5.4 Burleson County Water Supply Plan

Table 5.4-1. lists each water user group in Burleson 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 water users are presented in the following subsections.

Table 5.4-1. Burleson County Surplus/(Shortage)

Water User Group	Surplus/(Shortage)[1]		Comment
	2040 (acft/yr)	2070 (acft/yr)	
City of Caldwell	1,279	1,244	Projected surplus
Deanville WSC	211	202	Projected surplus
Milano WSC			See Milam County
City of Snook	274	254	Projected surplus
City of Somerville	606	578	Projected surplus
Southwest Milam WSC			See Milam County
County-Other	170	32	Projected surplus
Manufacturing	(44)	(102)	Projected shortage – see plan below
Steam-Electric	0	0	No projected demand
Mining	(1,512)	(428)	Projected shortage – see plan below
Irrigation	1,905	4,493	Projected surplus
Livestock	0	0	Demand equals supply

1 – From Tables C-7 and C-8, Appendix C – Comparison of Water Demands with Water Supplies to Determine Needs.

5.4.1 City of Caldwell

Description of Supply

The City of Caldwell obtains its water supply from groundwater from the Carrizo-Wilcox Aquifer. This supply is projected to be sufficient through the planning period.

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 the projected water shortage for the City of Caldwell. Associated costs are included for each strategy.

a. Conservation

- Cost Source: Volume II, Chapter 2
- Date to be Implemented: 2020
- Annual Cost: maximum of $116,000 in 2070
- Unit Cost: $470/acft

Table 5.4-2. Recommended Plan Costs by Decade for City of Caldwell

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*1,325*	*1,309*	*1,279*	*1,279*	*1,261*	*1,244*
Conservation						
Supply From Plan Element (acft/yr)	40	121	203	240	242	246
Annual Cost ($/yr)	$19,000	$57,000	$96,000	$113,000	$114,000	$116,000
Projected Surplus/(Shortage) after Conservation (acft/yr)	*1,365*	*1,430*	*1,482*	*1,519*	*1,503*	*1,490*

5.4.2 Deanville WSC

The Deanville WSC obtains its water supply from groundwater from the Carrizo-Wilcox Aquifer. This supply is projected to be sufficient through the planning period 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.

5.4.3 City of Snook

Description of Supply

The City of Snook obtains its water supply from groundwater from the Sparta Aquifer. No shortages are projected through the planning period.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategies are recommended for the City of Snook. Associated costs are included for each strategy.

a. Conservation

- Cost Source: Volume II, Chapter 2
- Date to be Implemented: 2020
- Annual Cost: maximum of $45,000 in 2070
- Unit Cost: $496/acft

Table 5.4-3. Recommended Plan Costs by Decade for City of Snook

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*291*	*280*	*274*	*266*	*259*	*254*
Conservation						
Supply From Plan Element (acft/yr)	11	26	42	59	76	91
Annual Cost ($/yr)	$5,000	$13,000	$21,000	$29,000	$38,000	$45,000
Projected Surplus/(Shortage) after Conservation (acft/yr)	*302*	*306*	*316*	*325*	*335*	*345*

5.4.4 City of Somerville

Description of Supply

The City of Somerville obtains its water supply from groundwater from the Sparta Aquifer. This supply is projected to be sufficient through the planning period.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategies are recommended for the City of Somerville.

a. Conservation

- Cost Source: Volume II, Chapter 2
- Date to be Implemented: 2020
- Annual Cost: $12,000 in 2030
- Unit Cost: $470/acft

Table 5.4-4. Recommended Plan Costs by Decade for City of Somerville

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*625*	*614*	*606*	*595*	*586*	*578*
Conservation						
Supply From Plan Element (acft/yr)	8	26	23	23	23	24
Annual Cost ($/yr)	$4,000	$12,000	$11,000	$11,000	$11,000	$11,000
Projected Surplus/(Shortage) after Conservation (acft/yr)	*633*	*640*	*629*	*618*	*609*	*602*

5.4.5 County-Other

Burleson County-Other entities obtain water supply from groundwater from the Queen City and Carrizo-Wilcox Aquifers. This supply is projected to be sufficient through the planning period and no change in water supply is recommended. Conservation was considered; however, the entity's current per capita use rate is below the selected target rate of 140 gpcd.

