



5.7 Coryell County Water Supply Plan

Table 5.7-1 lists each water user group in Coryell 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 5.2-1. Coryell County Surplus/(Shortage)

Water User Group	Surplus/(Shortage) ¹		Comment
	2040 (acft/yr)	2070 (acft/yr)	
City of Copperas Cove	3,473	1,866	Projected surplus
Coryell City Water Supply District	329	324	Projected surplus
Elm Creek WSC			See Bell County
Flat WSC	(23)	(62)	Projected shortage - see plan below.
Fort Hood			See Bell County
City of Gatesville	(2,455)	(4,688)	Projected shortage - see plan below.
Kempner WSC			See Lampasas County
Mountain WSC	110	13	Projected surplus
Multi-County WSC	(91)	(174)	Projected shortage - see plan below.
Mustang Valley WSC			See Bosque County
City of Oglesby	148	129	Projected surplus
The Grove WSC			See Bell County
County-Other	(259)	(1,107)	Projected shortage - see plan below.
Manufacturing	0	0	Demand equals supply
Steam-Electric	—	—	No projected demand
Mining	(296)	(242)	Projected shortage - see plan below.
Irrigation	736	736	Projected surplus
Livestock	0	0	Demand equals supply

1 - From Tables C-13 and C-14, Appendix C - Comparison of Water Demands with Water Supplies to Determine Needs

5.7.1 City of Copperas Cove

The service area for the City of Copperas Cove is within both Coryell and Lampasas Counties. The City obtains its water supply solely through purchases of treated surface water under contract from Bell County WCID No.1. Bell County WCID No. 1 is projected to provide up to 8,824 acft/yr of treated surface water to the City of Coryell during the planning period from raw surface water sourced from Lake Belton through contracts with the Brazos River Authority. The quantity shown in Table 5.7-1 represents the cumulative

totals for the City of Copperas Cove as a whole. No shortages are projected for the City of Copperas Cove 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.

5.7.2 Coryell City Water Supply District

Description of Supply

Coryell City Water Supply District obtains its water supply primarily through purchases of treated surface water under contract from the City of Gatesville; the supply available to the District under this contract is projected to range from 933 acft/yr to 1,542 acft/yr. The District also purchases raw surface water under contract from the Brazos River Authority in the amount of 300 acft/yr which is treated by the City of Gatesville. The remainder of the District’s water supply is obtained through groundwater production from the Trinity Aquifer which is projected to provide 83 acft/yr of supply through the planning period. No shortages are projected for Coryell City Water Supply District and no changes in water supply are recommended. This WUG is located in Coryell and McLennan Counties. The quantity shown in Table 5.7-1 represents the cumulative totals for Coryell City Water Supply District.

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 Coryell City Water Supply District.

- a. Conservation
 - Cost Source: Volume II, Chapter 2
 - Date to be Implemented: before 2030
 - Annual Cost: maximum of \$10,640 in 2030
 - Unit Cost: \$560/acft

Table 5.7-1. Recommended Plan Costs by Decade for Coryell City Water Supply District

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	332	331	329	327	326	324
Conservation						
Supply From Plan Element (acft/yr)	—	19	8	1	—	—
Annual Cost (\$/yr)	—	\$10,640	\$4,480	\$560	—	—
<i>Projected Surplus/(Shortage) after Conservation</i>	332	350	337	328	326	324



5.7.3 Flat WSC

Description of Supply

Flat Creek WSC obtains its water supply solely through purchases of treated surface water under contract with the City of Gatesville, which is projected to supply up to 102 acft/yr through the planning period. Shortages are projected for Flat Creek WSC beginning in 2030.

Water Supply Plan

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

a. Conservation

- Cost Source: Volume II, Chapter 2
- Date to be Implemented: 2030
- Annual Cost: maximum of \$22,240 in 2070
- Unit Cost: \$560/acft

b. Purchase Additional Water from Gatesville

- Cost Source: Volume II, Chapter 4.3
 - Strategy potentially dependent on BRA providing supply under its System Operations permit
- Date to be Implemented: 2030
- Project Cost: N/A
- Unit Cost: \$1,309/acft

Table 5.7-3. Recommended Plan Costs by Decade for Flat WSC

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	2	(10)	(23)	(35)	(48)	(62)
Conservation						
Supply From Plan Element (acft/yr)	—	9	20	32	36	40
Annual Cost (\$/yr)	—	\$5,040	\$11,200	\$17,920	\$20,160	\$22,400
<i>Projected Surplus/(Shortage) after Conservation</i>	2	(1)	(3)	(3)	(12)	(22)
Purchase Additional Water from Gatesville						
Supply From Plan Element (acft/yr)	—	1	3	3	12	22
Annual Cost (\$/yr)	—	\$1,309	\$3,927	\$3,927	\$15,708	\$28,798
Unit Cost (\$/acft)	—	\$1,309	\$1,309	\$1,309	\$1,309	\$1,309

5.7.4 City of Gatesville

Description of Supply

The City of Gatesville obtains its water supply through purchases of raw water under contract from the Brazos River Authority. The contracted supply volume is for 5,898 acft/yr; however, this contract is projected to be prorated and only provide a maximum of 4,902 acft/yr during the planning period. The City of Gatesville also provides treated surface water to a number of nearby WUGs through wholesale supply contracts.

