

5B.28 Robertson County Water Supply Plan

Table 5B.28-1 lists each water user group in Robertson County and their corresponding surplus or shortage in years 2030 and 2050. For each water user group with a projected shortage, a water supply plan has been developed and is presented in the following subsections. Water supply plans are also presented for some entities that need pumping/conveyance facilities to utilize their existing water resources, or to become a regional provider.

**Table 5B.28-1.
Robertson County Surplus/(Shortage)**

<i>Water User Group</i>	<i>Surplus/(Shortage)¹</i>		<i>Comment</i>
	<i>2030 (acft/yr)</i>	<i>2050 (acft/yr)</i>	
City of Bremond	227	207	Projected surplus
City of Calvert	234	164	Projected surplus
City of Franklin	383	343	Projected surplus
City of Hearne	(67)	(290)	Projected shortage – see plan below
County-Other	1,724	1,725	Projected surplus
Wheelock WSC ²	(*)	(*)	See footnote ²
Manufacturing	206	180	Projected surplus
Steam-Electric	10,727	10,727	Projected surplus
Mining	82	82	Projected surplus
Irrigation	28,313	29,413	Projected surplus
Livestock	474	474	Projected surplus
¹ From Tables 4-57 and 4-56, Section 4 – Comparison of Water Demands with Water Supplies to Determine Needs. ² Although no county-wide shortages are projected, Wheelock WSC has indicated the need for near-term projects to meet expected local shortages.			

5B.28.1 City of Bremond

The City of Bremond obtains its water supply from groundwater from the Carrizo-Wilcox Aquifer. The city owns and operates five wells that are projected to supply the needs of the City of Bremond through the year 2050. No shortages are projected for the City of Bremond and no changes in water supply are recommended.

5B.28.2 City of Calvert

The City of Calvert obtains its water supply from groundwater from the Carrizo-Wilcox Aquifer. The City owns and operates three wells that are projected to supply the needs of the City of Calvert through the year 2050. No shortages are projected for the City of Calvert and no changes in water supply are recommended.

5B.28.3 City of Franklin

The City of Franklin obtains its water supply from groundwater from the Carrizo-Wilcox Aquifer. The City owns and operates three wells that are projected to supply the needs of the City of Franklin through the year 2050. No shortages are projected for the City of Franklin and no changes in water supply are recommended.

5B.28.4 City of Hearne

5B.28.4.1 Description of Supply

The City of Hearne obtains its water supply from groundwater from the Carrizo-Wilcox Aquifer. The City owns and operates four wells that produce water from the aquifer that serves as the City's sole source supply. The water supply available from the Carrizo-Wilcox Aquifer is sufficient to meet the City's demands, however, the City's ability to meet demands in the year 2030 is projected to be constrained by the capacity of the existing wells.

5B.28.4.2 Options Considered

The City of Hearne has a shortage of 67 acft per year in 2030, which is about 4 percent of demand. Table 5B.28-2 lists the water management strategies, references to the report section detailing the strategy, total project cost, and unit costs that were considered for meeting the City of Hearne shortage.

Table 5B.28-2.
Water Management Strategies Considered for the City of Hearne

Option	Yield (acft/yr)	Approximate Cost ¹	
		Total	Unit (\$/acft)
Additional Water Conservation – City of Hearne (Section 5A.2)	75	\$43,000/yr ²	\$574 ²
Further development of Carrizo-Wilcox Aquifer	290	\$609,000 ³	\$231 ³
No Action	-	\$3,108,000 ³	\$46,394 ³

¹ Unless otherwise noted, costs are Total Project Cost and Unit Cost (\$/acft per year) for treated water delivered to the water supply entity or entities. Unit cost is for full utilization of project capacity.
² Source of Cost Estimate: Section 5A.2.
³ Source of Cost Estimate: New estimate for addition of municipal supply well to existing system.
⁴ Economic impact of not meeting shortage (i.e., "no action" alternative) in 2030 as estimated by TWDB.

5B.28.4.3 Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water supply plan is recommended to meet the projected year 2030 and 2050 shortage of the City of Hearne:

- Construct a new municipal supply well by 2030 to supply an additional 290 acft per year.

