	n/a	n/a	0%
10	Public Participation and Plan Adoption	\$88,204	\$5,382.70	6%
11	Implementation and Comparison to the Previous Regional Water Plan	n/a	n/a	0%
12	???	n/a	n/a	0%
	TOTAL	\$270,173	\$6,498.70	2%

2026 Plan Schedule Detail

Date	Scheduled Events/Tasks
Sept. 2021	Brazos G Pre-Planning Meeting,
January 2022	TWDB releases initial Draft Non-Municipal data for Livestock, Manufacturing, and Steam-Electric Power Generation for review
February 2022	Brazos G Meeting – Initial Non-Municipal data summary
March 2022	TWDB releases Draft list of municipal WUGs, GPCD, historical population, and water use for review
June 2022	Contract Amendments
Sept. 2022	TWDB releases remaining Draft Non-Municipal data for Irrigation and Mining for review

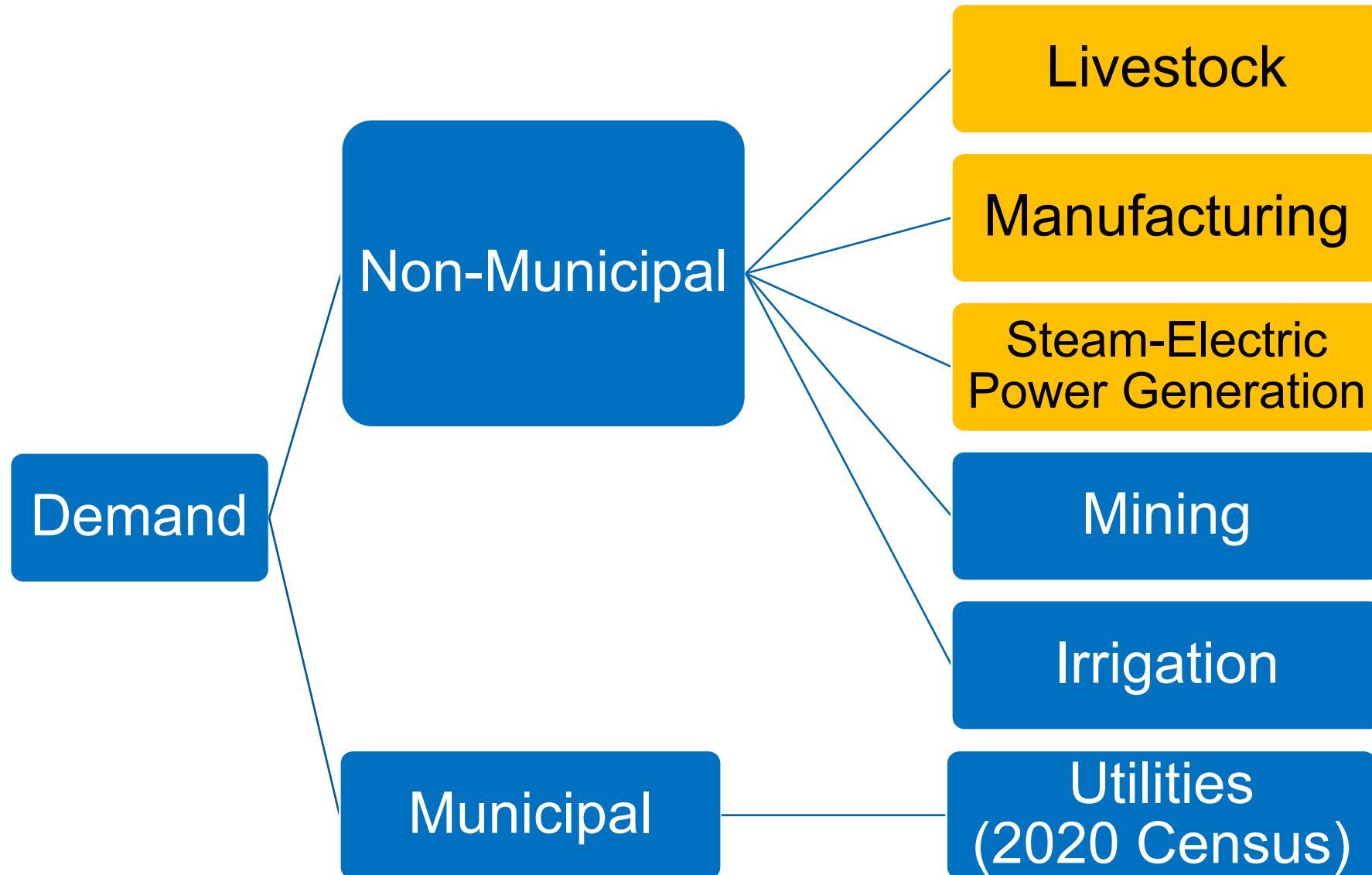


Today's Items for Consideration

Summary of Non-Municipal
Data and Projections Received

Near-Term Path Forward

Projections of Future Water Use



Draft Projections of Water Demand for Livestock in Brazos G

Difference in Methodologies, 2021 vs. 2026: Livestock

Methodology did not change

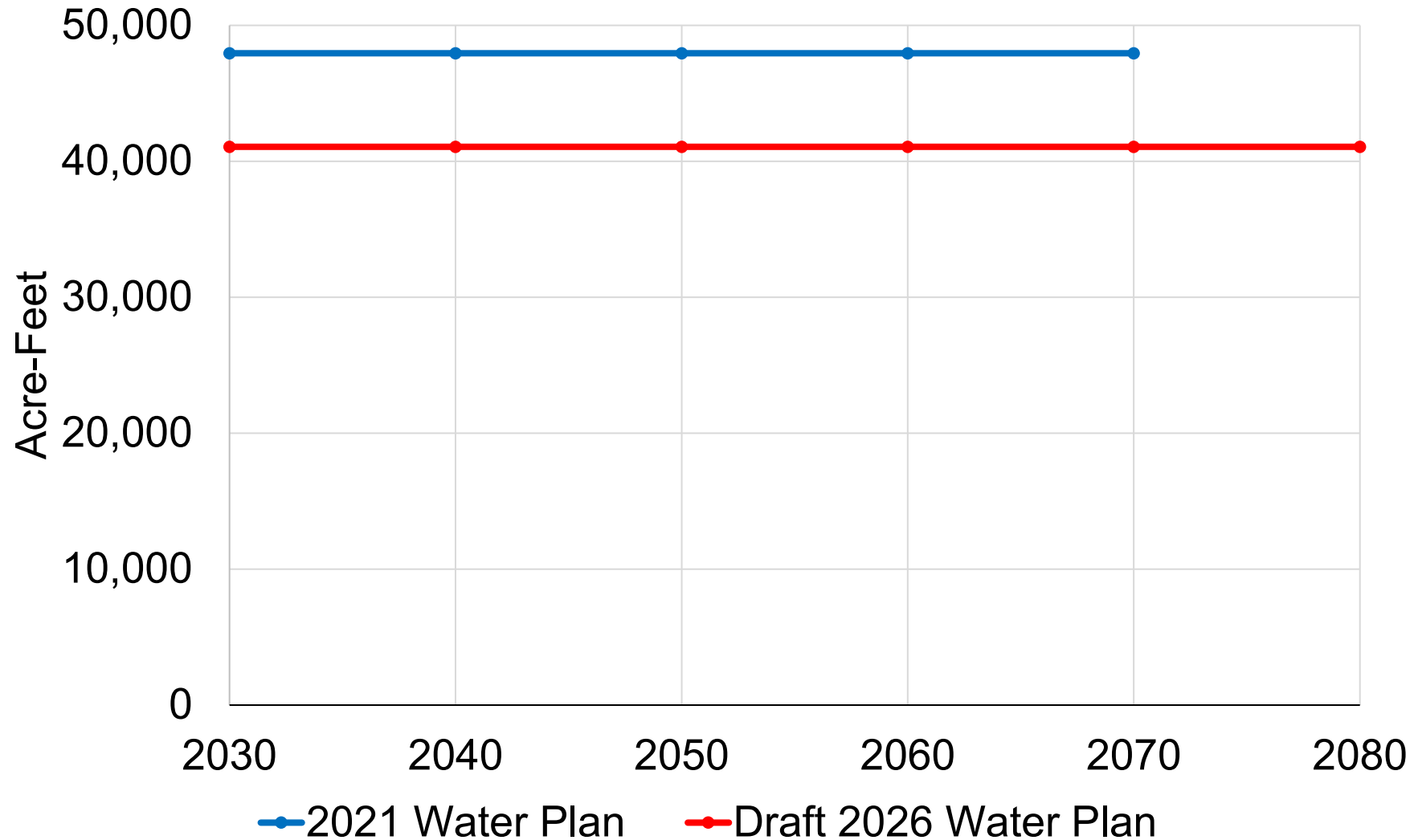
Differences in baseline data due to:

- Updates to the water use geographic splits (region/county/basin) - applied retroactively from 2015 forward.
- Changes in the assumed water use parameters for five livestock types
- Changes in broiler chicken inventory estimates

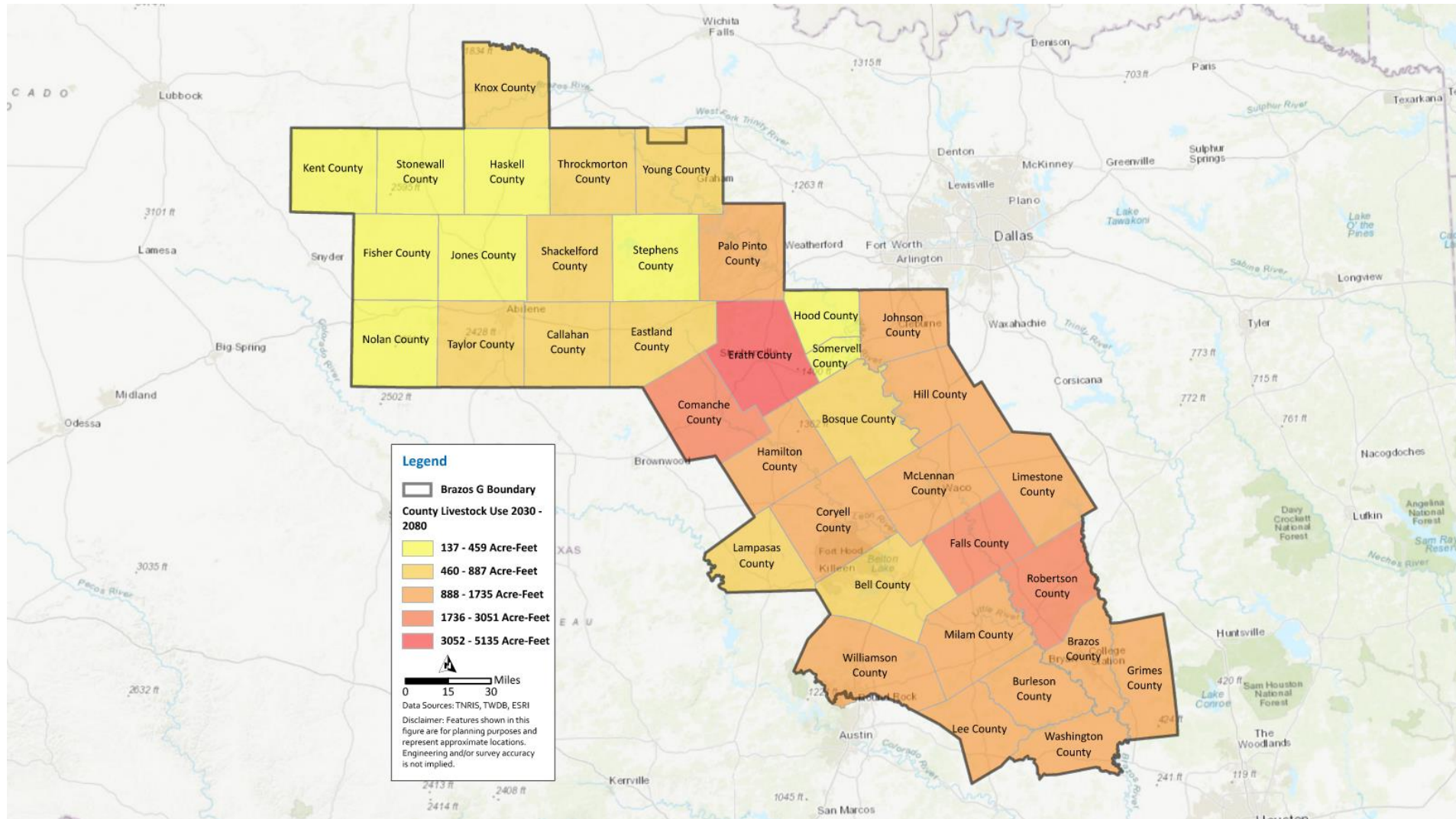
TWDB category	Subcategory	2021 RWP water use (gal/head/day)	2026 RWP water use (gal/head/day)
Cattle	Milk	75	55
	Fed & other cattle	15	15
Chickens	Non-broilers	0.086	0.09
	Broilers	0.077	0.09
Turkeys	Turkeys	0.2	0.2
Equine	Horses, ponies, mules, burros, & donkeys	12	12
Hogs	Hogs	11	5
Sheep	Sheep	2	2
Goats	Milk	0.5	2
	Meat		
	Angora		

Estimated water use consistent across the planning duration

Draft Projections of Livestock Water Use Within Brazos G (2030-2080)



