

5B.22 Lee County Water Supply Plan

Table 5B.22-1 lists each water user group in Lee County and their corresponding surplus or shortage in years 2030 and 2050. For each water user group with a projected shortage, a water supply plan has been developed and is presented in the following subsections.

**Table 5B.22-1.
Lee County Surplus/(Shortage)**

<i>Water User Group</i>	<i>Surplus/(Shortage)¹</i>		<i>Comment</i>
	<i>2030 (acft/yr)</i>	<i>2050 (acft/yr)</i>	
City of Giddings	(337)	(542)	Projected Shortage – see plan below
City of Lexington	648	615	Projected Surplus
County-Other	10,557	10,332	Projected Surplus
Manufacturing	17	14	Projected Surplus
Steam-Electric	0	0	No Projected Need
Mining	8	13	Projected Surplus
Irrigation	1,563	1,577	Projected Surplus
Livestock	2,478	2,478	Projected Surplus

¹ From Tables 4-43 and 4-44, Section 4 – Comparison of Water Demands with Water Supplies to Determine Needs.

5B.22.1 City of Giddings

5B.22.1.1 Description of Supply

The City of Giddings obtains its water supply from groundwater from the Carrizo-Wilcox Aquifer. The City owns and operates six wells that produce water from the Carrizo-Wilcox Aquifer that serves as its sole source supply. The water supply available from the Carrizo-Wilcox Aquifer is sufficient to meet the City's demands, however, the City's ability to meet demands in the year 2030 is projected to be constrained by the capacity of the wells.

5B.22.1.2 Options Considered

The City of Giddings has a shortage of 337 acft per year in 2030, which is about 12 percent of projected demand. Table 5B.22-2 lists the water management strategies, references to the report section discussing the strategy, total project cost, and unit costs that were considered for meeting the City of Giddings shortage.

**Table 5B.22-2.
Water Management Strategies Considered for the City of Giddings**

Option	Yield (acft/yr)	Approximate Cost ¹	
		Total	Unit (\$/acft)
Additional Water Conservation (Section 5A.2)	80	\$46,000/year	\$574 ²
Further Development of Carrizo/Wilcox Aquifer	542	\$613,000 ³	\$136 ³
No Action	--	\$15,635,000 ⁴	\$46,394 ⁴
¹ Unless otherwise noted, costs are Total Project Cost and Unit Cost (\$/acft per year) for treated water delivered to the water supply entity or entities. Unit cost is for full utilization of project capacity. ² Source of Cost Estimate: Section 5A.2. ³ Source of Cost Estimate: Cost of adding a new well to existing system. ⁴ Economic impact of not meeting shortage (i.e., "no action" alternative) in 2030 as estimated by TWDB.			

5B.22.1.3 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 2030 and 2050 shortage of the City of Giddings:

- Further development of Carrizo-Wilcox Aquifer

5B.22.1.4 Costs

Costs of the recommended plan for the City of Giddings to meet 2030 shortages are:

a. Further Development of Carrizo – Wilcox Aquifer:

- Cost Source: New cost estimate of adding a new well
- Date to be Implemented: By Year 2010
- Total Project Cost: \$613,000
- Annual Cost: \$75,000

The Cost Estimate includes 1,000 feet of 8-inch diameter pipeline, and the construction of a 500 gpm, 1,500 foot deep well.

**Table 5B.22-3.
Recommended Plan Costs by Decade for the City of Giddings**

Plan Element	2000	2010	2020	2030	2040	2050
Aquifer Development						
Projected Shortage (acft/yr)	(109)	(183)	(253)	(337)	(426)	(542)
Supply From Plan Element (acft/yr)	-	550	550	550	550	550
Annual Cost (\$/yr)	-	\$75,000	\$75,000	\$75,000	\$31,000	\$31,000
Unit Cost (\$/acft)	-	\$136	\$136	\$136	\$56	\$56

5B.22.2 City of Lexington

The City of Lexington obtains its water supply from groundwater from the Carrizo-Wilcox Aquifer. The city owns and operates two wells that are projected to supply the needs of the City of Lexington through the year 2050. No shortages are projected for the City of Lexington and no changes in water supply are recommended.

5B.22.3 County-Other

County-Other is projected to have a surplus of water through the year 2050 and no changes in water supply are recommended.

5B.22.4 Manufacturing

Manufacturing is projected to have a surplus of water through the year 2050 and no changes in water supply are recommended.

5B.22.5 Steam-Electric

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

5B.22.6 Mining

Projected Mining demand in Lee County is primarily associated with Alcoa and the plan to mine additional areas in Lee County. The operation includes depressurization of the groundwater in the layer below the underground lignite formation in order to extract the lignite resource. The water supply available is essentially the amount of water that is produced in the depressurization operation. This operation is largely non-consumptive and the water produced is available for other uses. The San Antonio Water System (SAWS), located in the South Central Texas Region (L), has contracted to purchase Carrizo-Wilcox Aquifer groundwater produced from land owned or leased by Alcoa in Milam, Lee, and Bastrop Counties. The Region L water plan calls for 55,000 acft/yr to be purchased through this contract. Water to be sold by Alcoa originates primarily from their ongoing lignite mining activities. Table 4-43A reports water quantities to be delivered from Lee County to SAWS consistent with the water plan being prepared by the South Central Texas Region RWPG. No shortages for Mining use are projected through the year 2050.

5B.22.7 Irrigation

Irrigation is projected to have a surplus of water through the year 2050 and no changes in water supply are recommended.

5B.22.8 Livestock

Livestock is projected to have a surplus of water through the year 2050 and no changes in water supply are recommended.