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 Thursday, December 8, 2022, at 1:00 PM 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/676209469. The following subjects will be considered for discussion and/or action at said meeting.

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

Comments and submissions may be submitted through email to khayes@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: Kendall Hayes, 201 W. Sheridan Street, San Antonio, TX 78204. Please direct any questions to Kendall Hayes at (210) 302-3641.

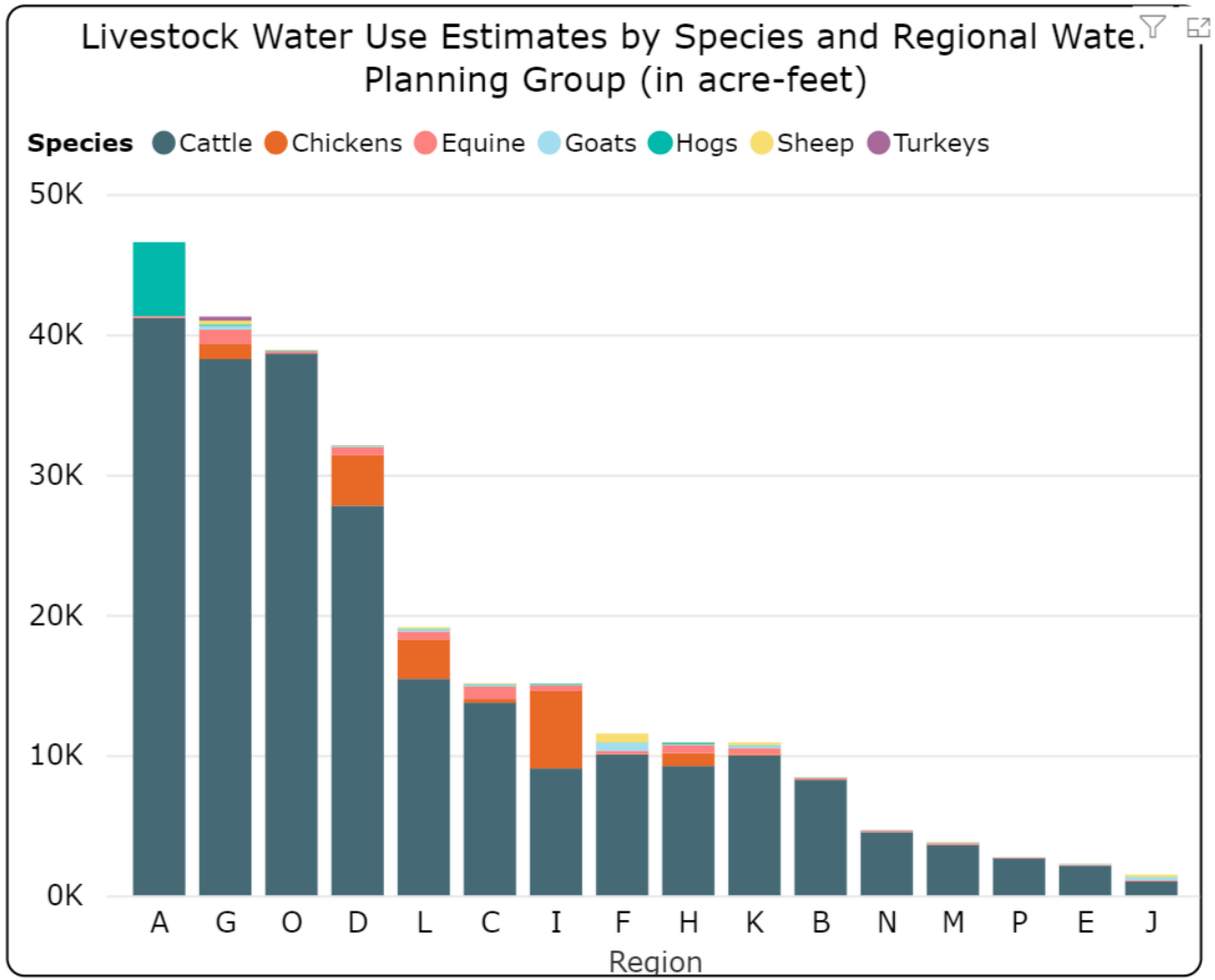
Agenda Item 1:
Review Released Draft Data from TWDB: Livestock Projections and Supporting Data

DRAFT 12/5/2022

Draft Water Demands: Livestock

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

http://www.twdb.texas.gov/waterplanning/data/dashboard/index.asp



Source: TWDB, 2017 Livestock Inventory

Livestock Water Use Estimates by Species

- Cattle contributed to 88.8% of all livestock water use in state
- Region L was fifth largest livestock producer

2026 Livestock Methodology

- Baseline = average of five years of TWDB annual region-county-level estimates (2015 - 2019).
- Historical TWDB annual water use estimates consist of species-specific water use per head values, multiplied by annual inventory estimates, plus surveyed water use for non-standard livestock production such as fish hatcheries.
- Decade-specific water use trends from the previous water planning cycle were applied to the five-year estimate average baseline. Draft year 2080 projections are held constant from the year 2070 projections.
- TWDB also changed the chicken inventory estimate methodology from using USDA production numbers (number of chickens produced in a year) to USDA inventory numbers (number of chickens at any given time) to better represent annual water use.

See Handout 1 for detailed methodology.

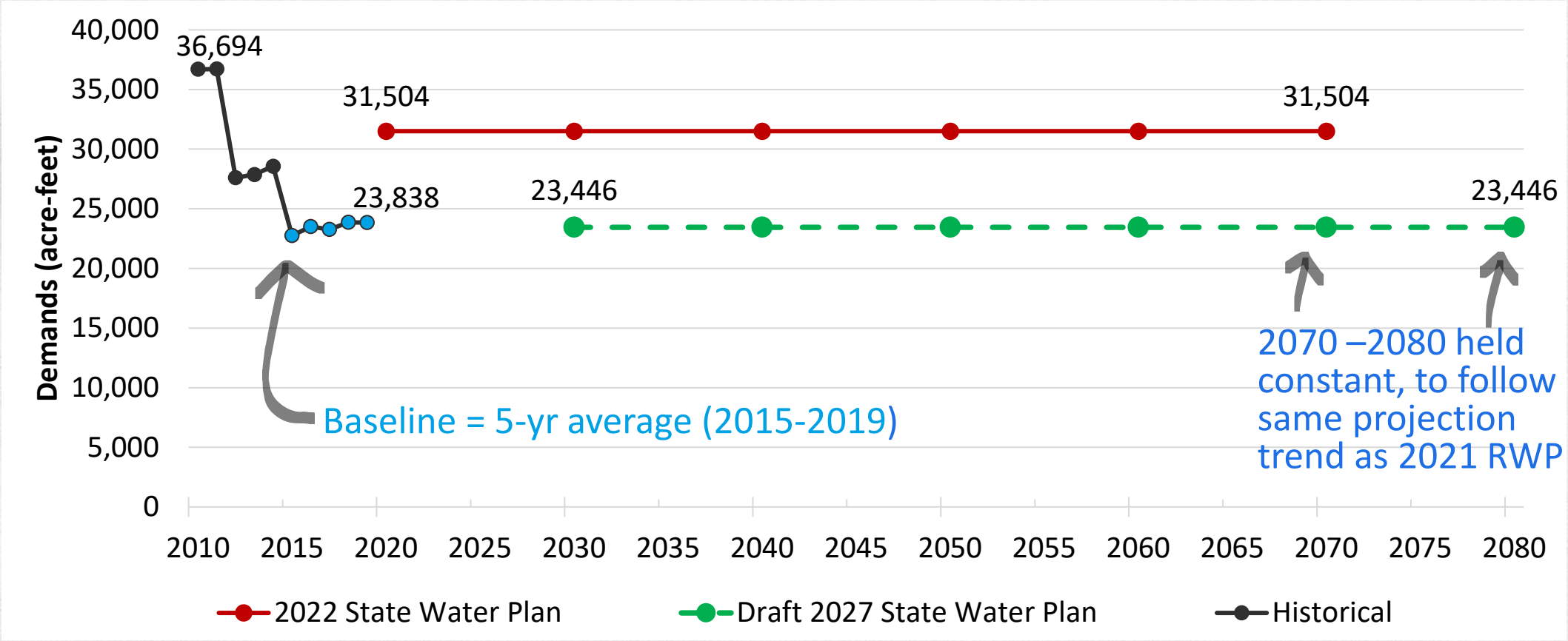
Draft Water Demand Projections: Livestock

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		
	Broilers	0.09	0.077
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

Source: TWDB

Draft Water Demand Projections: Livestock



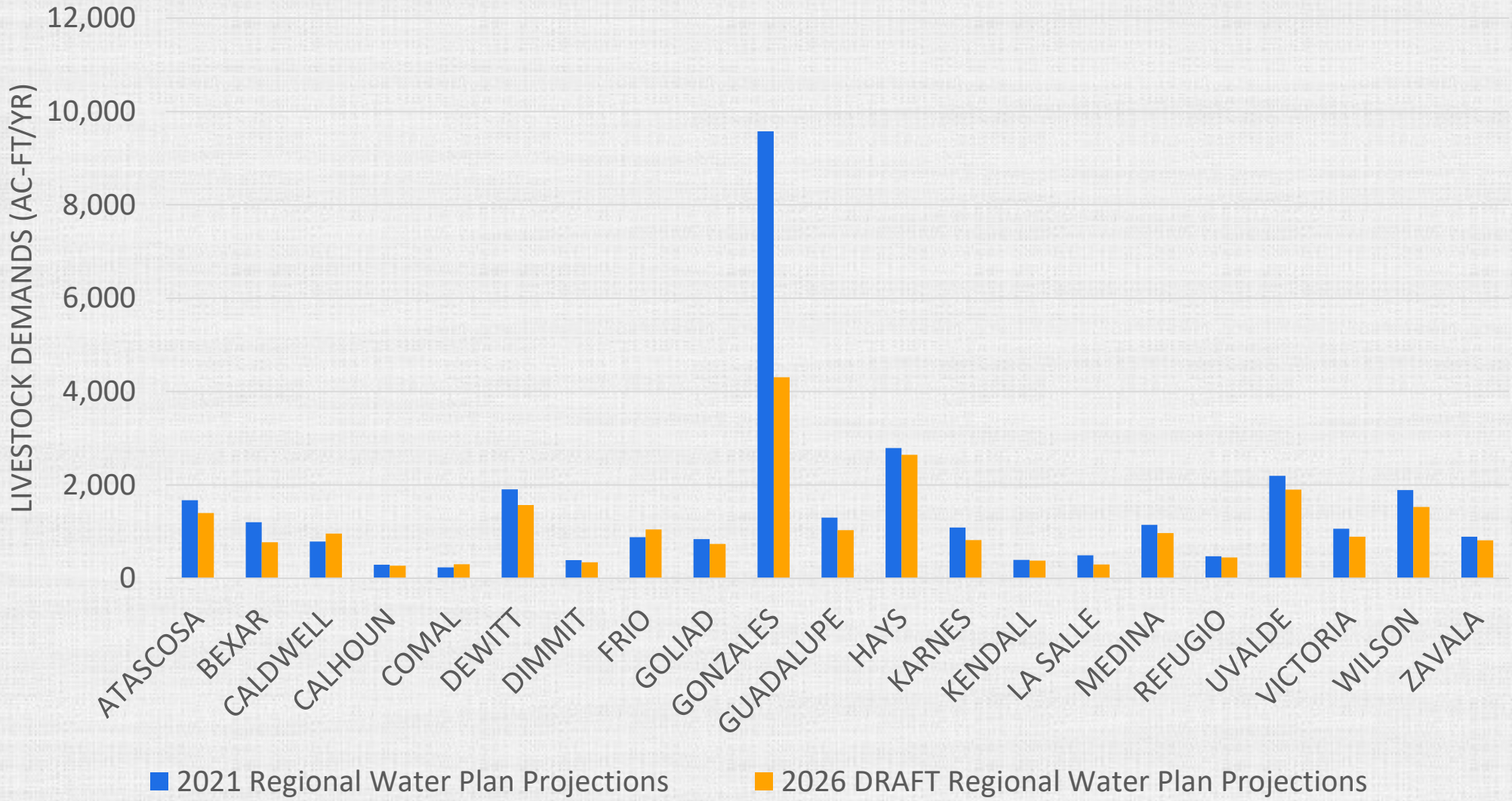
Source: Katie Dahlberg, TWDB

Same methodology as 2021 RWPs

- County Water Use Estimates = USDA Inventory * Livestock Water Use Coefficients
- Water Use Survey facilities

One County identified with significant changes (Gonzales County) from last cycle to this cycle. Other counties were identified with smaller changes (both increases and decreases) from previous cycle.

