



5.8 Eastland County Water Supply Plan

Table 5.8-1 lists each water user group in Eastland 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 5.8-1. Eastland County Surplus/(Shortage)

Water User Group	Surplus/(Shortage) ¹		Comment
	2040 (acft/yr)	2070 (acft/yr)	
City of Cisco	236	237	Projected surplus
City of Eastland	2,565	2,575	Projected surplus
City of Gorman	75	59	Projected surplus
City of Ranger	1,575	1,578	Projected surplus
City of Rising Star	5	7	Projected surplus
Stephens Regional SUD			See Stephens County
County-Other	61	76	Projected surplus
Manufacturing	38	38	Projected surplus
Steam-Electric	0	0	No projected demand
Mining	(929)	(432)	Projected shortage – see plan below
Irrigation	(2,257)	(2,271)	Projected shortage – see plan below
Livestock	0	0	Demand equals supply

1 – From Tables C-15 and C-16, Appendix C – Comparison of Water Demands with Water Supplies to Determine Needs.

5.8.1 City of Cisco

The City of Cisco uses surface water from Lake Cisco which has a 2070 safe yield of 1,075 acft/yr. Cisco also has a contract sale to supply water to Westbound WSC with 147 acft/yr through 2070. No shortages are projected for the City of Cisco and no changes in water supply are recommended.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategies are recommended for the City of Cisco.

a. Conservation

- Cost Source: Volume II, Chapter 2
- Date to be Implemented: before 2020
- Unit Cost: \$496/acft
- Annual Cost: maximum of \$33,426 in 2030

Table 5.8-2. Recommended Plan Costs by Decade for City of Cisco

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	223	224	236	241	240	237
Conservation						
Supply From Plan Element (acft/yr)	23	67	52	44	42	42
Annual Cost (\$/yr)	\$11,463	\$33,426	\$25,675	\$21,629	\$20,637	\$20,637
<i>Projected Surplus/(Shortage) after Conservation</i>	246	291	288	285	282	279

5.8.2 City of Eastland

The City of Eastland receives its surface water from a contract with Eastland County Water Supply District. This contract supplies 3,314 acft/yr through 2070. Eastland has contracts to supply water to Westbound WSC and City of Carbon for a total of 120 acft/yr through 2070. No shortages are projected for the City of Eastland and no changes in water supply are recommended. Conservation was considered; however, the entity's current per capita use rate is below the selected target rate of 140 gpcd.

5.8.3 City of Gorman

The City of Gorman purchases treated water from Upper Leon River Municipal Water District and no current or future shortage is projected. Therefore, no changes in water supply are recommended. Conservation was considered; however, the entity's current per capita use rate is below the selected target rate of 140 gpcd.

5.8.4 City of Ranger

The City of Ranger is supplied with surface water from a contract with Eastland County Water Supply District. This contract is scheduled to supply 2,025 acft/yr through 2070. No shortages are projected for the City of Ranger and no changes in water supply are recommended.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategy is recommended for the City of Ranger.

- a. Conservation
 - Cost Source: Volume II, Chapter 2
 - Date to be Implemented: before 2020
 - Unit Cost: \$496/acft
 - Annual Cost: maximum of \$22,670 in 2030



Table 5.8-3. Recommended Plan Costs by Decade for City of Ranger

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	1,562	1,565	1,575	1,577	1,578	1,578
Conservation						
Supply From Plan Element (acft/yr)	15	46	39	37	36	36
Annual Cost (\$/yr)	\$7,293	\$22,670	\$19,331	\$18,339	\$17,843	\$17,843
<i>Projected Surplus/(Shortage) after Conservation</i>	1,577	1,611	1,614	1,614	1,614	1,614

5.8.5 City of Rising Star

The City of Rising Star uses locally available Trinity Aquifer groundwater for its water supply. No shortages are projected for the City of Rising Star and no changes in water supply are recommended. Conservation was considered; however, the entity’s current per capita use rate is below the selected target rate of 140 gpcd.

