5.10 Falls County Water Supply Plan

Table 5.10-1 lists each water user group in Falls 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 5.10-1. Falls County Surplus/(Shortage)

Water User Group	Surplus/(Shortage)[1]		Comment
	2040 (acft/yr)	2070 (acft/yr)	
Bell-Milam Falls WSC			See Bell County for Plan
Bruceville-Eddy			See McLennan County for Plan
East Bell County WSC			See Bell County for Plan
City of Golinda	2	0	Projected surplus
City of Lott	161	161	Projected surplus
City of Marlin	930	872	Projected surplus– see plan below
City of Rosebud	430	425	Projected surplus
Tri-County SUD	(94)	(137)	Projected shortage – see plan below
West Brazos WSC	(173)	(216)	Projected shortage – see plan below
County-Other	90	68	Projected surplus
Manufacturing	(1)	(1)	Projected shortage – see plan below
Steam-Electric	0	0	No projected demand
Mining	(259)	(331)	Projected shortage – see plan below
Irrigation	2,478	2,847	Projected surplus
Livestock	0	0	Demand equals supply

1 – From Tables C-19 and C-20, Appendix C – Comparison of Water Demands with Water Supplies to Determine Needs.

5.10.1 City of Golinda

The City of Golinda is in both Falls and McLennan County. There are three water providers that have service area within the city limits including Golinda WSC, Sudduth Water Systems and West Brazos WSC. Some exempt well use is estimated within the City. 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.

5.10.2 City of Lott

The City of Lott obtains its water supply from the Central Texas WSC, which treats and delivers water from Lake Stillhouse Hollow. The City of Lott has contracted with Central

Texas WSC for 234 acft/yr of supply, which exceeds its 2070 water demand of 73 acft/yr. 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.

5.10.3 City of Marlin

Description of Supply

The City of Marlin obtains its water supply from surface water from local reservoirs and the Brazos River. The City owns and operates two existing reservoirs—Marlin City Lake and New Marlin Reservoir—that impound runoff from Big Sandy Creek. The City also owns water rights and authorizes diversion of 4,000 acft/yr from the Brazos River and has contracted with the Brazos River Authority for 1,200 acft/yr from the BRA System. Currently, the City utilizes surface water from the two existing reservoirs as its primary supply and diverts water from Brazos River only in an emergency to supplement the supply in the two existing reservoirs.

Water Supply Plan

The supplies projected are adequate to meet the City's water demand through 2070. Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water supply plan is recommended for the City of Marlin. Associated costs are included for each strategy.

a. Conservation
   - Cost Source: Volume II, Chapter 2
   - Date to be Implemented: before 2020 – use rate exceeds 140 gpcd
   - Annual Cost: maximum of $355,000 in 2070
   - Unit Cost: $474/acft

b. Brushy Creek Reservoir (Volume II, Chapter 4.1)
   - Cost Source: Volume II, Chapter 4.1
   - Date to be Implemented: 2020
   - Total Project Cost: $20,836,000
   - Annual Cost: $1,743,000 (includes NRCS share of project)

Table 5.10-2. Recommended Plan Costs by Decade for the City of Marlin

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*979*	*923*	*930*	*978*	*927*	*872*
Conservation						
Supply From Plan Element (acft/yr)	86	226	357	480	619	756
Annual Cost ($/yr)	$40,333	$105,891	$167,336	$225,048	$290,278	$354,582
Projected Surplus/(Shortage) after Conservation (acft/yr)	*1,065*	*1,149*	*1,287*	*1,458*	*1,546*	*1,628*
Brushy Creek Reservoir						
Supply From Plan Element (acft/yr)	1,450	1,450	1,450	1,450	1,450	1,450
Annual Cost ($/yr)	$697,000	$697,000	$296,000	$296,000	$141,000	$141,000
Unit Cost ($/acft)	$481	$481	$204	$204	$97	$97

5.10.4 City of Rosebud

The City of Rosebud obtains its water supply from the Central Texas WSC, which treats and delivers water from Lake Belton. The City of Rosebud has contracted with Central Texas WSC for 500 acft/yr of supply and from BRA for 100 act/yr, which exceeds its 2070 projected water demand of 175 acft/yr. Conservation was also considered; however, the entity's current per capita use rate is below the selected target rate of 140 gpcd. No change in water supply is recommended.