Draft Water Demand Projections: Livestock



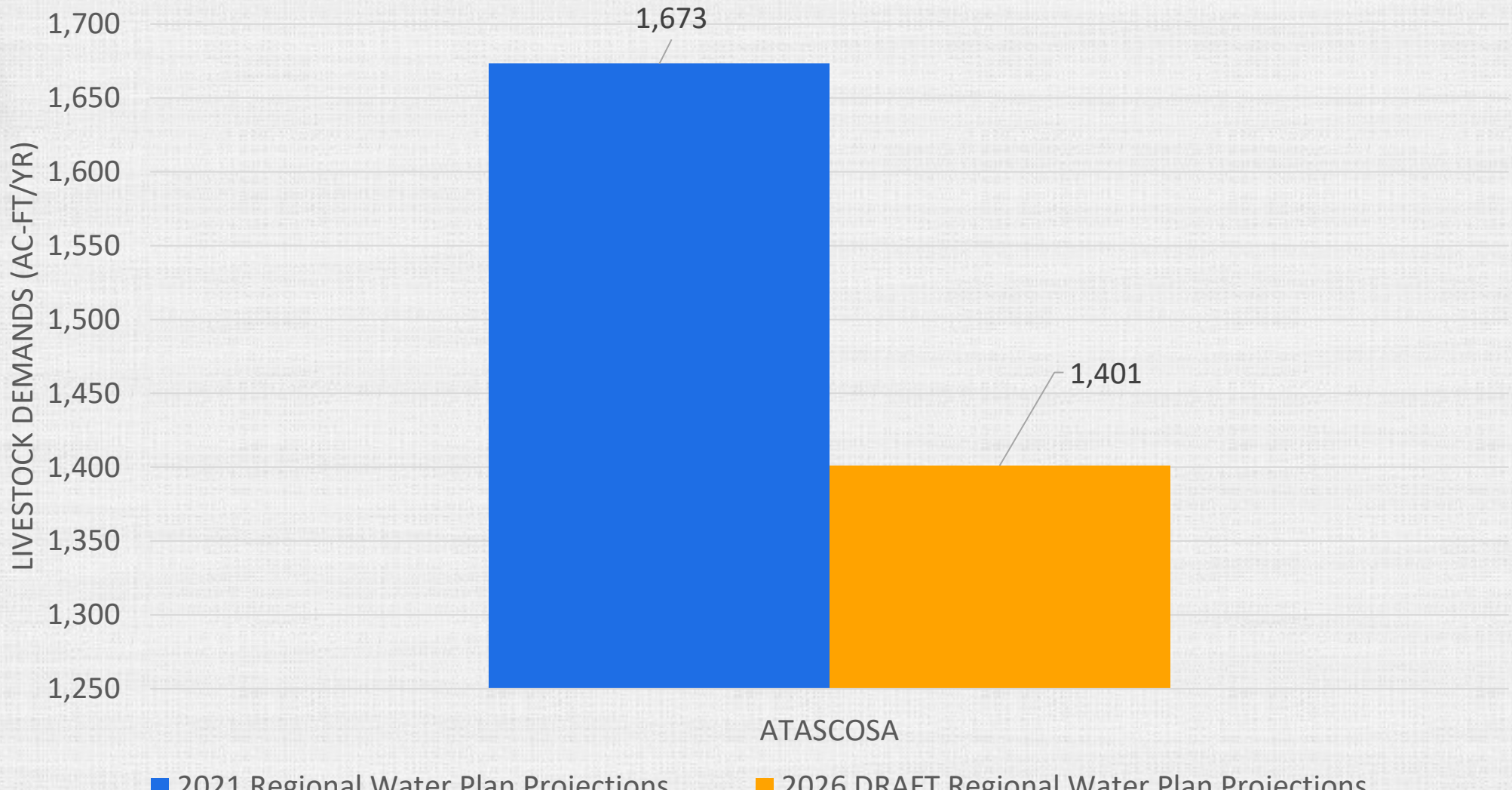
Draft Water Demand Projections: Livestock Criteria for Adjustment

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 livestock water demand projections:

1. Evidence that livestock water use estimates for a county from another source are more accurate than those used in the draft projections.
2. Plans for the construction, expansion, or closure of a confined livestock feeding operation in a county at some future date.
3. Other evidence of change in livestock inventory or water requirements that would justify an adjustment in the projected future rate of change in livestock water demand.
4. 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.

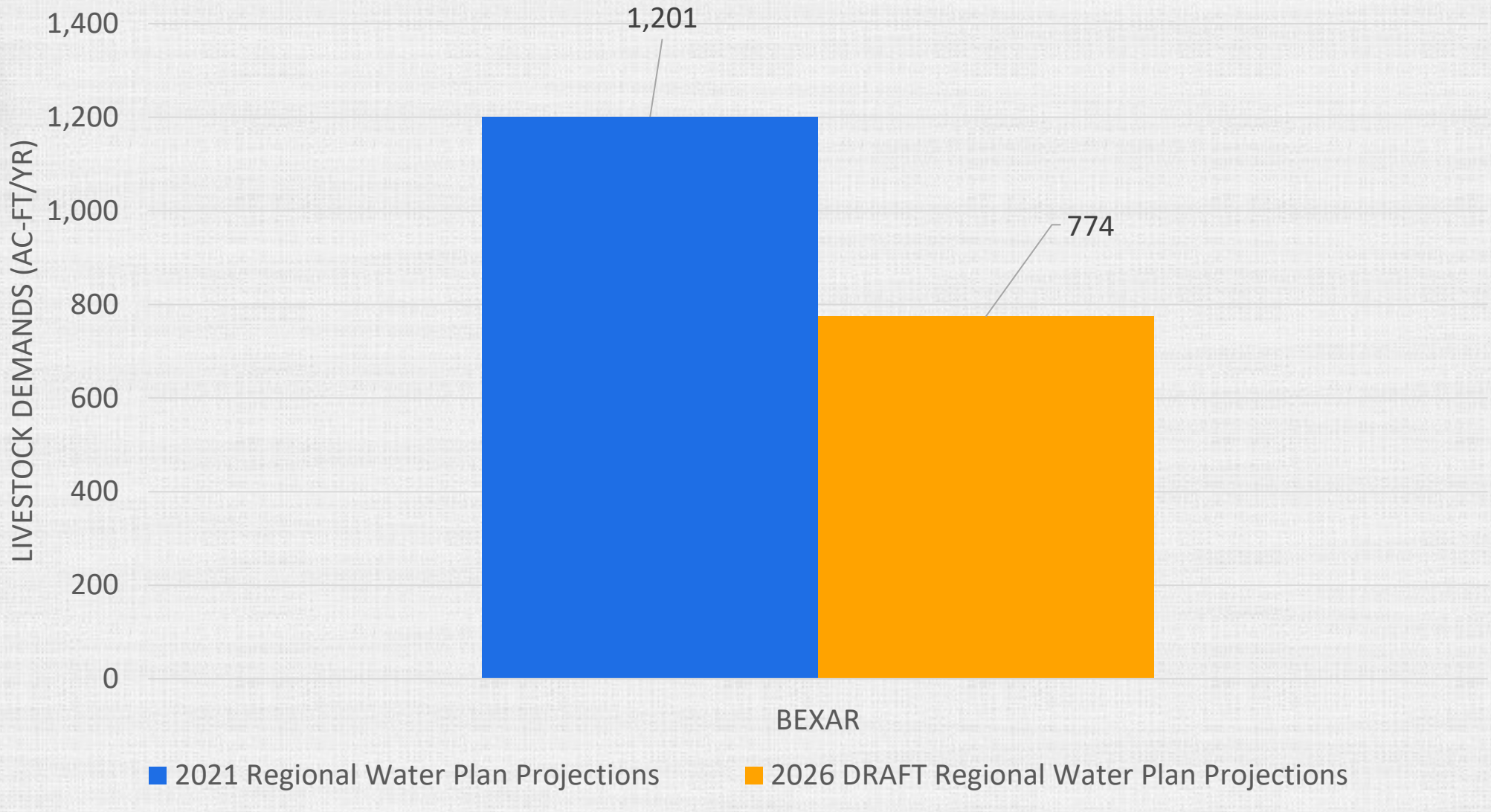
Draft Water Demand Projections: Atascosa County Livestock

Historical Water Use Estimates (ac-ft/yr)				
2015	2016	2017	2018	2019
1,408	1,420	1,363	1,407	1,409



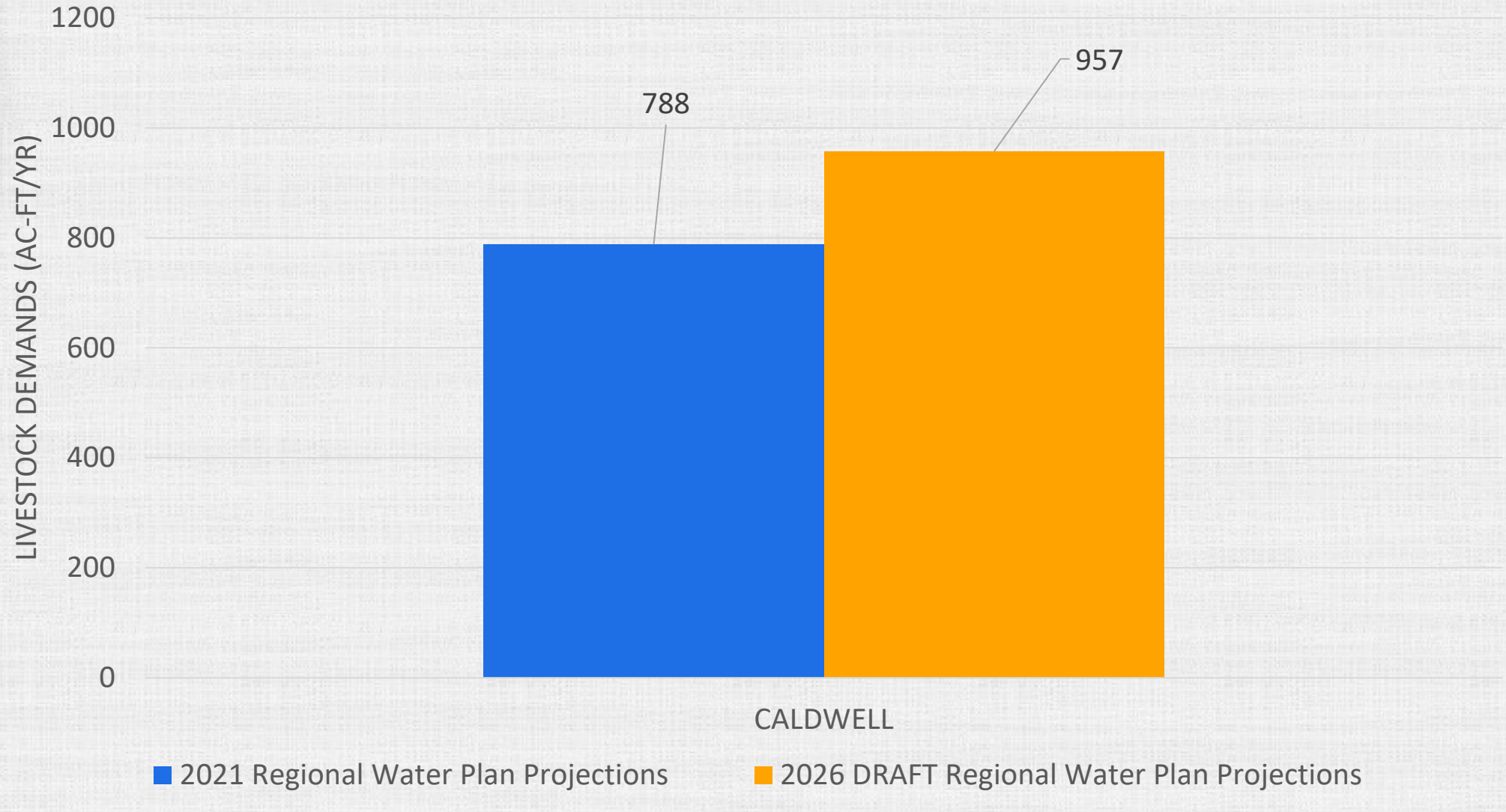
Draft Water Demand Projections: Bexar County Livestock

Historical Water Use Estimates (ac-ft/yr)				
2015	2016	2017	2018	2019
728	736	784	811	811