Draft Projections of Livestock Water Use Within Brazos G by County, All Years



Draft Projections of Water Demand for Manufacturing in Brazos G

Difference in Methodologies, 2021 vs. 2026: Manufacturing

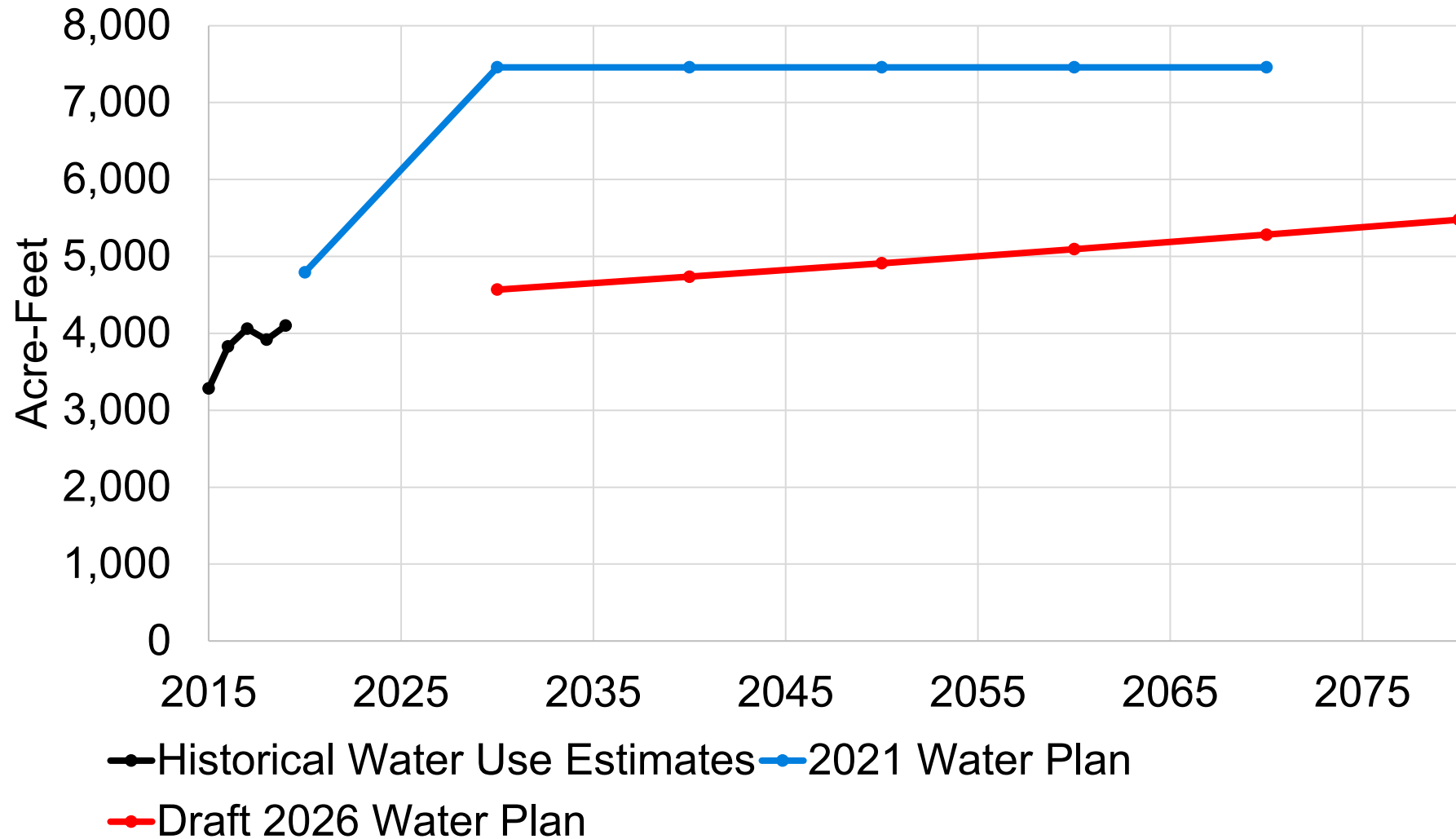
2021 Summary

- Applied industry-specific data to develop growth trends for each industry to estimate 2020 and 2030 period.
- Assumed constant for subsequent decades.

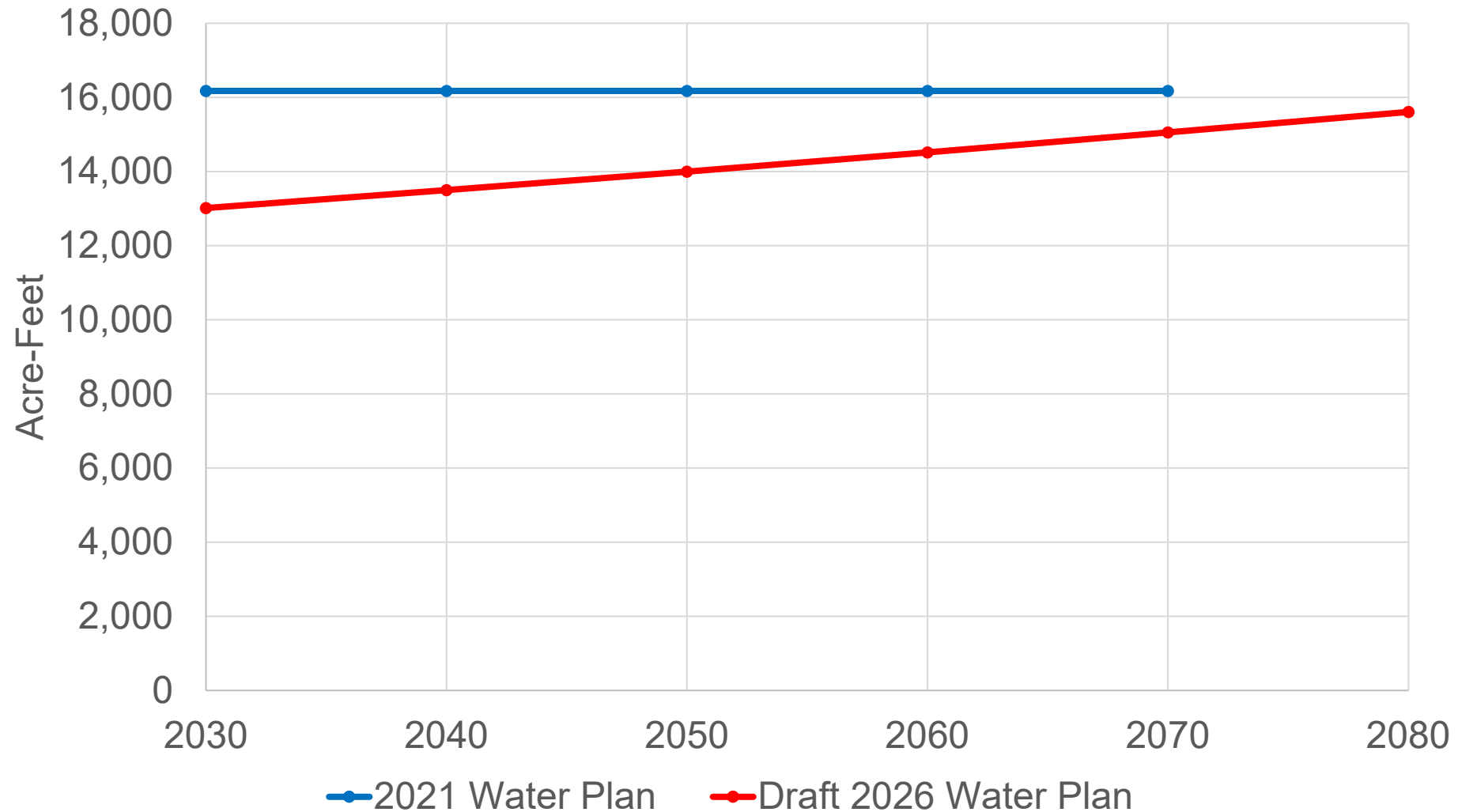
2026 Summary

- Generate county baseline from highest surveyed use (2015-2019)
- Add estimate for unaccounted water (i.e., missing entities).
- Assume linear demand trend based on County Business Patterns (U.S. Census Bureau) historical rate of change (2010-2019)