5.8.6 County-Other

The water supply entities for County-Other show a projected surplus from 2020 through 2070. Currently contract purchases through 2070 exist with the City of Cisco (147 acft/yr), the City of Clyde (221 acft/yr), and Eastland County WSC through the City of Eastland (120 acft/yr). Entities in County-Other also rely on Trinity Aquifer groundwater to meet needs. No changes in water supply are recommended. Conservation was considered; however, the entity’s current per capita use rate is below the selected target rate of 140 gpcd.

5.8.7 Manufacturing

Eastland County Manufacturing is supplied with surface water from Lake Eastland and Lake Leon. Manufacturing shows a projected surplus and no changes in water supply is recommended.

5.8.8 Steam-Electric

No Steam-Electric demand exists or is projected for the county.

5.8.9 Mining

Description of Supply

Mining demand in Eastland County is projected to increase beginning in 2020, peak in 2030 and slowly decrease until 2070. Current groundwater allocations in Eastland County exceed the MAG and would not be available for Mining operations. Additional supplies for mining operations could be used from available Trinity Aquifer groundwater supplies in Erath County, which is adjacent to Eastland County and has a surplus of Trinity Aquifer groundwater.

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 Eastland County-Mining.

- a. Conservation
 - Cost Source: Volume II, Chapter 2
 - Date to be Implemented: before 2020
 - Annual Cost: not determined
- b. Groundwater Development – Trinity Aquifer (Erath County)
 - Cost Source: Volume II, Chapter 12
 - Date to be Implemented: 2020
 - Project Cost: \$8,202,000
 - Unit Cost: Max of \$560 in 2020

Table 5.8-4. Recommended Plan Costs by Decade for Eastland County – Mining

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(1,164)	(1,173)	(929)	(714)	(518)	(432)
Conservation						
Supply From Plan Element (acft/yr)	35	59	65	50	36	30
Annual Cost (\$/yr)	ND	ND	ND	ND	ND	ND
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(1,129)	(1,114)	(864)	(664)	(482)	(402)
Groundwater Development – Trinity Aquifer						
Supply From Plan Element (acft/yr)	1,150	1,150	900	700	500	500
Annual Cost (\$/yr)	\$758,354	\$758,354	\$70,354	\$70,354	\$70,354	\$70,354
Unit Cost (\$/acft)	\$560	\$560	\$52	\$52	\$52	\$52

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

5.8.10 Irrigation

Description of Supply

Eastland County Irrigation is supplied by Trinity Groundwater, and run of the river water rights. Irrigation has 2,255 acft/yr in run of river rights which are not available during a drought of record. Irrigation is projected to have shortages beginning in 2020. Current Irrigation needs in Eastland County exceed the MAG. Additional supplies needed are being accounted against the available Trinity Aquifer supplies in adjacent Erath County.



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 Eastland County-Irrigation.

- a. Conservation
 - Cost Source: Volume II, Section 4B.2
 - Date to be Implemented: before 2020
 - Annual Cost: \$230/acft
- b. Groundwater Development – Trinity Aquifer (Erath County)
 - Cost Source: Volume II, Chapter 12
 - Date to be Implemented: 2020
 - Project Cost: \$24,210,000
 - Unit Cost: Max of \$1,255/acft in 2020

Table 5.8-5. Recommended Plan Costs by Decade for Eastland County – Irrigation

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(2,238)	(2,248)	(2,257)	(2,260)	(2,263)	(2,271)
Conservation						
Supply From Plan Element (acft/yr)	205	341	479	479	479	480
Annual Cost (\$/yr)	\$47,051	\$78,534	\$110,076	\$110,124	\$110,172	\$110,285
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(2,033)	(1,907)	(1,778)	(1,781)	(1,784)	(1,791)
Groundwater Development – Trinity Aquifer (Erath County)						
Supply From Plan Element (acft/yr)	2,033	1,907	1,778	1,781	1,784	1,791
Annual Cost (\$/yr)	\$2,213,162	\$2,213,162	\$182,162	\$182,162	\$182,162	\$182,162
Unit Cost (\$/acft)	\$1,089	\$1,089	\$90	\$90	\$90	\$90

5.8.11 Livestock

All of the livestock demand for Eastland County is met with local water supplies. No strategy is necessary or recommended.

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