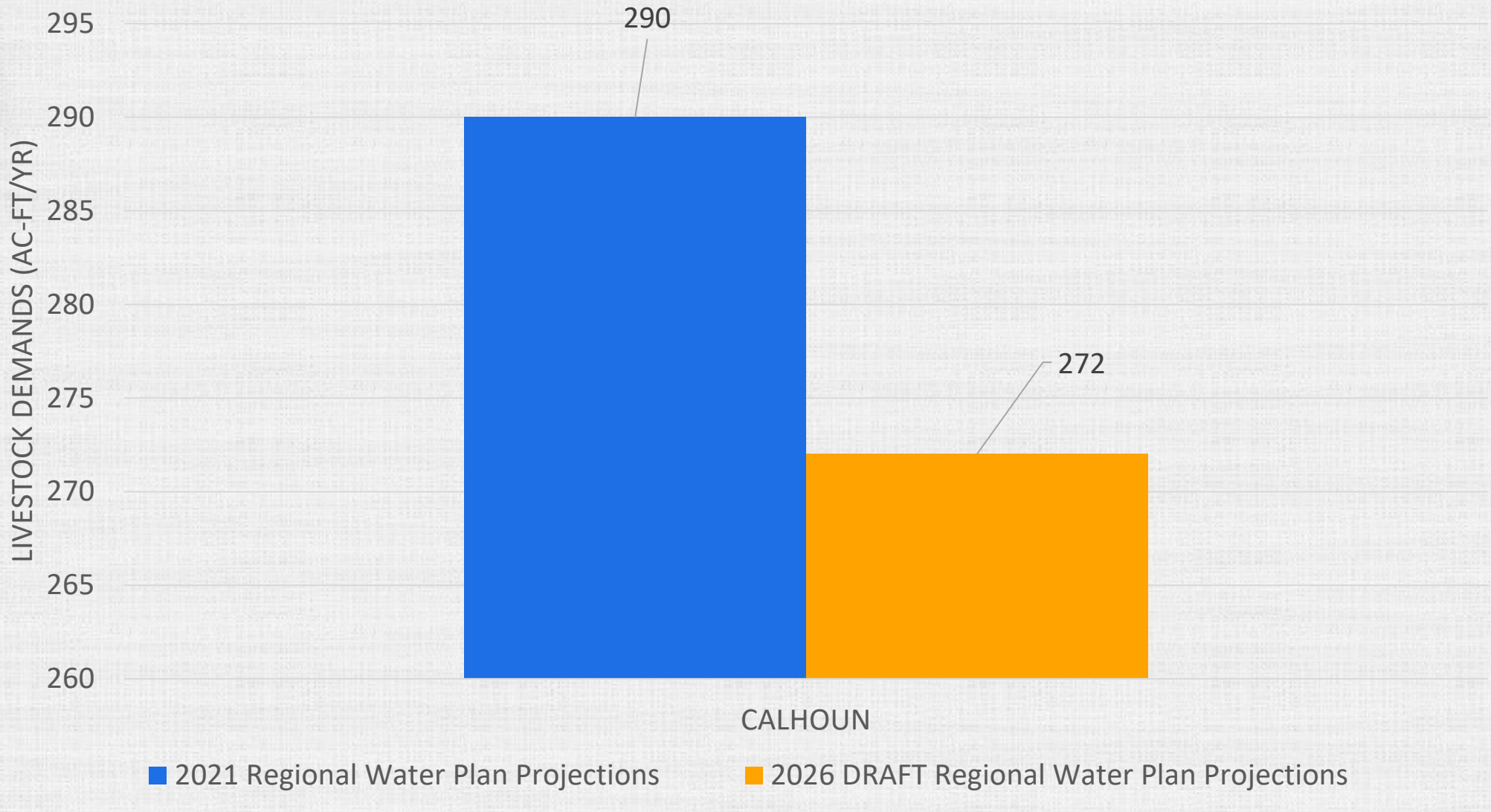
Draft Water Demand Projections: Caldwell County Livestock

Historical Water Use Estimates (ac-ft/yr)				
2015	2016	2017	2018	2019
695	709	1,078	1,144	1,159



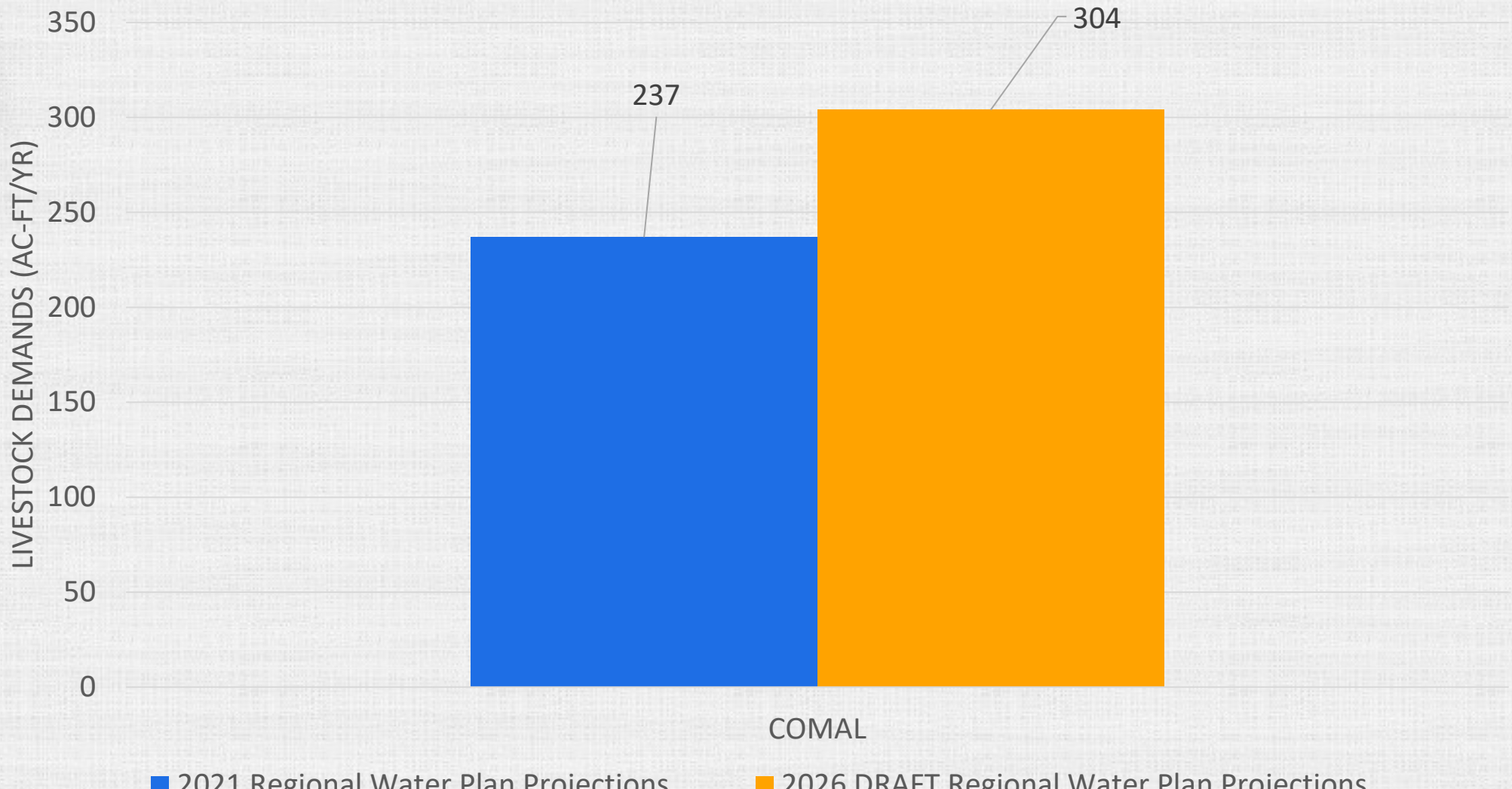
Draft Water Demand Projections: Calhoun County Livestock

Historical Water Use Estimates (ac-ft/yr)				
2015	2016	2017	2018	2019
270	274	264	277	277



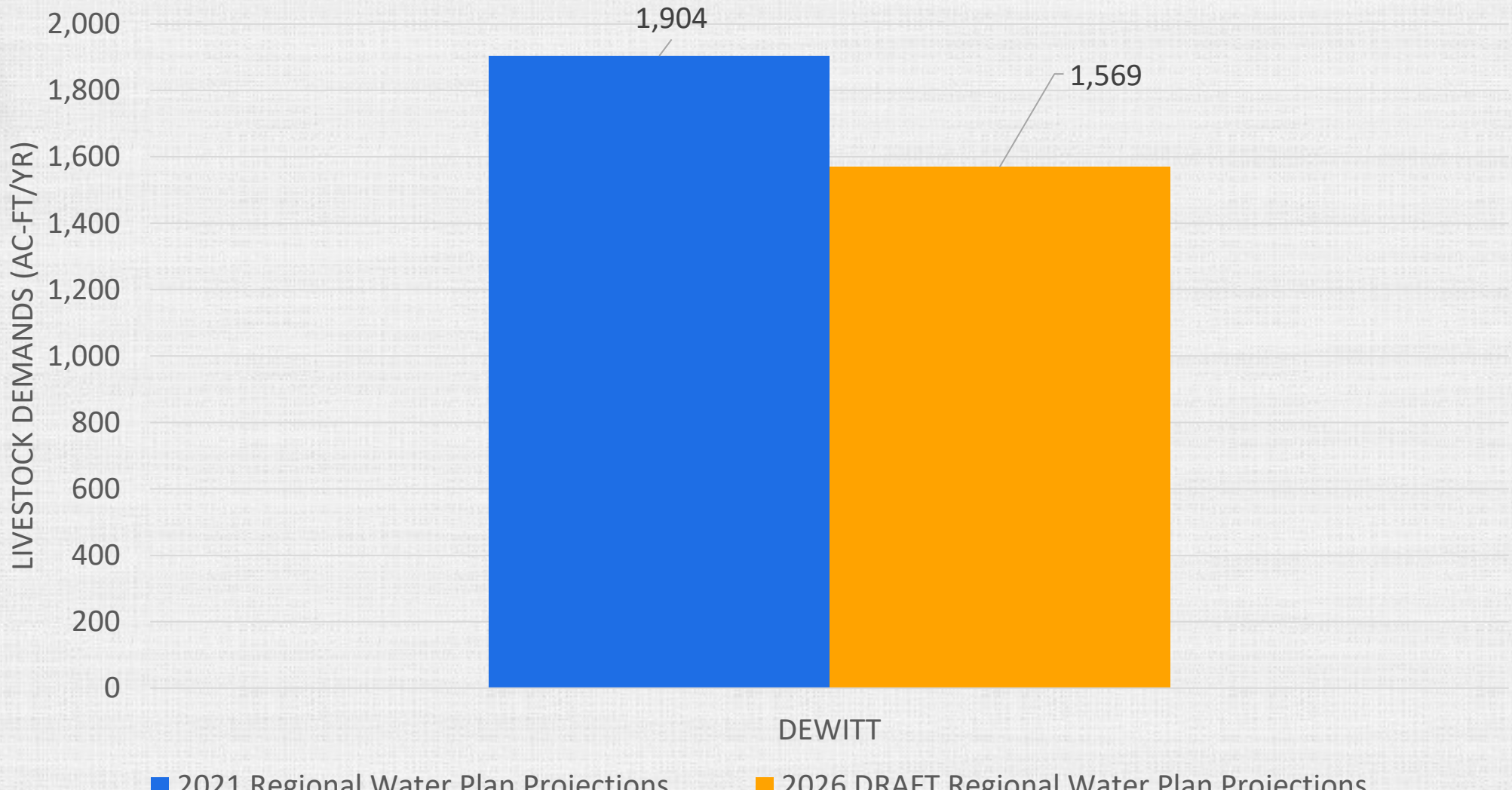
Draft Water Demand Projections: Comal County Livestock

Historical Water Use Estimates (ac-ft/yr)				
2015	2016	2017	2018	2019
260	262	324	337	338



