

Texas State Water Planning and Brazos G Regional Planning for the Future



Drought can Drive Water Planning



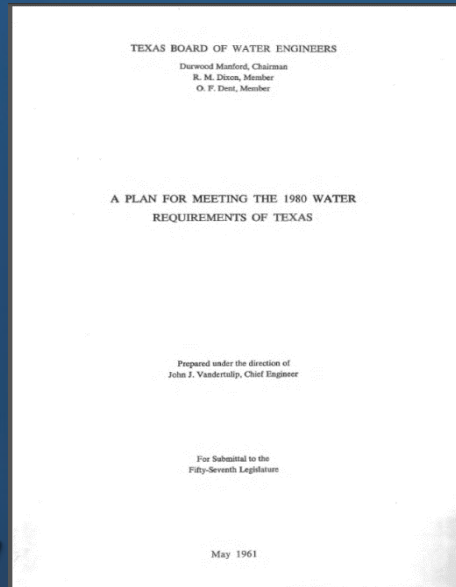
Gov. Price Daniel

1957

- Formation of TWDB
- \$200 million Water Development Fund



Gov. John Connally



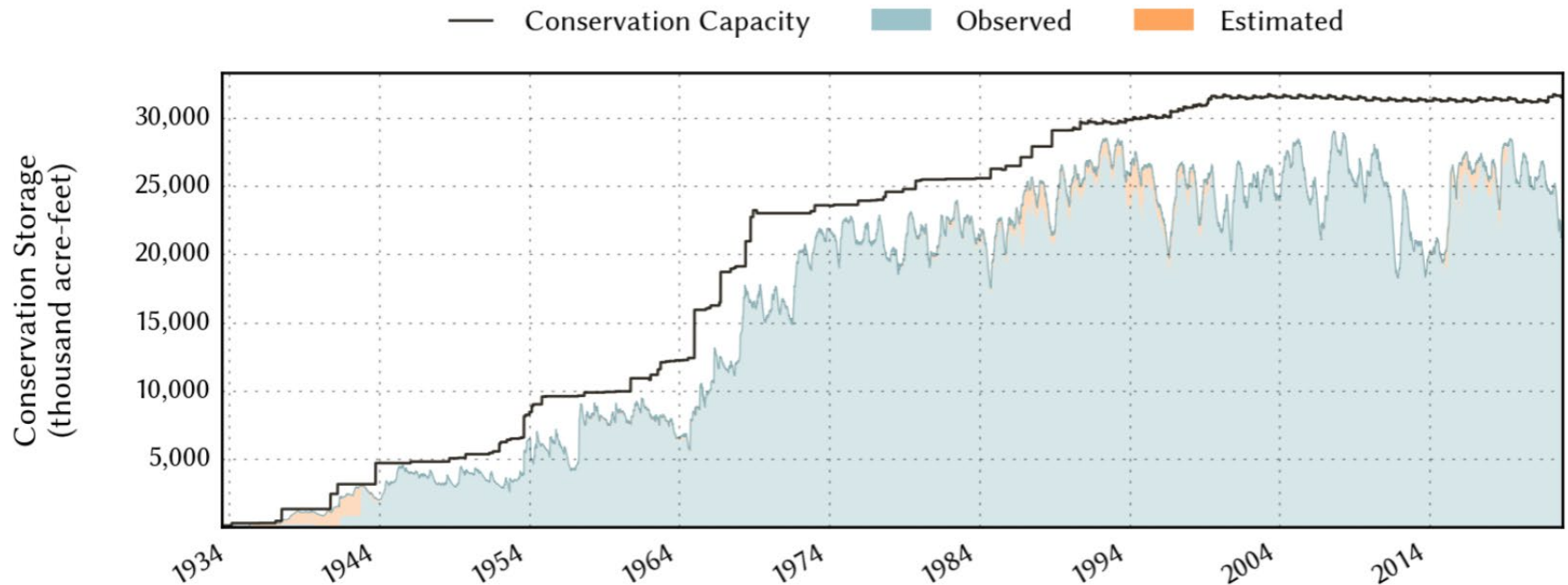
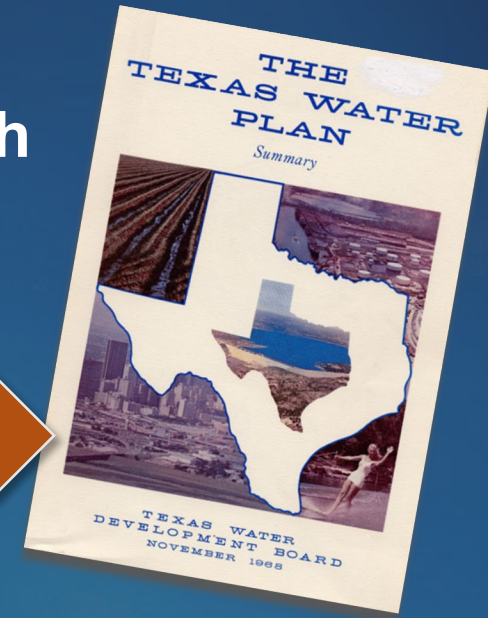
1961

- First Water Plan
- State Board of Water Engineers

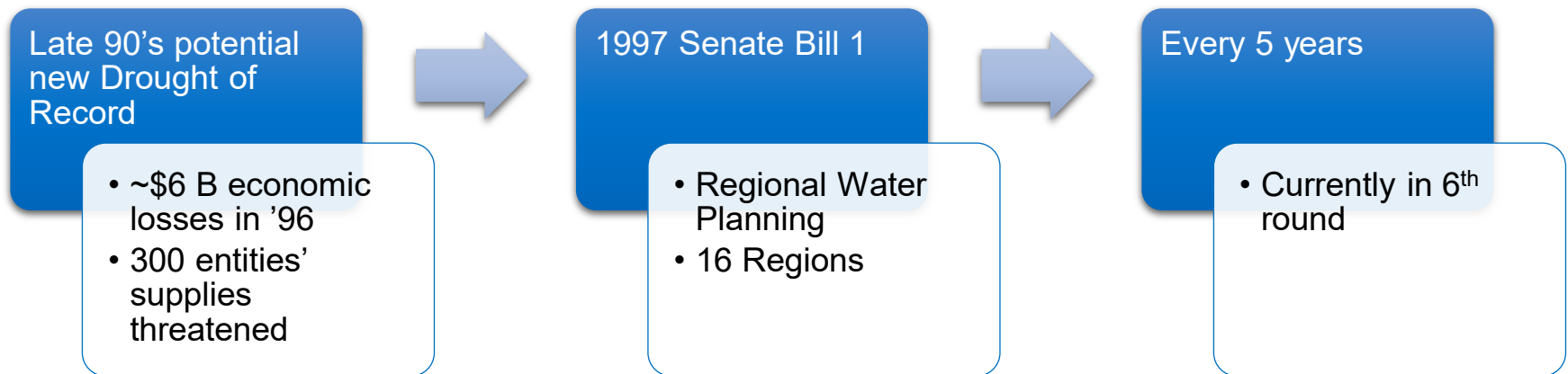
The '68 Plan

➤ '68 Plan featured “Burleigh’s Ditch” which would move Mississippi River water into Texas to the Panhandle