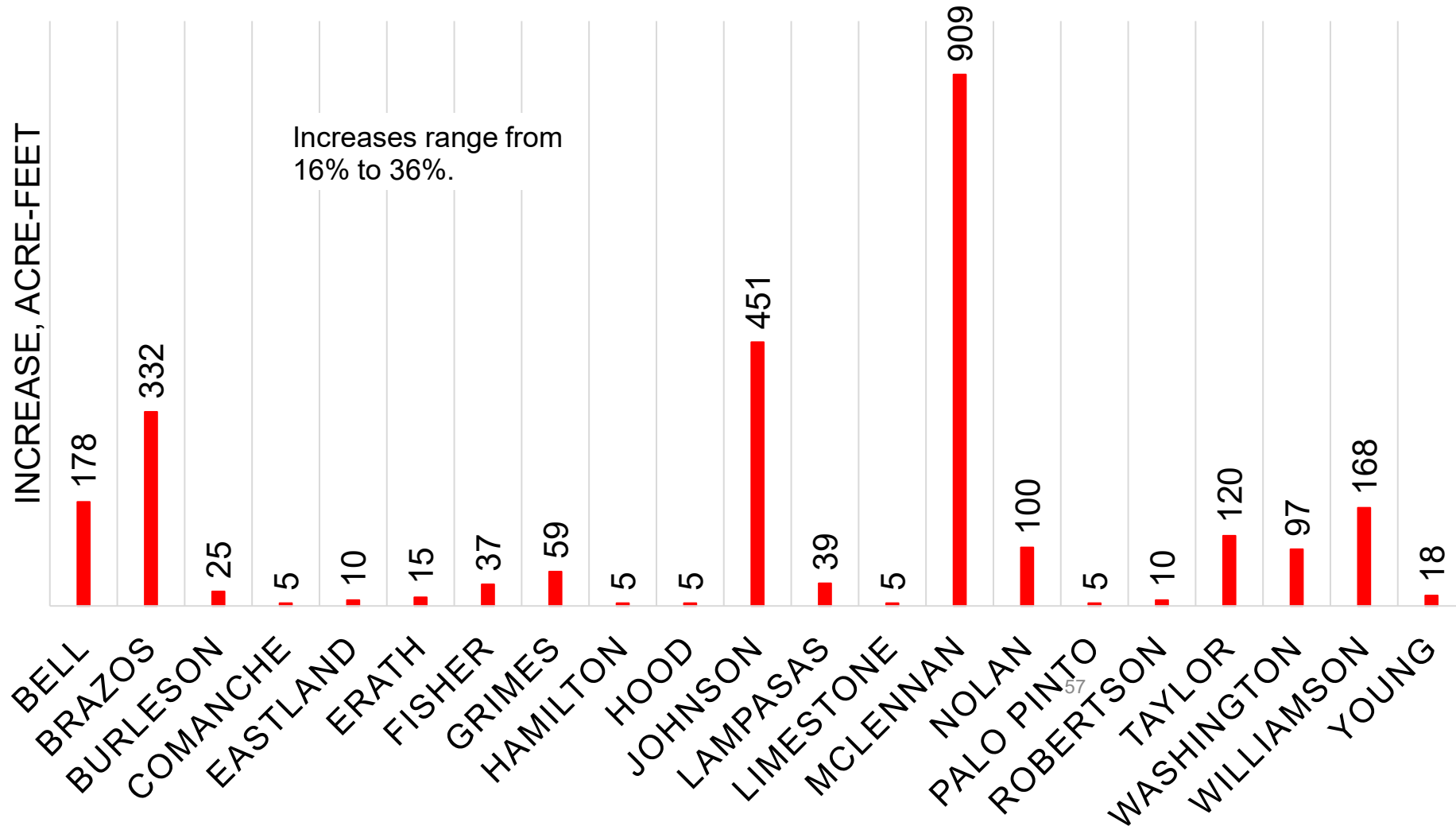
Example: McLennan County



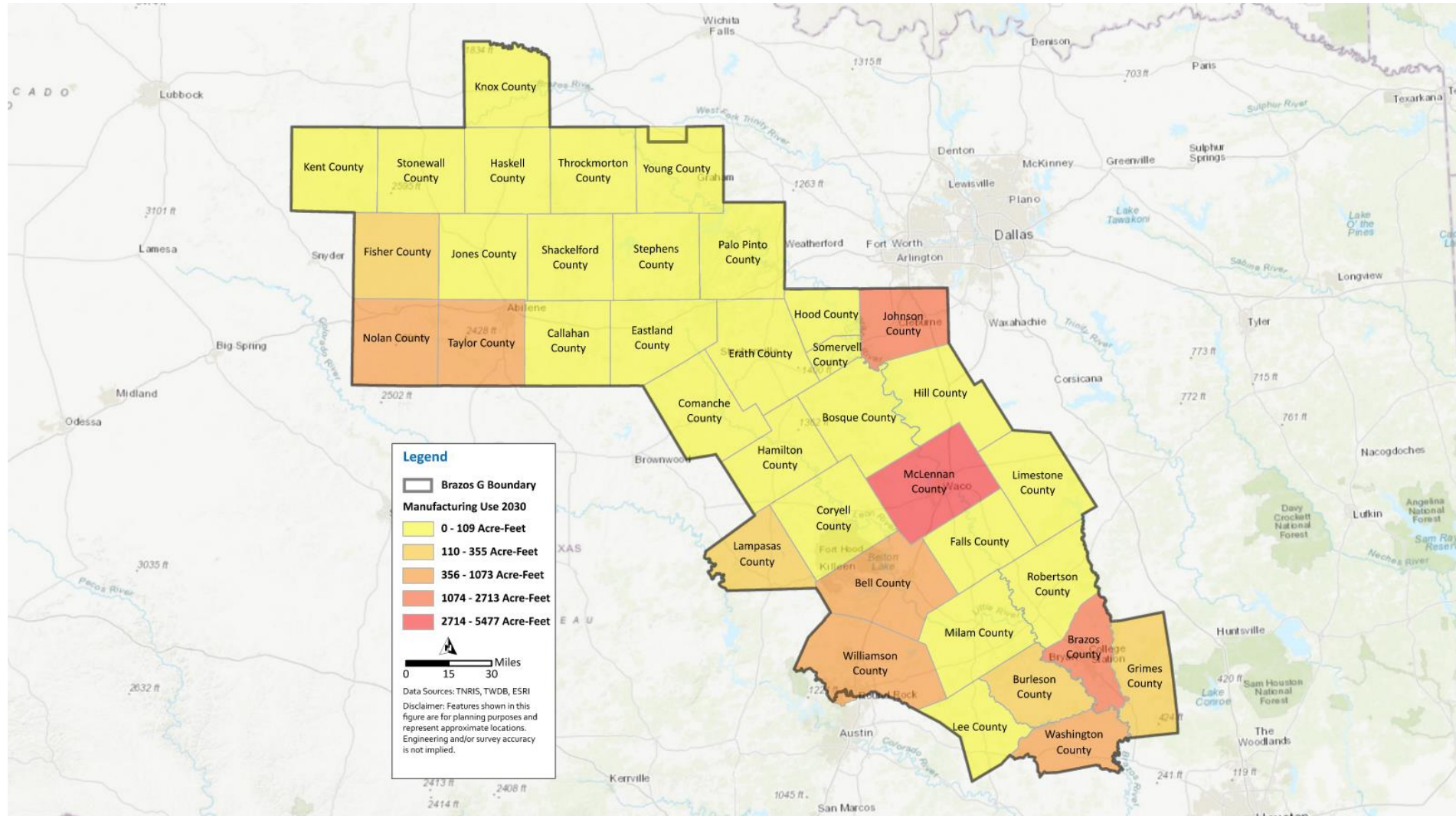
Draft Projections of Manufacturing Water Use Within Brazos G (2030-2080)



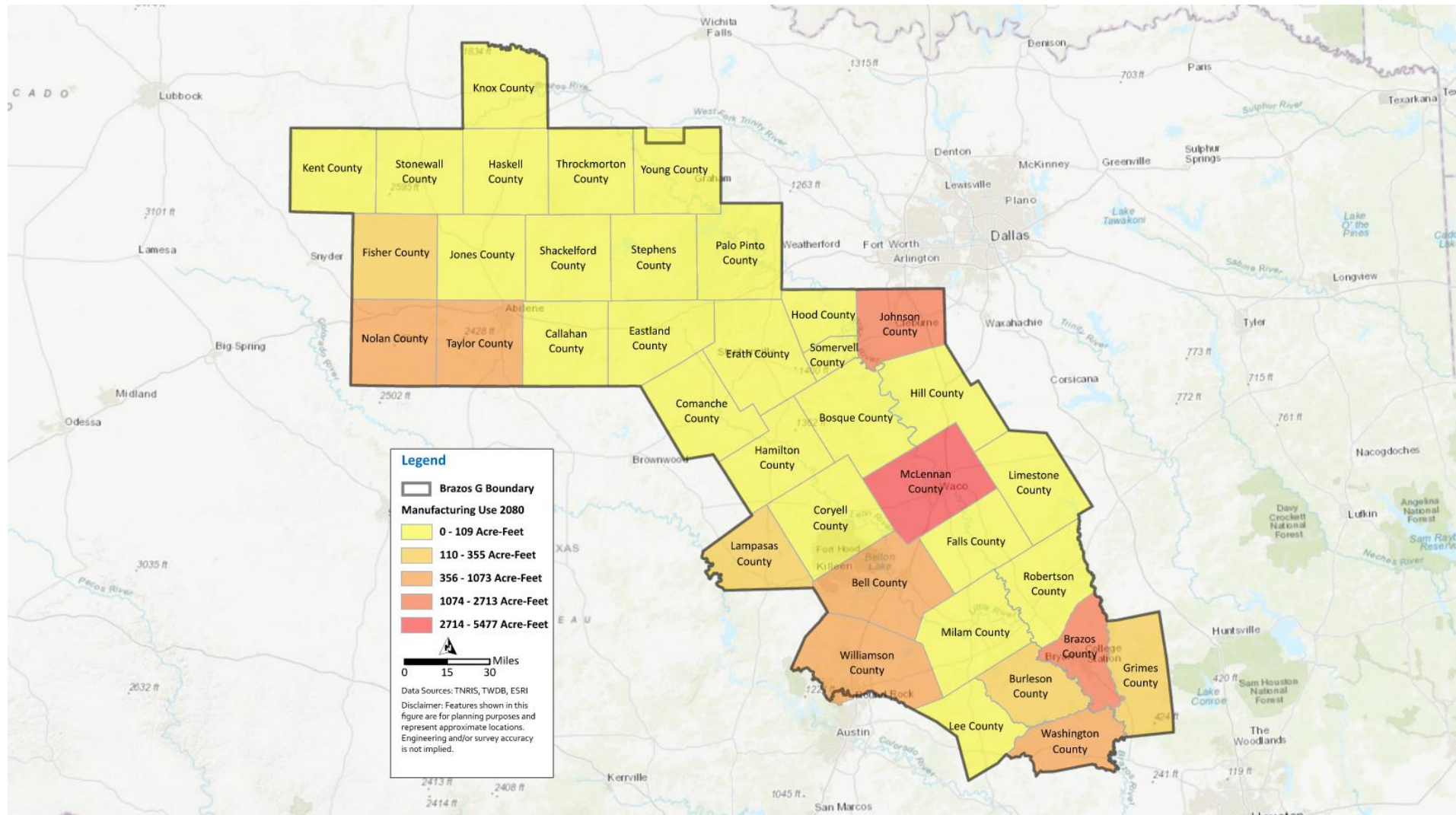
Projected Increases, Manufacturing Water Use Within Brazos G, 2030-2080