5B.28.4.4 Costs

Costs of the Recommended Plan for the City of Hearne:

- Cost Source: New estimate for municipal supply well
- Date to be Implemented: 2030
- Total Project Cost: \$609,000

The cost estimate includes 1,000 feet of 8-inch diameter pipeline and the construction of a 360 gpm, 1,500-foot deep well.

Table 5B.28-3.
Recommended Plan Costs by Decade for the City of Hearne

Plan Element	2000	2010	2020	2030	2040	2050
New Municipal Well						
Projected Shortage (acft/yr)	0	0	0	(67)	(165)	(290)
Supply From Plan Element (acft/yr)	0	0	0	290	290	290
Annual Cost (\$/yr)	0	0	0	\$49,000	\$58,000	\$67,000
Unit Cost (\$/acft)	0	0	0	\$731	\$351	\$231

5B.28.5 County-Other

County-Other is projected to have a surplus of water through the year 2050 and no basic changes in water supply are recommended. Despite the county-wide projections of surplus water, the Wheelock WSC has indicated that near-term projects will be needed to meet expected local shortages.

5B.28.5.1 Description of Supply (Wheelock WSC)

The Wheelock WSC currently obtains its water supply from local groundwater sources.

5B.28.5.2 Water Supply Plan

In anticipation of possible future shortages, the Wheelock WSC is merging with the Wickson Creek Special Utility District (Wickson), based in adjacent Brazos County. Wickson has developed a capital plan to meet future needs in Robertson County currently served by Wheelock WSC. A pipeline will be constructed to transport 175 acre-feet of water per year, and the Sparta Aquifer will be further developed to meet the needs of the Wheelock WSC.

5B.28.5.3 Costs

It is anticipated that all project costs (debt service, water purchase, and O&M) for the Wheelock/Wickson system expansion and merger will be borne by collection of utility fees. Based on projected water rates for Wheelock/Wickson of \$2.50 per 1,000 gallons, the unit cost for water obtained through this option will be \$815 per acre-foot.

**Table 5B.28-4
Water Management Strategies Considered for Wheelock WSC**

Option	Yield (acft/yr)	Approximate Cost ¹	
		Total	Unit (\$/acft)
Merge with Wickson Creek SUD	(*) ²	\$500,000 ³	\$815 ⁴

¹ Unless otherwise noted, costs are Total Project Cost and Unit Cost (\$/ac-ft per year) for treated water delivered to the water supply entity or entities. Unit cost is for full utilization of project capacity.
² Yield will be sufficient to meet unquantified local shortages in Wheelock WSC.
³ Total Project Cost Estimate based on Wickson SUD's capital improvements plan.
⁴ Unit cost based on projected utility rates after Wheelock/Wickson merger.

5B.28.6 Manufacturing

Manufacturing is projected to have a surplus of water through the year 2050 and no changes in water supply are recommended.

5B.28.7 Steam-Electric

Steam-Electric is projected to have a surplus of water through the year 2050. Steam-Electric water demand in Robertson County is associated with the Twin Oak Power Plant, owned and operated by Texas Utilities Company (TXU), and the TNP One Power Plant, owned and operated by Texas-New Mexico Power Company (TNPC). The Twin Oak Power Plant is supplied by Twin Oak Reservoir. Twin Oak Reservoir impounds runoff from Duck Creek and diversions from the Navasota River. TXU has contracted with the Brazos River Authority for water from Lake Limestone in sufficient quantity to meet its needs through the year 2050. The TNP One Power Plant is supplied by groundwater from the Carrizo-Wilcox Aquifer. The supply from the aquifer is sufficient to meet its need through the year 2050. No changes in water supply are recommended.

5B.28.8 Mining

Mining is projected to have a surplus of water through the year 2050 and no changes in water supply are recommended.

5B.28.9 Irrigation

Irrigation is projected to have a surplus of water through the year 2050 and no changes in water supply are recommended.

5B.28.10 Livestock

No shortage is projected for Livestock and no changes in water supply are recommended.