

5.5 Callahan County Water Supply Plan

Table 5.5-1 lists each water user group in Callahan County and their corresponding surplus or shortage in years 2040 and 2070. For each water user group with a projected shortage, a water supply plan has been developed and is presented in the following subsections.

Table 5.5-1. Callahan County Surplus/(Shortage)

| Water User Group | Surplus/(Shortage) ¹ | | Comment |
|----------------------|---------------------------------|----------------|--------------------------------------|
| | 2040 (acft/yr) | 2070 (acft/yr) | |
| City of Baird | (150) | (164) | Projected shortage - see plan below. |
| Callahan County WSC | 0 | 0 | Demand equals supply |
| City of Clyde | 91 | 85 | Projected surplus |
| Coleman County SUD | (25) | (26) | Projected shortage - see plan below. |
| City of Cross Plains | 107 | 101 | Projected surplus |
| Eula WSC | 96 | 88 | Projected surplus |
| Hamby WSC | | | See Jones County |
| Potosi WSC | | | See Taylor County |
| County-Other | 24 | 17 | Projected surplus |
| Steam-Electric | – | – | No demand projected |
| Manufacturing | – | – | No demand projected |
| Mining | (134) | (100) | Projected shortage - see plan below. |
| Irrigation | 291 | 287 | Projected surplus |
| Livestock | 0 | 0 | Demand equals supply |

1 – From Tables C-9 and C-10, Appendix C – Comparison of Water Demands with Water Supplies to Determine Needs.

5.5.1 City of Baird

Description of Supply

The City of Baird obtains its water supply from surface water supplied from Lake Baird and from the City of Abilene. From 2020 through 2070, the City’s contractual purchase from the City of Abilene is 77 acft/yr and the total amount of surface water availability from Lake Baird ranges from 25 to 0 in 2020 to 2070, respectively. Baird also receives reuse water from the City of Clyde in trade for potable water. Supplies are not sufficient to meet demands through 2070. Conservation is recommended to reduce the City’s gallons per capita per day (gpcd) in 2030 to a goal of 140 gpcd after the plumbing fixtures act.

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 Baird. Associated costs are included for each strategy.

a. Purchase Additional Supplies from City of Abilene

- Cost Source: Abilene Water Rates 2019
- Date to be Implemented: 2020
- Project Cost: none
- Unit Cost: \$1,694/ac-ft (\$5.20/1,000 gal)

Table 5.5-2. Recommended Plan Costs by Decade for the City of Baird

| Plan Element | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|--|-----------|-----------|-----------|-----------|-----------|-----------|
| <i>Projected Surplus/(Shortage) (acft/yr)</i> | (155) | (152) | (150) | (154) | (159) | (164) |
| Conservation | | | | | | |
| Supply from Plan Element (acft/yr) | – | – | – | – | – | – |
| Annual Cost (\$/yr) | – | – | – | – | – | – |
| <i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i> | (155) | (152) | (150) | (154) | (159) | (164) |
| Purchase Additional Supplies from City of Abilene | | | | | | |
| Supply from Plan Element (acft/yr) | 155 | 152 | 150 | 154 | 159 | 164 |
| Annual Cost (\$/yr) | \$262,570 | \$257,488 | \$254,100 | \$260,876 | \$269,346 | \$277,816 |
| Unit Cost (\$/acft) | \$1,694 | \$1,694 | \$1,694 | \$1,694 | \$1,694 | \$1,694 |

5.5.2 Callahan County WSC

Callahan County WSC obtains its water supply from a contract with Clyde. Supplies are sufficient to meet demands through 2070. Conservation was also considered; however, the entity’s current per capita use rate is below the selected target rate of 140 gpcd.