- State developed the water plan with input from stakeholders



// Evolution of Planning

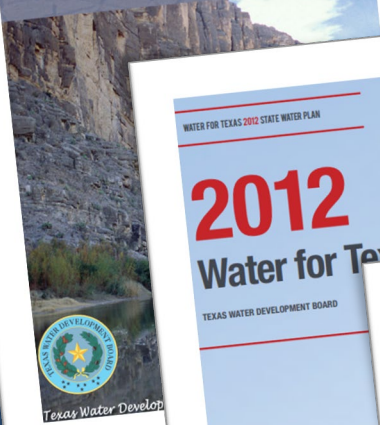


Water for Texas – 2002



Texas Water Development Board
January

*Water for Texas
2007*



WATER FOR TEXAS 2012 STATE WATER PLAN

2012

Water for Texas

TEXAS WATER DEVELOPMENT BOARD



Texas Water Development Board

Water
— for —
Texas



2022
State Water Plan

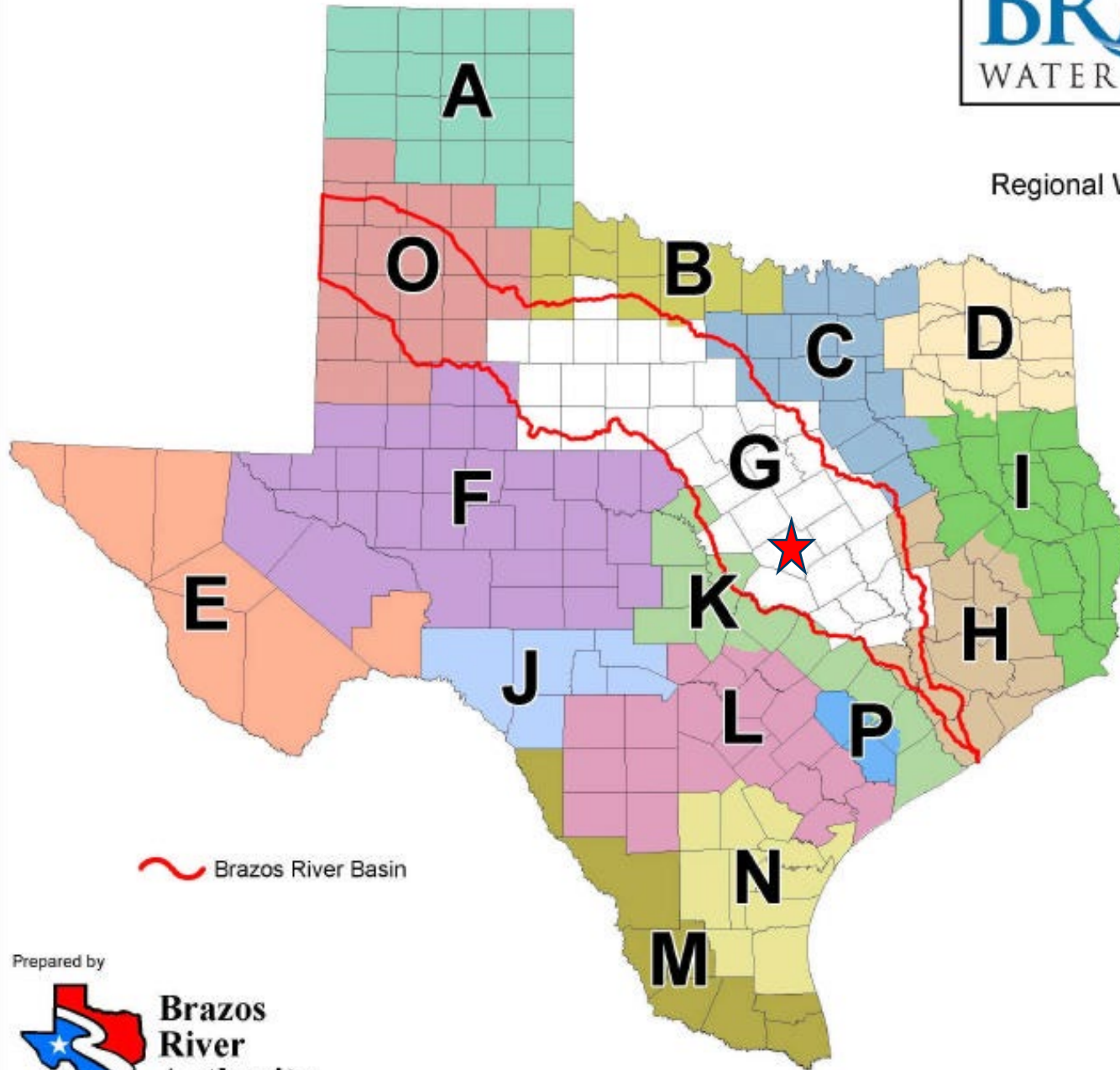
**WATER
FOR
TEXAS**

Texas Water
Development Board


The Texas State Water Plan -
“Water for Texas” -
is developed every 5 years.

It is developed from the compilation
of 16 Regional Water Plans in a
“Bottom Up” planning process.

