NOTICE OF OPEN MEETING OF THE
SOUTH CENTRAL TEXAS
REGIONAL WATER PLANNING
POPULATION AND WATER
DEMANDS WORK GROUP

TAKE NOTICE that a meeting of the Population and Water Demands Work Group, as established by the South Central Texas Regional Water Planning Group (SCTRWPG) will be held on Tuesday, December 13, 2022, at 10:00 AM both in person and virtually. The in person meeting will be held at the San Antonio River Authority, 201 W. Sheridan Street, San Antonio, TX 78204. You can attend virtually on GotoMeeting at https://meet.goto.com/767371741. The following subjects will be considered for discussion and/or action at said meeting.

1. Review Released Draft Data from TWDB
    a. Irrigation Projections and Supporting Data
2. Discussion and Appropriate Action Regarding Recommendation for Feedback to TWDB

Comments and submissions may be submitted through email to ccastillo@sariverauthority.org. Any written documentation can be sent to Tim Andruss, Chair, South Central Texas Regional Water Planning Group, c/o San Antonio River Authority, Attn: Caye Castillo, 201 W. Sheridan Street, San Antonio, TX 78204. Please direct any questions to Caye Castillo at (210) 302-4258.

Agenda Item 1:
Review Released Draft Data from TWDB: Irrigation Projections and Supporting Data

DRAFT 12/9/2022

Draft Water Demands: Irrigation

- Draft data released August 2022
- RWPG Responsibilities:
  - Review and submit revisions via consultant
  - Due to TWDB by **July 14, 2023**, but we can submit any time before then

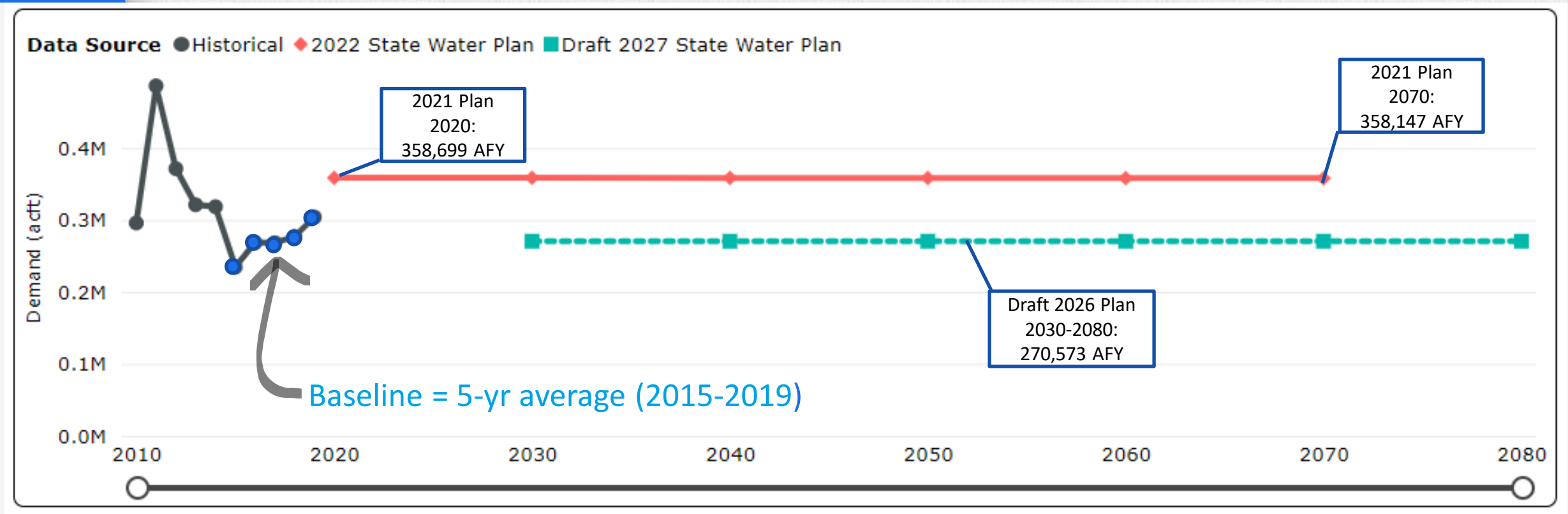
2026 Draft Irrigation Methodology

Draft irrigation water demand projections for each region-county were developed based upon:

- The TWDB Agricultural Conservation department develops annual irrigation water use estimates at the county level:
  - Apply a calculated evapotranspiration-based "crop water need" estimate to reported irrigated acreage from the Farm Service Agency.
  - Adjust estimates based on surface water release data from the TCEQ and comments from groundwater conservation districts, irrigation districts, and river authorities.

