

4C.30 Somervell County Water Supply Plan

Table 4C.30-1 lists each water user group in Somervell County and their corresponding surplus or shortage in years 2030 and 2060. For each water user group with a projected shortage, a water supply plan has been developed and is presented in the following subsections.

**Table 4C.30-1.
Somervell County Surplus/(Shortage)**

Water User Group	Surplus/(Shortage) ¹		Comment
	2030 (acft/yr)	2060 (acft/yr)	
City of Glen Rose	38	37	Projected surplus
County-Other	(231)	(260)	Projected shortage – see plan below
Manufacturing	(4)	(7)	Projected shortage – see plan below
Steam-Electric	25,570	25,510	Projected surplus
Mining	(94)	(85)	Projected shortage – see plan below
Irrigation	945	953	Projected surplus
Livestock	0	0	Supply equals demand

¹ From Tables C-59 and C-60, Appendix C – Comparison of Water Demands with Water Supplies to Determine Needs.

4C.30.1 The City of Glen Rose

4C.30.1.1 Description of Supply

The City of Glen Rose obtains groundwater from the Trinity Aquifer. No shortage is projected for the City of Glen Rose. However, Glen Rose may obtain supplemental surface water supplies from the Somervell County Water Supply Project.

4C.30.1.2 Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water supply plan is recommended to supplement existing supplies for the City of Glen Rose:

- Somervell County Water Supply Project – the project will treat raw water from Wheeler Branch Off-Channel Reservoir and transmit the treated water to customers of the Somervell County Water District.

4C.30.1.3 Costs

Costs of the Somervell County Water Supply Project are discussed in Section 4C.30.2.3 below.

**Table 4C.30-1.
Recommended Plan Costs by Decade for the City of Glen Rose**

<i>Plan Element</i>	<i>2010</i>	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>
Projected Surplus/(Shortage) (acft/yr)	57	46	38	36	36	37
Somervell County Water Supply Project (Phases 1 – 4)*						
Supply From Plan Element (acft/yr)	340	340	340	340	340	340
Annual Cost (\$/yr)	\$896,240	\$896,240	\$896,240	\$159,800	\$159,800	\$159,800
Unit Cost (\$/acft)	\$2,636	\$2,636	\$2,636	\$470	\$470	\$470
Somervell County Water Supply Project (Phases 5 – 13)*						
Supply From Plan Element (acft/yr)	–	–	260	260	260	260
Annual Cost (\$/yr)	–	–	\$1,471,340	\$1,471,340	\$1,471,340	\$128,180
Unit Cost (\$/acft)	–	–	\$5,659	\$5,659	\$5,659	\$493

* Note: This supply is from the Wheeler Branch Reservoir, which has been implemented. The project is for development of treatment and transmission facilities.

4C.30.2 County-Other

4C.30.2.1 Description of Supply

Somervell County-Other obtains its water supply from groundwater from the Trinity Aquifer. Based on the available groundwater supply, Somervell County-Other is projected to have a shortage of 231 acft/yr in the year 2030 and 260 acft/yr in the year 2060.

4C.30.2.2 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 Somervell County-Other:

- Wheeler Branch Off-Channel Reservoir – the project has obtained a water rights permit from the TCEQ and is projected to be completed by 2010
- Somervell County Water Supply Project – the project will treat raw water from Wheeler Branch Off-Channel Reservoir and transmit the treated water to customers of the Somervell County Water District.

- Conservation was also considered; however, the County-Other’s per capita use rate is below the selected target rate of 140 gpcd.

4C.30.2.3 Costs

Costs of the Recommended Plan for Somervell County-Other.

- a. Wheeler Branch Off-Channel Reservoir:
 - Cost Source: Volume II, Section 4B.13.3
 - Date to be Implemented: before 2010
 - Total Project Cost: \$27,195,000
 - Annual Cost: \$2,117,000
- b. Somervell County Water Supply Project:
 - Cost Source: Somervell County Water District
 - Date to be Implemented: before 2010, with future phases
 - Total Project Cost: \$87,084,700 (Phases 1 – 13)
 - Annual Cost: \$7,647,300 (Phases 1 – 13)

**Table 4C.30-2.
Recommended Plan Costs by Decade for Somervell County-Other**

<i>Plan Element</i>	<i>2010</i>	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>
Projected Surplus/(Shortage) (acft/yr)	(133)	(189)	(231)	(251)	(257)	(260)
Wheeler Branch Off-Channel Reservoir						
Supply From Plan Element (acft/yr)	1,800	1,800	1,800	1,800	1,800	1,800
Annual Cost (\$/yr)	\$2,117,000	\$2,117,000	\$2,117,000	\$2,117,000	\$2,117,000	\$2,117,000
Unit Cost (\$/acft)	\$1,176	\$1,176	\$1,176	\$1,176	\$1,176	\$1,176
Somervell County Water Supply Project (Phases 1 – 4)*						
Supply From Plan Element (acft/yr)	200	200	200	200	200	200
Annual Cost (\$/yr)	\$527,200	\$527,200	\$527,200	\$94,000	\$94,000	\$94,000
Unit Cost (\$/acft)	\$2,636	\$2,636	\$2,636	\$470	\$470	\$470
Somervell County Water Supply Project (Phases 5 – 13)*						
Supply From Plan Element (acft/yr)	–	–	516	516	516	516
Annual Cost (\$/yr)	–	–	\$2,920,044	\$2,920,044	\$2,920,044	\$781,588
Unit Cost (\$/acft)	–	–	\$5,659	\$5,659	\$5,659	\$493

* Note: This supply is from the Wheeler Branch Reservoir, which has been implemented. The project is for development of treatment and transmission facilities.