Regional Water Planning Groups of Texas



- 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

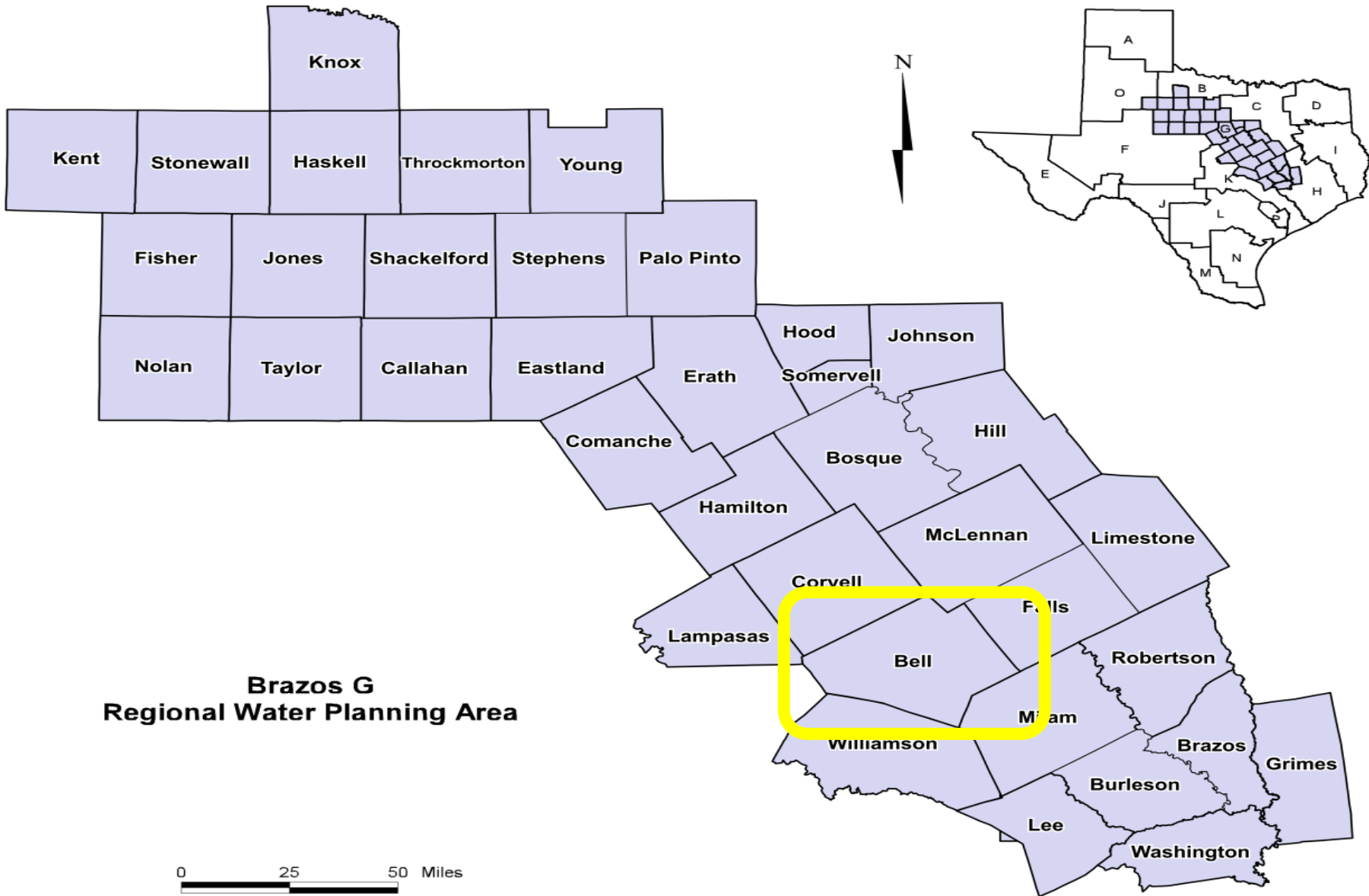
 Brazos River Basin

Prepared by



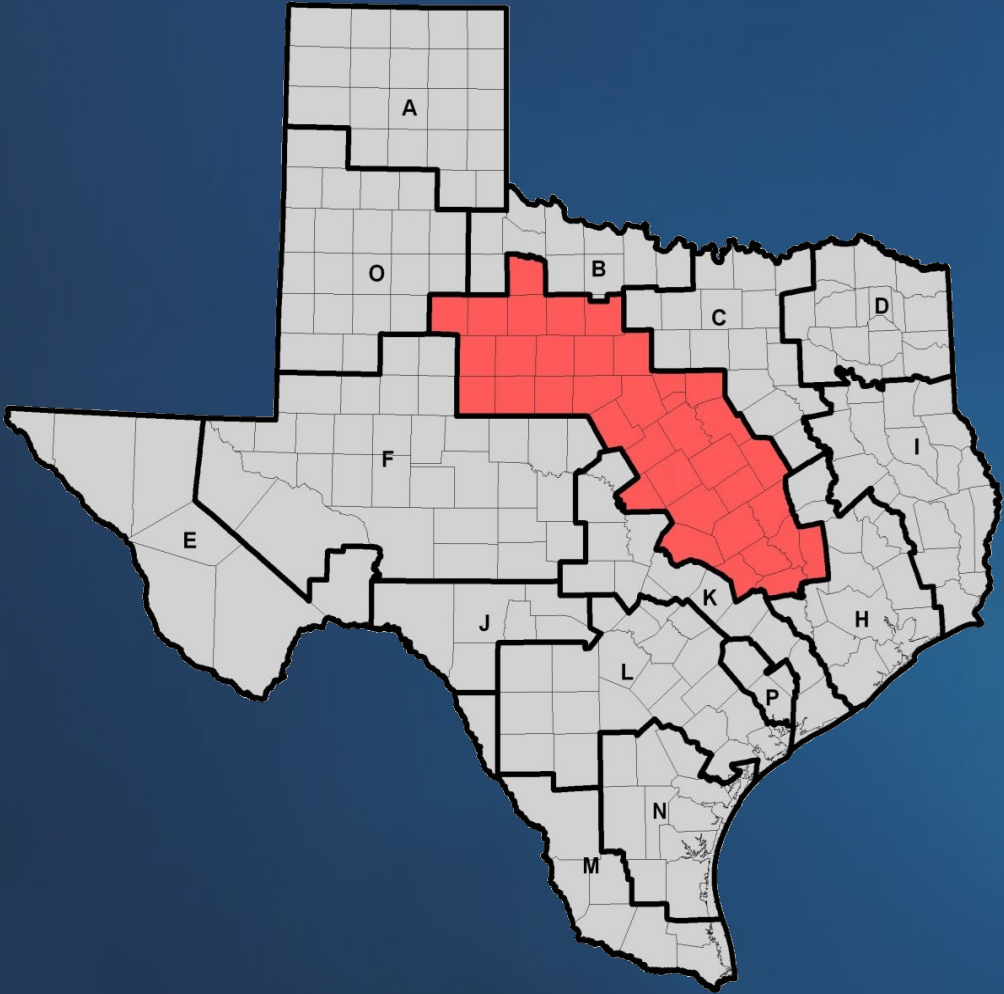
Administrative Agent for Brazos G RWPG

Source: Texas Water Development Board



BRAZOS G

WATER PLANNING GROUP



- 37 Counties
- 527 Water Users
 - 279 Municipal Groups
 - Other Uses
 - Manufacturing (30)
 - Steam Electric (12)
 - Irrigation (36)
 - Livestock (37)
 - Mining (36)
- 97 Wholesale Providers



The regional water plans provide for the orderly development, management, and conservation of water resources, and include drought preparation and response.

The goal of the Region G planning process is to assure sufficient water will be available at a reasonable cost to ensure public health, safety and welfare, further economic development, and protect agriculture and natural resources.



