

5B.3 Brazos County Water Supply Plan

Table 5B.3-1 lists each water user group in Brazos 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. Water supply plans are also presented for some entities that need pumping/conveyance facilities to utilize their existing water resources, or to become a regional provider.

**Table 5B.3-1.
Brazos 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 Bryan	89	(3,106)	Projected shortage – see plan below
City of College Station	(6,381)	(12,295)	Projected shortage – see plan below
Texas A&M University	0	0	No Projected Needs
County-Other ²	61	637	Projected surplus
Manufacturing	195	128	Projected surplus
Steam-Electric	756	756	Projected surplus
Mining	16	12	Projected surplus
Irrigation	10,106	10,869	Projected surplus
Livestock	0	0	No Projected Needs
¹ From Tables 4-5 and 4-6, Section 4 – Comparison of Water Demands with Water Supplies to Determine Needs. ² Wickson Creek SUD has notified the Brazos G RWPG that it will need to construct facilities in order to utilize existing water supplies to meet needs in newly acquired service areas.			

5B.3.1 City of Bryan

5B.3.1.1 Description of Supply

Source: Sparta and Carrizo-Wilcox Aquifers

Estimated Reliable Supply: 16,073 acft/yr

System Description: 13 wells

The City of Bryan's groundwater supply is currently limited by well capacity.

5B.3.1.2 Options Considered

The City of Bryan has a small surplus in 2030 and a projected shortage of 3,106 acft in 2050. Therefore, Bryan will need to increase its water supply prior to 2030. Table 5B.3-2 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 Bryan's needs.

**Table 5B.3-2.
Water Management Strategies Considered for the City of Bryan**

Option	Yield (acft/yr)	Approximate Cost ¹	
		Total	Unit (\$/acft)
Additional Water Conservation (Section 5A.2)	1,102	\$632,548/year	\$574 ²
Wastewater Reuse (Section 5A.3)	1,918	\$7,745,925	\$326
Further Development of Carrizo-Wilcox Aquifer (Section 5A.17)	4,000	\$7,639,000	\$214 ³
Millican Reservoir -- Bundic Dam Site (Section 5A.14)	73,800	\$552,000,000	\$541
Millican Reservoir -- Panther Creek Site (Section 5A.14)	235,200	\$1,237,000,000	\$366
Peach Creek Reservoir (Section 5A.15)	12,550	\$58,889,000	\$455
No Action	-	\$295,693,000 ⁴	\$95,201 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 Prorated based on unit cost.
⁴ Economic impact of not meeting shortage (i.e., "no action") in 2050 as estimated by TWDB.

5B.3.1.3 Water Supply Plan

For the long-term period beyond 2030, the following water management strategies are recommended:

- Further development of Carrizo-Wilcox Aquifer

5B.3.1.4 Costs

Costs of the Recommended Plan for the City of Bryan.

- Cost Source: Section 5A.17
- Date to be Implemented: By Year 2030
- Total Project Cost: \$7,639,000
- Unit Cost: \$214 per acft

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

<i>Plan Element</i>	<i>2000</i>	<i>2010</i>	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>
Aquifer Development						
Projected Surplus/(Shortage) (acft/yr)	4,031	2,640	1,214	89	(1,375)	(3,106)
Supply From Plan Element (acft/yr)	0	0	0	4,000	4,000	4,000
Annual Cost (\$/yr)	0	0	0	\$856,000	\$856,000	\$856,000
Unit Cost (\$/acft)	0	0	0	\$214	\$214	\$214

5B.3.2 City of College Station

5B.3.2.1 Description of Supply

- **Source:** Groundwater from Carrizo-Wilcox Aquifer
- **Estimated Reliable Supply:** 15,700 acft/yr

5B.3.2.2 Options Considered

The City of College Station has a shortage of 6,381 acft per year in 2030, which is about 29 percent of demand. Table 5B.3-4 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 College Station's shortage.