See Handout 1 for detailed methodology.

2026 Draft Irrigation Methodology



Source: TWDB

Same methodology as 2021 RWPs

- 2030-2080 held constant, except counties where Available Groundwater volumes (MAGs + non-MAGs) are less than groundwater portion of the demand projections – those counties demands will decrease.
- MAGs that have been reviewed and updated by July 2022 by the TWDB Groundwater staff were incorporated into the draft irrigation projections.

Draft Water Demand Projections: Irrigation Criteria for Adjustment

One or more of the following criteria must be verified by the regional water planning group and the Executive Administrator for consideration of revising the irrigation water demand projections:

1. Evidence that irrigation water use estimates for a county from another information source or more recent modeled available groundwater (MAG) volumes are more accurate than those used in the draft projections.
2. Evidence that recent (10 years or less) irrigation trends are more indicative of future trends than the draft water demand projections.
3. Evidence that the baseline irrigation demand projection is more likely to reflect the future irrigation demand than the groundwater resource-constrained water demand projection (especially where economically feasible water supply strategies have been identified).
4. Region or county-specific studies that have developed water demand projections or trends for the planning period, or part of the planning period, and are deemed to be more reasonable estimates than the TWDB-generated draft projections.
5. Evidence of errors identified in historical water use, including volumes of reuse (treated effluent) or brackish groundwater that were not included in the draft projections.

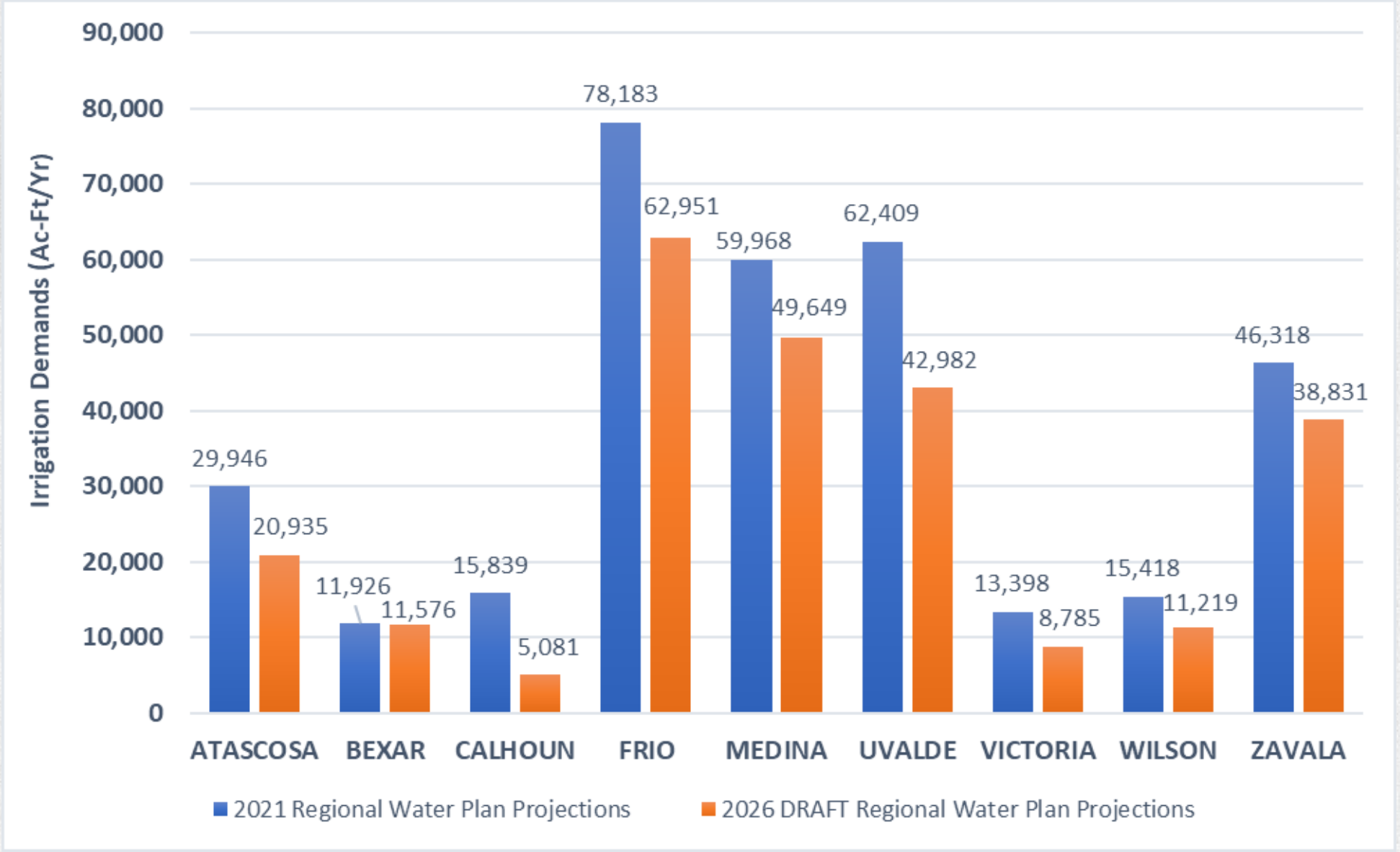
2026 Draft Water Demand Projections: Irrigation (1 of 2)