5.5.3 City of Clyde

The City of Clyde uses surface water from Clyde Lake which is projected to supply 500 acft/yr from 2020 through 2070. Clyde also has a contractual purchase plan of 307 acft/yr from the City of Abilene that can cover the city’s projected demands. **Clyde also has an arrangement with the City of Baird to receive potable water in trade for reuse water.** No current or future shortages are projected. Clyde also has contractual sales to Eula WSC of 221 acft/yr through 2070 and Callahan County WSC from 184 to 188 acft/yr from 2020 to 2070, respectively. Clyde has recently acquired a 2,500 acft/yr water right for supplies from Fort Phantom Hill Reservoir; however, the full amount of the water right is not firm and supply will be less than 2,500 acft/yr. In addition, this supply cannot be applied until infrastructure is in place to deliver and treat the water. No change in water supply is



recommended. Conservation was also considered; however, the entity’s current per capita use rate is below the selected target rate of 140 gpcd.

5.5.4 Coleman County SUD

Description of Supply

Coleman County SUD obtains its water supply from the City of Coleman via Lake Brownwood in Region F. Shortages are projected beginning in 2020. This WUG is located in multiple counties (Callahan and Taylor and others outside of Region G (Brown, Coleman, and Runnels)). The values shown in Table 5.5-1 represent the cumulative totals for Coleman County WSC in these two counties.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, and in coordination with Region F, the following water supply plan is recommended for Coleman County SUD. Conservation was considered; however, the entity’s current per capita use rate is below the selected target rate of 140 gpcd.

- a. Subordination Lake Coleman (Region F):
 - Cost Source: 2020 Region F Water Plan
 - Date to be Implemented: 2030
 - Total Project Cost: no cost
 - Unit Cost: none

Table 5.5-3. Recommended Plan Costs by Decade for the Coleman County SUD

| Plan Element | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|--|------|------|------|------|------|------|
| <i>Projected Surplus/(Shortage) (acft/yr)</i> | (24) | (25) | (25) | (25) | (26) | (26) |
| Conservation | | | | | | |
| Supply from Plan Element (acft/yr) | – | – | – | – | – | – |
| Annual Cost (\$/yr) | – | – | – | – | – | – |
| <i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i> | (24) | (25) | (25) | (25) | (26) | (26) |
| Subordination Lake Coleman (Region F) | | | | | | |
| Supply from Plan Element (acft/yr) | 24 | 25 | 25 | 25 | 26 | 26 |
| Annual Cost (\$/yr) | – | – | – | – | – | – |
| Unit Cost (\$/acft) | – | – | – | – | – | – |

5.5.5 City of Cross Plains

Description of Supply

The City of Cross Plains uses locally available groundwater from the Trinity Aquifer. The city is projected to have sufficient supplies through the planning period. Conservation is recommended to reduce the City’s gpcd between 2020 and 2070 to a goal 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 Cross Plains. Associated costs are included for each strategy.

- a. Conservation:
 - Cost Source: Volume II
 - Date to be Implemented: before 2030
 - Annual Cost: maximum of \$5,387 in 2020
 - Unit Cost: \$560/ac-ft

Table 5.5-4. Recommended Plan Costs by Decade for the City of Cross Plains

| Plan Element | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|------|---------|---------|---------|---------|---------|
| <i>Projected Surplus/(Shortage) (acft/yr)</i> | 117 | 110 | 107 | 105 | 102 | 101 |
| Conservation | | | | | | |
| Supply from Plan Element (acft/yr) | 0 | 10 | 6 | 4 | 5 | 4 |
| Annual Cost (\$/yr) | \$0 | \$5,387 | \$3,291 | \$2,391 | \$2,666 | \$2,260 |
| <i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i> | 117 | 110 | 107 | 105 | 102 | 101 |
| Additional Demands from Recommended Strategies from Others | | | | | | |
| Increase Contract Amount to Mining-Callahan (ac-ft/yr) | 27 | 34 | 23 | 15 | 7 | 0 |
| <i>Total Needs Including Recommended Strategies</i> | 90 | 76 | 84 | 90 | 95 | 1 |

5.5.6 EULA WSC

Description of Supply

The City of Cross Plains has a contract with Abilene for 61 ac-ft/yr and Clyde for 221 ac-ft/yr and a surplus is projected. 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 EULA WSC. Associated costs are included for each strategy.