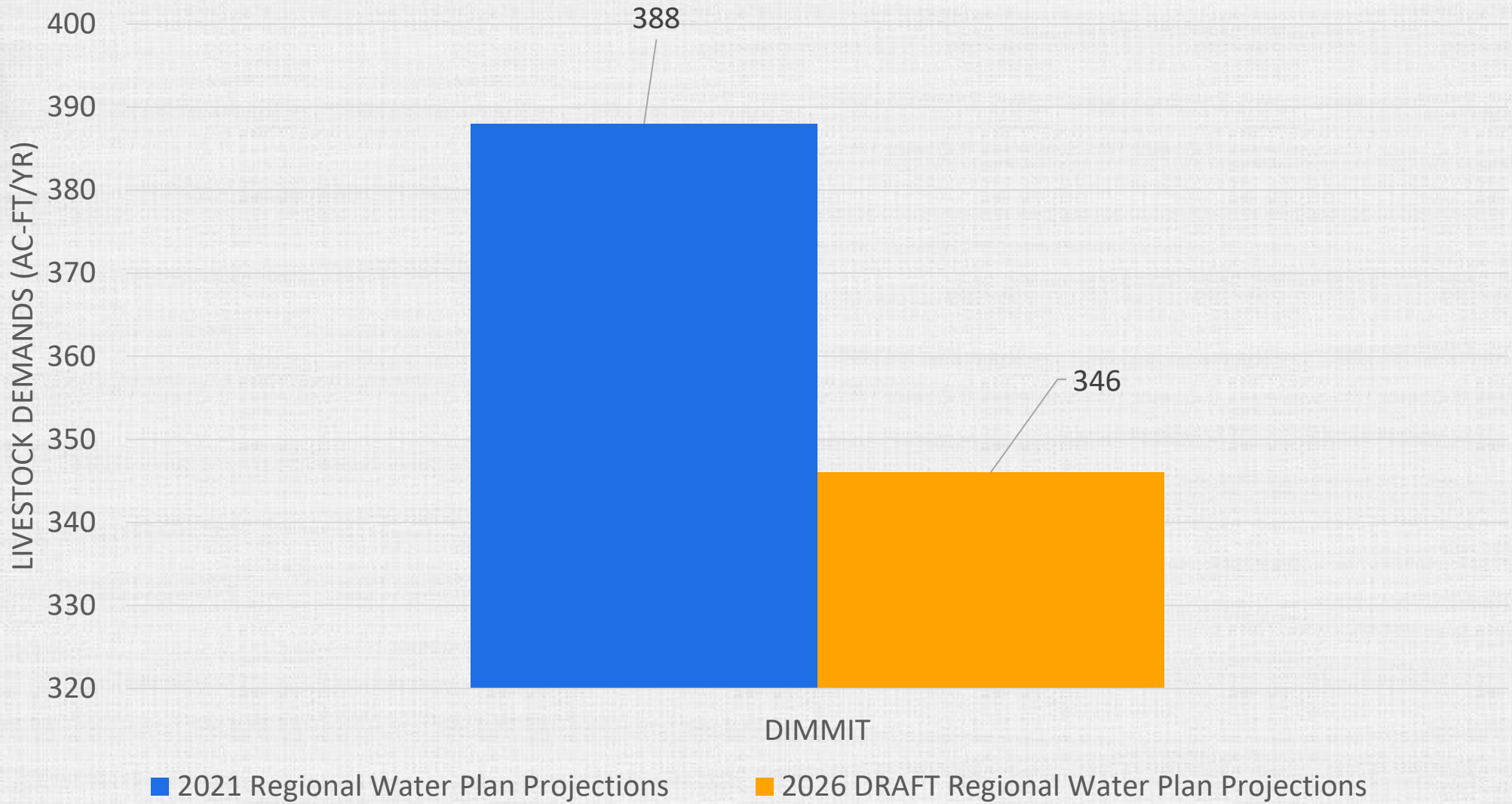
Draft Water Demand Projections: DeWitt County Livestock

Historical Water Use Estimates (ac-ft/yr)				
2015	2016	2017	2018	2019
1,514	1,530	1,563	1,618	1,620



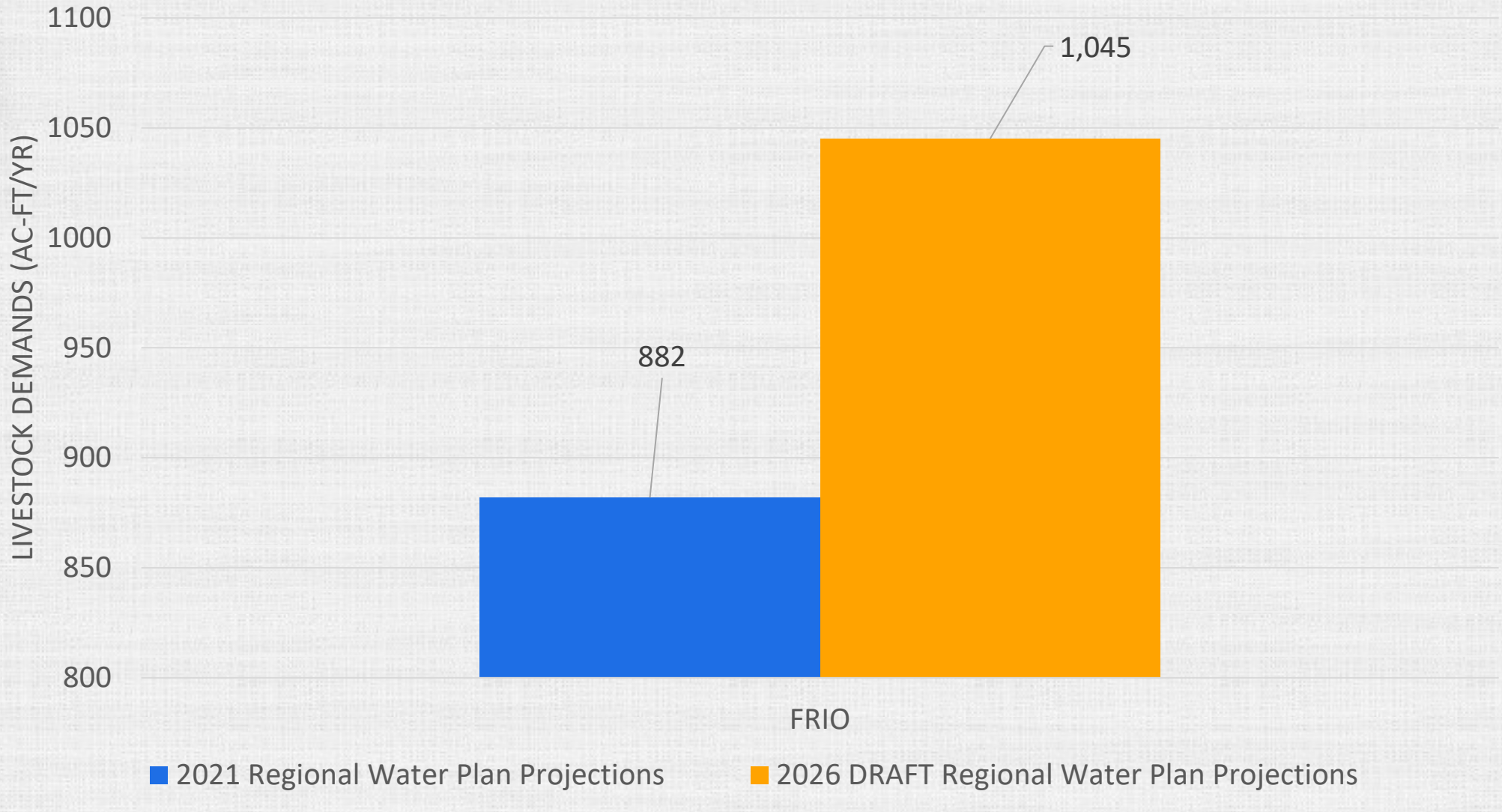
Draft Water Demand Projections: Dimmit County Livestock

Historical Water Use Estimates (ac-ft/yr)				
2015	2016	2017	2018	2019
306	312	358	376	376



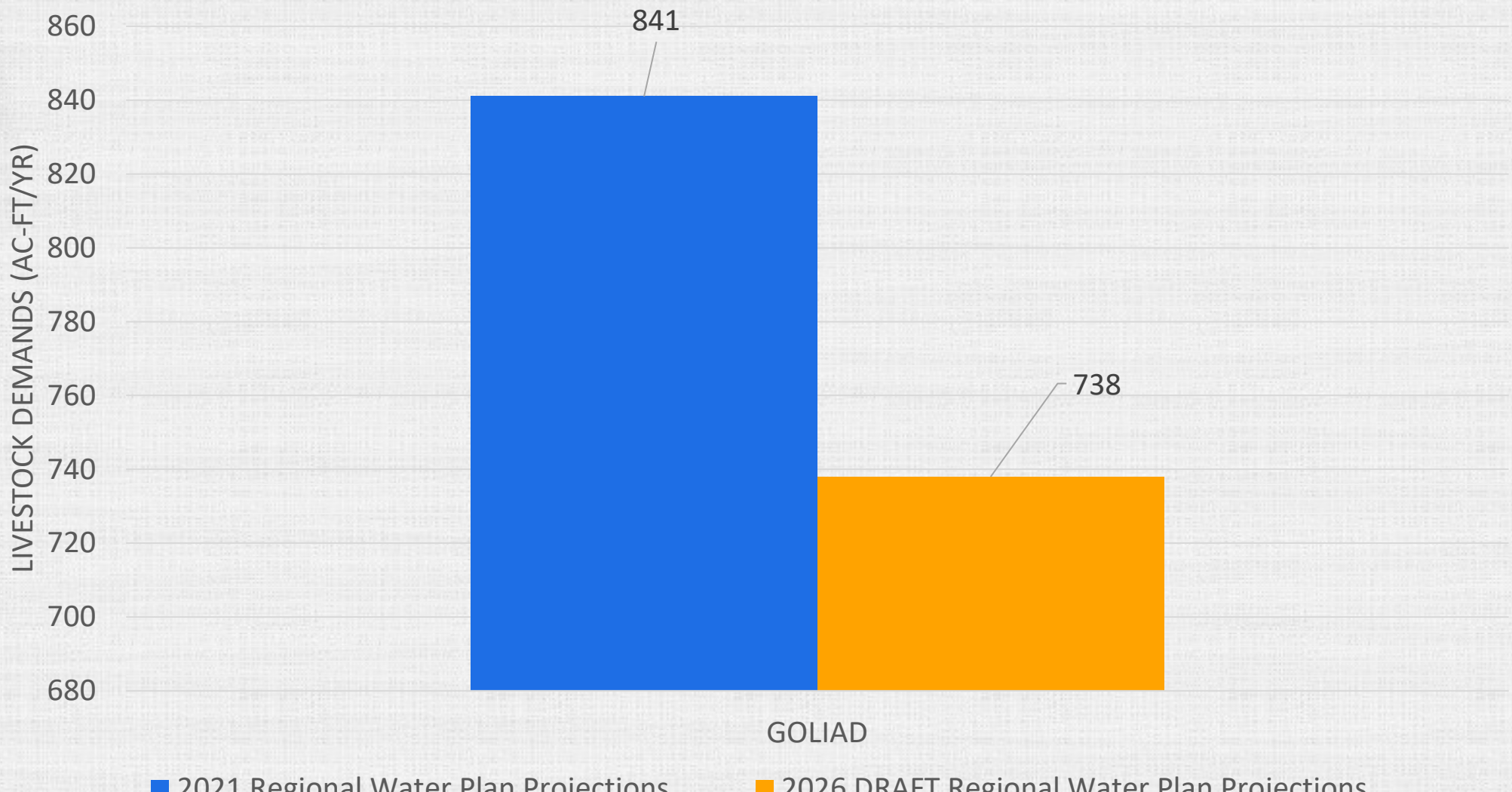
Draft Water Demand Projections: Frio County Livestock

Historical Water Use Estimates (ac-ft/yr)				
2015	2016	2017	2018	2019
1,171	1,219	925	955	955



