



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 WSC			See Bell County
City of Bruceville-Eddy			See McLennan County
Cego-Durango WSC	27	22	Projected surplus
East Bell County WSC			See Bell County
Little Elm Valley WSC			See Bell County
City of Marlin	899	839	Projected surplus
North Milam WSC			See Milam County
City of Rosebud	454	449	Projected surplus
West Brazos WSC	455	417	Projected surplus
County-Other	69	87	Projected surplus
Manufacturing	—	—	No projected demand
Steam-Electric	—	—	No projected demand
Mining	(161)	(233)	Projected shortage - see plan below.
Irrigation	1,382	1,382	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 Cego-Durango WSC

Cego-Durango WSC obtains its water supply solely through groundwater production from the Trinity Aquifer, which is projected to provide an available groundwater supply of 205 acft/yr through the planning period. No shortages are projected for Cego-Durango WSC through the planning period and no change in water supply is recommended.

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 Cego-Durango WSC. Associated costs are included for each strategy.

a. Conservation

- Cost Source: Volume II, Chapter 2
- Date to be Implemented: before 2030
- Annual Cost: maximum of \$3,360 in 2030
- Unit Cost: \$560/acft

Table 5.10-1. Recommended Plan Costs by Decade for Cego-Durango WSC

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	29	25	27	32	27	22
Conservation						
Supply From Plan Element (acft/yr)	—	6	3	2	1	1
Annual Cost (\$/yr)	—	\$3,360	\$1,680	\$1,120	\$560	\$560
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	29	31	30	34	28	23

5.10.2 City of Marlin

Description of Supply

The City of Marlin obtains its water supply through raw water diversions from local reservoirs and the Brazos River under water rights held by the City. 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 has contracted to purchase raw surface water from the Brazos River Authority. Surface water supplies available through diversions by the City are projected to provide up to 2,250 acft/yr of supply at the beginning of the planning period, then decreasing to 2,000 acft/yr at the end of the period. Purchases of raw surface water under contract with the Brazos River Authority is projected to provide a constant supply of 1,200 acft/yr through the planning period.

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.

b. Conservation

- Cost Source: Volume II, Chapter 2
- Date to be Implemented: before 2030
- Annual Cost: maximum of \$408,800 in 2070
- Unit Cost: \$560/acft

c. Brushy Creek Reservoir (Volume II, Chapter 4.1)

- Cost Source: Volume II, Chapter 4.1
- Date to be Implemented: 2030
- Total Project Cost: \$33,229,000
- Annual Cost: maximum of \$2,493,000 (includes NRCS share of project)

Table 5.10-3. Recommended Plan Costs by Decade for the City of Marlin

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	951	892	899	950	896	839
Conservation						
Supply From Plan Element (acft/yr)	—	151	296	432	583	730
Annual Cost (\$/yr)	—	\$84,560	\$165,760	\$241,920	\$326,480	\$408,800
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	951	1,043	1,195	1,382	1,479	1,569
Brushy Creek Reservoir						
Supply From Plan Element (acft/yr)	—	2,000	2,000	2,000	2,000	2,000
Annual Cost (\$/yr)	—	\$2,493,000	\$2,493,000	\$926,000	\$926,000	\$413,000
Unit Cost (\$/acft)	—	\$1,247	\$1,247	\$463	\$463	\$207

5.10.3 City of Rosebud

The City of Rosebud obtains its water supply primarily through purchases of treated surface water under contract from Central Texas WSC, which treats and delivers water from Stillhouse Hollow Lake through purchases under contract with the Brazos River Authority. This supply contract is projected to provide up to 525 acft/yr of supply to the City. Additionally, the City of Rosebud also contracts directly with the Brazos River Authority for purchases of raw surface water which is projected to provide 100 acft/yr of supply. No shortages are projected for the City of Rosebud. 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.

5.10.4 West Brazos WSC

The service area for West Brazos WSC is located in multiple counties (McLennan and Falls) and obtains its water supply solely through groundwater production from the Trinity Aquifer. The values presented in Table 5.10-1 for West Brazos WSC represents the cumulative supply surplus for the WUG. Trinity Aquifer groundwater supply available to West Brazos WSC is projected at 815 to 817 acft/yr during the planning period. No supply shortages are projected through the planning period for West Brazos WSC and change in supply is recommended.

5.10.5 County-Other

Entities comprising Falls County-Other obtain water supply through purchases of treated surface water from Central Texas WSC and through local groundwater production from

the Brazos River Alluvium and Carrizo-Wilcox Aquifers. Supply purchases from Central Texas WSC are projected to provide a total of 92 acft/yr through the planning period; available groundwater supply from the Brazos River Alluvium Aquifer are projected at 170 acft/yr and available supply from the Carrizo-Wilcox Aquifer is projected to range between 514 and 530 acft/yr. No supply shortages are projected during the planning period and no change in supply is recommended.

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
- Date to be Implemented: 2020
- Project Cost: \$220,000
- Unit Cost: \$2,177/acft

Table 5.10-2. Recommended Plan Costs by Decade for the Falls County – Other

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	89	81	90	105	87	68
Conservation						
Supply From Plan Element (acft/yr)	—	—	—	—	—	—
Annual Cost (\$/yr)	—	—	—	—	—	—
<i>Projected Surplus/(Shortage) after Conservation</i>	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

5.10.6 Manufacturing

No Manufacturing demand exists or is projected for the county.

5.10.7 Steam-Electric

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

5.10.8 Mining

Description of Supply

Mining operations in Falls County obtain water supply solely through groundwater production from the Brazos River Alluvium Aquifer. 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 2030
- Annual Cost: not determined

Table 5.10-4. Recommended Plan Costs by Decade for Falls County – Mining

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage)</i>	(127)	(148)	(161)	(188)	(209)	(233)
Conservation						
Supply from Plan Element (acft/yr)	7	12	18	20	21	23
Annual Cost (\$/yr)	ND	ND	ND	ND	ND	ND
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(120)	(136)	(143)	(168)	(188)	(210)
Reallocation of Supplies from Falls County Irrigation						
Supply from Plan Element (acft/yr)	120	136	143	168	188	210

Annual Cost (\$/yr)	ND	ND	ND	ND	ND	ND
Unit Cost (\$/acft)	ND	ND	ND	ND	ND	ND

ND – Not determined.

5.10.9 Irrigation

Irrigation in Falls County obtains water supply through groundwater production from the Brazos River Alluvium. No supply shortages are projected for Irrigation through the planning period and no change in water supply is recommended.

5.10.10 Livestock

Livestock operations in Falls County obtain water supply through local stock surface water impoundments. No shortages are projected through the planning period and no change in water supply is recommended.