County	2026 DRAFT Irrigation Water Demand Projections (AFY)					
	2030	2040	2050	2060	2070	2080
ATASCOSA	20,935	20,935	20,935	20,935	20,935	20,935
BEXAR	11,576	11,576	11,576	11,576	11,576	11,576
CALDWELL	557	557	557	557	557	557
CALHOUN	5,081	5,081	5,081	5,081	5,081	5,081
COMAL	755	755	755	755	755	755
DEWITT	422	422	422	422	422	422
DIMMIT	3,776	3,776	3,776	3,776	3,776	3,776
FRIO	62,951	62,951	62,951	62,951	62,951	62,951
GOLIAD	3,413	3,413	3,413	3,413	3,413	3,413
GONZALES	3,829	3,829	3,829	3,829	3,829	3,829
REGION TOTAL	**270,573**	**270,573**	**270,573**	**270,573**	**270,573**	**270,573**

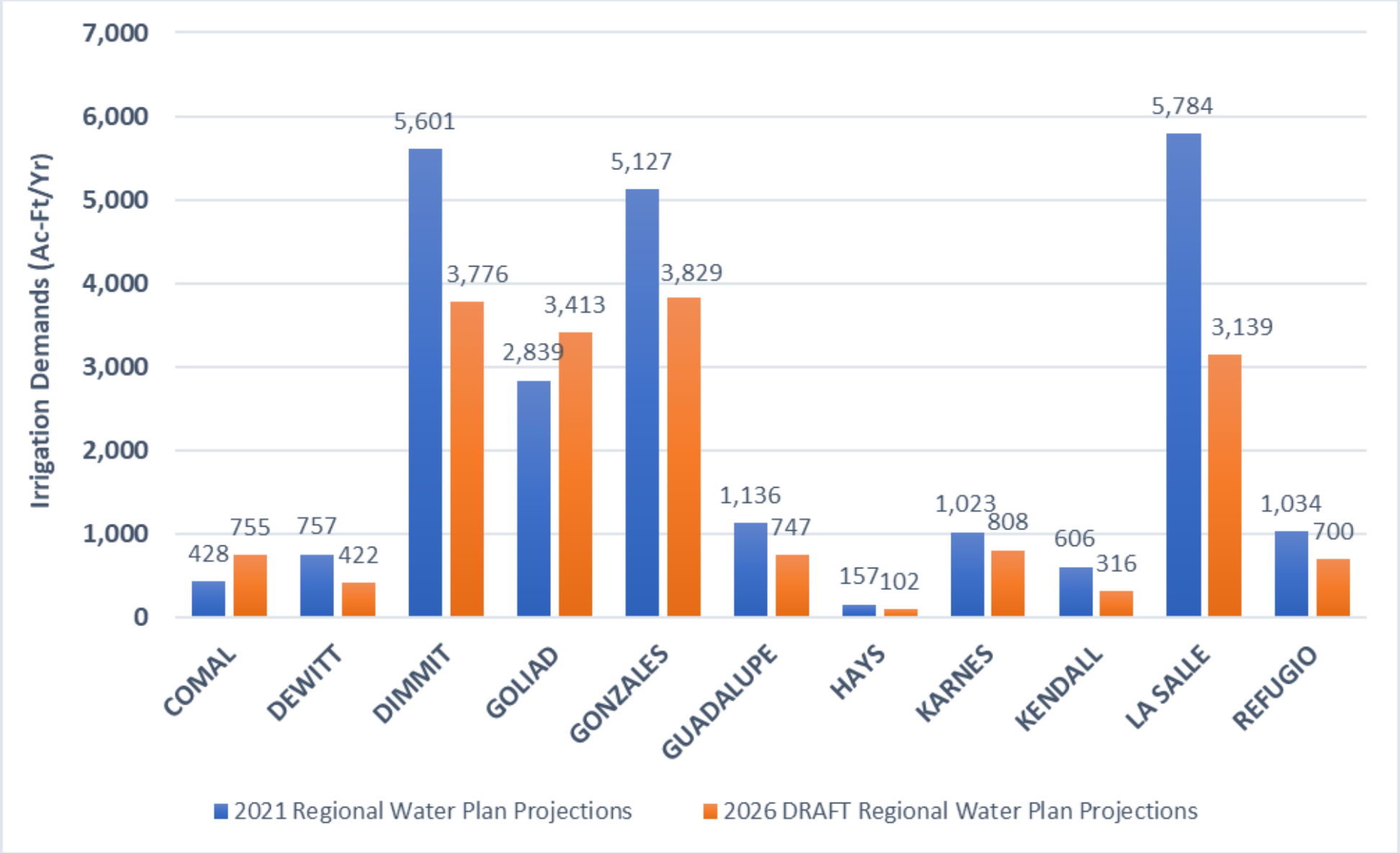
2026 Draft Water Demand Projections: Irrigation (2 of 2)

