2026 Regional Water Plans
Projections Methodology Overview

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Water Supply Planning

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Chairs Conference Call
Agenda

• Overview projections process
• Projections data release schedule
• Projections methodologies
  – Non-municipal water demands
  – Population
  – Municipal water demand
TWDB drafts projections using statewide methodologies

Share data with Regional Water Planning Groups

RWPGs review & request revisions (Exhibit C)

TWDB reviews revision requests

Finalize projections

TWDB presents projections to Board (Oct 2023)

Any changes thereafter are amendments
## Projections Release Schedule

<table>
<thead>
<tr>
<th>Draft Water Demand Projections</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Livestock Projections + Supporting Data</td>
<td>January 2022</td>
</tr>
<tr>
<td>Manufacturing Projections + Supporting Data</td>
<td>January 2022</td>
</tr>
<tr>
<td>Steam-Electric Projections + Supporting Data</td>
<td>January 2022</td>
</tr>
<tr>
<td>Water User Group List + Historical Population, Connections, Net Use, GPCD</td>
<td>March 2022</td>
</tr>
<tr>
<td><strong>DUE:</strong> RWPGs review WUG list + historical data</td>
<td>July 2022</td>
</tr>
<tr>
<td>Irrigation Projections + Supporting Data</td>
<td>August 2022</td>
</tr>
<tr>
<td>Mining Projections + Supporting Data</td>
<td>August 2022</td>
</tr>
<tr>
<td>Population Projections + Plumbing Code Savings + Municipal Demand</td>
<td>February 2023</td>
</tr>
<tr>
<td><strong>DUE:</strong> RWPGs request revisions for non-municipal demand projections</td>
<td>July 2023</td>
</tr>
<tr>
<td><strong>DUE:</strong> RWPGs request revisions for population and municipal demand projections</td>
<td>August 2023</td>
</tr>
</tbody>
</table>
Non-Municipal Water Demand Projections Methodologies

Historical: 2015 - 2019

Projections: 2030 - 2080
Irrigation

Same methodology as 2021 RWPs

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

<table>
<thead>
<tr>
<th>TWDB Category</th>
<th>USDA Data Type</th>
<th>2026 RWP Water Use (gallons/head/day)</th>
<th>2021 RWP Water Use (gallons/head/day)</th>
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<tbody>
<tr>
<td>Cattle</td>
<td>Milk</td>
<td>55</td>
<td>75</td>
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<tr>
<td></td>
<td>Fed &amp; Other Cattle</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Chickens</td>
<td>Layers</td>
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<tr>
<td></td>
<td>Pullets, Replacement</td>
<td>0.09</td>
<td>0.086</td>
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<tr>
<td></td>
<td>Roosters</td>
<td></td>
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<tr>
<td></td>
<td>Broilers</td>
<td>0.09</td>
<td>0.077</td>
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<tr>
<td>Equine</td>
<td>Horses &amp; Ponies</td>
<td>12</td>
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<tr>
<td></td>
<td>Mules, Burros, &amp; Donkeys</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>Hogs</td>
<td>Hogs</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>Sheep</td>
<td>Sheep</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Goats</td>
<td>Milk</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Meat &amp; Other</td>
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<td>0.5</td>
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<tr>
<td></td>
<td>Angora</td>
<td></td>
<td></td>
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<tr>
<td>Turkeys</td>
<td>Turkeys</td>
<td>0.2</td>
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</tr>
</tbody>
</table>
Livestock Projections:
Compare 2021 RWP to Draft 2026 RWP

Demands (acre-feet)

- 2022_SWP
- Draft_2027_SWP
- Historical

Texas Water Development Board
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
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 plants

- 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 2026 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 released in January 2022
Steam-Electric Power Projections: Compare 2021 RWP to Draft 2026 RWP

Demands (acre-feet)
2026 RWP Draft Projections website: https://www.twdb.texas.gov/waterplanning/data/projections/2027/projections.asp
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

• No Sub-County-Other-WUGs in DB27 this plan
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

Projected Demand =

\[
\frac{(\text{Population} \times (\text{GPCD} - \text{PC Savings}) \times 365)}{325,851}
\]
## Water Sources

<table>
<thead>
<tr>
<th>Source</th>
<th>Groundwater</th>
<th>Surface Water</th>
<th>Reuse</th>
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<tbody>
<tr>
<td></td>
<td>Fresh</td>
<td>Brackish</td>
<td>Fresh</td>
</tr>
<tr>
<td>Irrigation</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Livestock</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Mining</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Steam-electric</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Municipal</td>
<td>x</td>
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Questions?

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