

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)		Comment
	2040 (acft/yr)	2070 (acft/yr)	
City of Baird	(150)	(164)	Projected shortage - see plan below.
Callahan County WSC	0	0	No projected surplus or shortage
City of Clyde	91	85	Projected surplus - see plan below.
Coleman County SUD	(15)	(15)	Projected shortage - see plan below.
City of Cross Plains	107	101	Projected surplus - see plan below.
Eula WSC	96	88	Projected surplus - see plan below.
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	No projected surplus or shortage

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. Supplies are not sufficient to meet demands through 2070.

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. Conservation was also considered; however, the entity's usage is below the selected goal of 140 gpcd.

- 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/acft (\$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. 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.

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 Clyde. Associated costs are included for each strategy. Conservation was also considered; however, the entity’s usage is below the selected goal of 140 gpcd.

- a. Purchase Additional Supply from Abilene
- Cost Source: Abilene Water Rates 2019
 - Date to be Implemented: 2020
 - Project Cost: none
 - Unit Cost: \$1,694/acft (\$5.20/1,000 gal)

Table 5.5-3. Recommended Plan Costs by Decade for the City of Clyde

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(214)	(220)	91	93	88	85
Conservation						
Supply from Plan Element (acft/yr)	–	–	–	–	–	–
Annual Cost (\$/yr)	–	–	–	–	–	–
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(214)	(220)	91	93	88	85
BRA System Operations						
Supply from Plan Element (acft/yr)	214	220	–	–	–	–
Annual Cost (\$/yr)	\$363,000	\$373,000	–	–	–	–
Unit Cost (\$/acft)	\$1,694	\$1,694	–	–	–	–

5.5.4 Coleman County SUD

Description of Supply

Coleman County SUD obtains its water supply from the Lake Brownwood (sales from Brookesmith SUD from BCWID #1) and Lake Coleman and Hords Creek Lake (which have no supply under WAM Run 3) in Region F. These supplies become available under the subordination WMS for each lake and Coleman County SUD has no remaining needs. These supplies and WMS volumes are also in the database. 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 the table below 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 5.5-4. 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>	(15)	(15)	(15)	(15)	(15)	(15)
Conservation						
Supply from Plan Element (acft/yr)	–	–	–	–	–	–
Annual Cost (\$/yr)	–	–	–	–	–	–
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(15)	(15)	(15)	(15)	(15)	(15)
Subordination Lake Coleman (Region F)						
Supply from Plan Element (acft/yr)	15	15	15	15	15	15
Annual Cost (\$/yr)	–	–	–	–	–	–
Unit Cost (\$/acft)	–	–	–	–	–	–
Subordination Hords Creek Lake (Region F)						
Supply from Plan Element (acft/yr)	3	3	3	3	3	3
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 at 310 acft/yr. The city is projected to have sufficient supplies through the planning period.

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. Conservation is recommended to reduce usage to a goal of 140 gpcd.



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

Table 5.5-5. 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	\$6,000	\$3,000	\$2,000	\$3,000	\$2,000
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	117	120	113	109	107	105
Additional Demands from Recommended Strategies from Others						
Increase Contract Amount to Mining-Callahan (acft/yr)	27	34	23	15	7	0
<i>Total Needs Including Recommended Strategies</i>	90	86	90	94	100	105

5.5.6 EULA WSC

Description of Supply

The City of Cross Plains has a contract with Abilene for 61 acft/yr and Clyde for 221 acft/yr and a surplus is projected.

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

Table 5.5-6. 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 (acft/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. Available Trinity Aquifer supplies at 80 acft/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. Conservation is recommended.



- 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 acft/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 acft/yr (with debit service)

Table 5.5-7. 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.