County	2026 DRAFT Irrigation Water Demand Projections (AFY):					
	2030	2040	2050	2060	2070	2080
GUADALUPE	747	747	747	747	747	747
HAYS	102	102	102	102	102	102
KARNES	808	808	808	808	808	808
KENDALL	316	316	316	316	316	316
LA SALLE	3,139	3,139	3,139	3,139	3,139	3,139
MEDINA	49,649	49,649	49,649	49,649	49,649	49,649
REFUGIO	700	700	700	700	700	700
UVALDE	42,982	42,982	42,982	42,982	42,982	42,982
VICTORIA	8,785	8,785	8,785	8,785	8,785	8,785
WILSON	11,219	11,219	11,219	11,219	11,219	11,219
ZAVALA	38,831	38,831	38,831	38,831	38,831	38,831
REGION TOTAL	**270,573**	**270,573**	**270,573**	**270,573**	**270,573**	**270,573**

Irrigation Water Demand Comparison (1 of 2)



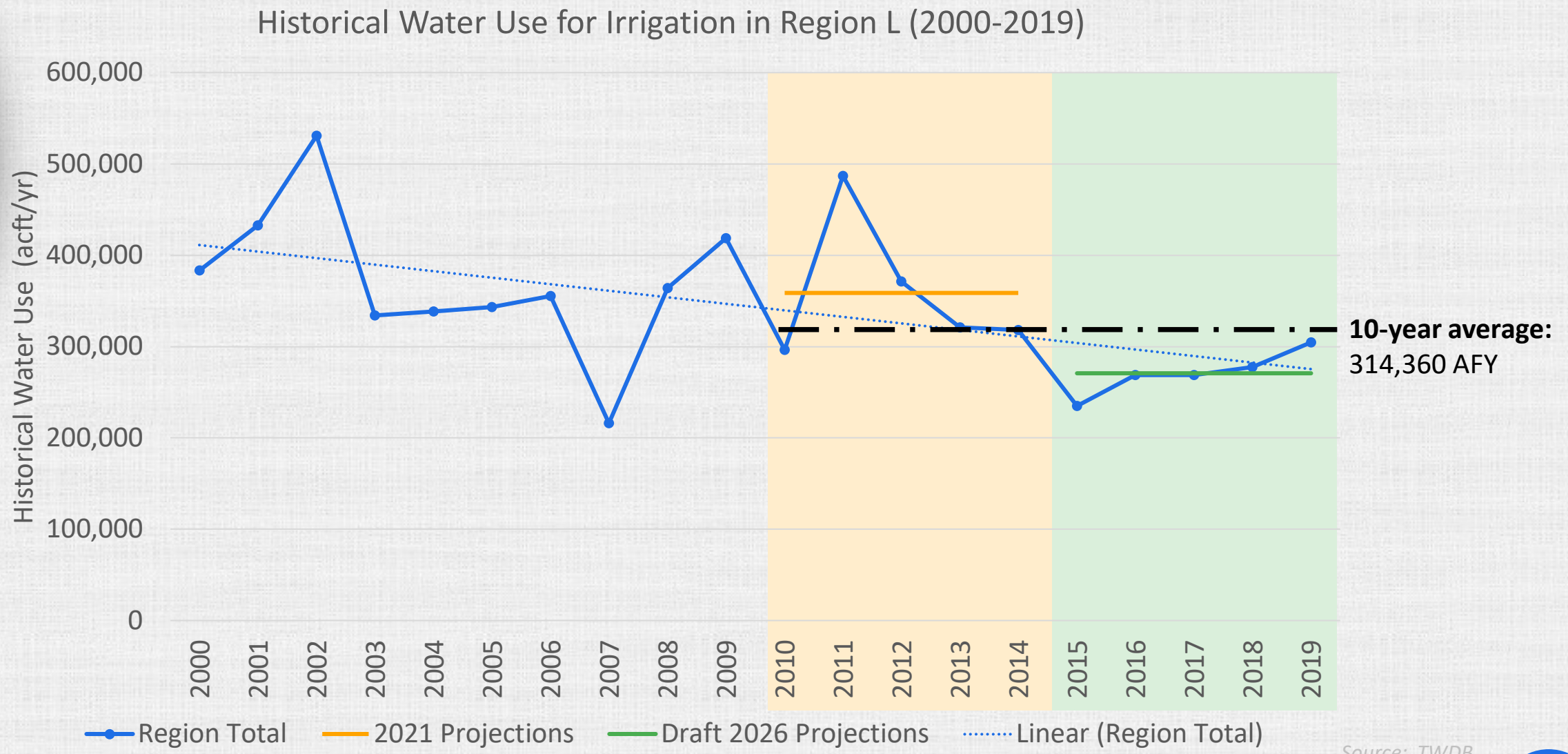
Irrigation Water Demand Comparison (2 of 2)