23 Voting Members representing 12 Interest groups:

- 1 – Public
- 1 – Industries
- 1 – Environmental
- 1 – Small Business
- 1 – Electric Generating Utilities
- 1 – River Authorities
- 1 – Water Utilities
- 2 – Agriculture
- 2 – Water Districts
- 3 – Counties
- 4 – Municipalities
- 5 – Groundwater Management Areas

Non-Voting Members:

TWDB, TDA, TPWD, TSSWCB and adjacent Regional Water Planning Groups

Basis of Planning



Categories

Water User Groups (WUGs)

- Irrigation
- Livestock
- Manufacturing
- Mining
- Municipal
- Steam-electric Power Generation

Wholesale Water Providers

Major Water Providers

Total of 30 Municipal Water User Groups in Bell County

BRAZOS G 2026 REGIONAL WATER PLAN | BRAZOS G

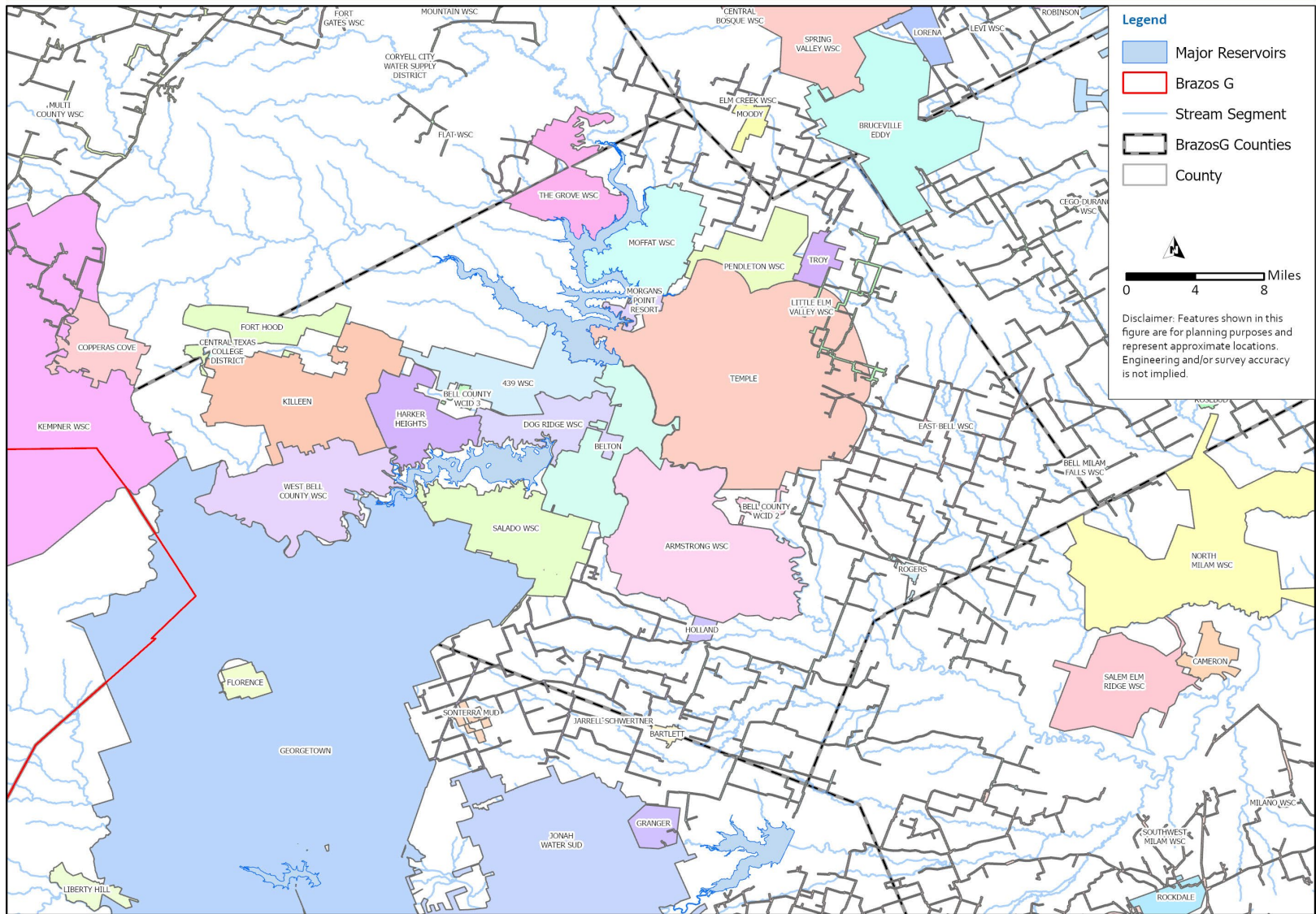
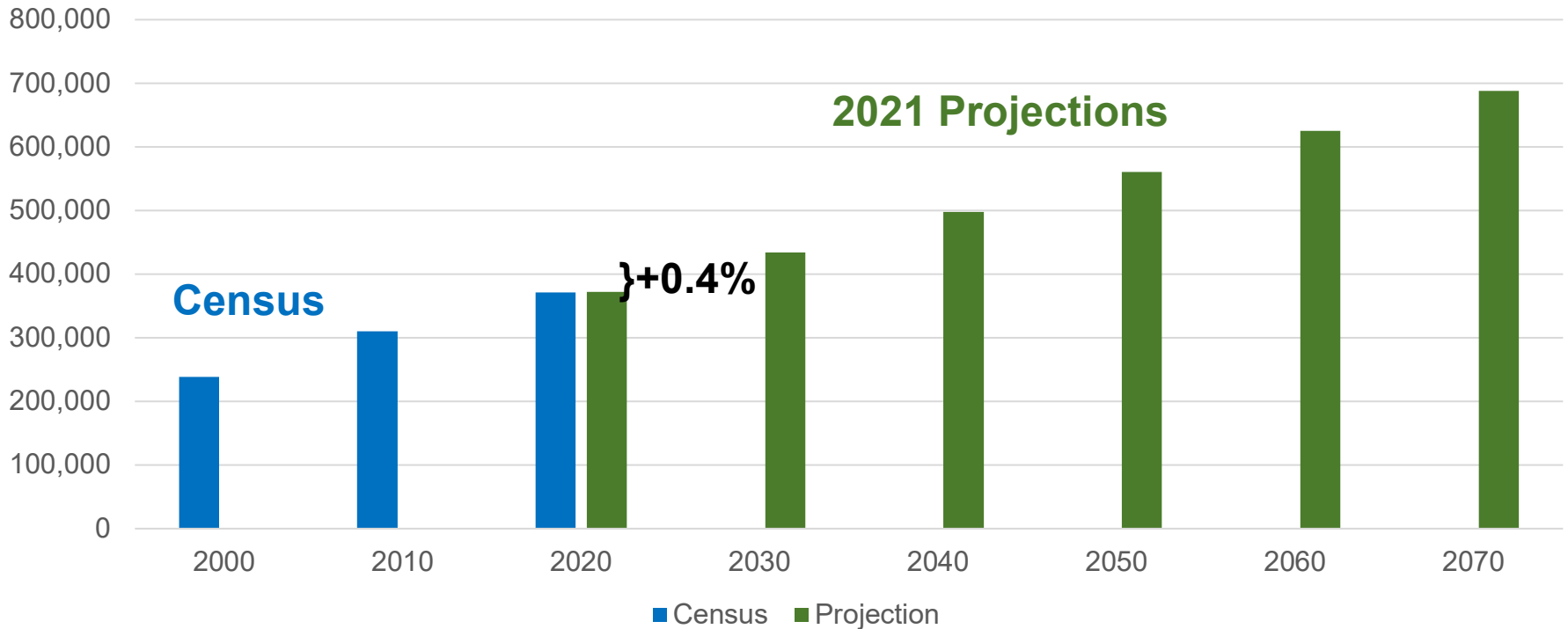


