

5.6 Comanche County Water Supply Plan

Table 5.6-1 lists each water user group in Comanche County and their corresponding surplus or shortage in years 2040 and 2070. A brief summary of the water user groups and the plan for the selected water user are presented in the following subsections.

Table 5.6-1. Comanche County Surplus/(Shortage)

Water User Group	Surplus/(Shortage)		Comment
	2040 (acft/yr)	2070 (acft/yr)	
City of Comanche	173	140	Projected surplus
City of De Leon	94	81	Projected surplus
County-Other	(440)	(488)	Projected shortage - see plan below.
Manufacturing	4	4	Projected surplus
Steam-Electric	0	0	No demand projected
Mining	(151)	83	Projected shortage - see plan below.
Irrigation	(15,151)	(15,292)	Projected shortage - see plan below.
Livestock	0	0	No projected surplus or shortage

5.6.1 City of Comanche

The City of Comanche obtains its water supply through purchases of treated surface water under contract from the Upper Leon River Municipal Water District. The water supplied by the Upper Leon River Municipal Water District is diverted from Lake Proctor under contracts with the Brazos River Authority. The City of Comanche is projected to obtain up to 706 acft/yr of treated surface water supply from the Upper Leon River Municipal Water District through the planning period. The City of Comanche is also contracted to sell 20 acft/yr of treated surface water to Manufacturing entities in Comanche County. No shortage is projected for the City of Comanche and no changes in water supply are recommended. Conservation was also considered; however, the entity’s usage is below the selected goal of 140 gpcd.

5.6.2 City of De Leon

The City of De Leon obtains its water supply through purchases of treated surface water under contract from the Upper Leon River Municipal Water District. The water supplied by the Upper Leon River Municipal Water District is diverted from Lake Proctor under contracts with the Brazos River Authority. The City of De Leon is projected to obtain up to 307 acft/yr of treated surface water supply from the Upper Leon River Municipal Water District through the planning period. No supply shortage is projected for the City of De Leon and no change in water supply is recommended. Conservation was also considered; however, the entity’s usage is below the selected goal of 140 gpcd.

5.6.3 County-Other

Description of Supply

Entities comprising the Comanche County-Other WUG obtain their water supply primarily through groundwater production from the Trinity Aquifer. Additionally, Comanche County WSC purchases treated surface water under contract from the Upper Leon Municipal Water District. Shortages are projected for each decade within the planning period.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategies are recommended for County-Other. Conservation was also considered; however, the entity's usage is below the selected goal of 140 gpcd. Associated costs are included for each strategy.

- a. Trinity Aquifer Development, Erath County
 - Cost Source: Volume II
 - Date to be Implemented: before 2030
 - Project Cost: \$5,359,000
 - Unit Cost: maximum of \$1,008/acft

Table 5.6-2. Recommended Plan Costs by Decade for Comanche County-Other

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(454)	(449)	(440)	(449)	(468)	(488)
Conservation						
Supply From Plan Element (acft/yr)	—	—	—	—	—	—
Annual Cost (\$/yr)	—	—	—	—	—	—
<i>Projected Surplus/(Shortage) after Conservation</i>	(454)	(449)	(440)	(449)	(468)	(488)
Groundwater Development – Trinity Aquifer (Erath County)						
Supply From Plan Element (acft/yr)	488	488	488	488	488	488
Annual Cost (\$/yr)	\$492,000	\$492,000	\$115,000	\$115,000	\$115,000	\$115,000
Unit Cost (\$/acft)	\$1,008	\$1,008	\$236	\$236	\$236	\$236

5.6.4 Manufacturing

Comanche County Manufacturing entities obtain water supply through purchases of treated surface water from the City of Comanche, which is projected to provide up to 20 acft/yr of supply during the planning period. Additionally, local groundwater production from the Trinity Aquifer is also used by Manufacturing entities in the county. No shortages are projected and no change in water supply is recommended.

5.6.5 Steam-Electric

There is no projected demand for Comanche County Steam-Electric.

5.6.6 Mining

Description of Supply

Mining operations in Comanche County are supplied through groundwater production from the Trinity Aquifer. Supply projections show water shortages occurring until 2060.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategies are recommended to meet water needs for Comanche County-Mining. Conservation is recommended. Associated costs are included for each strategy.

- a. Conservation
 - Cost Source: Volume II
 - Date to be Implemented: before 2030
 - Annual Cost: not determined
- b. Trinity Aquifer Development, Erath County
 - Cost Source: Volume II
 - Date to be Implemented: before 2030
 - Project Cost: \$2,223,000
 - Unit Cost: maximum of \$639/acft

Table 5.6-3. Recommended Plan Costs by Decade for Comanche County – Mining

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(232)	(314)	(151)	(65)	24	83
Conservation						
Supply From Plan Element (acft/yr)	13	26	26	19	13	9
Annual Cost (\$/yr)	ND	ND	ND	ND	ND	ND
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(219)	(288)	(125)	(46)	37	92
Groundwater Development – Trinity Aquifer						
Supply From Plan Element (acft/yr)	288	288	288	288	288	288
Annual Cost (\$/yr)	\$184,000	\$184,000	\$28,000	\$28,000	\$28,000	\$28,000
Unit Cost (\$/acft)	\$639	\$639	\$97	\$97	\$97	\$97

ND – Not determined. Costs to implement industrial conservation technologies will vary based on each location

5.6.7 Irrigation

Description of Supply

Comanche County Irrigation is supplied through groundwater production from the Trinity Aquifer and through purchases of raw surface water from the Brazos River Authority. Irrigation is projected to have shortages throughout the planning period. Comanche Irrigation has contracted for 6,652 acft/yr of surface water supplies from the Brazos River Authority, which can supply 5,529 acft/yr in 2020 and 5,347 acft/yr in 2070, based on water availability analyses prescribed under water planning guidelines.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategies are recommended to meet water needs for Comanche County-Irrigation. Conservation is recommended. Associated costs are included for each strategy.

- a. Conservation
 - Cost Source: Volume II
 - Date to be Implemented: before 2030
 - Annual Cost: maximum of \$3,106,912
 - Unit Cost: \$1,382/acft
- b. Firm Up BRA Little River Supplies
 - Cost Source: Volume II
 - Date to be Implemented: before 2030
 - Annual Cost: Costs borne by BRA
 - Unit Cost: Costs borne by BRA
- c. Leave Needs Unmet:
 - Cost Source: Cost of not meeting needs – see Appendix G
 - Date to be Implemented: before 2030

Table 5.6-4. Recommended Plan Costs by Decade for Comanche County – Irrigation

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(15,078)	(15,147)	(15,151)	(15,220)	(15,224)	(15,292)
Conservation						
Supply From Plan Element (acft/yr)	964	1,606	2,248	2,248	2,248	2,248
Annual Cost (\$/yr)	\$1,332,000	\$2,219,000	\$3,107,000	\$3,107,000	\$3,107,000	\$3,107,000
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(14,114)	(13,541)	(12,903)	(12,972)	(12,976)	(13,044)
Firm Up BRA Little River Supplies						
Supply From Plan Element (acft/yr)	—	1,159	1,196	1,233	1,269	1,306
Annual Cost (\$/yr)	—	—	—	—	—	—
Unit Cost (\$/acft)	—	—	—	—	—	—
Leave Needs Unmet (acft/yr)	(12,991)	(12,382)	(11,707)	(11,739)	(11,707)	(11,738)

5.6.8 Livestock

No shortages are projected for Comanche County Livestock and no changes in water supply are recommended.

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