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 the City of Gatesville.

a. Conservation

- Cost Source: Volume II, Chapter 2
- Date to be Implemented: before 2030
- Annual Cost: maximum of \$1,339,520 in 2070
- Unit Cost: \$560/acft

b. Coryell County Off-Channel Reservoir

- Strategy to develop new raw supply, only. Delivery and treatment would be required when supplies are needed.
- Cost Source: Volume II, Chapter 4.3
 - Strategy potentially dependent on BRA providing supply through its System Operations permit
- Date to be Implemented: before 2030
- Project Cost: \$82,584,000
- Unit Cost: maximum of \$2,017 acft/yr

c. Raw Water Conveyance and Water Treatment Plant Expansion

- Cost Source: Volume II, Chapter 14
- Date to be Implemented: pipeline before 2030, WTP expansion before 2050.
- Project Cost: \$96,294,068
- Unit Cost: maximum of \$5,095 acft/yr

Table 5.7-4. Recommended Plan Costs by Decade for the City of Gatesville

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(1,041)	(1,692)	(2,455)	(3,154)	(3,917)	(4,668)
Conservation						
Supply From Plan Element (acft/yr)	—	384	852	1,386	1,988	2,392
Annual Cost (\$/yr)	—	\$215,040	\$477,120	\$776,160	\$1,113,280	\$1,339,520
<i>Projected Surplus/(Shortage) after Conservation</i>	(1,041)	(1,308)	(1,603)	(1,768)	(1,929)	(2,296)
Additional Demands from Recommended Strategies from Others						
Increase Contract to Flat WSC (acft/yr)	—	1	3	3	12	22
Increase Contract to Coryell County-Other (acft/yr)	—	—	259	525	815	1,107 ^A
Projected Surplus/(Shortage) after Conservation	(1,041)	(1,309)	(1,865)	(2,296)	(2,756)	(3,425)
Coryell County Off-Channel Reservoir						
Supply From Plan Element (acft/yr) ^B	3,135	3,135	3,135	3,135	3,135	3,135
Annual Cost (\$/yr)	\$6,322,000	\$6,322,000	\$3,256,000	\$3,256,000	\$1,429,000	\$1,429,000
Unit Cost (\$/yr)	\$2,017	\$2,017	\$1,039	\$1,039	\$455	\$455
Raw Water Conveyance and Water Treatment Plant Expansion						
Supply From Plan Element (acft/yr)	1,286	1,318	1,350	3,135	3,135	3,135
Annual Cost (\$/yr)	\$6,552,205	\$6,552,205	\$794,000	\$2,667,149	\$2,667,149	\$1,650,000
Unit Cost (\$/yr)	\$5,095	\$4,971	\$588	\$850	\$850	\$526

A – Meeting demand is dependent on Brazos River Authority no longer prorating contracted supply to City of Gatesville. The strategy is included as an alternative strategy for this WUG. B – Raw supply, only; yield limited by Gatesville Water Treatment Plant capacity.

5.7.5 Mountain WSC

Mountain WSC obtains its water supply through groundwater production from the Trinity Aquifer and through purchases of treated surface water under contract from the City of Gatesville which is projected to provide up to 280 acft/yr of supply. Available supply from the Trinity Aquifer is projected at 147 acft/yr. No shortages are projected for Mountain WSC and no changes to 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.

5.7.6 Multi-County WSC

Description of Supply

Multi-County WSC obtains its water supply through purchases of treated surface water under contract from the City of Hamilton, which is projected to provide 245 acft/yr of supply

through the planning period. This WUG is located in Coryell and Hamilton Counties. The quantity shown in Table 5.7-1 represents the cumulative totals for Multi-County WSC.

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 the Multi-County WSC. Conservation was considered; however, the entity's current per capita use rate is below the selected target rate of 140 gpcd.

a. Purchase additional water from City of Hamilton

- Cost Source: Volume II, Chapter 12
- Date to be Implemented: before 2020
- Unit Cost: \$250/acft
- Annual Cost: maximum of \$50,869

Table 5.7-5. Recommended Plan Costs by Decade for Multi-County WSC

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(46)	(67)	(91)	(115)	(144)	(174)
Conservation						
Supply From Plan Element (acft/yr)	—	—	—	—	—	—
Annual Cost (\$/yr)	—	—	—	—	—	—
<i>Projected Surplus/(Shortage) after Conservation</i>	(46)	(67)	(91)	(115)	(144)	(174)
Purchase from City of Hamilton						
Supply From Plan Element (acft/yr)	46	67	91	115	144	174
Annual Cost (\$/yr)	\$11,500	\$16,750	\$22,750	\$28,750	\$36,000	\$43,5600
Unit Cost (\$/acft)	\$250	\$250	\$250	\$250	\$250	\$250

5.7.7 City of Oglesby

The City of Oglesby obtains its water supply solely through groundwater production from the Trinity Aquifer which is projected to provide 211 acft/yr of groundwater supply. No shortages are projected for the City during the planning period and no changes to 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.