Figure # Brazos G Water User Groups: Bell County

Determined by whether or not the utility used more than 100 ac-ft in the 2015-2019 period per 31 TAC 357.10(43).

Bell County Population – Census and 2021 Projections



2020	
Census	370,647
Projection	371,956
Difference	+1,309
% Difference	+0.4%

How **Water Demand** is projected.

Baseline
GPCD
(with plumbing
savings)

X

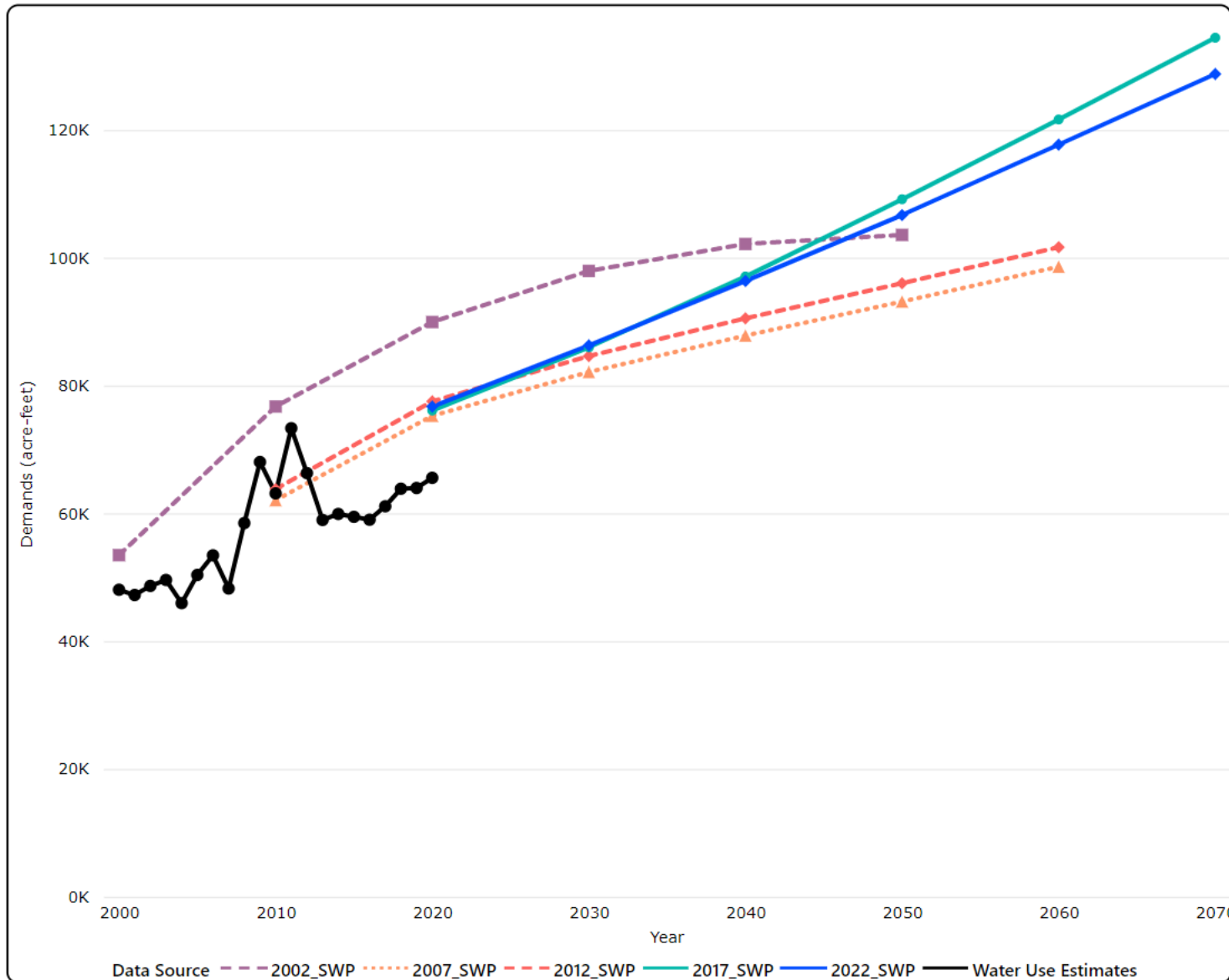
Projected
Population

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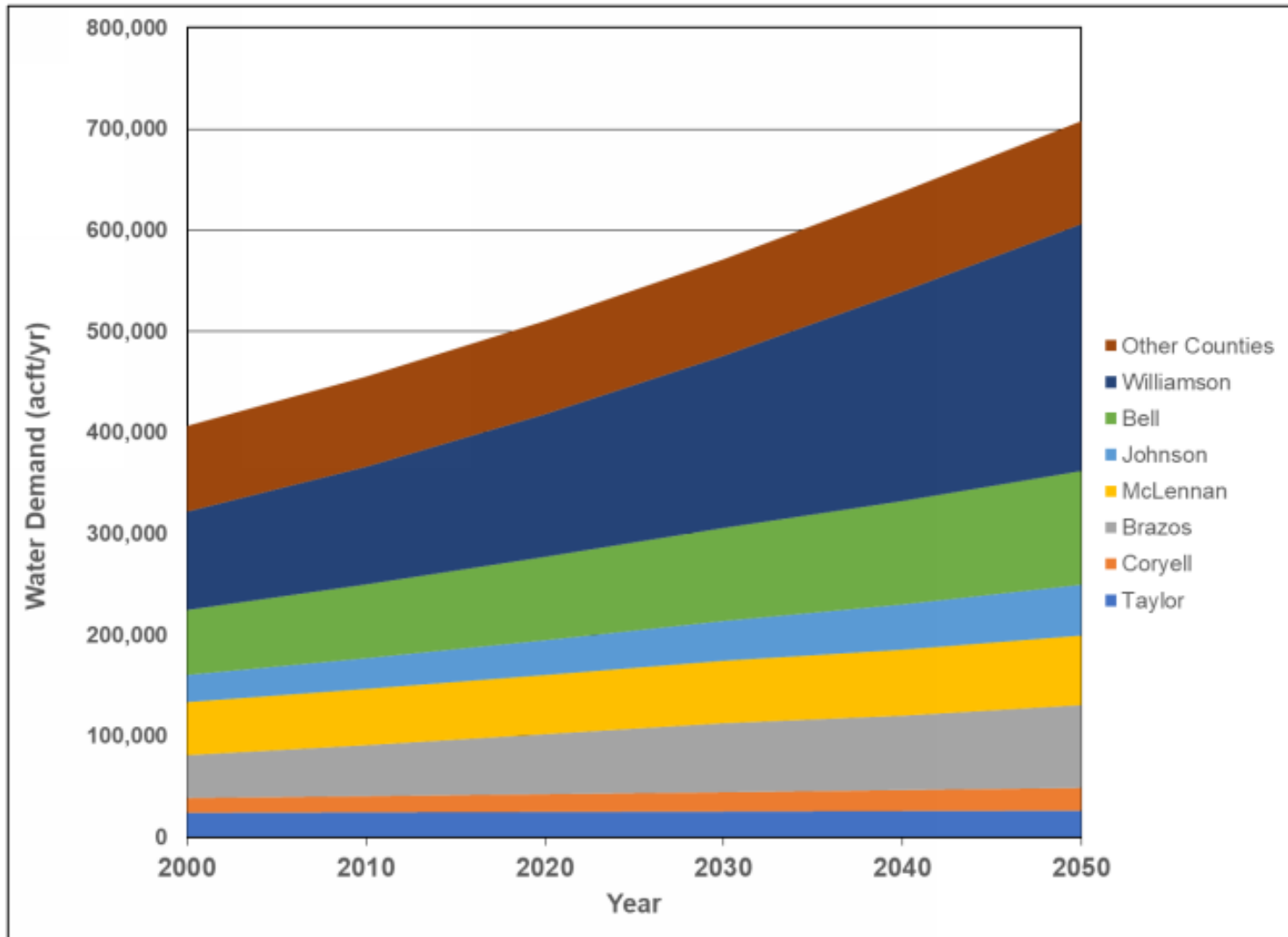
**Municipal
Water
Demand**

Performed for each municipal utility.

Historical Bell County Municipal Water Demand with projections from previous Plans