Draft Water Demand Projections: Goliad County Livestock

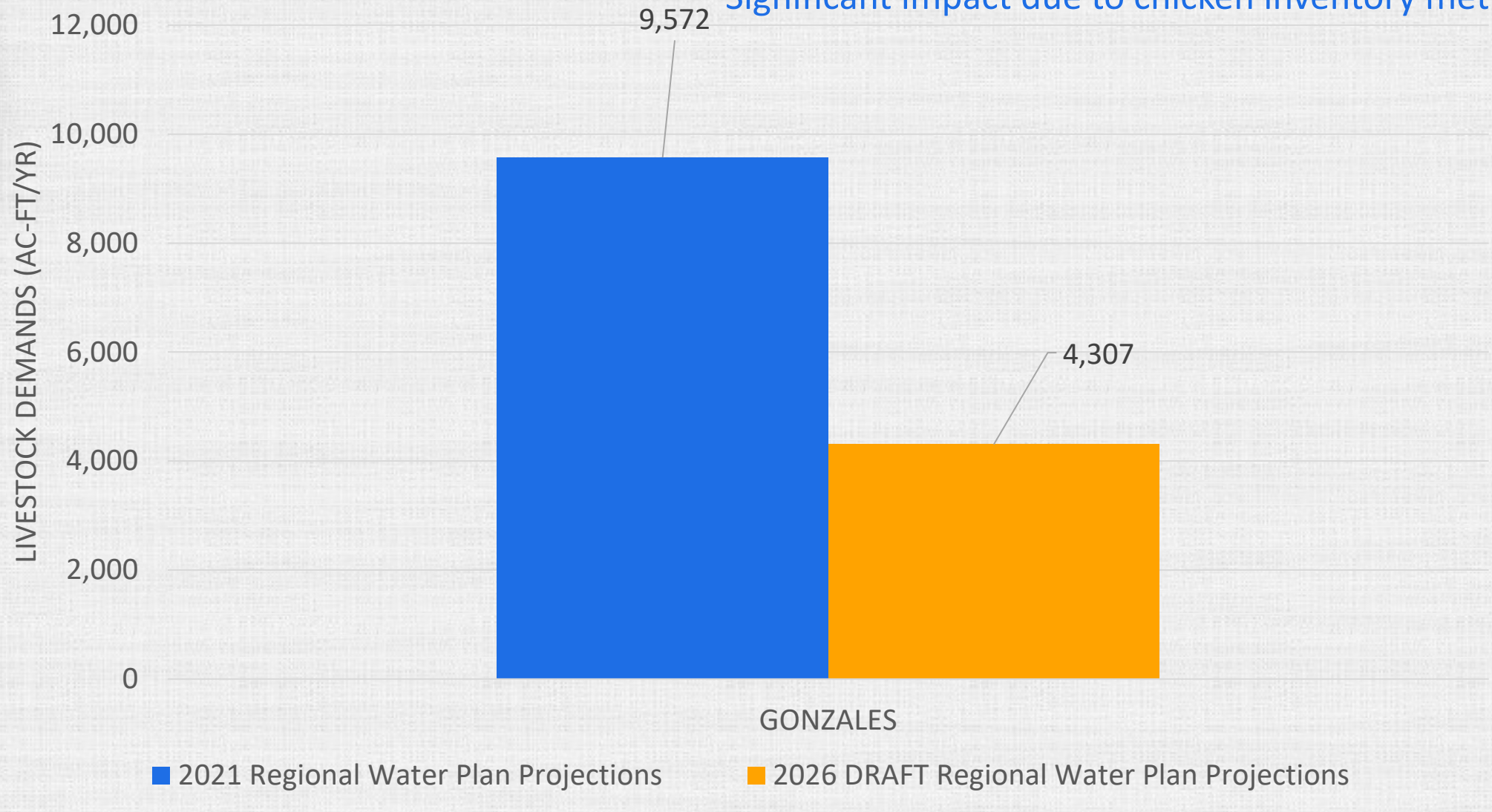
Historical Water Use Estimates (ac-ft/yr)				
2015	2016	2017	2018	2019
748	763	708	736	736



Draft Water Demand Projections: Gonzales County Livestock

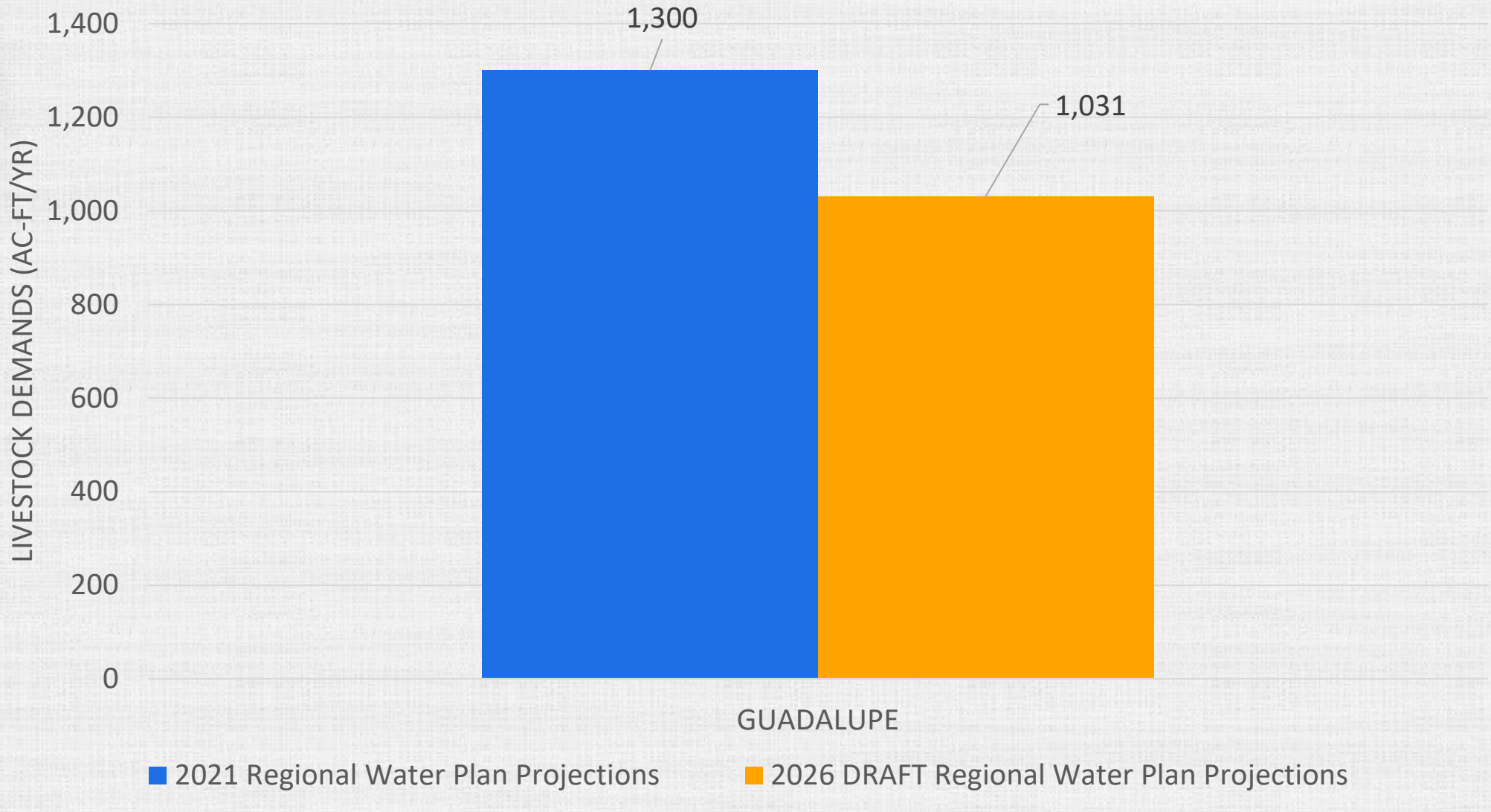
Significant impact due to chicken inventory methodology

Historical Water Use Estimates (ac-ft/yr)				
2015	2016	2017	2018	2019
3,948	4,056	4,378	4,535	4,616



Draft Water Demand Projections: Guadalupe County Livestock

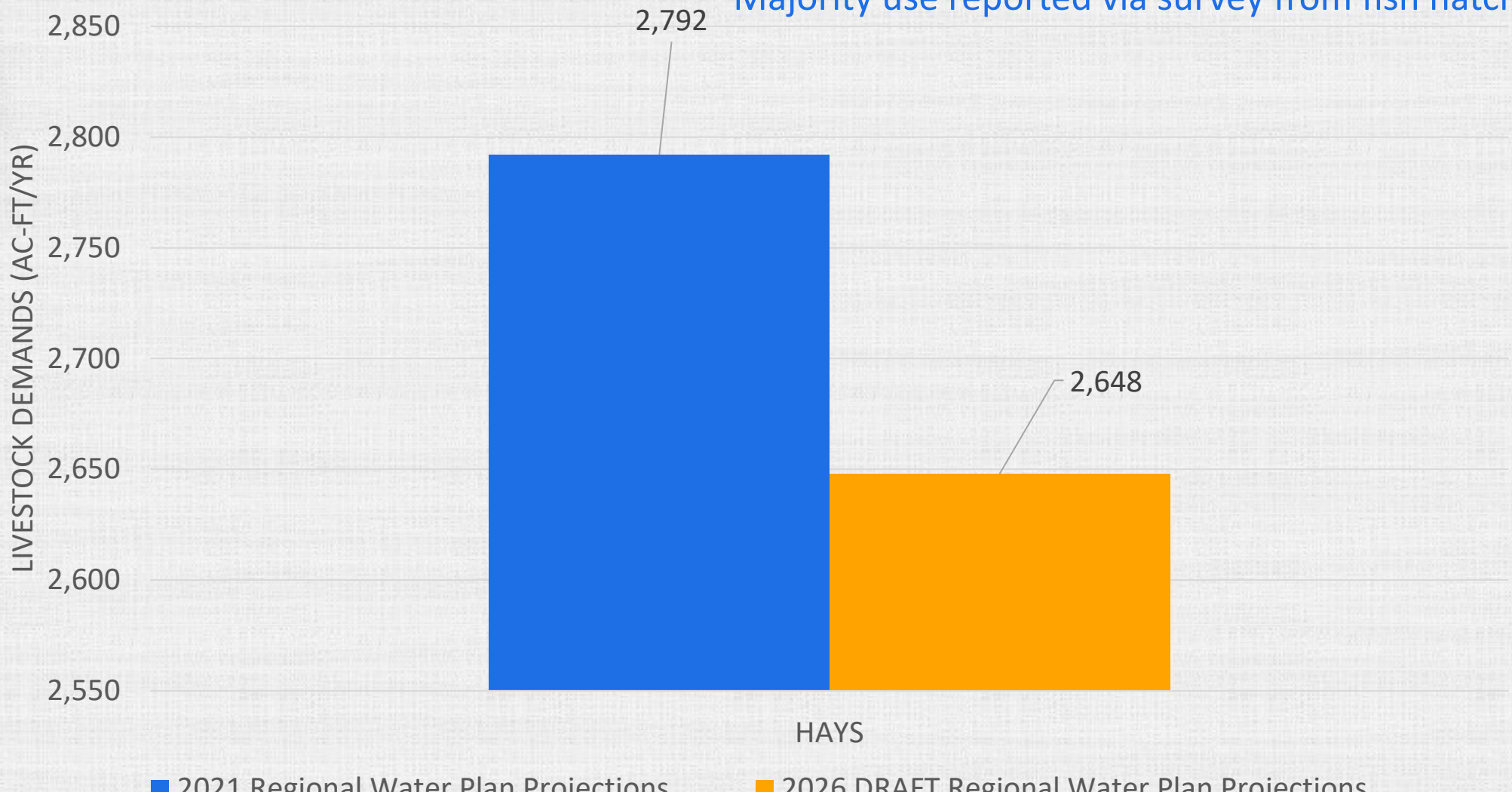
Historical Water Use Estimates (ac-ft/yr)				
2015	2016	2017	2018	2019
1,028	1,060	984	1,004	1,008



