

5.9 Erath County Water Supply Plan

Table 5.9-1 lists each water user group in Erath County and their corresponding surplus or shortage in years 2040 and 2070.

Table 5.9-1. Erath County Surplus/(Shortage)

Water User Group	Surplus/(Shortage) ¹		Comment
	2040 (acft/yr)	2070 (acft/yr)	
City of Dublin	73	24	Projected surplus
City of Gordon			See Palo Pinto County
City of Stephenville	2,553	1,933	Projected surplus
County-Other	310	(347)	Projected shortage - see plan below.
Manufacturing	2	29	Projected shortage (2020, 2030) - see plan below.
Steam-Electric	—	—	No projected demand
Mining	631	830	Projected surplus
Irrigation	360	360	Projected surplus
Livestock	0	0	Demand equals supply

1 - From Tables C-17 and C-18, Appendix C - Comparison of Water Demands with Water Supplies to Determine Needs

5.9.1 City of Dublin

The City of Dublin 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 Dublin is projected to obtain up to 598 acft/yr of treated surface water supply from the Upper Leon River Municipal Water District through the planning period. The City also provides sales of treated surface water to Manufacturing entities and entities comprising the County-Other WUG in Erath County. No shortages are projected for the City of Dublin and no change in water supply is recommended. Conservation was considered; however, the City's current per capita use rate is below the selected target of 140 gpcd.

5.9.2 City of Stephenville

Description of Supply

The City of Stephenville obtains its water supply through groundwater production from the Trinity Aquifer and through purchases of treated surface water under contract with the Upper Leon River Municipal Water District. The Upper Leon River Municipal Water District has contracted with the Brazos River Authority for raw water supply from Lake Proctor. Treated water supply available under contract from the Upper Leon River Municipal Water District is projected at 1,862 acft/yr through the planning period while the groundwater

supply available to the City is projected at 3,780 acft/yr. No supply shortages are projected for the City. Conservation was considered; however, the entity’s current per capita use rate is below the selected target rate of 140 gpcd.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water supply plan is recommended for the City of Stephenville. Associated costs are included for each strategy.

a. Trinity Aquifer Groundwater Development:

- Cost Source: Volume II, Chapter 14
- Date to be Implemented: 2020
- Project Cost: \$7,479,000
- Unit Cost: maximum of \$748,670

Table 5.9-2. Recommended Plan Costs by Decade for City of Stephenville

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	2,954	2,740	2,553	2,353	2,139	1,933
Conservation						
Supply from Plan Element (acft/yr)	—	—	—	—	—	—
Annual Cost (\$/yr)	—	—	—	—	—	—
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	—	—	—	—	—	—
Additional Demands from Recommended Strategies from Others						
Increase Supply to Erath County-Manufacturing (acft/yr)	1	2	—	—	—	—
<i>Total Needs Including Recommended Strategies (acft/yr)</i>	2,953	2,738	2,553	2,353	2,139	1,933
Trinity Aquifer Groundwater Development						
Supply from Plan Element (acft/yr)	526	526	526	526	526	526
Annual Cost (\$/yr)	\$748,670	\$748,670	\$89,670	\$89,670	\$89,670	\$89,670
Unit Cost (\$/acft)	\$1,423	\$1,423	\$170	\$170	\$170	\$170

5.9.3 County-Other

Description of Supply

The water supply entities comprising County-Other rely primarily on groundwater production from the Trinity Aquifer for water supply. Some treated surface water supplies are provided through the City of Dublin and City of Gordon. Available Trinity Aquifer groundwater supplies are projected at 3,211 acft/yr, while treated surface water is

projected to provide an additional 122 acft/yr of supply. Supply shortages are projected for the entity beginning by 2060.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water supply plan is recommended for the Erath County-Other. Associated costs are included for each strategy. Conservation was also considered; however, the entity's current per capita use rate is below the selected target rate of 140 gpcd.

b. Trinity Aquifer Groundwater Development:

- Cost Source: Volume II, Chapter 14
- Date to be Implemented: before 2060
- Project Cost: \$2,012,000
- Annual Cost: maximum of \$239,490

Table 5.9-3. Recommended Plan Costs by Decade for Erath County – Other

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	727	499	310	63	(148)	(347)
Conservation						
Supply from Plan Element (acft/yr)	—	—	—	—	—	—
Annual Cost (\$/yr)	—	—	—	—	—	—
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	727	499	310	63	(148)	(347)
Trinity Aquifer Groundwater Development						
Supply from Plan Element (acft/yr)	—	—	—	—	148	347
Annual Cost (\$/yr)	—	—	—	—	\$120,245	\$239,490
Unit Cost (\$/acft)	—	—	—	—	\$812	690

5.9.4 Manufacturing

Description of Supply

Manufacturing water supply in Erath County is obtained from multiple sources including through local groundwater production from the Trinity Aquifer, purchases of treated surface from the City of Dublin and County-Other entities, and groundwater purchases from the City of Stephenville. Manufacturing is projected to have a supply shortage until 2040.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water supply plan is recommended for the Erath County-Other. Associated costs are included for each strategy..

a. Conservation:

- Cost Source: Volume II
 - Date to be Implemented: 2020
 - Annual Cost: not determined
- b. Purchase additional groundwater supply from the City of Stephenville:
- Cost Source: Volume II, Chapter 14
 - Date to be Implemented: before 2030
 - Annual Cost: maximum of \$652/yr
 - Unit Cost: \$326/acft

Table 5.9-4. Recommended Plan Costs by Decade for Erath County – Manufacturing

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(3)	(6)	2	9	18	29
Conservation						
Supply from Plan Element (acft/yr)	2	4	6	6	6	6
Annual Cost (\$/yr)	ND	ND	ND	ND	ND	ND
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(1)	(2)	8	15	24	35
Purchase additional supply from City of Stephenville						
Supply from Plan Element (acft/yr)	1	2	—	—	—	—
Annual Cost (\$/yr)	\$326	\$652	—	—	—	—
Unit Cost (\$/acft)	\$326	\$326	—	—	—	—

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

5.9.5 Steam-Electric

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

5.9.6 Mining

Water supply for Mining in Erath County is obtained through groundwater production from the Trinity Aquifer. No water supply shortages are projected for Mining entities in the County through the planning period.

5.9.7 Irrigation

Irrigation in Erath County obtains water solely through local groundwater production from the Trinity Aquifer is projected to have a surplus of available water through the planning period. No change in water supply is recommended.



5.9.8 Livestock

Water supply for Livestock is obtained through local stock surface water impoundments. No shortages are projected for Livestock use and no changes in water supply are recommended.

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