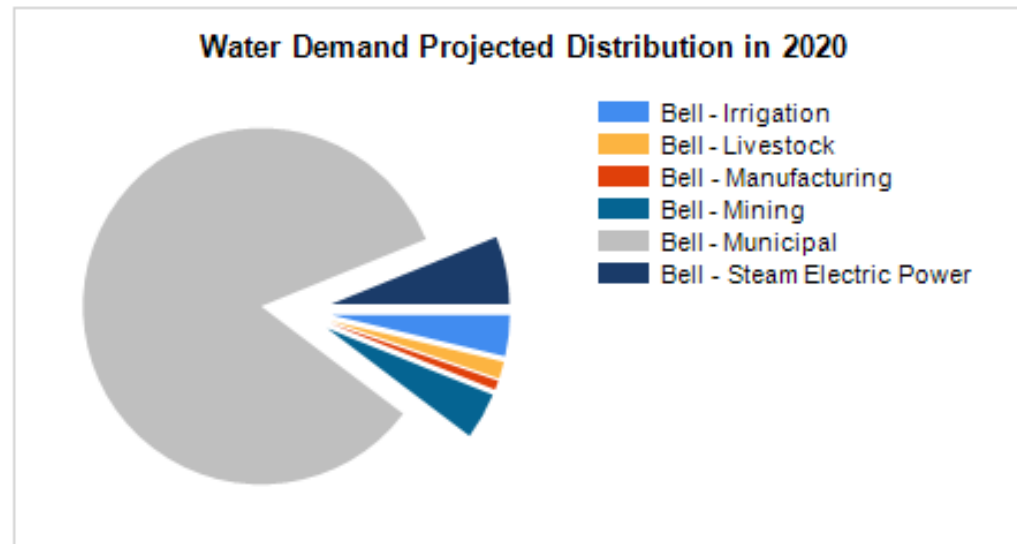


Regional Municipal Water Demand Projections by County

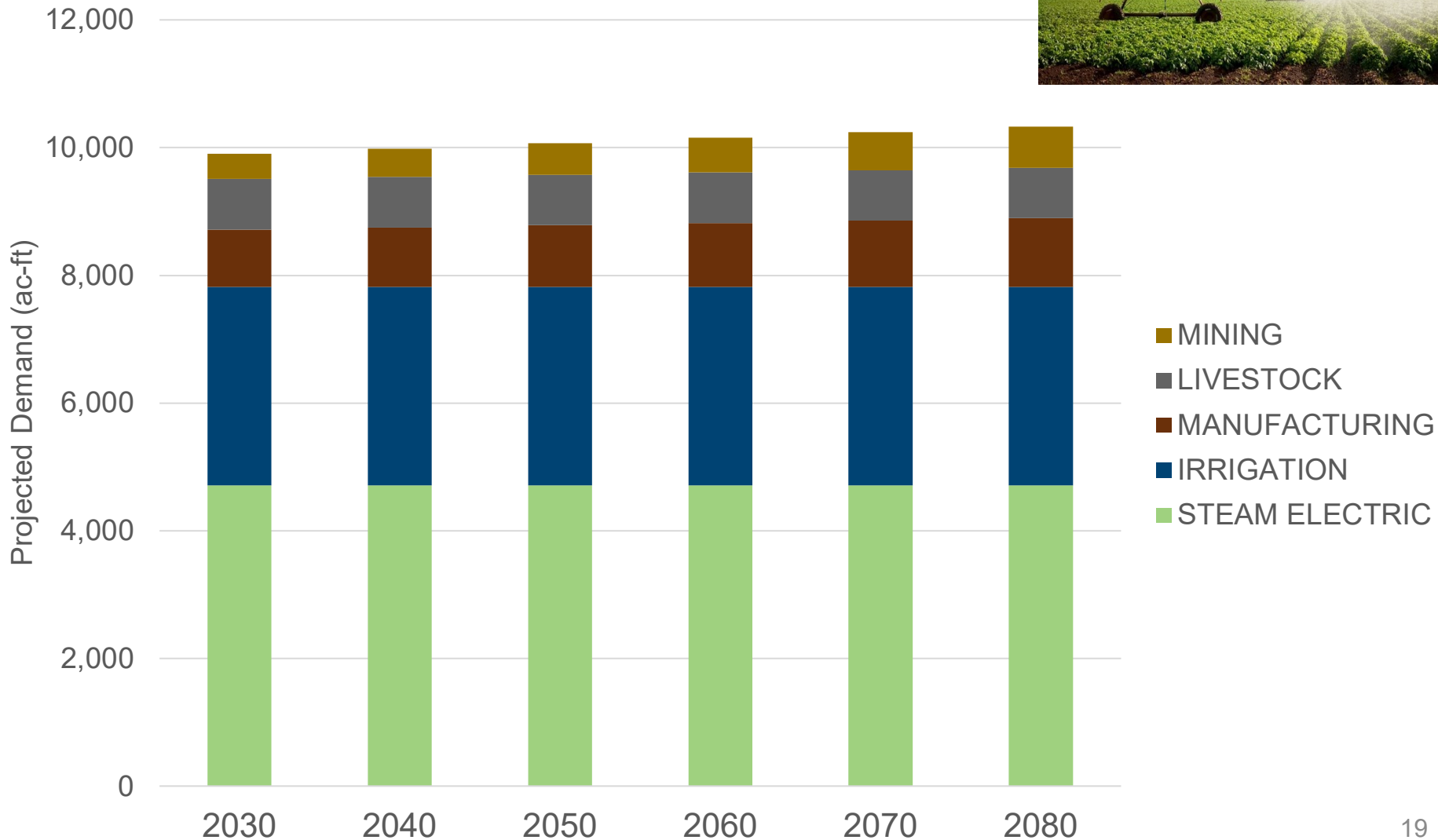


2021 Regional Water Plan Water Demand Projections by County for 2020-2070 in Acre-Feet

Total Water Demand for Bell County							
County	Category	2020	2030	2040	2050	2060	2070
Bell	Irrigation	2,843	2,843	2,843	2,843	2,843	2,843
Bell	Livestock	1,172	1,172	1,172	1,172	1,172	1,172
Bell	Manufacturing	641	685	685	685	685	685
Bell	Mining	3,242	3,980	4,599	5,349	6,105	6,968
Bell	Municipal	64,087	72,875	82,330	91,902	102,161	112,347
Bell	Steam Electric Power	4,714	4,714	4,714	4,714	4,714	4,714
Bell County Total		76,699	86,269	96,343	106,665	117,680	128,729



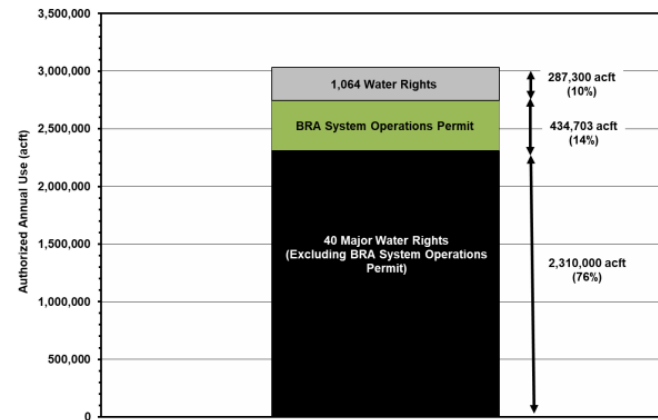
Composition of Draft 2026 Projected Non-Municipal Demands for Bell County



Water Rights, Source Availability, and Supply



Figure 3-1. Distribution of Water Rights in the Brazos River Basin



Surface Water Rights

- No person may appropriate any state water or begin construction of any work designed for the storage, taking, or diversion of water without first obtaining a permit

Availability

- Firm yield and reliability
- Determined by state Water Availability Models (WAMs)

Supply

- Considers infrastructure capacity
- Contracts

Groundwater

Ownership

- Private property associated with land ownership
- Different from surface water law

Groundwater Conservation Districts

Joint Planning

- Groundwater Management Areas

Desired Future Conditions

- Aquifer levels (elevations)