5.10.5 Tri-County SUD

Description of Supply

Tri-County SUD obtains its water supply from the Trinity and Carrizo-Wilcox Aquifers, and does not have adequate water supplies to meet its projected water demands. This WUG is located in multiple counties (Limestone, McLennan, Robertson, and Falls). The needs shown in Table 5.10-1 represents the cumulative totals for Tri-County SUD in all counties it serves.

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 Tri-County SUD. Associated costs are included for each strategy. Conservation was also considered; however, the entity's current per capita use rate is below the selected target rate of 140 gpcd.

a. Groundwater Development – Carrizo Wilcox Aquifer (Limestone Co):

- Cost Source: Volume II, Chapter 12
- Date to be Implemented: before 2020
- Project Cost: $1,445,000
- Annual Cost: maximum of $268,000 in 2020

Table 5.10-3. Recommended Plan Costs by Decade for Tri-County SUD

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*(82)*	*(93)*	*(94)*	*(92)*	*(114)*	*(137)*
Conservation						
Supply from Plan Element (acft/yr)	—	—	—	—	—	—
Annual Cost ($/yr)	—	—	—	—	—	—
Projected Surplus/(Shortage) after Conservation (acft/yr)	*(82)*	*(93)*	*(94)*	*(92)*	*(114)*	*(137)*
Groundwater Development – Carrizo Wilcox						
Supply from Plan Element (acft/yr)	202	202	202	202	202	202
Annual Cost ($/yr)	$268,000	$268,000	$147,000	$147,000	$147,000	$147,000
Unit Cost ($/acft)	$1,329	$1,329	$729	$729	$729	$729

5.10.6 West Brazos WSC

Description of Supply

This WUG is located in multiple counties (McLennan and Falls) and relies on Trinity Aquifer groundwater to meet demands. The Trinity Aquifer in Falls County has current pumping that exceeds the MAG. The shortages shown in Table 5.10-4 represent the cumulative totals for West Brazos WSC in both counties.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water supply plan is recommended to meet the projected shortage of West Brazos WSC. Associated costs are included for each strategy. Conservation was also considered; however, the entity's current per capita use rate is below the selected target rate of 140 gpcd.

a. Groundwater Development – Carrizo Wilcox Aquifer:

- Cost Source: Volume II, Chapter 12
- Date to be Implemented: before 2020
- Project Cost: $2,752,000
- Unit Cost: maximum of $1,446 (2020)

Table 5.10-4. Recommended Plan Costs by Decade for West Brazos WSC

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*(157)*	*(167)*	*(173)*	*(178)*	*(197)*	*(216)*
Conservation						
Supply from Plan Element (acft/yr)	—	—	—	—	—	—
Annual Cost ($/yr)	—	—	—	—	—	—
Projected Surplus/(Shortage) after Conservation (acft/yr)	*(157)*	*(167)*	*(173)*	*(178)*	*(197)*	*(216)*
Groundwater Development – Carrizo Wilcox Aquifer						
Supply from Plan Element (acft/yr)	202	202	202	202	202	216
Annual Cost ($/yr)	$292,010	$292,010	$69,010	$69,010	$69,010	$69,010
Unit Cost ($/acft)	$1,446	$1,446	$342	$342	$342	$319

5.10.7 County-Other

Description of Supply

Various entities are dealing with elevated levels of arsenic in groundwater supplies and have been pursuing water management strategies through the FHLM WSC. Through a TWDB sponsored study coordinated by FHLM WSC, these entities have considered a regional brackish RO WTP in Limestone County, Carrizo-Wilcox Regional Groundwater in Limestone County, Tehuacana Reservoir, and supplies from City of Marlin (Brushy Creek Reservoir), and City of Waco. The recommended strategy is to provide for arsenic treatment for individual entities. This strategy does not provide new supply. Surpluses are projected through the year 2070. 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 Falls County-Other.

a. Upgrade Treatment for Arsenic

Entities within County-Other for which Arsenic treatment is recommended include Moore WS.