Unmet Irrigation Water Needs from the 2021 Plan

County	2021 Unmet Irrigation Water Needs (AFY)					
	2020	2030	2040	2050	2060	2070
BEXAR	4,152	4,152	4,152	4,152	4,152	4,152
CALHOUN	14,088	14,088	14,088	14,088	14,088	14,088
COMAL	33	33	33	33	33	33
DEWITT	318	318	265	265	0	0
DIMMIT	5,249	5,249	5,249	5,249	5,249	5,249
FRIO	0	0	1,838	3,612	5,332	7,146
GOLIAD	388	388	388	388	388	388
KARNES	352	352	911	911	911	911
KENDALL	1	1	1	1	1	1
LA SALLE	1,184	1,203	1,223	1,248	1,271	1,294
MEDINA	37,636	38,392	38,254	38,898	39,075	40,143
UVALDE	43,021	43,333	43,333	43,423	43,672	44,101
VICTORIA	5,791	5,791	5,791	5,791	5,791	5,791
WILSON	3,390	3,405	3,417	3,428	11,153	11,453
ZAVALA	21,235	21,350	21,109	20,733	20,148	19,865
REGION TOTAL	**136,838**	**138,055**	**140,052**	**142,220**	**151,264**	**154,615**

Draft Water Demand Projections: Irrigation



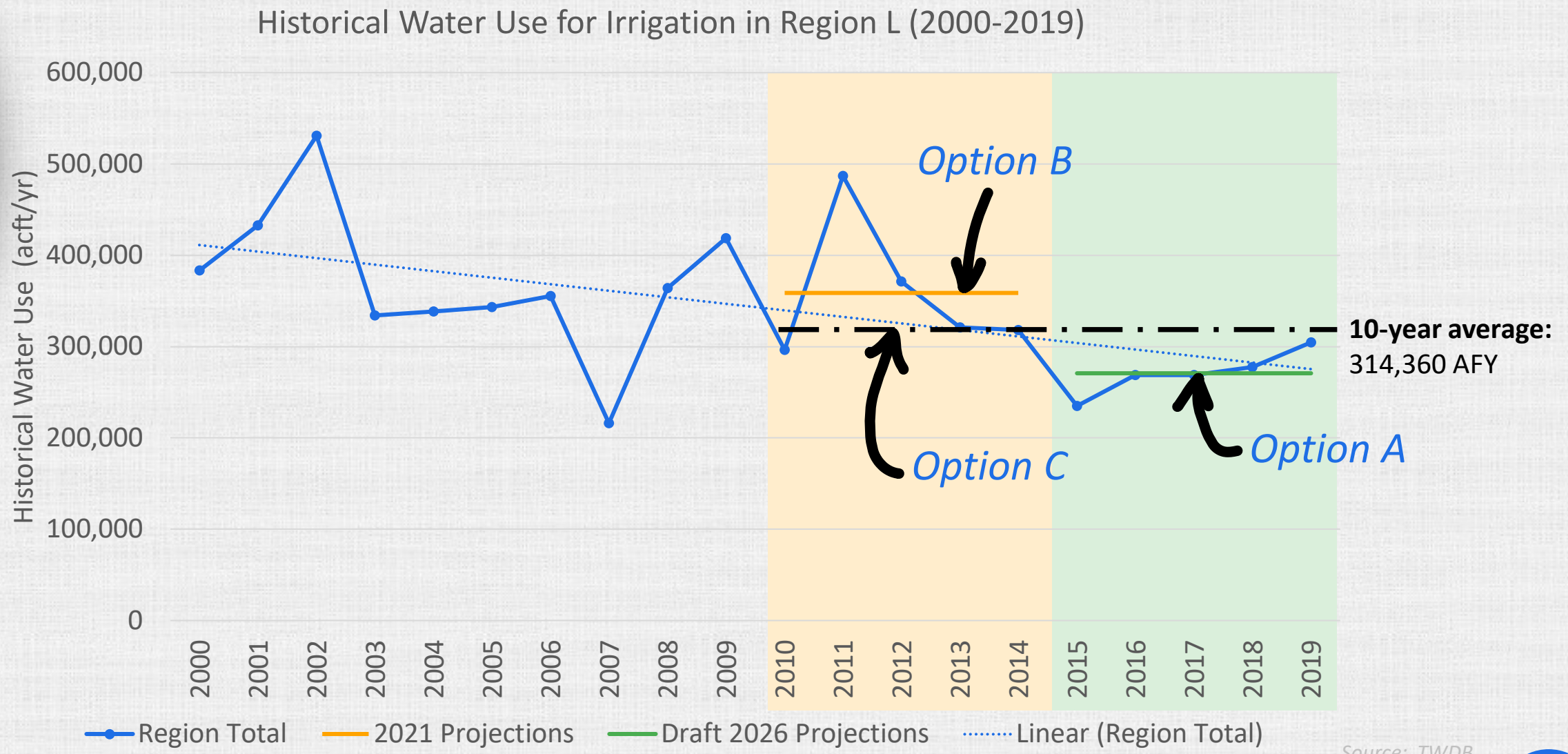
Source: TWDB

Path Forward: Discussion

2030 Demand

- **Option A** (current): No change from 2026 Draft Irrigation Projections (2015-2019)
- **Option B**: Use 2021 RWP Irrigation Projections (2010-2014 average)
- **Option C**: Use most recent ten-years of TWDB water use estimates (2010-2019 average)
- **Option D**: Other suggestions?

Draft Water Demand Projections: Irrigation



Source: TWDB

Path Forward: Discussion (continued)

2040-2080 Demand

- **Option 1** (current): Hold demands constant between 2030-2080 (unless demands exceed MAG and MAG decreases over time)
- **Option 2**: Decrease demands between 2030-2080 based on historical water use

---

- How to account for voluntary suspension of irrigation practices during severe drought?
  - **Alternative 0** (current): Demand exists = drought management strategy
  - **Alternative 1**: No demand = no planting*

*Would only occur for applicable customers in participating counties during severe drought – additional program information required

Draft Water Demand Projections: Irrigation Criteria for Adjustment

One or more of the following criteria must be verified by the regional water planning group and the Executive Administrator for consideration of revising the irrigation water demand projections:

1. Evidence that irrigation water use estimates for a county from another information source or more recent modeled available groundwater (MAG) volumes are more accurate than those used in the draft projections.
2. Evidence that recent (10 years or less) irrigation trends are more indicative of future trends than the draft water demand projections.
3. Evidence that the baseline irrigation demand projection is more likely to reflect the future irrigation demand than the groundwater resource-constrained water demand projection (especially where economically feasible water supply strategies have been identified).
4. Region or county-specific studies that have developed water demand projections or trends for the planning period, or part of the planning period, and are deemed to be more reasonable estimates than the TWDB-generated draft projections.
5. Evidence of errors identified in historical water use, including volumes of reuse (treated effluent) or brackish groundwater that were not included in the draft projections.

Agenda Item 2:
Discussion and Appropriate Action Regarding Recommendation for Feedback to TWDB

Discussion.

- Proposed revisions for TWDB
- Next Steps
- Next Meeting(s)
- Other topics

Irrigation Water Demand Projections Methodology for the 2026 Regional and 2027 State Water Plans

Methodology summary

The draft irrigation water demand projections are based upon the average of the most recent five-years of water use estimates (2015 through 2019) for each region-county and either:

- held constant between 2030 and 2080 or
- in counties where the total groundwater availability over the planning period is projected to be less than the groundwater-portion of the baseline water demand projections, the irrigation water demand projections are held constant for 10 years beyond the point that the groundwater availability falls below the baseline demand, in most cases 2030 to 2040, after projected demands will begin to decline, depending on and commensurate with the groundwater availability.