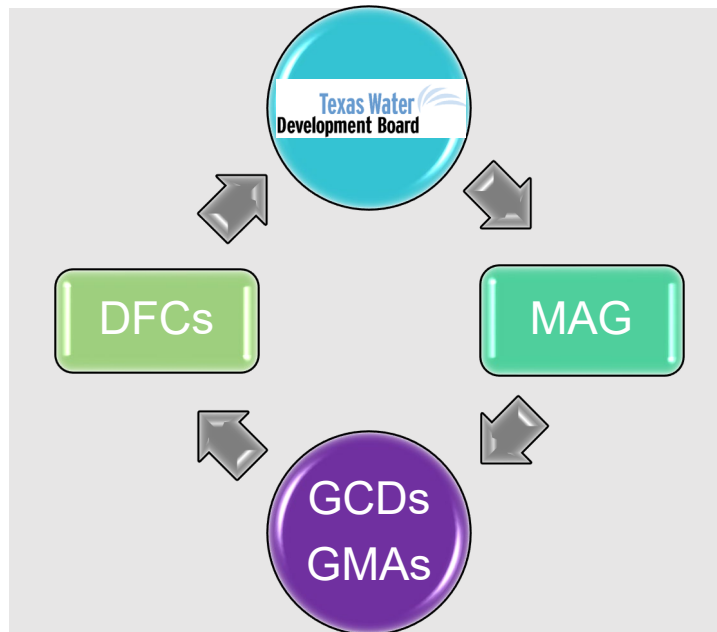
Modeled Available Groundwater

- Official State Models (MAGs)
- Local models

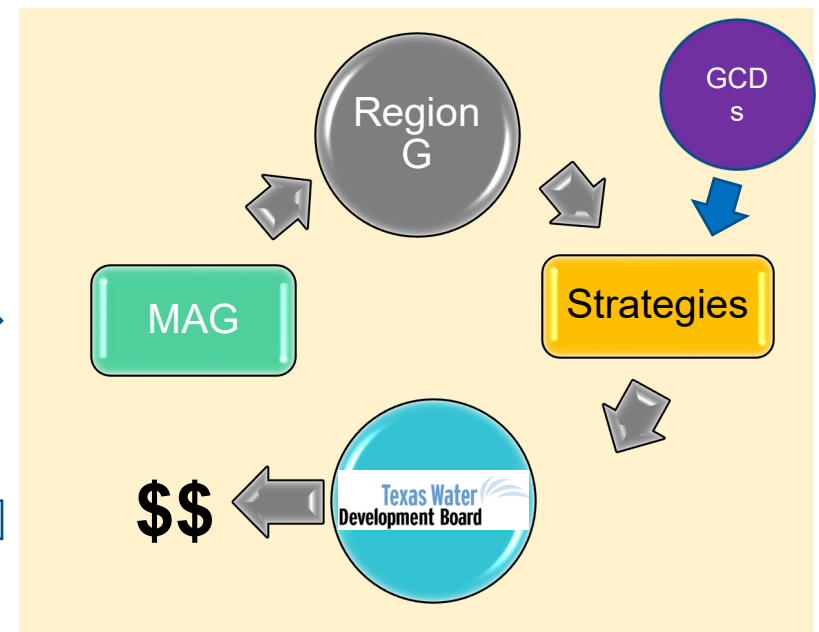


The Groundwater Planning Cycle

Joint Groundwater Planning

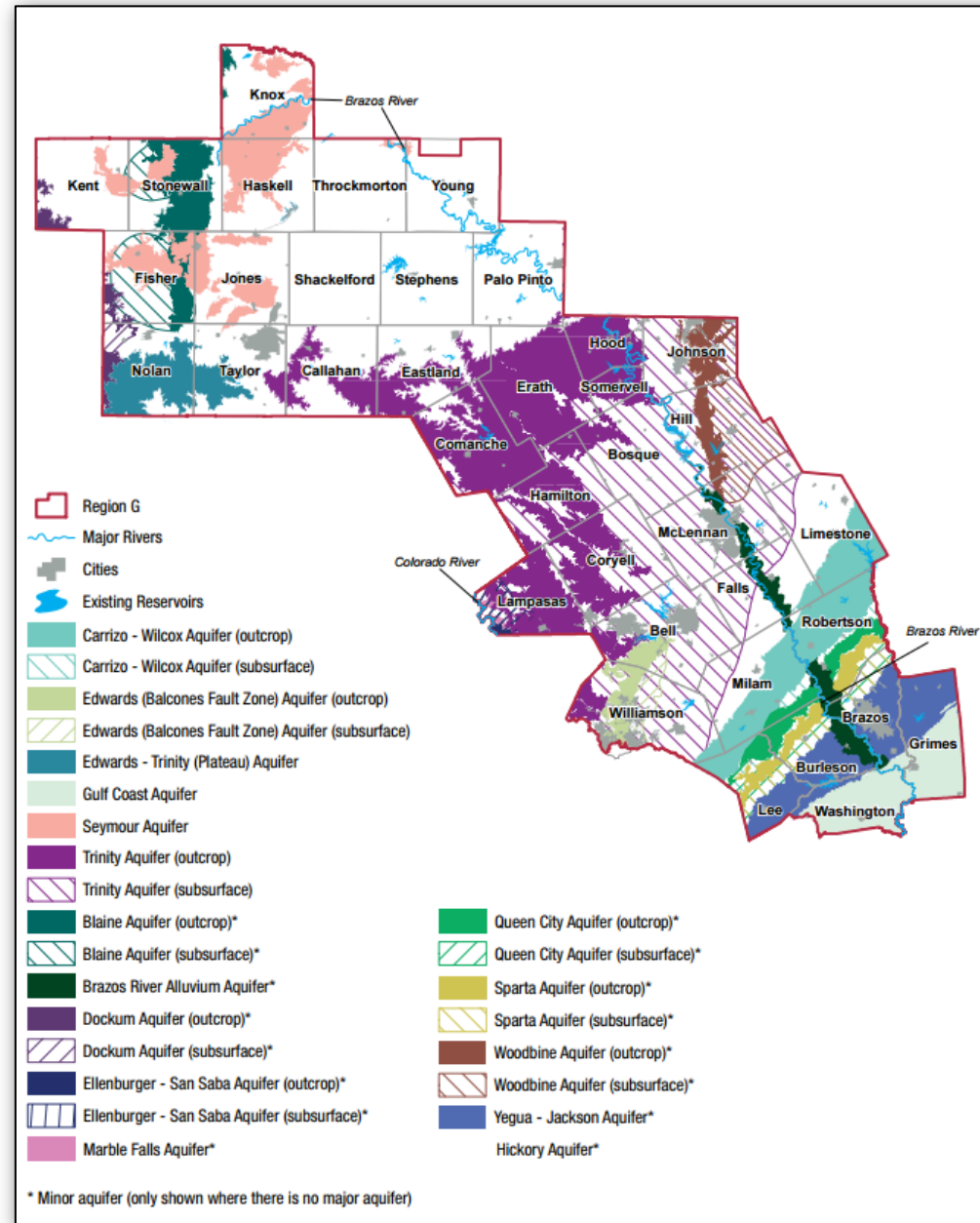


Regional Water Planning

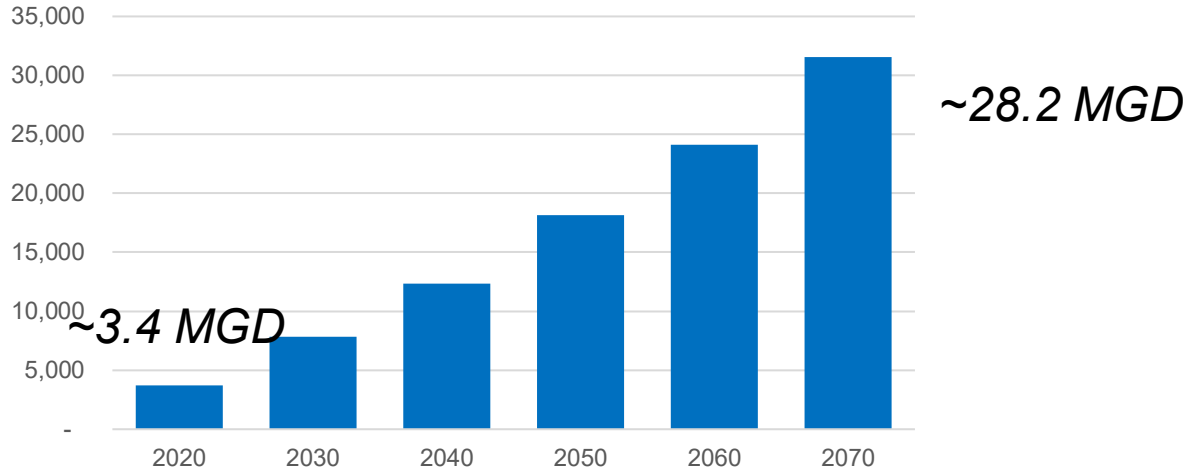


Providing consistent interaction and communication with GCDs

- GCDs know the local issues
- GCD input on groundwater strategies
- Brackish and ASR expertise

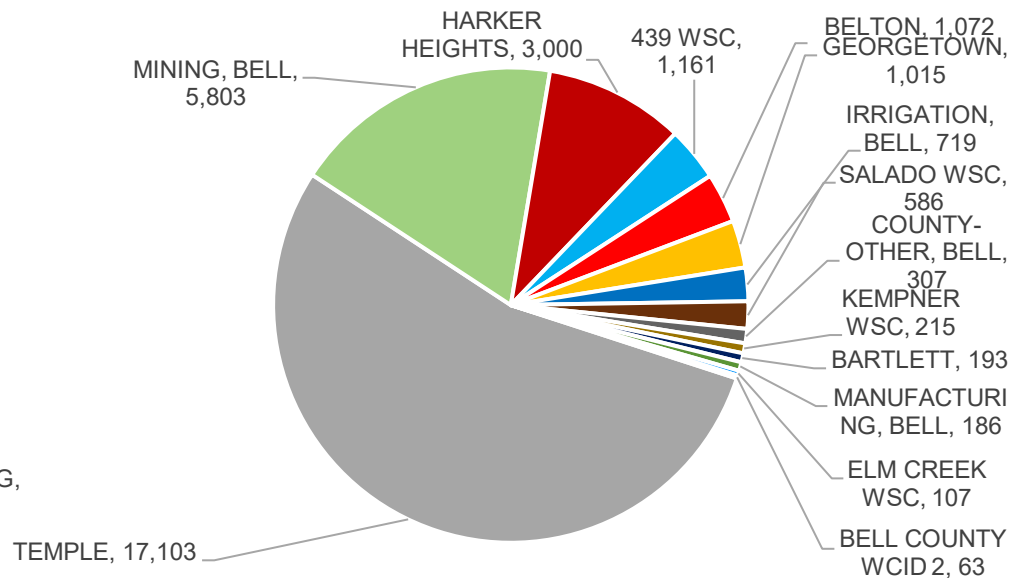
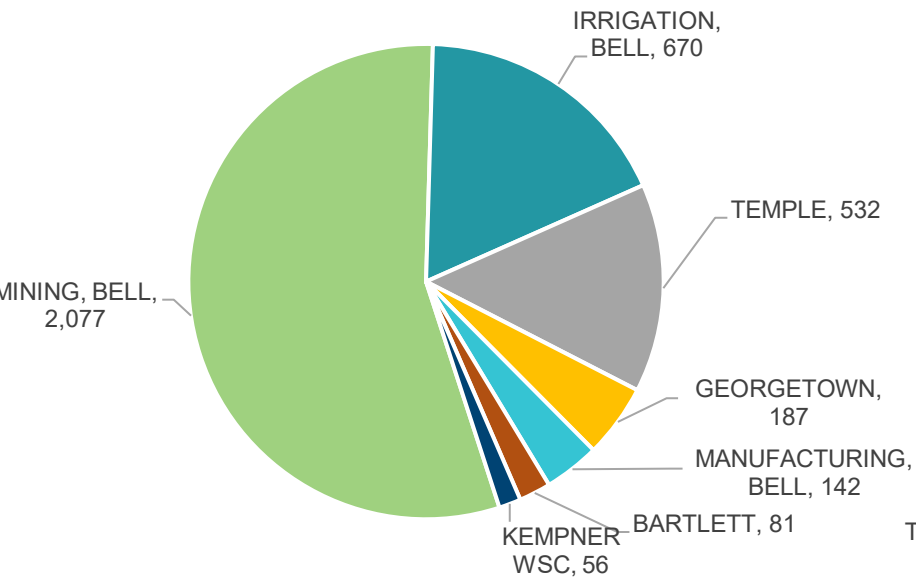


Bell County Projected Needs



3,745 ac-ft in 2020

31,530 ac-ft in 2070



Vetting of Water Management Strategies

- Potentially Feasible Strategies
- Costing
- Assessment of Potential Impacts
 - Water
 - Agricultural
 - Natural