Draft Projections of Manufacturing Water Use in Brazos G by County (2030)



Draft Projections of Manufacturing Water Use in Brazos G by County (2080)



Draft Projections of Water Demand for Steam Electric Power Generation in Brazos G

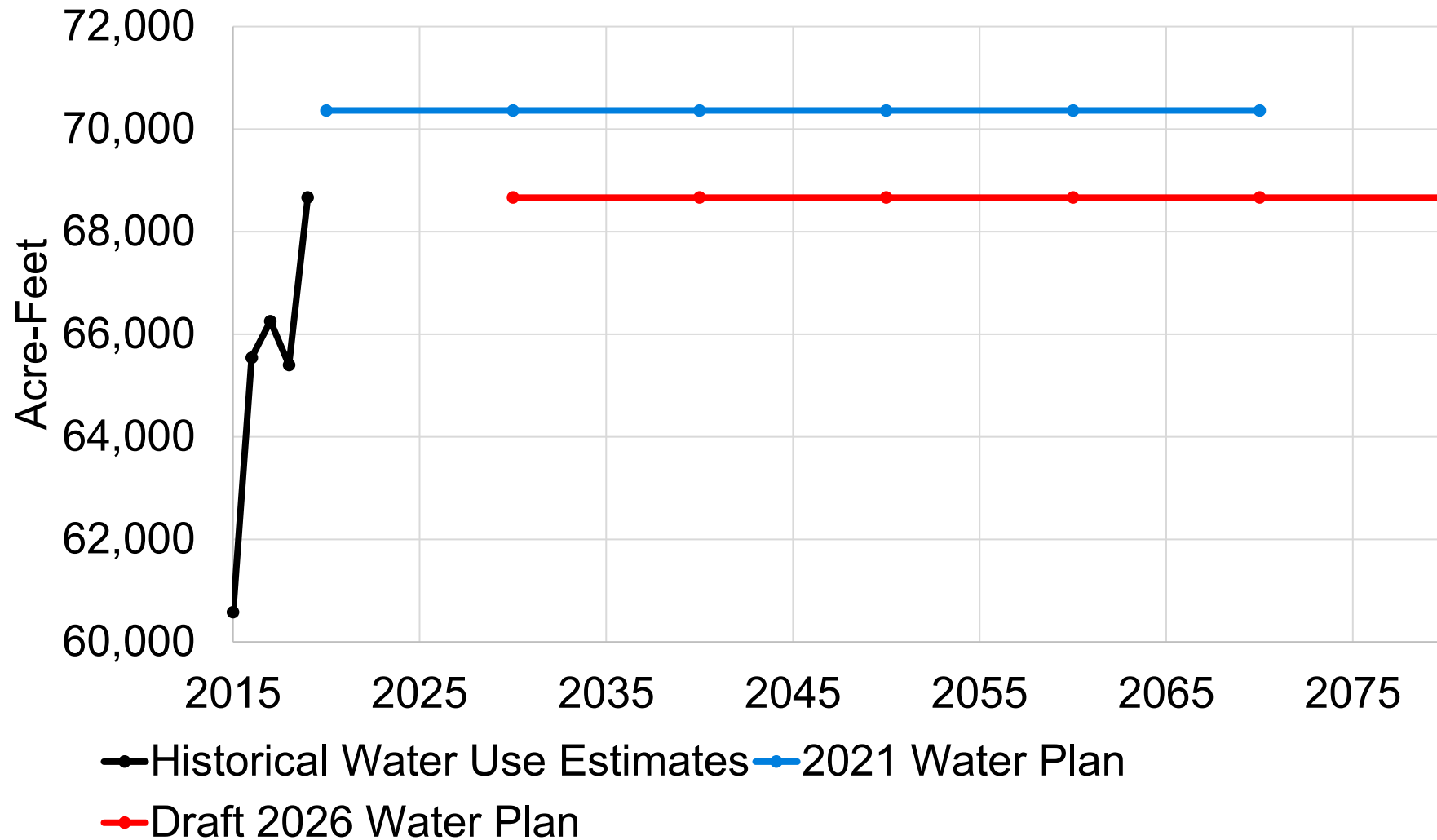
Difference in Methodologies, 2021 vs. 2026: Steam Electric

Methodology did not change

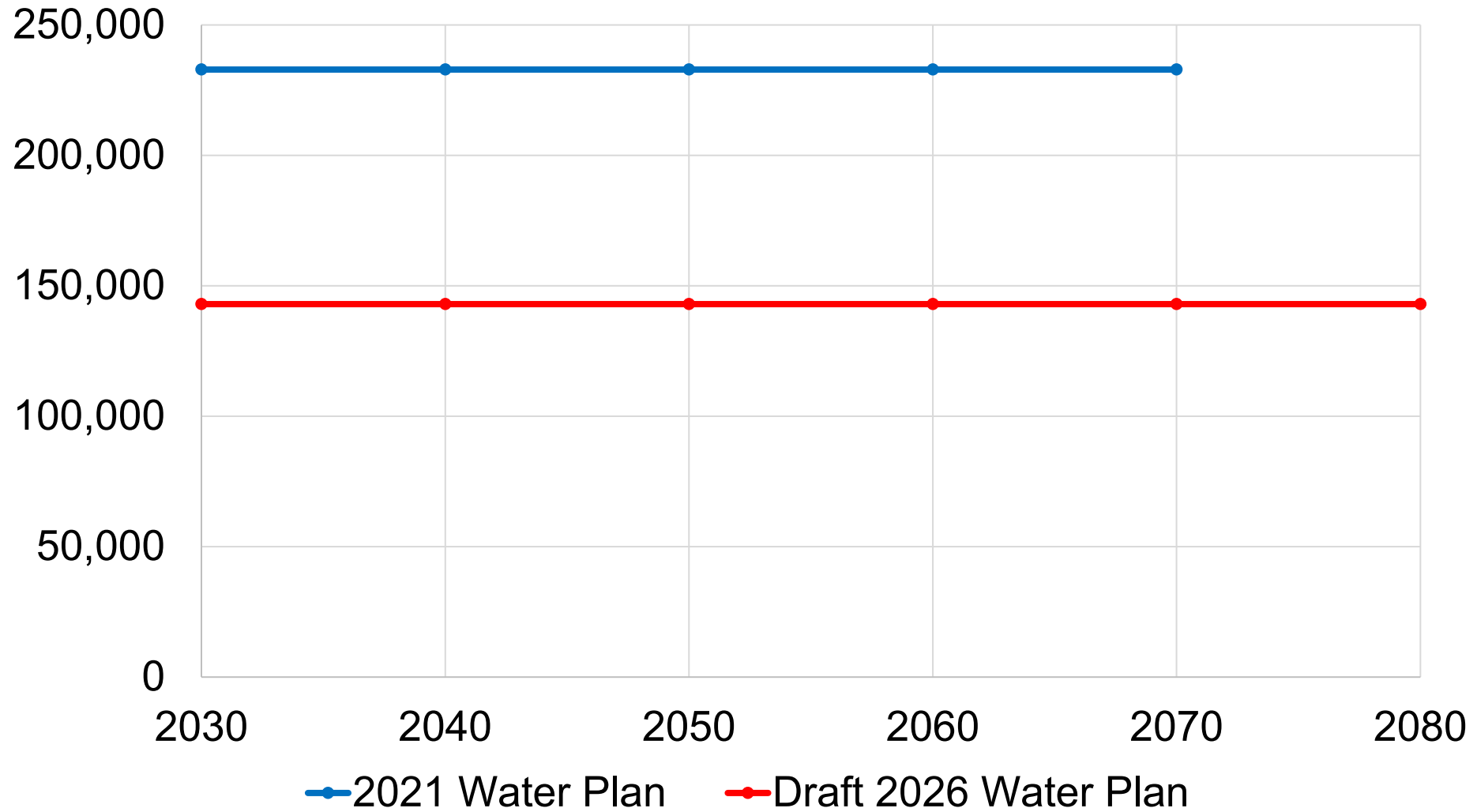
- Estimated baseline developed from the highest single-year county surveyed water use between 2015 and 2019
- Adjustments reflecting near-term facility additions and retirements
- Assumed constant projected use through 2080