Draft Water Demand Projections: Hays County Livestock

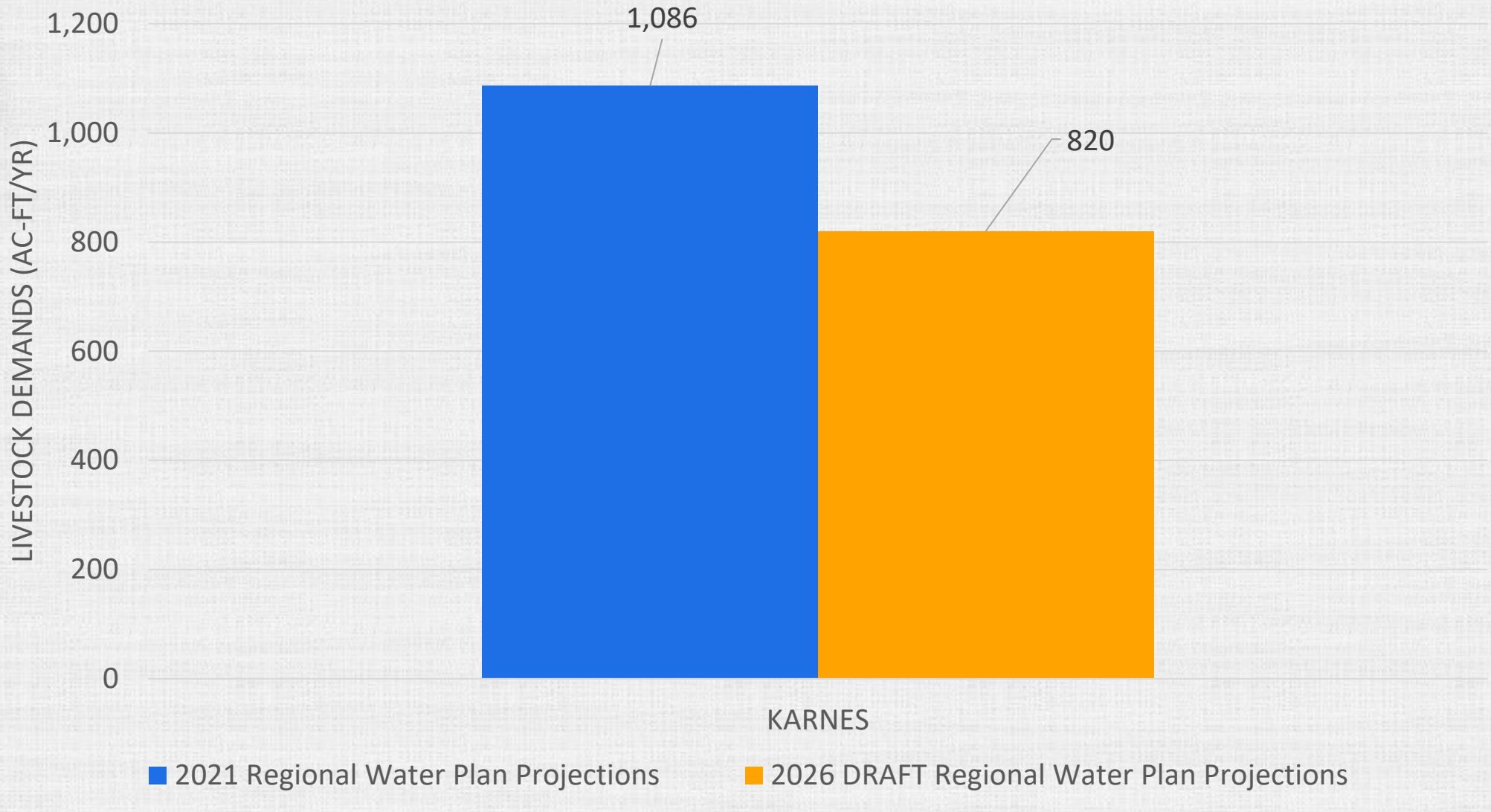
Majority use reported via survey from fish hatcheries

Historical Water Use Estimates (ac-ft/yr)				
2015	2016	2017	2018	2019
244	245	213	220	220



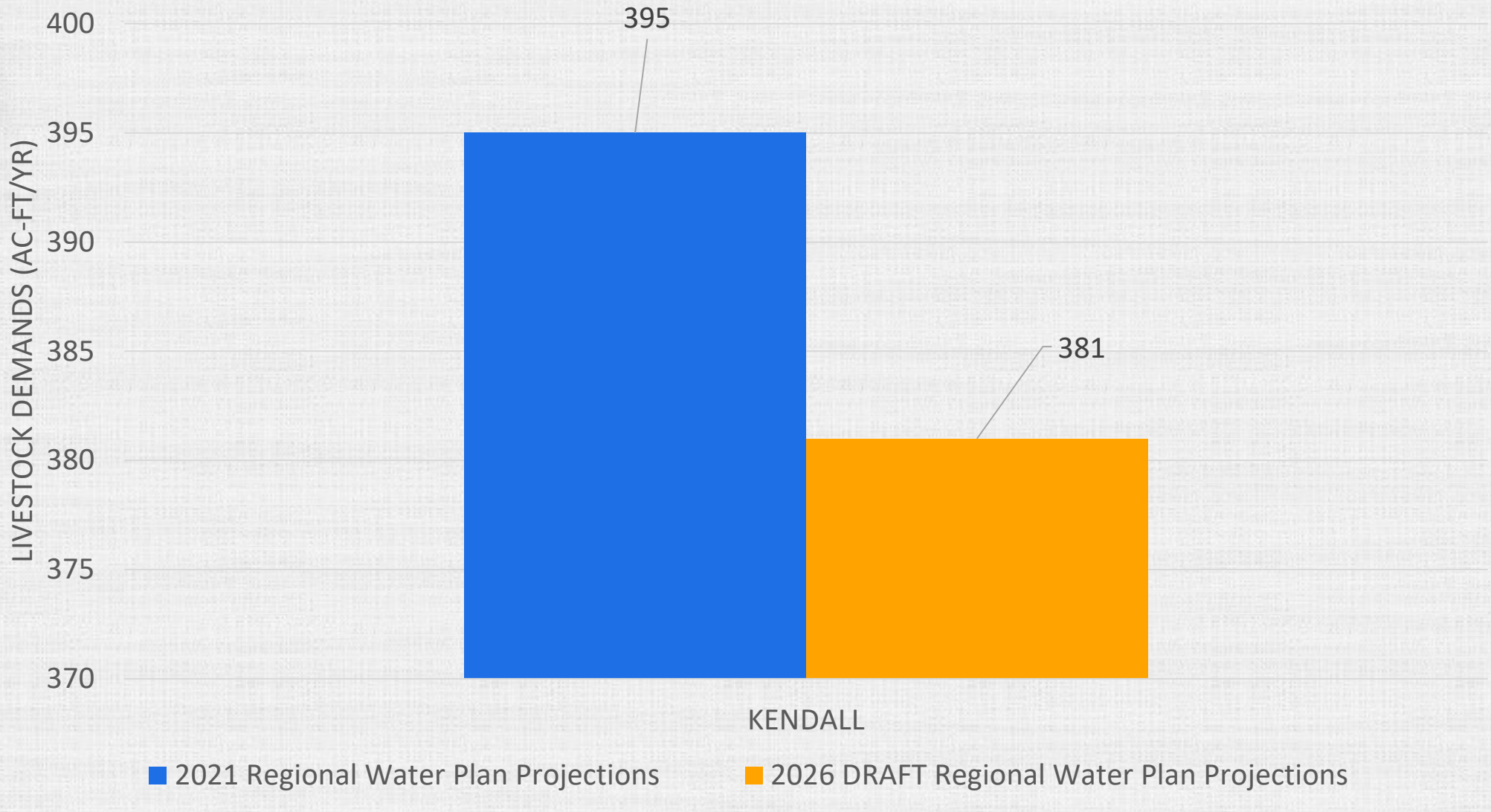
Draft Water Demand Projections: Karnes County Livestock

Historical Water Use Estimates (ac-ft/yr)				
2015	**2016**	**2017**	**2018**	**2019**
796	811	813	841	841



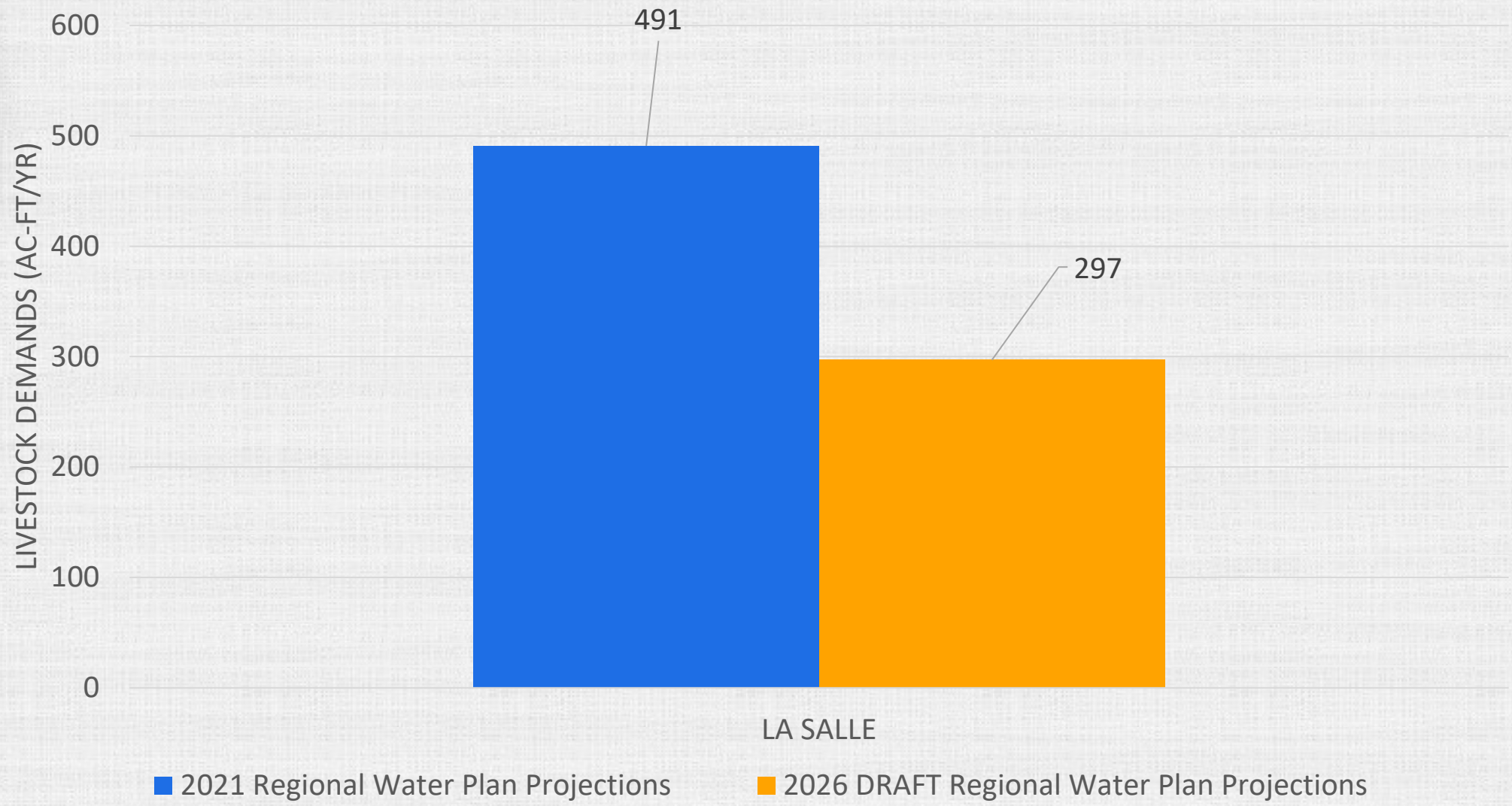
Draft Water Demand Projections: Kendall County Livestock

Historical Water Use Estimates (ac-ft/yr)				
2015	2016	2017	2018	2019
390	390	364	381	381



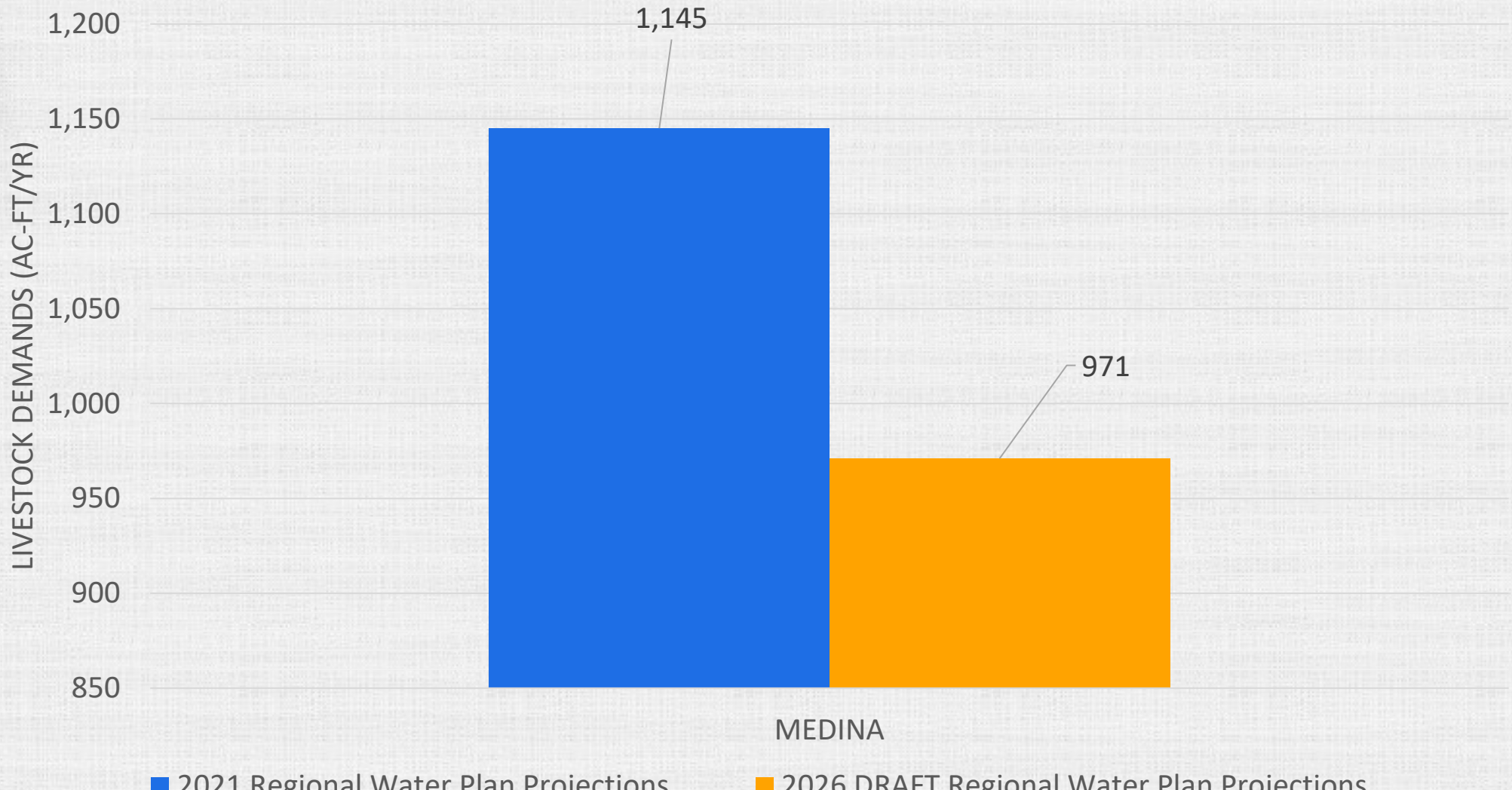
Draft Water Demand Projections: La Salle County Livestock