5.7.8 County-Other

Description of Supply

Water supply for County-Other entities is obtained through groundwater production from the Trinity Aquifer, which is projected to provide 614 acft/yr of groundwater supply. Shortages for Coryell County-Other are projected to occur before 2040. Local officials have requested that the Coryell County Reservoir be evaluated and recommended as a water



management strategy to meet future needs in Coryell County. The project would likely be developed in cooperation with the Brazos River Authority. Some users included in Coryell County-Other receive water from BRA contracts.

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 the entities in Coryell County-Other. Conservation was considered; however, the entity's current per capita use rate is below the selected target rate of 140 gpcd.

- a. Groundwater Development – Trinity Aquifer
 - Cost Source: Volume II, Chapter 14
 - Date to be Implemented: 2040
 - Project Cost: \$10,114,000
 - Unit Cost: maximum of \$1,279/acft
- b. Alternative: Purchase from Gatesville
 - Cost Source: Volume II, Chapter 4.3
 - Strategy potentially dependent on BRA providing supply through its System Operations permit
 - Date to be Implemented: 2040
 - Project Cost: N/A
 - Unit Cost: \$1,309/acft

Table 5.7-6. Recommended Plan Costs by Decade for Coryell County – Other

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	324	52	(259)	(525)	(815)	(1,107)
Conservation						
Supply From Plan Element (acft/yr)	—	—	—	—	—	—
Annual Cost (\$/yr)	—	—	—	—	—	—
<i>Projected Surplus/(Shortage) after Conservation</i>	324	52	(259)	(525)	(815)	(1,107)
Groundwater Development – Trinity Aquifer						
Supply From Plan Element (acft/yr)	—	—	259	525	815	1,107
Annual Cost (\$/yr)	—	—	\$331,221	\$530,754	\$573,131	\$705,507
Unit Cost (\$/acft)	—	—	\$1,279	\$1,011	\$703	\$637
Alternative: Purchase from Gatesville (Coryell County Off-Channel Reservoir)						
Supply From Plan Element (acft/yr)	—	—	259	525	815	1,107 ^A
Annual Cost (\$/yr)	—	—	\$339,031	\$687,225	\$1,066,835	\$1,449,063
Unit Cost (\$/acft)	—	—	\$1,309	\$1,309	\$1,309	\$1,309

A – Meeting demand is dependent on Brazos River Authority no longer prorating contracted supply to City of Gatesville

5.7.9 Manufacturing

Coryell County Manufacturing obtains water supply through purchases of treated surface water under contract from the City of Gatesville. No shortage is projected and no changes in water supply are recommended.

5.7.10 Steam-Electric

Coryell County has no current or projected future demand for Steam-Electric; therefore, no recommendations have been made.

5.7.11 Mining

Description of Supply

Mining demand in Coryell County is projected to peak in 2020, and slowly decrease until 2070. Water supply to meet Mining demands is obtained solely through groundwater production from the Trinity Aquifer. Shortages are projected throughout the planning period.

Recommended Strategy

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 Coryell County-Mining. Associated costs are included for each strategy.



- a. Conservation
 - Cost Source: Volume II
 - Date to be Implemented: before 2020
 - Annual Cost: Not determined.
- b. Groundwater Development – Trinity Aquifer
 - Cost Source: Volume II, Chapter 14
 - Date to be Implemented: before 2030
 - Project Cost: \$11,284,000
 - Unit Cost: maximum of \$715/acft

Table 5.7-7. Recommended Plan Costs by Decade for Coryell County – Mining

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(1,315)	(877)	(296)	(168)	(203)	(242)
Conservation						
Supply From Plan Element (acft/yr)	45	54	34	25	28	31
Annual Cost (\$/yr)	ND	ND	ND	ND	ND	ND
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(1,270)	(823)	(262)	(143)	(175)	(211)
Groundwater Development - Trinity						
Supply From Plan Element (acft/yr)	1,270	1,270	1,270	1,270	1,270	1,270
Annual Cost (\$/yr)	\$907,959	\$907,959	\$113,959	\$113,959	\$113,959	\$113,959
Unit Cost (\$/acft)	\$715	\$715	\$90	\$90	\$90	\$90

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

5.7.12 Irrigation

No shortages are projected for Coryell County Irrigation and no changes in water supply are recommended.

5.7.13 Livestock

Livestock water supply is projected to meet demands through 2070 and no changes in water supply are recommended.

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