Fewer proposed facilities compared to previous plan and removal of retired facilities result in decreases in projected demands

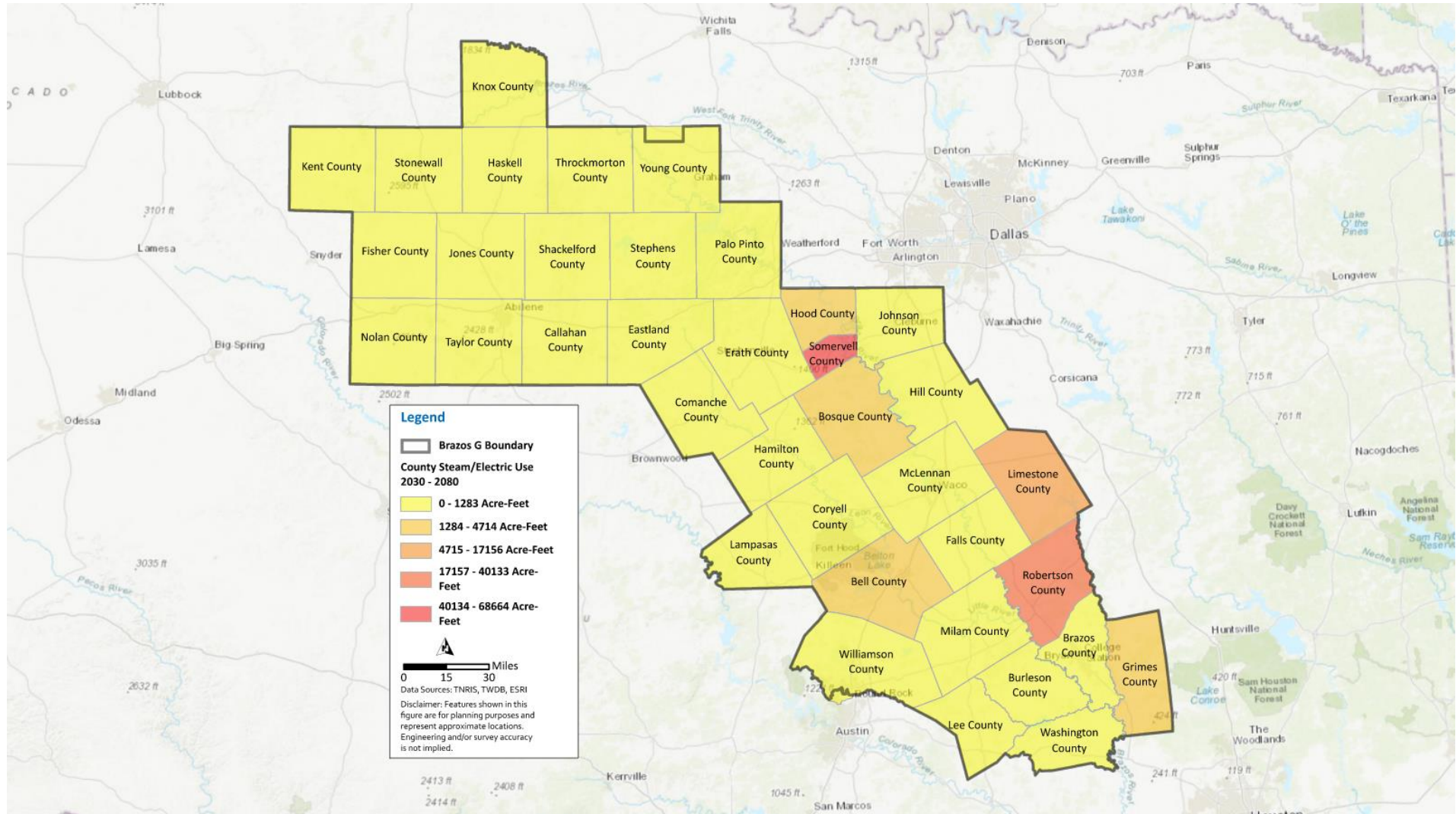
Example: Somervell County



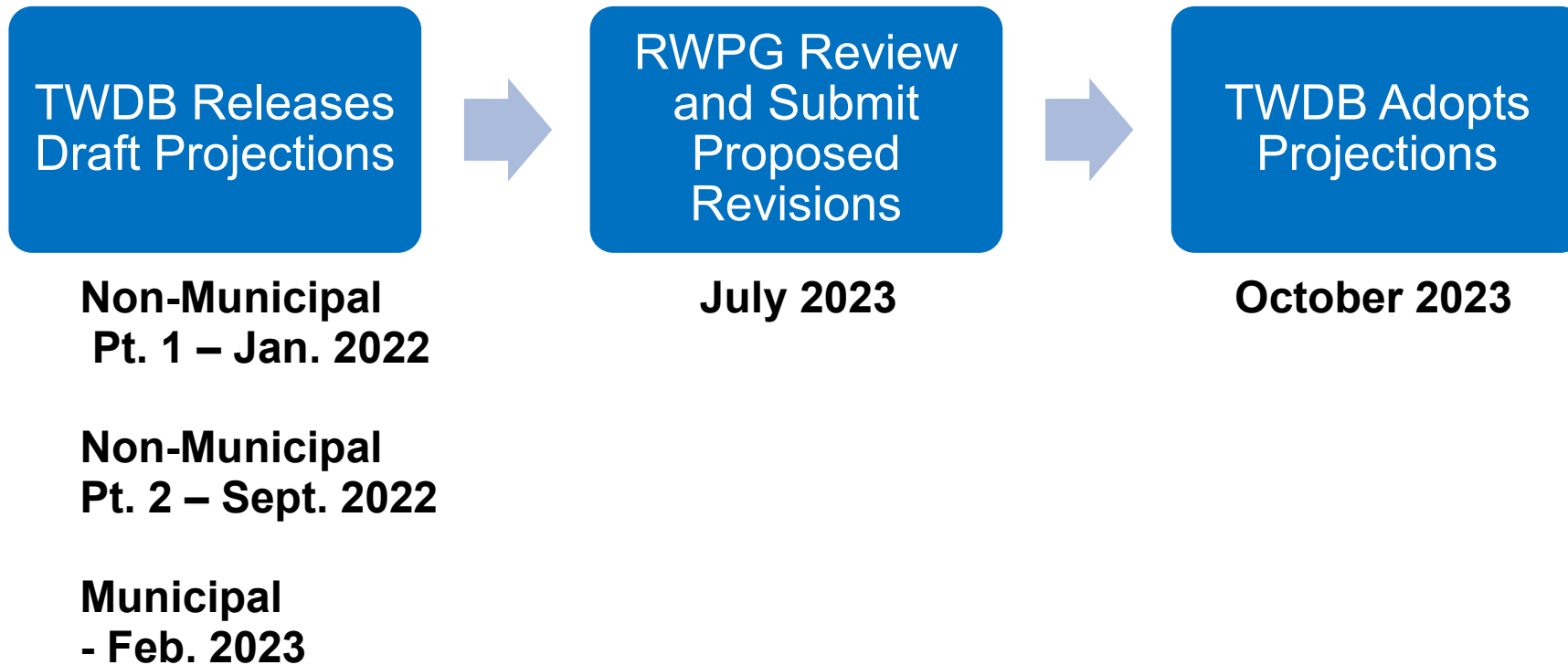
Draft Projections of Steam Electric Water Use Within Brazos G, 2030-2080