Historical Water Use Estimates (ac-ft/yr)				
2015	**2016**	**2017**	**2018**	**2019**
416	424	212	216	216



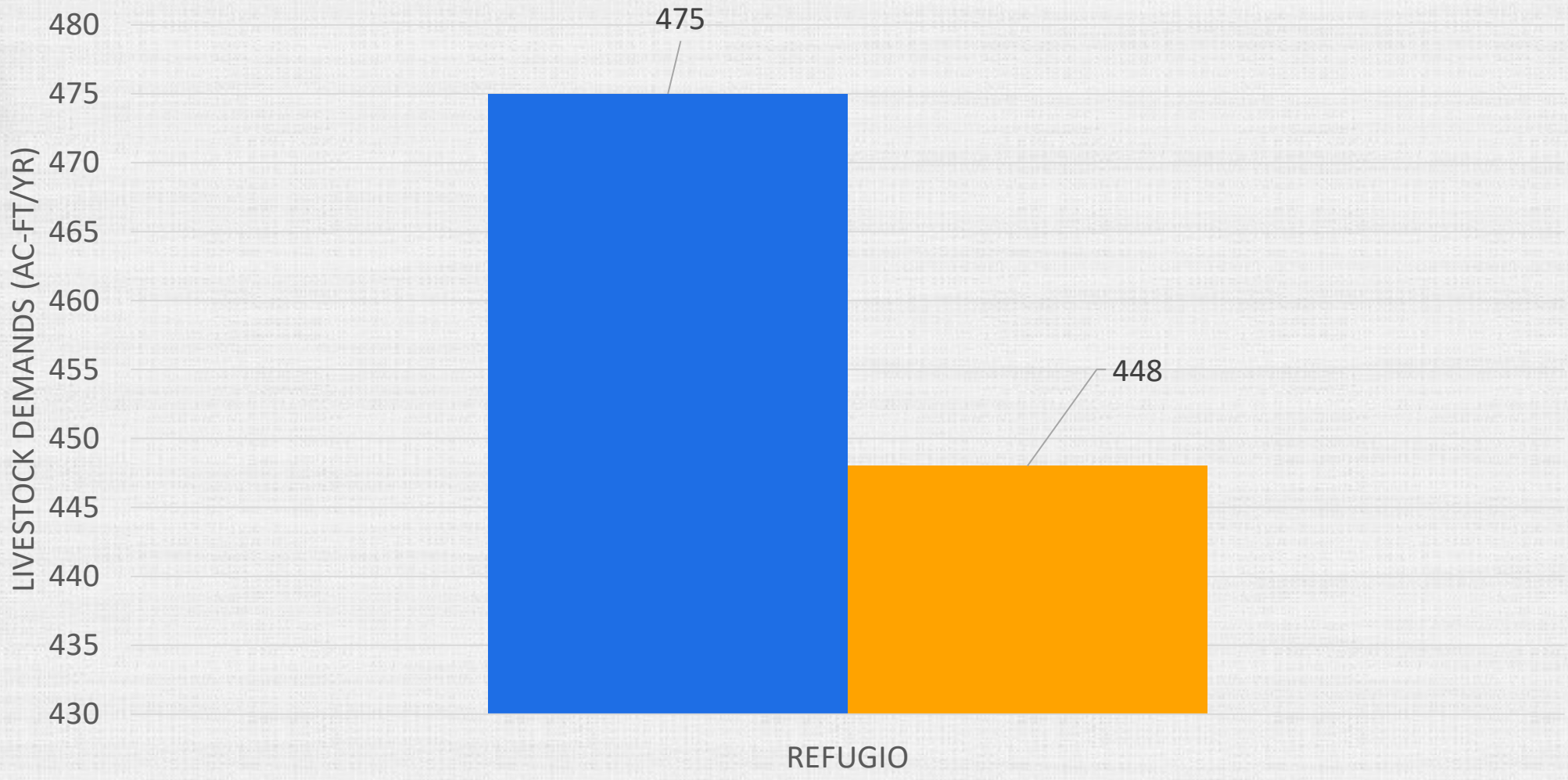
Draft Water Demand Projections: Medina County Livestock

Historical Water Use Estimates (ac-ft/yr)				
2015	2016	2017	2018	2019
850	865	1,026	1,056	1,056



Draft Water Demand Projections: Refugio County Livestock

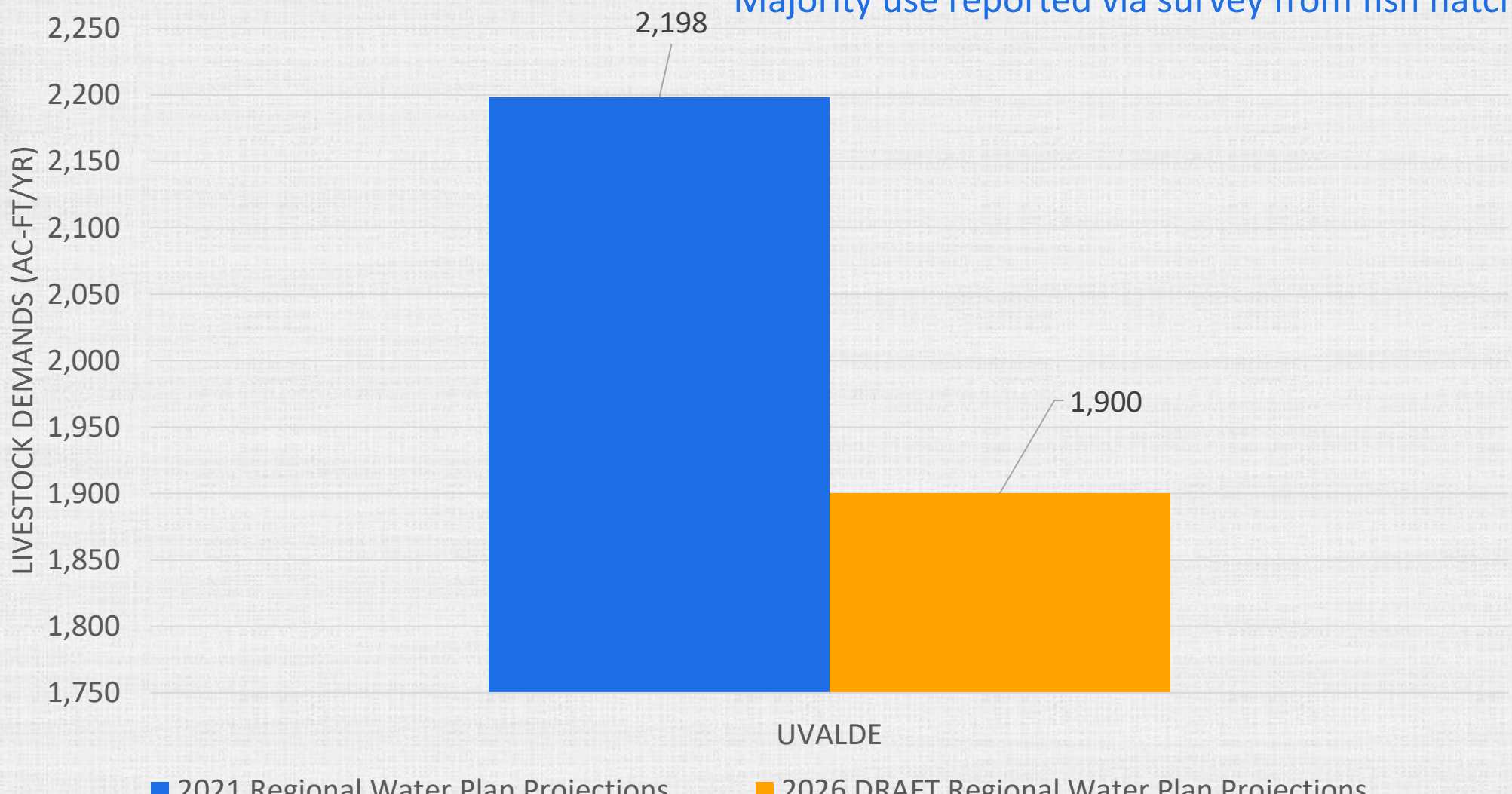
Historical Water Use Estimates (ac-ft/yr)				
2015	2016	2017	2018	2019
406	419	460	478	478



Draft Water Demand Projections: Uvalde County Livestock

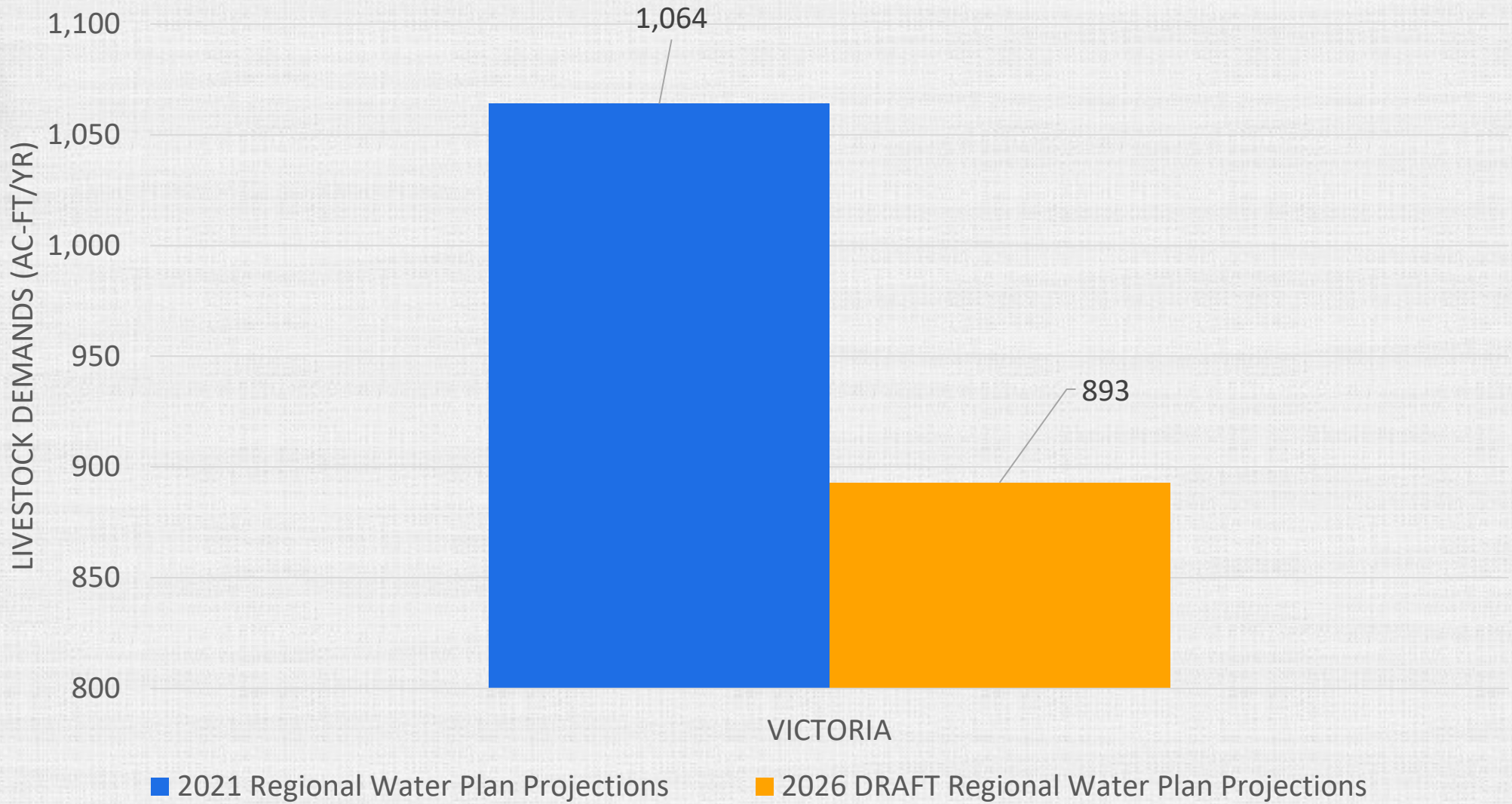
Majority use reported via survey from fish hatcheries