After draft projections (decades 2030 through 2080) for each region-county are provided to the Regional Water Planning Groups (RWPGs), the RWPGs may request alterations to the draft projections, subject to adequate justification, documentation, and EA approval per guidance in *Exhibit C: General Guidelines for Development of the 2026 Regional Water Plans*.

Key changes from the previous planning cycle's projection methodology: None

Major Assumptions/Updates

- Baseline use calculated as average of five years of TWDB annual region-county level estimates (2015 - 2019).
- Irrigation water demands will be held constant unless constrained by modeled available groundwater (MAG), then, after a single decade delay, the demands will decline at the same rate as the groundwater availability. This is to both acknowledge the decline in availability and yet allow for a need to be reflected that can be addressed with strategies such as conservation. This is the same method used to develop irrigation projections for the 2021 Regional Water Plans.

Baseline default projection methodology

Data Sources:

- TWDB historical water use estimates by region and county (2015-2019), including reuse.
- Projected total groundwater availability volumes including the most recent MAG volumes from the 2021 Joint Groundwater Planning process (some MAG data is under review and is subject to change). At the time these draft irrigation projections were developed, updated MAG data was not available from Groundwater Management Areas 1, 8, 9, 10 and 12.

Each year, the TWDB Agricultural Conservation department develops annual irrigation water use estimates at the county level by applying a calculated evapotranspiration-based "crop water need"

estimate to reported irrigated acreage from the Farm Service Agency. These estimates are then adjusted based on surface water release data from the Texas Commission on Environmental Quality and comments from groundwater conservation districts, irrigation districts, and river authorities.

As part of the regional and state water plans, the TWDB Projections and Socioeconomic Analysis department develops irrigation projections. Future water demands for irrigation purposes are significantly impacted by commodity prices, production costs, federal agricultural policies, and federal energy policies. Any attempt to forecast such factors and their impact on water use over a 50-year period would be impractical. A more credible methodology is to focus on recent historical irrigation water use data as an indicator of future use. Therefore, the baseline dry-year irrigation demand projection for most areas will be the average of the annual irrigation water use estimates over the most recent five years of water use data and that average volume will then be held constant over the planning period.

However, much of the projected irrigation demands of the state are supplied by groundwater sources that are projected to decline significantly over 50 years. If the baseline irrigation water demand projections associated with groundwater and summed over 50 years, exceeds the projected groundwater resource (modeled available groundwater volume) summed over 50 years, then the water demand projections will reflect groundwater availability constraints as described below.

Constrained water demand projections

Starting at the year 2030 baseline projection, the demand volume will be held constant for at least one decade. If the annual groundwater availability is lower than the baseline projection at the beginning of the planning period (2030), then beginning in 2040, the subsequent demands will parallel the trend of the groundwater availability (MAG). See Figure 1. If the annual groundwater availability equals or exceeds the default baseline annual groundwater projection at the beginning of the planning period (2030) but then falls below the baseline projection at a later point, then the irrigation water demand projections will not begin to parallel the groundwater availability until the following decade, after the point at which groundwater availability has fallen below the baseline demand projections. See Figure 2.

Figure 1- Potential Draft Irrigation Water Demand Projections: Declining Groundwater Example