5B.3.2.3 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 shortage of the City of College Station:

- Further Development of Carrizo-Wilcox Aquifer

For the long-term period beyond 2030, the following additional water management strategy is recommended:

- Further Development of Carrizo-Wilcox Aquifer

Table 5B.3-4.
Water Management Strategies Considered for the City of College Station

Option	Yield (acft/yr)	Approximate Cost ¹	
		Total	Unit (\$/acft)
Additional Water Conservation (Section 5A.2)	1,102	\$632,548/year	\$574 ²
Further Development of Carrizo-Wilcox Aquifer (Section 5A.17)	14,000	\$20,054,000	\$214 ³
Wastewater Reuse (Section 5A.3)	2,797	\$11,295,799	\$326
Millican Reservoir -- Bundic Dam Site (Section 5A.14)	73,800	\$552,000,000	\$541
Millican Reservoir -- Panther Creek Site (Section 5A.14)	235,200	\$1,237,000,000	\$366
Peach Creek Reservoir (Section 5A.15)	12,550	\$58,889,000	\$455
No Action	-	\$607,475,000 ⁴	\$95,201 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 Prorated based on unit cost.
⁴ Economic impact of not meeting shortage (i.e., "no action") in 2030 as estimated by TWDB.

5B.3.2.4 Costs

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

- Cost Source: Section 5A.17
- Date to be Implemented: By Year 2010
- Total Project Cost: \$20,054,000

Table 5B.3-5.
Recommended Plan Costs by Decade for the City of College Station

Plan Element	2000	2010	2020	2030	2040	2050
Aquifer Development						
Projected Surplus/(Shortage) (acft/yr)	3,613	(169)	(3,819)	(6,381)	(9,708)	(12,295)
Supply From Plan Element (acft/yr)	0	7,000	7,000	14,000	14,000	14,000
Annual Cost (\$/yr)	0	\$1,498,000	\$1,498,000	\$1,498,000	\$1,498,000	\$1,498,000
Unit Cost (\$/acft)	\$0	\$214	\$214	\$214	\$141	\$141

5B.3.3 Texas A&M University

Texas A&M University obtains about 8,600 acft/yr of groundwater from the Carrizo-Wilcox Aquifer. Texas A&M also has a contract with BRA for 6,945 acft in Lake Limestone. No infrastructure is in place for Texas A&M to utilize their surface water. No shortages are projected for Texas A&M University and no changes in water supply are recommended.

5B.3.4 County-Other

No shortages are projected for Brazos County-Other entities.

5B.3.4.1 Wickson Creek Special Utility District

Wickson Creek Special Utility District obtains its water supply from the Sparta and Carrizo-Wilcox Aquifers. The District has recently merged with Carlos WSC (Grimes County) and Wheelock WSC (Robertson County). The District Master Plan has considered options for supply to the service area and it recommends capital improvements including water transmission pipelines, pump stations, and water storage tanks. The total project cost of the capital improvement program is \$4,377,000. The recommended plan costs by decade for Wickson Creek SUD are:

**Table 5B.3-6.
Recommended Plan Costs by Decade for Wickson Creek SUD**

<i>Plan Element</i>	<i>2000</i>	<i>2010</i>	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>
Capital Improvements Program						
Projected Surplus/(Shortage) (acft/yr)	Not Estimated					
Supply From Plan Element (acft/yr)	0	675	675	675	675	675
Annual Cost (\$/yr)	\$0	\$334,000	\$334,000	\$334,000	\$0	\$0
Unit Cost (\$/acft)	\$0	\$494	\$494	\$494	\$0	\$0

5B.3.5 Manufacturing

No shortages are projected for Brazos County Manufacturing and no changes in water supply are recommended.

5B.3.6 Steam-Electric

No shortages are projected for Brazos County Steam-Electric and no changes in water supply are recommended.

5B.3.7 Mining

No shortages are projected for Brazos County Mining and no changes in water supply are recommended.

5B.3.8 Irrigation

No shortages are projected for Brazos County Irrigation and no changes in water supply are recommended.

5B.3.9 Livestock

No shortages are projected for Brazos County Livestock and no changes in water supply are recommended.