

## 5.28 Robertson County Water Supply Plan

Table 5.28-1 lists each water user group in Robertson 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 5.28-1. Robertson County Surplus/(Shortage)**

Water User Group	Surplus/(Shortage) <sup>1</sup>		Comment
	2040 (acft/yr)	2070 (acft/yr)	
Bethany-Hearne WSC	0	0	Demand equals supply
City of Bremond	186	141	Projected surplus
City of Calvert	349	350	Projected surplus
City of Franklin	917	738	Projected surplus
City of Hearne	1,729	1,724	Projected surplus
Robertson County WSC	(235)	(526)	Projected shortage - see plan below.
Twin Creek WSC	390	325	Projected surplus
Wellborn SUD			See Brazos County
Wickson Creek SUD			See Brazos County
County-Other	10	11	Projected surplus
Manufacturing	4,566	4,566	Projected surplus
Steam-Electric	(24,607)	(28,894)	Projected shortage - see plan below.
Mining	3,687	3,687	Projected surplus
Irrigation	(17,100)	(17,921)	Projected shortage - see plan below.
Livestock	0	0	Demand equals supply

1 – From Tables C-55 and C-56, Appendix C – Comparison of Water Demands with Water Supplies to Determine Needs.

### 5.28.1 Beathany-Hearne WSC

Bethany-Hearne WSC purchases its water supply from the City of Hearne. Supply is projected to meet demand throughout the planning period. Conservation was considered, however the entity’s current per capita use rate is below the selected target rate of 140 gpcd.

### 5.28.2 City of Bremond

#### Description of Supply

The City of Bremond obtains its water supply from the Carrizo-Wilcox Aquifer. No shortages are projected for the City.

## 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 Bremond.

### a. Conservation

- Cost Source: Volume II
- Date to be Implemented: by 2030
- Annual Cost: maximum of \$13,365 in 2070
- Unit Cost: \$560/acft

**Table 5.28-2. Recommended Plan Costs by Decade for City of Bremond**

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	210	198	186	171	156	141
<b>Conservation</b>						
Supply From Plan Element (acft/yr)	0	13	21	21	23	24
Annual Cost (\$/yr)	\$0	\$7,514	\$11,700	\$12,021	\$12,605	\$13,365
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	210	198	186	171	156	141

### 5.28.3 City of Calvert

The City of Calvert obtains its water supply from the Carrizo-Wilcox Aquifer. No shortages are projected for the City. Conservation was considered; however, the entity's current per capita use rate is below the selected target rate of 140 gpcd.

### 5.28.4 City of Franklin

The City of Franklin obtains its water supply from the Carrizo-Wilcox Aquifer. No shortages are projected for the City of Franklin. Conservation was considered; however, the entity's current per capita use rate is below the selected target rate of 140 gpcd.

### 5.28.5 City of Hearne

#### Description of Supply

The City of Hearne obtains its water supply from the Carrizo-Wilcox Aquifer. The City also provides supply to Robertson County Manufacturing and Bethany Hearne WSC. No shortages are projected for the City of Hearne.

## 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 Hearne.

### a. Conservation

- Cost Source: Volume II



- Date to be Implemented: by 2030
- Annual Cost: \$23,914 in 2030
- Unit Cost: \$560/acft

**Table 5.28-3. Recommended Plan Costs by Decade for City of Hearne**

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	2,040	1,899	1,729	1,729	1,728	1,724
<b>Conservation</b>						
Supply From Plan Element (acft/yr)	0	43	22	19	17	17
Annual Cost (\$/yr)	\$0	\$23,914	\$12,577	\$10,897	\$9,777	\$9,777
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	2,040	1,899	1,729	1,729	1,728	1,724

## 5.28.6 Robertson County WSC

### Description of Supply

Robertson County WSC obtains its water supply from the Carrizo-Wilcox Aquifer. The entity also provides supply to Robertson County Steam and Electric. Robertson County WSC has a projected shortage throughout the planning period.

### Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategy is recommended for Robertson County WSC. Conservation was considered, however the entity’s current per capita use rate is below the selected target rate of 140 gpcd.

- a. Groundwater Development
  - Cost Source: Volume II
  - Date to be Implemented: by 2030
  - Project Cost: \$3,306,000
  - Unit Cost: \$691/acft

**Table 5.28-4. Recommended Plan Costs by Decade for Robertson County WSC**

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(81)	(157)	(235)	(332)	(433)	(526)
<b>Conservation</b>						
Supply From Plan Element (acft/yr)	—	—	—	—	—	—
Annual Cost (\$/yr)	—	—	—	—	—	—
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(81)	(157)	(235)	(332)	(433)	(526)

**Table 5.28-4. Recommended Plan Costs by Decade for Robertson County WSC**

Plan Element	2020	2030	2040	2050	2060	2070
Groundwater Development – Carrizo-Wilcox Aquifer						
Supply From Plan Element (acft/yr)	550	550	550	550	550	550
Annual Cost (\$/yr)	\$380,000	\$380,000	\$147,000	\$147,000	\$147,000	\$147,000
Unit Cost (\$/acft)	\$691	\$691	\$267	\$267	\$267	\$267

### 5.28.7 Twin Creek WSC

#### Description of Supply

Twin Creek WSC obtains its water supply from the Carrizo-Wilcox Aquifer. A surplus is projected for Twin Creek WSC throughout the planning period.

#### 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 Hearne.

- a. Conservation
  - Cost Source: Volume II
  - Date to be Implemented: by 2030
  - Annual Cost: \$13,811 in 2070
  - Unit Cost: \$560/acft

**Table 5.28-5. Recommended Plan Costs by Decade for Twin Creek WSC**

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	427	408	390	368	347	325
Conservation						
Supply From Plan Element (acft/yr)	0	21	23	23	23	25
Annual Cost (\$/yr)	\$0	\$11,642	\$13,153	\$13,003	\$12,995	\$13,811
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	427	408	390	368	347	325

### 5.28.8 County-Other

#### Description of Supply

Robertson County-Other entities obtain water supply from groundwater from the Carrizo-Wilcox Aquifer. Water supply is projected to be sufficient through the planning period.



## Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategy is recommended.

- a. Conservation
  - Cost Source: Volume II
  - Date to be Implemented: by 2030
  - Project Cost: \$13,811 (in 2070)
  - Unit Cost: \$560/acft

**Table 5.28-6. Recommended Plan Costs by Decade for County – Other**

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	3	9	10	11	11	11
<b>Conservation</b>						
Supply From Plan Element (acft/yr)	0	21	23	23	23	25
Annual Cost (\$/yr)	\$0	\$11,642	\$13,153	\$13,003	\$12,995	\$13,811
<i>Projected Surplus/(Shortage) after Conservation</i>	3	9	10	11	11	11

### 5.28.9 Manufacturing

Water supply for manufacturing in Robertson County is obtained by purchase from the City of Hearne and from Carrizo-Wilcox wells operated by the manufacturing entity. Manufacturing is projected to have a surplus of 4,566 acft/yr through the year 2070 and no changes in water supply are recommended.

### 5.28.10 Steam-Electric

#### Description of Supply

Robertson County Steam-Electric entities obtain water supply from the Carrizo-Wilcox Aquifer, contracts with the Brazos River Authority, and groundwater purchase from Robertson County WSC. Based on the available groundwater and surface water supply, Robertson County Steam-Electric is projected to have shortages beginning in year 2020 and continuing through year 2070.