4C.30.3 Manufacturing

4C.30.3.1 Description of Supply

Somervell County Manufacturing obtains its water supply from groundwater from the Trinity Aquifer. Based on the available groundwater supply, Somervell County Manufacturing is projected to have a shortage of 4 acft/yr in the year 2030 and 7 acft/yr in the year 2060.

4C.30.3.2 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 Somervell County Manufacturing:

- Conservation, and
- Purchase water from the City of Glen Rose.

4C.30.3.3 Costs

Costs of the Recommended Plan for Somervell County Manufacturing.

- a. Conservation:
 - Date to be Implemented: before 2010
 - Annual Cost: Not determined
- b. Water Supply from City of Glen Rose:
 - Cost Source: estimated wholesale treated water rate
 - Date to be Implemented: By year 2010
 - Annual Cost: \$16,161 in 2060

The annual cost was calculated by multiplying the Manufacturing projected supply from this strategy by an estimated wholesale water rate of \$162/acft.

**Table 4C.30-3.
Recommended Plan Costs by Decade for Somervell County Manufacturing**

<i>Plan Element</i>	<i>2010</i>	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>
Projected Surplus/(Shortage) (acft/yr)	(2)	(3)	(4)	(5)	(6)	(7)
Conservation						
Supply From Plan Element (acft/yr)	0	0	1	1	1	1
Annual Cost (\$/yr)	—	—	—	—	—	—
Unit Cost (\$/acft)	—	—	—	—	—	—
Water Supply from City of Glen Rose						
Supply From Plan Element (acft/yr)	10	10	10	10	10	10
Annual Cost (\$/yr)	\$16,161	\$16,161	\$16,161	\$16,161	\$16,161	\$16,161
Unit Cost (\$/acft)	\$162	\$162	\$162	\$162	\$162	\$162

4C.30.4 Steam-Electric

4C.30.4.1 Description of Supply

Somervell County Steam-Electric is projected to have a surplus of water through 2060. Potable water for plant staff and high-quality process water for boiler feed at the Comanche Peak Steam Electric Station is currently provided from local groundwater. When the Somervell County Water Supply Project is developed, some potable water and process water for the plant will be obtained from the project.

4C.30.4.2 Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water supply plan is recommended to supplement existing supplies for Somervell County Steam-Electric:

- Somervell County Water Supply Project – the project will treat raw water from Wheeler Branch Off-Channel Reservoir and transmit the treated water to customers of the Somervell County Water District.
- Conservation was also considered; however, the Somervell County Steam-Electric is already exercising substantial conservation.

4C.30.4.3 Costs

Costs of the Somervell County Water Supply Project are discussed in Section 4C.30.2.3 above.

**Table 4C.30-4.
Recommended Plan Costs by Decade for Somervell County Steam-Electric**

<i>Plan Element</i>	<i>2010</i>	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>
Projected Surplus/(Shortage) (acft/yr)						
Somervell County Water Supply Project (Phases 1 – 4)*						
Supply From Plan Element (acft/yr)	300	300	300	300	300	300
Annual Cost (\$/yr)	\$790,800	\$790,800	\$790,800	\$141,000	\$141,000	\$141,000
Unit Cost (\$/acft)	\$2,636	\$2,636	\$2,636	\$470	\$470	\$470
Somervell County Water Supply Project (Phases 5 – 13)*						
Supply From Plan Element (acft/yr)	–	–	184	184	184	184
Annual Cost (\$/yr)	–	–	\$1,041,256	\$1,041,256	\$1,041,256	\$90,712
Unit Cost (\$/acft)	–	–	\$5,659	\$5,659	\$5,659	\$493

* Note: This supply is from the Wheeler Branch Reservoir, which has been implemented. The project is for development of treatment and transmission facilities.

4C.30.5 Mining

4C.30.5.1 Description of Supply

Somervell County Mining obtains its water supply from groundwater from the Trinity Aquifer. Based on the available groundwater supply, Somervell County Mining is projected to have a shortage of 94 acft/yr in the year 2030 and 85 acft/yr in the year 2060.

4C.30.5.2 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 Somervell County Mining:

- Conservation, and
- Voluntary Redistribution from Steam-Electric.

4C.30.5.3 Costs

Costs of the Recommended Plan for Somervell County Mining.

a. Conservation:

- Date to be Implemented: before 2010
- Annual Cost: Not determined

b. Voluntary Redistribution from Steam-Electric:

- Cost Source: assumed unit cost for raw water transfer between entities
- Date to be Implemented: before 2010
- Unit Cost: \$75/acft
- Annual Cost: \$11,250

**Table 4C.30-4.
Recommended Plan Costs by Decade for Somervell County Mining**

<i>Plan Element</i>	<i>2010</i>	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>
Projected Surplus/(Shortage) (acft/yr)	(106)	(98)	(94)	(91)	(88)	(85)
Conservation						
Supply From Plan Element (acft/yr)	9	14	19	19	18	18
Annual Cost (\$/yr)	—	—	—	—	—	—
Unit Cost (\$/acft)	—	—	—	—	—	—
Voluntary Redistribution from Steam-Electric						
Supply From Plan Element (acft/yr)	150	150	150	150	150	150
Annual Cost (\$/yr)	\$11,250	\$11,250	\$11,250	\$11,250	\$11,250	\$11,250
Unit Cost (\$/acft)	\$75	\$75	\$75	\$75	\$75	\$75

4C.30.6 Irrigation

Somervell County Irrigation is projected to have a surplus of water through 2060 and no changes in water supply are recommended.

4C.30.7 Livestock

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