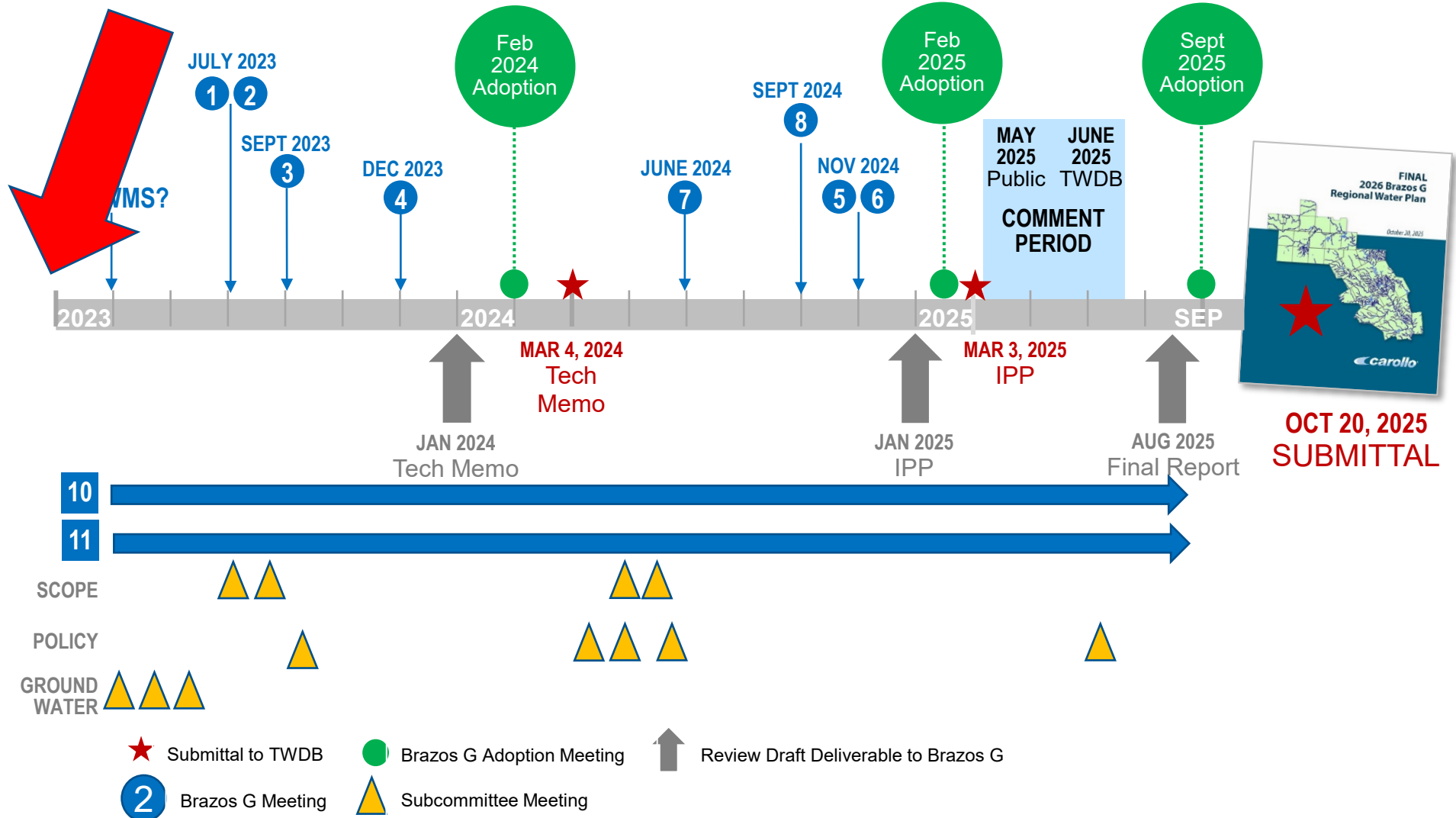
Draft Projections of Steam Electric Water Use Within Brazos G by County, All Years



Process



LIVING DRAFT Brazos G Approval Path to the Final 2026 Regional Water Plan



2022

February

- **Technical Consultant**
 - Continue review and analyses of Livestock, Manufacturing, and Steam-Electric Power Generation demand projections.

March

- **TWDB**
 - Release of draft list of municipal WUGs, GPCD, historic population, and water use.
- **Technical Consultant**
 - Engagement with non-municipal representatives;
 - Initiate review of WUG list.

April / May

- **Groundwater Subcommittee**
 - Review and discuss possible actions related to release of updated MAGs.*
- **Technical Consultant**
 - Coordinate with TWDB staff on non-municipal projections and potential modifications to WUG list.

2022 (cont'd)

June

- **TWDB**
 - Contract amendments.
- **Potential Brazos G Meeting**
 - Consider action to approve amended contract;
 - Status on non-municipal demands;
 - Plan for initiating Water Supply Assumptions TM;
 - Consideration and potential action on any proposed changes to WUG List by July 2022.

July

- **Technical Consultant**
 - Submittal of approved proposed revisions to Draft WUG List;
 - Initiate coordination with TWDB staff on development of Draft Water Supply Assumptions TM.

Sept

- **TWDB**
 - Release of draft irrigation and mining projections.
- **Potential Brazos G Meeting**
 - Status of non-municipal demand projections;
 - Status report with outline and discussion of key assumptions for development of Water Supply Assumptions Technical Memorandum and framework.

2022 (cont'd)

Oct.

- **Technical Consultant**
 - Review and analyses of irrigation and mining projections, and engagement;
 - Submit Draft Water Supply Assumptions TM to Brazos G RWPG for review.

Nov

- **Potential Brazos G Meeting**
 - Consider action to approve submittal of changes to TWDB by December 2022, pending any necessary revisions deemed appropriate;
 - Review and discussion of Draft Water Supply Assumptions TM. Consider action to approve submittal of Draft Water Supply Assumptions TM to TWDB by December 2022, pending any necessary revisions deemed appropriate.

Dec

- **Technical Consultant**
 - Submit proposed revisions to non-municipal demands to TWDB;
 - Submit Water Supply Assumptions TM to TWDB.