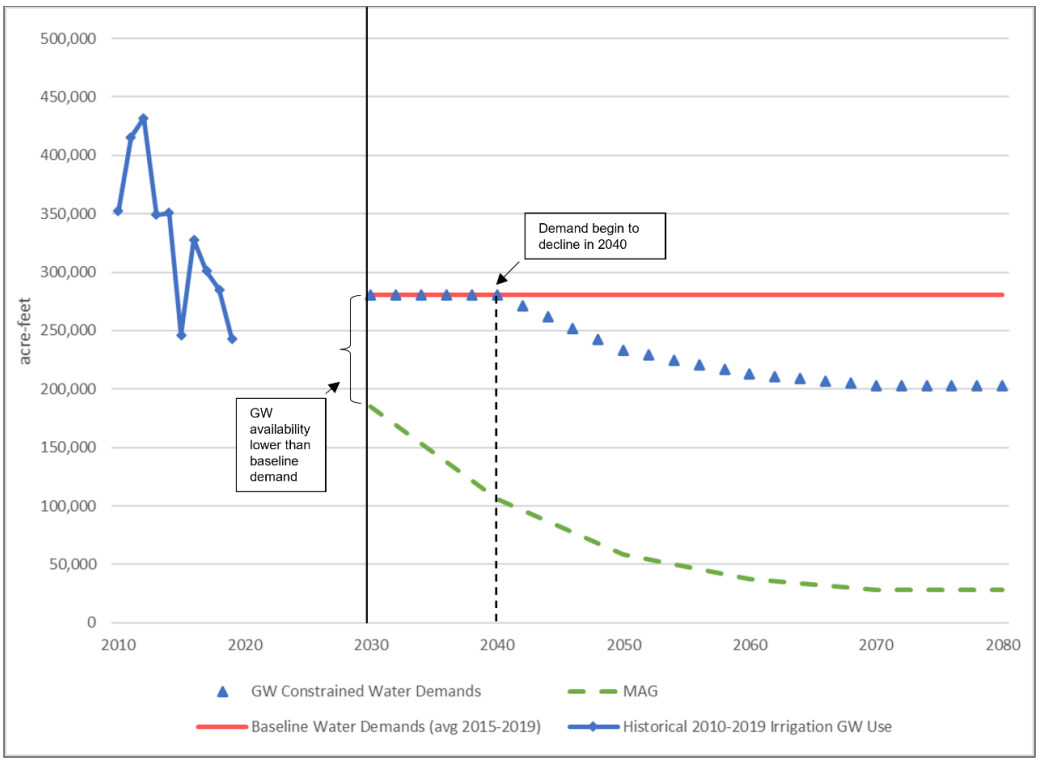
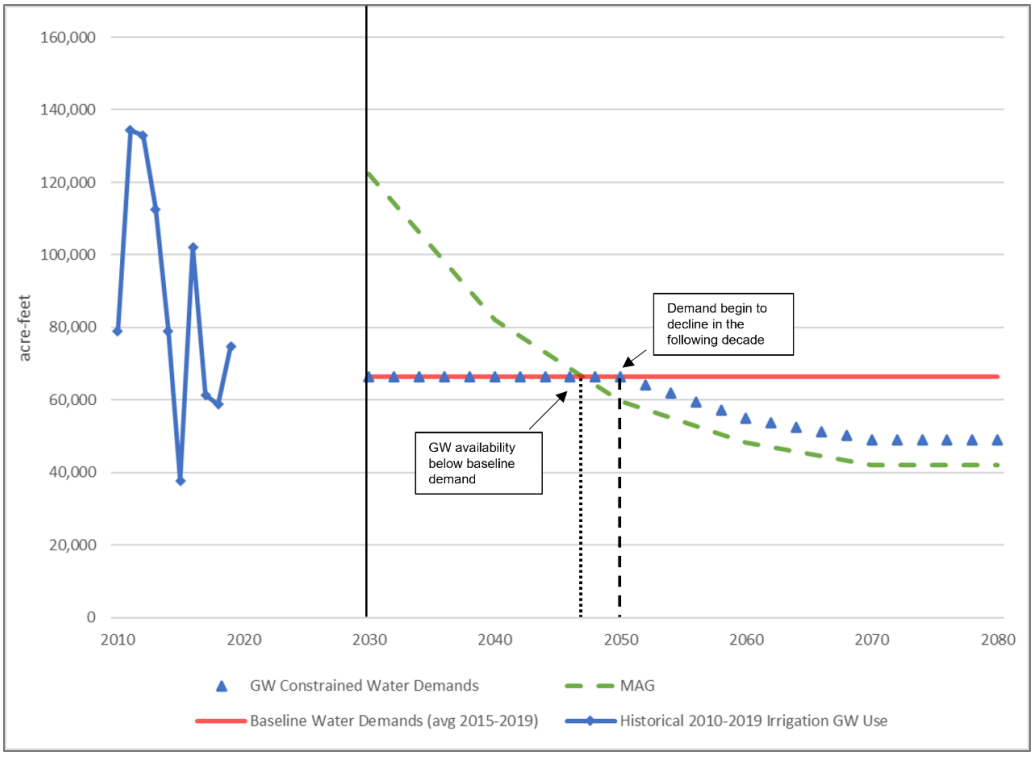


Figure 2- Potential Draft Irrigation Water Demand Projections: Declining Groundwater Example



While constraining water demand projections based on water resource availability would most likely occur in areas primarily utilizing groundwater, such constraints could also occur in areas with limitations of surface water rights or contracts. At this stage however, TWDB does not have sufficient information to attempt to constrain surface water demands and will defer to RWPGs to identify such instances, if appropriate. The portion of the baseline irrigation water demand projection anticipated to be supplied by surface water and reuse, based on recent water use data, will be added to the constrained groundwater demand.

Key Data Sources

Links to the key data sources in developing the projections:

1. Historical water use (county):

   https://www3.twdb.texas.gov/apps/reports/WU/SumFinal_CountyReportWithReuse

2. 2021 RWP Projections (county):

   https://www3.twdb.texas.gov/apps/reports/Projections/2022%20Reports/demand_county