2021 Recommended Water Management Strategies to meet projected needs in Bell County

- Alcoa Property Supply (Alcoa Lake & Brazos ROR)
- Alcoa Property Supply (Milam Sep Little River)
- Belton to Stillhouse Pipeline – BRA
- Belton WTP Expansion
- Edwards Aquifer Development
- Georgetown WTP Expansion
- Industrial Water Conservation
- Irrigation Water Conservation
- Kempner WSC WTP Expansion
- Killeen Reduction to Harker Heights
- Lake Granger ASR
- Lake Granger Augmentation-Ph 2 (GW)
- Municipal Water Conservation
- Purchase from Bell County WCID 1
- Purchase Raw Water from Fort Hood
- Purchase supply from Jarrell-Schwertner WSC
- Purchase treated SW from Central Texas WSC
- Reallocation of Supply from Moffat WSC
- Reuse
- Temple WTP Expansion
- Trinity Aquifer Development
- Trinity – Lake Georgetown ASR
- Williamson County Groundwater – South Option

Conservation

- Those methods and practices that either:
 - reduce the demand for water supply, or
 - increase the efficiency of the supply.
- Considered first for all WUGs with needs before any other strategies
- Municipal savings reflect a 1% annual reduction in per capita consumption until a target of 140 GPCD is reached.
- Conservation recommendations for several entities in Williamson County go beyond this and call for a reduction to a target of 120 GPCD by 2070.

Recommended Strategies and Projects	WUGs Receiving Supply ¹	Supply Developed						Total Project Cost
		2020	2030	2040	2050	2060	2070	
Municipal Conservation	100	0	23,441	45,098	64,776	86,273	103,439	\$614,324,416
Irrigation Conservation	20	8,308	13,848	18,980	18,898	19,139	19,139	ND
Industrial Conservation	33	1,689	3,027	3,785	3,775	3,858	4,024	ND

Water Conservation Resources

- Water Conservation Implementation Task Force
 - Guidance on Best Management Practices (BMPs)
 - GPCD targets and goals
- TWDB
 - Water Conservation BMP Guides (Municipal, Wholesale Water Providers)
 - Water Conservation Plan Guidance for Utilities
 - Checklist
 - How to Develop a Water Conservation Plan
 - Identifying Water Conservation Targets and Goals

Municipal water conservation can be achieved in a variety of ways, including using BMPs identified by the TWDB

1. System Water Audit and Water Loss,
2. Water Conservation Pricing,
3. Prohibition on Wasting Water,
4. Conservation Ordinance Planning and Development,
5. Showerhead, Aerator, and Toilet Flapper Retrofit,
6. Residential Toilet Replacement Programs with Ultra-Low-Flow toilets,
7. Residential Clothes Washer Incentive Program,
8. School Education,
9. Water Survey for Single-Family and Multi-Family Customers,
10. Landscape Irrigation Conservation and Incentives,
11. Water-Wise Landscape Design and Conversion Programs,
12. Athletic Field Conservation,
13. Golf Course Conservation,
14. Metering of all New Connections and Retrofitting of Existing Connections,
15. Wholesale Agency Assistance Programs,
16. Conservation Coordinator (updated 2019),
17. Water Reuse
18. Public Information,
19. Rainwater Harvesting and Condensate Reuse
20. New Construction Greywater,
21. Park Conservation,
22. Conservation Programs for Industrial, Commercial, and Institutional Accounts,
23. Residential Landscape Irrigation Evaluation,
24. Outdoor Watering Schedule (adopted 2019),
25. Custom Characterization (adopted 2019),
26. Public Outreach and Education (adopted 2019),
27. Partnerships with Nonprofit Organizations,
28. Custom Conservation Rebates (adopted 2019),
29. Plumbing Assistance for Economically Disadvantaged Customers (adopted 2019)

Brazos G 2021 Recommendations

Does not recommend specific conservation BMPs for entities, as each entity should choose best fit strategies

Top 3 Most Common BMPs

Municipal

- Metering of all new connections and retrofit of existing connections;
- Public information;
- System water audit and water loss control.

Irrigation

- Furrow dikes;
- Low-pressure sprinklers (LESA); and
- Low-energy precision application systems (LEPA)

Industrial Water Conservation

The Brazos G RWPG recommends that counties with projected needs for industrial users (manufacturing or mining) use BMPs identified by TWDB to reduce those water demands by

- 3 % by 2020,
- 5 % by 2030, and
- 7 % from 2040 to 2070

Industrial Conservation BMPs

1. Industrial Water Audit
2. Industrial Water Waste Reduction
3. Industrial Submetering
4. Cooling Towers
5. Cooling Systems (other than Cooling Towers)
6. Industrial Alternative Sources and Reuse and Recirculation of Process Water
7. Rinsing/Cleaning
8. Water Treatment
9. Boiler and Steam Systems
10. Refrigeration (including Chilled Water)
11. Once-Through Cooling
12. Management and Employee Programs
13. Industrial Facility Landscaping
14. Industrial Site-Specific Conservation

Why does the Water Plan Matter?

Regional and State Water Plans are considered in:

- Permitting (including amendments)
- Funding assistance
- Broad-scale resource to support future growth
 - Evidence of water supply and capability to support economic development
 - High-level base to support additional necessary detailed studies
- Rural water providers with limited funding for individual long-term planning studies



Consistency

- Consistency is achieved when a proposed project will use the **same source of water** as currently used or recommended in the water plan
- A project does not have to be in the water plan **unless** certain state financing is used (SWIFT, etc.)
- Treatment & distribution infrastructure usually not included in plans

Engagement with Regional Water Planning

Ongoing
Brazos G Process

- Formal input from Cities, counties, stakeholders critical for identifying & supporting Water Management Strategies

Provides a
“high-level”
characterization of
project(s)

- Costs
- Infrastructure
- Potential Impacts
- Issues

Provides initial support
for:

- Permitting - State and Federal processes
- Additional necessary studies
- Funding
- Economic Development

Funding Challenges and State Resources

- Grants are scarce and competitive.
- Low-interest loans are more common, but can be competitive (e.g. TWDB).
- Require patience and time to administer.
- Availability and rules change frequently, with specific requirements depending upon program and project specifics.
- For grants, The Foundation Center (<http://foundationcenter.org>) is a good starting point.

State Agency

Texas Dept. of Agriculture

Texas Water Development Board

Texas Commission on Environmental Quality

Texas Dept. of Transportation

Texas Historical Commission

Texas Dept. of Public Safety Div. of Emergency Mgmt.

Texas Forest Service (Rural VFD assistance)

Texas Task Force on Indigent Defense

Texas Parks and Wildlife Dept.

Texas Dept. of Housing & Community Affairs

Texas Governor's Office Economic Development Bank

Texas Dept. of State Health Services (Indigent Health Care)

Texas State Library

Texas Comptroller of Public Accounts (SECO)

Texas Water Development Board Financial Assistance Programs

Variety of cost-effective
loan and grant programs

Provide for water related
infrastructure:

- Planning
- Acquisition
- Design
- Construction

Totaling billions

Example TWDB Programs

Clean Water State Revolving Fund

Drinking Water State Revolving Fund

Economically Distressed Areas
Program

Flood Protection Planning

FEMA Flood Mitigation Assistance

Regional Water Planning Group
Grants

Rural Water Assistance Fund

State Participation Program

State Water Implementation Fund for
Texas (SWIFT)

Texas Water Development Fund

Summary

- ◆ Bottom-up process guided by TWDB to provide a consistent statewide picture of water resources
- ◆ Many moving parts
 - Technical
 - Administrative
- ◆ Where can we improve?
 - Engagement
 - Engagement
 - Engagement



How does Brazos G communicate?

- Brazos G website: www.brazosgwater.org
 - Posted meetings and planning information
 - Email contact widget
- Email list of interested parties
- Planning group meetings and required public hearings
- Surveys of Water User Groups and Wholesale Water Providers
- Public presentations when invited and time/funding allows
- Other public meetings to discuss major issues
- Phone calls/emails to & from us (members, BRA, consultants)
- Sub-regional meetings



Questions?

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