- Cost Source: Volume II, Chapter 12.5
- Date to be Implemented: 2020
- Project Cost: $220,000
- Unit Cost: $2,177/acft

Table 5.10-5. Recommended Plan Costs by Decade for the Falls County – Other

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*89*	*81*	*90*	*105*	*87*	*68*
Conservation						
Supply From Plan Element (acft/yr)	—	—	—	—	—	—
Annual Cost ($/yr)	—	—	—	—	—	—
Projected Surplus/(Shortage) after Conservation	*89*	*81*	*90*	*105*	*87*	*68*
Upgrade Treatment for Arsenic						
Supply From Plan Element (acft/yr)	53	53	53	53	53	53
Annual Cost ($/yr)	$115,000	$115,000	$97,000	$97,000	$97,000	$97,000
Unit Cost ($/yr)	$2,177	$2,177	$1,830	$1,830	$1,830	$1,830

5.10.8 Manufacturing

Description of Supply

Manufacturing is projected to have a one acre foot need for water through the year 2070. The location for this manufacturing demand within the county has not been determined. The City of Marlin has the largest population of the WUGs in Falls County and has current supply and would be a likely location and water supplier for the manufacturing demand.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water supply plan is recommended to meet the projected shortage of Falls County Manufacturing. Associated costs are included for each strategy. Conservation was also considered; however, the entity's current per capita use rate is below the selected target rate of 140 gpcd.

a. Purchase water from City of Marlin:

- Cost Source: $4.67 per 1000 gal. Volume II, Chapter 12
- Date to be Implemented: before 2020
- Annual Cost: maximum of $1,522 in 2070

Table 5.10-6. Recommended Plan Costs by Decade for Falls County – Manufacturing

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*(1)*	*(1)*	*(1)*	*(1)*	*(1)*	*(1)*
Conservation						
Supply from Plan Element (acft/yr)	—	—	—	—	—	—
Annual Cost ($/yr)	—	—	—	—	—	—
Projected Surplus/(Shortage) after Conservation (acft/yr)	*(1)*	*(1)*	*(1)*	*(1)*	*(1)*	*(1)*
Purchase from City of Marlin						
Supply from Plan Element (acft/yr)	1	1	1	1	1	1
Annual Cost ($/yr)	$1,522	$1,522	$1,522	$1,522	$1,522	$1,522
Unit Cost ($/acft)	$1,522	$1,522	$1,522	$1,522	$1,522	$1,522

5.10.9 Steam-Electric

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

5.10.10 Mining

Description of Supply

Mining is projected to have a shortage of water through the year 2070. Conservation will be applied as a recommended strategy to reduce the Mining demand.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water supply plan is recommended to meet the projected shortage of Falls County Mining. Associated costs are included for each strategy.

a. Conservation

- Cost Source: Volume II, Chapter 2
- Date to be Implemented: before 2020
- Annual Cost: Costs to implement conservation technologies will vary based on each location and have not been determined.

b. Reallocation from Falls County – Irrigation:

- Cost Source: Unknown – the exact location of the projected Mining demands in Falls County is unknown, but could logically be located near the supplies located in the county, and development of a cost is not feasible.
- Date to be Implemented: before 2020
- Annual Cost: not determined

Table 5.10-7. Recommended Plan Costs by Decade for Falls County – Mining

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage)	*(225)*	*(246)*	*(259)*	*(286)*	*(307)*	*(331)*
Conservation						
Supply from Plan Element (acft/yr)	7	12	18	20	21	23
Annual Cost ($/yr)	ND	ND	ND	ND	ND	ND
Projected Surplus/(Shortage) after Conservation (acft/yr)	*(218)*	*(234)*	*(241)*	*(266)*	*(286)*	*(308)*
Reallocation of Supplies from Falls County Irrigation						
Supply from Plan Element (acft/yr)	218	234	241	266	286	308
Annual Cost ($/yr)	ND	ND	ND	ND	ND	ND
Unit Cost ($/acft)	ND	ND	ND	ND	ND	ND

ND – Not determined.

5.10.11 Irrigation

Irrigation is projected to have a surplus of water through the year 2070 and no changes in water supply are recommended.

5.10.12 Livestock

Livestock is projected to have a no additional need for water through the year 2060 and no changes in water supply are recommended.