Historical Water Use Estimates (ac-ft/yr)				
2015	2016	2017	2018	2019
858	873	770	796	797



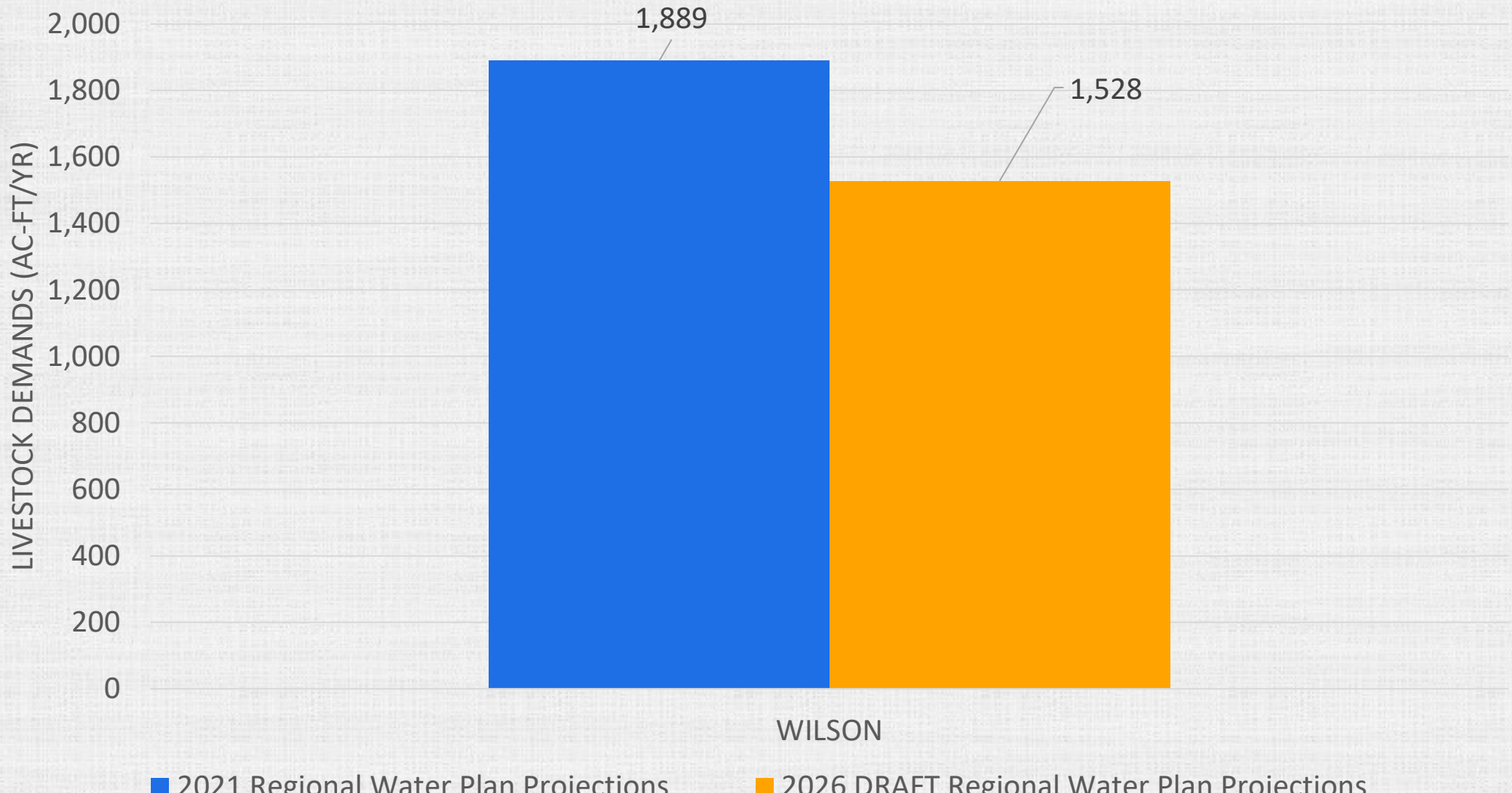
Draft Water Demand Projections: Victoria County Livestock

Historical Water Use Estimates (ac-ft/yr)				
2015	2016	2017	2018	2019
911	935	851	883	883



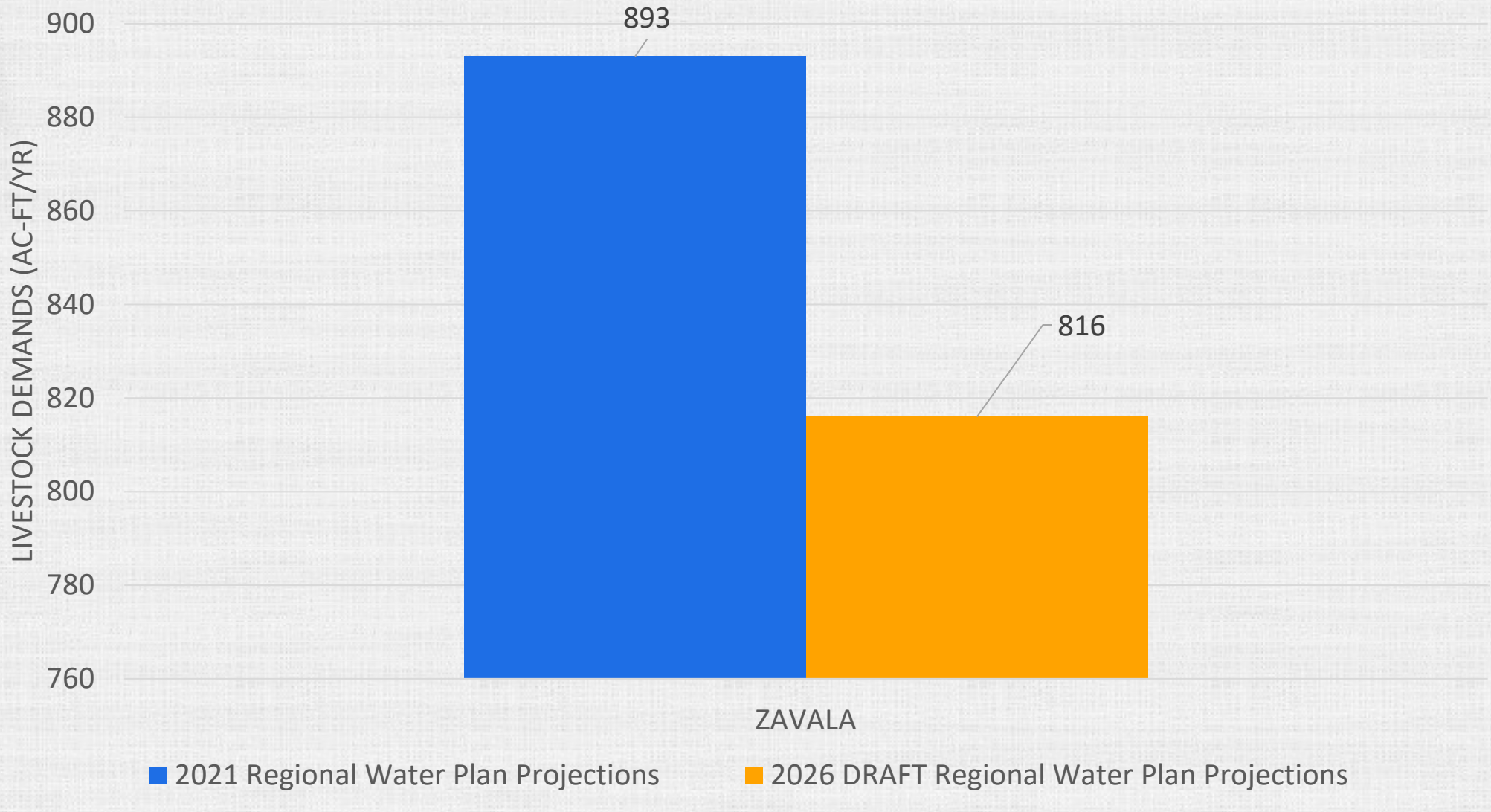
Draft Water Demand Projections: Wilson County Livestock

Historical Water Use Estimates (ac-ft/yr)				
2015	2016	2017	2018	2019
1,466	1,483	1,528	1,582	1,583



Draft Water Demand Projections: Zavala County Livestock

Historical Water Use Estimates (ac-ft/yr)				
2015	2016	2017	2018	2019
716	742	856	884	884



Draft Water Demand Projections: Livestock 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 livestock water demand projections:

1. Evidence that livestock water use estimates for a county from another source are more accurate than those used in the draft projections.
2. Plans for the construction, expansion, or closure of a confined livestock feeding operation in a county at some future date.
3. Other evidence of change in livestock inventory or water requirements that would justify an adjustment in the projected future rate of change in livestock water demand.
4. 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.

- Next Steps
- Next Meeting(s)
- Other topics

Handout 1

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

Methodology Summary

The draft livestock water demand projections for the 2026 Regional Water Plans (RWPs) were based upon the region-county five-year average annual water use estimates (2015 through 2019) developed by the TWDB. Decade-specific water use trends from the previous water planning cycle were applied to the five-year estimate average baseline. For example, if the 2021 RWP data reflects a five percent increase in projected demand for Travis County from 2020 to 2030, then the projected change in demands for the year 2030 in the new plan are also a five percent increase from the baseline (which is the five-year average value). Subsequent decade-specific projections were obtained using the same procedures for decades 2040 through 2070. Thus, the new draft projections use the existing TWDB-approved water use projection decadal growth rates from the 2021 RWPs. Year 2070 projections were held constant through the draft year 2080 projections.

Draft projections (decades 2030 through 2080) for each region-county are provided to the Regional Water Planning Groups (RWPGs), and the RWPGs may request alterations to the draft projections, subject to adequate documentation, justification, 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

- Baseline use calculated as average of five years of TWDB annual region-county-level estimates (2015 - 2019).
- Historical TWDB annual water use estimates consist of species-specific water use per head values, multiplied by annual inventory estimates, plus surveyed water use for non-standard livestock production such as fish hatcheries.
- Trend factors for projecting demands through the planning horizon use the percent changes from the most recently approved 2021 RWPs.
- Draft year 2080 projections are held constant from the year 2070 projections.

Primary Data Changes Reflected in the 2026 RWP Projections

Several changes in the baseline data were incorporated into the 2026 RWP draft projections. These include the following:

- Update of the region-county splits. In 2019, TWDB staff performed a state-wide geographic analysis of likely grazing lands for the various species as well as the locations of permitted Concentrated Animal Feeding Operations (CAFOs). This resulted in updates to the water use geographic splits (region/county/ basin), which were applied retroactively to annual water use estimates from 2015 forward.

- Additional review of the published literature and expert opinion concerning livestock water use (gallons/head/day) resulted in changes in the assumed water use parameters for five types of livestock (Table 1 below, changes highlighted in grey). Updates were incorporated to better reflect changes in the values statewide. The water use estimates were updated for years 2015 through 2019 based on the new water use per head coefficients (see Key Data Sources No. 3 listed below).
- Changes in broiler chicken inventory estimates were also considered and updated from 2015 through 2019.

Table 1. Water use parameter comparison, 2021 and 2026 RWPs.

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		

In order to address changes in the livestock industry and any changes in water use patterns, the draft livestock water demands are re-estimated as part of each 5-year planning cycle. As with any methodology applied statewide, there may be specific cases for which modifications to this general methodology are warranted. In such cases, TWDB staff may adjust the methodology as necessary while being consistent with the original intent.

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

3. Non-Surveyed Annual Livestock Inventory and Water Use Estimates Methodology Summary:

   https://www3.twdb.texas.gov/waterplanning/data/dashboard/Sources/LivestockSummary_Final.PDF