Table 5.5-5. Recommended Plan Costs by Decade for EULA WSC

| Plan Element | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|------|------|------|------|------|------|
| <i>Projected Surplus/(Shortage) (acft/yr)</i> | 114 | 102 | 96 | 92 | 90 | 88 |
| Conservation | | | | | | |
| Supply from Plan Element (acft/yr) | – | – | – | – | – | – |
| Annual Cost (\$/yr) | – | – | – | – | – | – |
| <i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i> | 114 | 102 | 96 | 92 | 90 | 88 |
| Additional Demands from Recommended Strategies from Others | | | | | | |
| Increase Contract Amount to Mining-Callahan (ac-ft/yr) | 114 | 102 | 96 | 92 | 90 | 87 |
| <i>Total Needs Including Recommended Strategies</i> | 0 | 0 | 0 | 0 | 0 | 1 |

5.5.7 County-Other

The water supply entities comprising County-Other mostly rely on groundwater systems in the Trinity Aquifer show a projected surplus through the planning period. No changes in water supply are recommended for Callahan County-Other. Conservation was considered; however, the entity's current per capita use rate is below the selected target rate of 140 gpcd.

5.5.8 Manufacturing

No Manufacturing demand exists or is projected for the county.

5.5.9 Steam-Electric

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

5.5.10 Mining

Description of Supply

Mining activities are projected to increase in Callahan County requiring local water management strategies to meet the projected water demand and shortages. Conservation is recommended to reduce the Mining demand between 2020 and 2070. Available Trinity Aquifer supplies at 80 ac-ft/yr in Callahan County will also be used to meet the projected demands.

Water Supply Plan

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

a. Conservation:

- Cost Source: Volume II
- Date to be Implemented: before 2030
- Annual Cost: not determined

b. Purchase Water from EULA WSC:

- Cost Source: Volume II
- Date to be Implemented: before 2020
- Project Cost: \$11,058,000
- Unit Cost: \$6,617 ac-ft/yr (with debit service)

c. Purchase Water from City of Cross Plains:

- Cost Source: Volume II
- Date to be Implemented: before 2020
- Project Cost: \$11,058,000
- Unit Cost: \$6,617 ac-ft/yr (with debit service)

Table 5.5-6. Recommended Plan Costs by Decade for the Callahan County – Mining

| Plan Element | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|-----------|-----------|-----------|-----------|----------|----------|
| <i>Projected Surplus/(Shortage) (acft/yr)</i> | (148) | (147) | (134) | (121) | (110) | (100) |
| Conservation | | | | | | |
| Supply from Plan Element (acft/yr) | 7 | 11 | 15 | 14 | 13 | 13 |
| Annual Cost (\$/yr) | ND | ND | ND | ND | ND | ND |
| <i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i> | (141) | (136) | (119) | (107) | (97) | (87) |
| Purchase Water from EULA WSC | | | | | | |
| Supply from Plan Element (acft/yr) | 114 | 102 | 96 | 92 | 90 | 87 |
| Annual Cost (\$/yr) | \$754,338 | \$674,934 | \$105,504 | \$101,108 | \$98,910 | \$95,613 |
| Unit Cost (\$/acft) | \$6,617 | \$6,617 | \$1,099 | \$1,099 | \$1,099 | \$1,099 |
| Purchase Water from City of Cross Plains | | | | | | |
| Supply from Plan Element (acft/yr) | 27 | 34 | 23 | 15 | 7 | 0 |
| Annual Cost (\$/yr) | \$178,659 | \$224,978 | \$25,277 | \$16,485 | \$7,693 | \$0 |
| Unit Cost (\$/acft) | \$6,617 | \$6,617 | \$1,099 | \$1,099 | \$1,099 | \$1,099 |
| ND – Not determined. Costs to implement industrial conservation technologies will vary based on each location | | | | | | |



5.5.11 Irrigation

Description of Supply

Irrigation activities are supplied from the local Trinity Aquifer. Conservation is not needed as there are projected surplus supplies to meet the demands.

5.5.12 Livestock

No Livestock shortage exists or is projected for the county.

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