



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)

| Comanche County Surplus/(Shortage) Water User Group | Surplus/(Shortage) ¹ | | Comment |
|---|---------------------------------|-------------------|-------------------------------------|
| | 2040 (acft/yr) | 2070 (acft/yr) | |
| City of Comanche | 147 | 38 | Projected surplus |
| City of De Leon | 85 | 42 | Projected surplus |
| County Other | (135) | (183) | Projected shortage – see plan below |
| Manufacturing | 0 | 0 | Demand equals supply |
| Steam-Electric | 0 | 0 | No projected demand |
| Mining | (337) | (102) | Projected shortage – see plan below |
| Irrigation | (1,823) | (968) | Projected shortage – see plan below |
| Livestock | 0 | 0 | Demand equals supply |

1 – From Tables C-11 and C-12, Appendix C – Comparison of Water Demands with Water Supplies to Determine Needs.

5.6.1 City of Comanche

The City of Comanche receives its water from the Upper Leon MWD (Lake Proctor surface water), which has an agreement to meet Comanche’s water needs. Therefore, no shortage is projected for the City of Comanche 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.

5.6.2 City of De Leon

The City of DeLeon receives its water from the Upper Leon MWD (Lake Proctor surface water), which has an agreement to meet DeLeon’s water needs. Therefore, no shortage is projected for the City of DeLeon 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.

5.6.3 County-Other

Description of Supply

The water supply entities for County-Other show a projected shortage from 2020 through 2070. Currently water supplies are provided from locally available Trinity Aquifer and contract purchases from Upper Leon MWD. 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 management strategies are recommended for County-Other. Associated costs are included for each strategy.

a. Conservation

- Cost Source: Volume II, Chapter 3
- Date to be Implemented: before 2020
- Unit Cost: \$496/acft
- Annual Cost: maximum of \$22,670 in 2030

b. Trinity Aquifer Development

- Cost Source: Volume II, Chapter 12
- Date to be Implemented: before 2020
- Project Cost: \$2,033,000
- Unit Cost: \$924/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> | (149) | (144) | (135) | (144) | (163) | (183) |
| Conservation | | | | | | |
| Supply From Plan Element (acft/yr) | — | — | — | — | — | — |
| Annual Cost (\$/yr) | — | — | — | — | — | — |
| <i>Projected Surplus/(Shortage) after Conservation</i> | (149) | (144) | (135) | (144) | (163) | (183) |
| Trinity Aquifer Development | | | | | | |
| Supply From Plan Element (acft/yr) | 161 | 161 | 161 | 161 | 242 | 242 |
| Annual Cost (\$/yr) | \$149,000 | \$149,000 | \$36,000 | \$36,000 | \$110,000 | \$110,000 |
| Unit Cost (\$/acft) | \$924 | \$924 | \$223 | \$223 | \$455 | \$455 |

5.6.4 Manufacturing

Comanche County Manufacturing demand is met with supplies from City of Comanche. No shortages are projected and no changes in water supply are 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 by limited amounts of Trinity Aquifer groundwater. Supply shortages are expected for Mining beginning in 2020.

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 (Table 5.6-3). Associated costs are included for each strategy.

- a. Conservation
 - Cost Source: Volume II, Section 2
 - Date to be Implemented: before 2020
 - Annual Cost: not determined
- b. Trinity Aquifer Development
 - Cost Source: Volume II, Section 12
 - Date to be Implemented: before 2020
 - Project Cost: \$4,475,000
 - Unit Cost: Max of \$871/acft (2020)

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> | (418) | (499) | (337) | (250) | (162) | (102) |
| Conservation | | | | | | |
| Supply From Plan Element (acft/yr) | 14 | 26 | 26 | 19 | 13 | 9 |
| Annual Cost (\$/yr) | ND | ND | ND | ND | ND | ND |
| <i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i> | (404) | (473) | (311) | (230) | (149) | (93) |
| Trinity Aquifer Development | | | | | | |
| Supply From Plan Element (acft/yr) | 404 | 473 | 311 | 320 | 149 | 93 |
| Annual Cost (\$/yr) | \$411,796 | \$411,796 | \$36,796 | \$36,796 | \$36,796 | \$36,796 |
| Unit Cost (\$/acft) | \$871 | \$871 | \$78 | \$78 | \$78 | \$78 |

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 by Trinity Aquifer groundwater, run of the river water rights and BRA contracts. More than 10,000 acft/yr of irrigation water rights are not available during drought of record conditions. Irrigation is projected to have shortages beginning in 2020.

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 (Table 5.6-4). Associated costs are included for each strategy.

- a. Conservation
 - Cost Source: Volume II, Section 2
 - Date to be Implemented: before 2020
 - Annual Cost: \$230/acft
- b. Groundwater Development – Trinity Aquifer
 - Cost Source: Volume II, Section 12
 - Date to be Implemented: before 2020
 - Project Cost: \$11,015,000
 - Unit Cost: \$1,666/acft

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> | (893) | (1,962) | (1,823) | (463) | (757) | (968) |
| Conservation | | | | | | |
| Supply From Plan Element (acft/yr) | 824 | 1,359 | 1,883 | 1,863 | 1,844 | 1,825 |
| Annual Cost (\$/yr) | \$189,460 | \$312,513 | \$432,993 | \$428,534 | \$424,106 | \$419,824 |
| <i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i> | (69) | (603) | 60 | 1,400 | 1,087 | 857 |
| Groundwater Development – Trinity Aquifer | | | | | | |
| Supply From Plan Element (acft/yr) | 69 | 603 | — | — | — | — |
| Annual Cost (\$/yr) | \$1,004,806 | \$1,004,806 | — | — | — | — |
| Unit Cost (\$/acft) | \$1,666 | \$1,666 | — | — | — | — |

5.6.8 Livestock

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