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_REP/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