## 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 Steam-Electric.

- a. Groundwater Development – Carrizo-Wilcox Aquifer
  - Cost Source: Volume II

- Date to be Implemented: 2030
  - Project Cost: Not yet determined
  - Unit Cost: Not yet determined
- b. Purchase Depressurization Water from Walnut Creek Mine
- Cost Source: Volume II
  - Date to be Implemented: 2050
  - Project Cost: Not enough information to cost delivery
  - Unit Cost: \$500/acft (Water purchase rate only)
- c. Leave Needs Unmet
- Cost Source: Cost of not meeting needs – see Appendix H
  - Date to be Implemented: 2020

**Table 5.28-7. Recommended Plan Costs by Decade for Robertson County – Steam Electric**

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(21,750)	(23,179)	(24,607)	(26,036)	(27,465)	(28,894)
<b>Conservation</b>						
Supply From Plan Element (acft/yr)	—	—	—	—	—	—
Annual Cost (\$/yr)	—	—	—	—	—	—
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(21,750)	(23,179)	(24,607)	(26,036)	(27,465)	(28,894)
<b>Groundwater Development – Carrizo-Wilcox</b>						
Supply From Plan Element (acft/yr)	260	260	741	1,140	1,140	1,140
Annual Cost (\$/yr)	ND	ND	ND	ND	ND	ND
Unit Cost (\$/acft)	ND	ND	ND	ND	ND	ND
<b>Purchase Depressurization Water from Walnut Creek Mine</b>						
Supply From Plan Element (acft/yr)	9,000	9,000	9,000	9,000	9,000	9,000
Annual Cost (\$/yr)	\$4,500,000	\$4,500,000	\$4,500,000	\$4,500,000	\$4,500,000	\$4,500,000
Unit Cost (\$/acft)	\$500	\$500	\$500	\$500	\$500	\$500
<b>Leave Needs Unmet</b>						
Supply From Plan Element (acft/yr)	12,490	13,919	14,866	15,896	17,325	18,754
Annual Cost (\$/yr)	—	—	—	—	—	—
Unit Cost (\$/acft)	—	—	—	—	—	—

ND – Not yet determined. Costs are still in development.



## 5.28.11 Mining

### Description of Supply

Mining operations in Robertson County are supplied by Carrizo-Wilcox Groundwater. Surpluses are projected for Robertson County Mining throughout the planning period.

## 5.28.12 Irrigation

### Description of Supply

Robertson County Irrigation is supplied by the Carrizo-Wilcox, Queen City, Sparta, and Brazos River Alluvium Aquifers. Current pumping in the Brazos River Alluvium greatly exceeds the MAG for Robertson County. Irrigation is projected to have shortages beginning in 2020 and continuing through 2070.

### 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 Robertson County-Irrigation.

#### a. Conservation

- Cost Source: Volume II
- Date to be Implemented: by 2030
- Annual Cost: maximum of \$1,326,000

#### b. Leave Needs Unmet

- New supplies for irrigation would be cost prohibitive to develop and most farms would switch to dry-land crops or allow fields to go fallow during a prolonged drought
- Cost Source: Cost of not meeting needs – see Appendix H
- Date to be Implemented: 2020

**Table 5.28-8. Recommended Plan Costs by Decade for Robertson County – Irrigation**

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(12,851)	(16,181)	(17,100)	(17,718)	(17,829)	(17,921)
<b>Conservation</b>						
Supply From Plan Element (acft/yr)	2,375	3,959	5,579	5,612	5,612	5,612
Annual Cost (\$/yr)	\$561,438	\$935,730	\$1,318,692	\$1,326,302	\$1,326,319	\$1,326,319
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(10,476)	(12,222)	(11,521)	(12,106)	(12,217)	(12,309)
<b>Leave Needs Unmet</b>						
Supply From Plan Element (acft/yr)	10,476	12,222	11,521	12,106	12,217	12,309

**Table 5.28-8. Recommended Plan Costs by Decade for Robertson County – Irrigation**

Plan Element	2020	2030	2040	2050	2060	2070
Annual Cost (\$/yr)	—	—	—	—	—	—
Unit Cost (\$/acft)	—	—	—	—	—	—

### 5.28.13 Livestock

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