5.4.6 Manufacturing

Description of Supply

Water supply for manufacturing in Burleson County is obtained from Sparta wells operated by the various manufacturing entities. Manufacturing is projected to have a shortage of water beginning in the year 2030.

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 Manufacturing. Associated costs are included for each strategy.

a. Conservation
   - Cost Source: Volume II, Chapter 2
   - Date to be Implemented: before 2020
   - Annual Cost: not determined

b. Groundwater Development – Sparta Aquifer
   - Cost Source: Volume II, Chapter 12.1
   - Date to be Implemented: 2030
   - Project Cost: $932,000
   - Unit Cost: Max of $1,265 (2030)

c. Alternative: Purchase supplies from City of Caldwell
   - Cost Source: Volume II, Chapter 12
   - Date to be Implemented: 2030
   - Project Cost: Not enough information to cost delivery
   - Unit Cost: $500/acft

Table 5.4-5. Recommended Plan Costs by Decade for Burleson County – Manufacturing

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*0*	*(22)*	*(44)*	*(64)*	*(82)*	*(102)*
Conservation						
Supply From Plan Element (acft/yr)	4	8	13	14	15	17
Annual Cost ($/yr)	ND	ND	ND	ND	ND	ND
Projected Surplus/(Shortage) after Conservation (acft/yr)	*4*	*(14)*	*(31)*	*(50)*	*(67)*	*(85)*

Table 5.4-5. Recommended Plan Costs by Decade for Burleson County – Manufacturing

Plan Element	2020	2030	2040	2050	2060	2070
Groundwater Development – Sparta Aquifer						
Supply From Plan Element (acft/yr)	—	50	50	50	85	85
Annual Cost ($/yr)	—	$107,534	$107,534	$35,534	$35,534	$35,534
Unit Cost ($/acft)	—	$1,265	$1,265	$418	$418	$418
Alternative: Purchase Water from City of Caldwell						
Supply From Plan Element (acft/yr)	—	50	50	50	85	85
Annual Cost ($/yr)	—	$25,000	$25,000	$25,000	$42,500	$42,500
Unit Cost ($/acft)	—	$500	$500	$500	$500	$500

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

5.4.7 Steam-Electric

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

5.4.8 Mining

Description of Supply

There are currently no water supplies allocated to Mining operations in Burleson County. Demands for Mining are projected to increase significantly resulting in 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 Burleson County-Mining. Associated costs are included for each strategy.

a. Conservation

- Cost Source: Volume II, Chapter 2
- Date to be Implemented: 2020
- Annual Cost: not determined

b. Groundwater Development – Sparta Aquifer

- Cost Source: Volume II, Chapter 12.1
- Date to be Implemented: 2020
- Project Cost: $5,466,000
- Unit Cost: Max of $678 (2020)

c. Leave needs unmet

- Cost Source: Cost of not meeting needs – see Appendix H
- Date to be Implemented: 2020

Table 5.4-6. Recommended Plan Costs by Decade for Burleson County – Mining

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*(995)*	*(1,923)*	*(1,512)*	*(1,100)*	*(686)*	*(428)*
Conservation						
Supply From Plan Element (acft/yr)	30	96	106	77	48	30
Annual Cost ($/yr)	ND	ND	ND	ND	ND	ND
Projected Surplus/(Shortage) after Conservation (acft/yr)	*(965)*	*(1,827)*	*(1,406)*	*(1,023)*	*(638)*	*(398)*
Groundwater Development – Sparta Aquifer						
Supply From Plan Element (acft/yr)	740	740	740	740	740	740
Annual Cost ($/yr)	$501,602	$501,602	$42,602	$42,602	$42,602	$42,602
Unit Cost ($/acft)	$678	$678	$58	$58	$58	$58
Leave Needs Unmet						
Supply From Plan Element (acft/yr)	250	1,100	700	300	—	—
Annual Cost ($/yr)	—	—	—	—	—	—
Unit Cost ($/acft)	—	—	—	—	—	—

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

5.4.9 Irrigation

Burleson County Irrigation is supplied by Carrizo, Yegua-Jackson and Brazos River Alluvium groundwater and from run-of-river diversion rights from the Brazos River. No shortages are projected for irrigation and no changes in water supply are recommended.

5.4.10 Livestock

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