

5.22 Lee County Water Supply Plan

Table 5.22-1 lists each water user group in Lee 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 5.22-1. Lee County Surplus/(Shortage)

Water User Group	Surplus/(Shortage) ¹		Comment
	2040 (acft/yr)	2070 (acft/yr)	
Aqua WSC	0	0	Demand equals supply
City of Giddings	400	351	Projected surplus
Lee County WSC	2,824	2,492	Projected surplus
City of Lexington	387	377	Projected surplus
Southwest Milam WSC			See Milam County
County-Other	7	1	Projected surplus
Manufacturing	7	10	Projected surplus
Steam-Electric	0	0	No projected demand
Mining	3,115	3,324	Projected surplus, shortage in 2020-2030
Irrigation	197	207	Projected surplus
Livestock	0	0	Demand equals supply

1 – From Tables C-43 and C-44, Appendix C – Comparison of Water Demands with Water Supplies to Determine Needs.

5.22.1 Aqua WSC

Description of Supply

Aqua WSC is located in Lee and Bastrop (Region K) Counties with a majority of its demand in Bastrop County. Aqua WSC obtains its water supply from groundwater from the Carrizo-Wilcox Aquifer. Based on the existing supply available from groundwater, demands are projected to match supplies from year 2020 through year 2070. Conservation is recommended to reduce Aqua WSC gallons per capita per day (gpcd) to a goal of 140 gpcd.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, and in coordination with Region K, the following water management strategy is recommended for Aqua WSC.

- a. Conservation
 - Cost Source: Volume II

- Date to be Implemented: 2030
- Annual Cost: maximum of \$2,244 in 2040
- Unit Cost: \$560/acft

Table 5.22-2. Recommended Plan Costs by Decade for Aqua WSC (Brazos G)

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	0	0	0	0	0	0
Conservation						
Supply From Plan Element (acft/yr)	0	11	4	0	0	0
Annual Cost (\$/yr)	\$0	\$5,983	\$2,244	\$225	\$0	\$0
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	0	0	0	0	0	0

5.22.2 City of Giddings

Description of Supply

The City of Giddings obtains its water supply from groundwater from the Carrizo-Wilcox Aquifer at 1,730 to 1,725 ac-ft/yr. The City of Giddings sells water to Lee County Manufacturing at 13 to 18 ac-ft/yr. There are surpluses projected through 2070. Conservation is recommended to reduce the City’s gallons per capita per day (gpcd) to a goal of 140 gpcd.

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 City of Giddings.

a. Conservation

- Cost Source: Volume II
- Date to be Implemented: 2030
- Annual Cost: maximum of \$134,243 in 2070
- Unit Cost: \$560/acft



Table 5.22-3. Recommended Plan Costs by Decade for City of Giddings

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	576	461	400	380	362	351
Conservation						
Supply From Plan Element (acft/yr)	0	95	199	237	238	240
Annual Cost (\$/yr)	\$0	\$52,980	\$111,538	\$132,735	\$133,385	\$134,243
<i>Projected Surplus/(Shortage) after Conservation</i>	576	461	400	380	362	351

5.22.3 Lee County WSC

Lee County WSC is located in Lee, Bastrop (Region K) and Fayette (Region K) counties. The majority of water demand is located in Lee County. The WSC obtains its water supply from groundwater from the Queen City Aquifer at 133 to 136 ac-ft/yr, the Carrizo Wilcox at 3,934 ac-ft/yr, and the Sparta Aquifer at 272 ac-ft/yr. Balance and strategies represented in the table below are for the entire WSC in all counties and regions. No shortages are projected for the planning period. Conservation was considered; however, the entity's current per capita use rate is below the selected target rate of 140 gpcd.

5.22.4 City of Lexington

Description of Supply

The City of Lexington obtains its water supply from the Carrizo-Wilcox Aquifer at 667 ac-ft/yr. No shortages are projected for the City of Lexington, surpluses are projected through 2070. Conservation is recommended to reduce the City's gallons per capita per day (gpcd) to a goal of 140 gpcd.

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 City of Lexington.

a. Conservation

- Cost Source: Volume II
- Date to be Implemented: 2030
- Annual Cost: maximum of \$11,812 in 2060
- Unit Cost: \$560/ac-ft

Table 5.22-4. Recommended Plan Costs by Decade for City of Lexington

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	423	399	387	383	379	377
Conservation						
Supply From Plan Element (acft/yr)	0	20	23	21	21	21
Annual Cost (\$/yr)	\$0	\$11,025	\$12,601	\$11,591	\$11,812	\$11,790
<i>Projected Surplus/(Shortage) after Conservation</i>	423	399	387	383	379	377

5.22.5 County-Other

Entities in Lee County-Other receive supplies from the Carrizo-Wilcox Aquifer at 156 ac-ft/yr. County-Other is projected to have a surplus of water through the year 2070 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.

5.22.6 Manufacturing

Manufacturing is supplied from City of Giddings at 13 to 18 ac-ft/yr and is projected to have a surplus of water through the year 2070 and no changes in water supply are recommended.

5.22.7 Steam-Electric

No Steam-Electric demand exists nor is projected for the county.

5.22.8 Mining

Description of Supply

Mining operations in Lee County are supplied water from the Carrizo-Wilcox at 2,905 to 3,324 ac-ft/yr from 2020 to 2070. Shortages are projected from 2020 to 2030 and surpluses for Mining are projected between 2040 and 2070. Conservation is recommended in 2020 and 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 Lee County-Mining.

a. Conservation

- Cost Source: Volume II
- Date to be Implemented: 2030
- Annual Cost: not determined



b. Groundwater Development – Carrizo-Wilcox

- Cost Source: Volume II
- Date to be Implemented: 2020 and 2030
- Project Cost: \$3,077,000
- Unit Cost: \$1,413

Table 5.22-5. Recommended Plan Costs by Decade for Lee County – Mining

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(275)	(169)	3,115	3,221	3,324	3,324
Conservation						
Supply From Plan Element (acft/yr)	95	159	0	0	0	0
Annual Cost (\$/yr)	ND	ND	ND	ND	ND	ND
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(180)	(10)	3,115	3,221	3,324	3,324
Groundwater Development – Carrizo-Wilcox						
Supply From Plan Element (acft/yr)	180	10	–	–	–	–
Annual Cost (\$/yr)	\$254,340	\$14,130	–	–	–	–
Unit Cost (\$/acft)	\$1,413	\$1,413	–	–	–	–

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

5.22.9 Irrigation

Lee County Irrigation is supplied from run-of-the river water rights at 1 ac-ft/yr, the Carrizo-Wilcox Aquifer at 781 to 783 ac-ft/yr from 2020 to 2070, and the Queen City Aquifer at 576 to 591 ac-ft/yr from 2020 to 2070. Irrigation is projected to have a surplus of water through the year 2070 and no changes in water supply are recommended.

5.22.10 Livestock

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

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