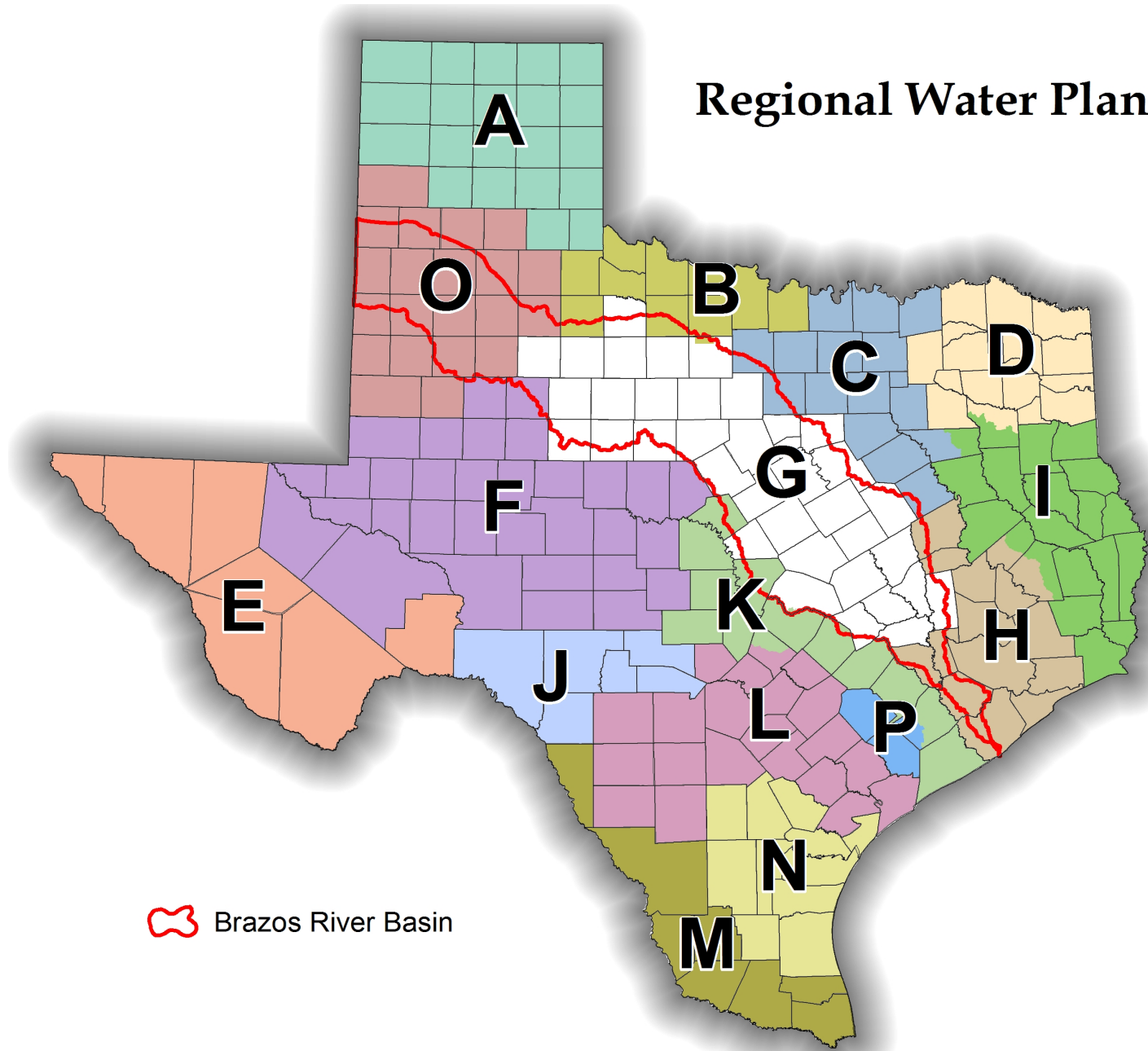
Questions?

Tony L. Smith, P.E. and Heather Harris, P.E.
Carollo Engineers, Inc.
Office: 512-453-5383



10. Report and possible discussion on updates from other regional water planning groups (Regions B, C, F, H, K, L & O)

Regional Water Planning Groups



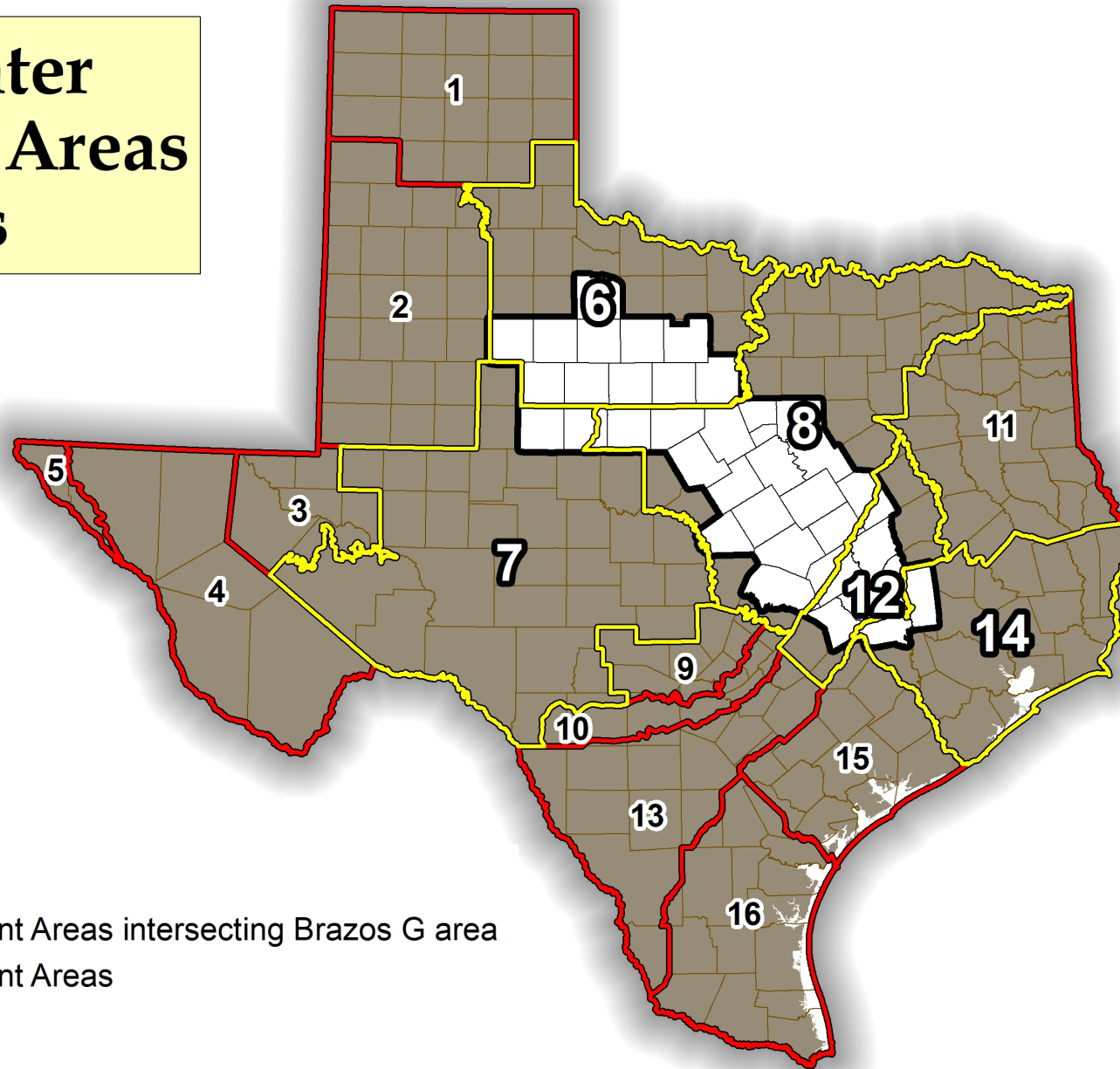
- A** Panhandle
- B** Region B
- C** Region C
- D** North East Texas
- E** Far West Texas
- F** Region F
- G** Brazos G
- H** Region H
- I** East Texas
- J** Plateau
- K** Lower Colorado
- L** South Central Texas
- M** Rio Grande
- N** Coastal Bend
- O** Llano Estacado
- P** Lavaca

 Brazos River Basin




11. Report and possible discussion on Groundwater Management Area (GMA) activities

Groundwater Management Areas of Texas



GMA's in Brazos G:
6, 7, 8, 12, 14

-  Brazos G Area
-  Groundwater Management Areas intersecting Brazos G area
-  Groundwater Management Areas



12. Report and possible discussion on agency communication and information (TDA, TSSWCB, BBASC & Interregional Planning Council)



13. Discussion and possible action regarding certification of administrative expenses to be submitted to the Texas Water Development Board for reimbursement for the sixth cycle of Regional Water Plan (RWP) development.



14. Discussion and possible action on report by Brazos G Administrator.

14.1. Brazos G Website



Brazos G Website Update

www.brazosgwater.org

Improved User Experience

- User-friendly for smartphones and tablets
- Allows for a redesign for easier navigation of information

Improved Security and Maintenance

- Shared operation platform with www.brazos.org and www.lowerbrazosflood.org
- Allows BRA IT Staff oversight of website security
- Allows BRA IT staff to have control of website maintenance



15. Discussion and possible action on report by Brazos G Chair



16. Discussion and possible action on new business to be considered at next meeting



17. Confirmation of next meeting date



18. Adjourn