

5B.30 Somervell County Water Supply Plan

Table 5B.30-1 lists each water user group in Somervell 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. In addition, long-term considerations are provided for some entities with projected surpluses.

**Table 5B.30-1.
Somervell 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 Glen Rose | (300) | (432) | Projected shortage – see plan below |
| County-Other | (640) | (1,188) | Projected shortage – see plan below |
| Manufacturing | 0 | 0 | No demand or supply |
| Steam-Electric | 0 | 0 | Supply equals demand |
| Mining | 3 | (6) | Projected shortage – no plan |
| Irrigation | 522 | 525 | Projected surplus |
| Livestock | 0 | 0 | Supply equals demand |

¹ From Tables 4-59 and 4-60, Section 4 – Comparison of Water Demands with Water Supplies to Determine Needs.

5B.30.1 The City of Glen Rose

5B.30.1.1 Description of Supply

The City of Glen Rose obtains groundwater from the Trinity Aquifer. The City has a projected shortage of 300 acft in 2030, which represents about 44 percent of total demand.

5B.30.1.2 Options Considered

Table 5B.30-2 lists the water management strategies, references to the report section discussing the strategy, total project cost, and unit costs that were considered for meeting City of Glen Rose's shortage.

**Table 5B.30-2.
Water Management Strategies Considered for the City of Glen Rose**

| Option | Yield (acft/yr) | Approximate Cost ¹ | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------------------|-----------------------|
| | | Total | Unit (\$/acft) |
| Off-channel storage reservoir ⁽²⁾ (Section 5A15.3) | 2,000 | \$24,633,000 | \$1,100 |
| Wastewater Reuse | 47 | \$189,850 | \$326 |
| Additional Water Conservation | 34 | \$19,500/yr | \$574 |
| No Action | - | \$12,733,000 ³ | \$42,443 ³ |
| 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. Operation and maintenance of existing facilities is not needed. ² Multiple sites are feasible. Cost based on Barker Branch site. ³ Economic impact of not meeting shortage (i.e., "no action") in 2030 as estimated by TWDB. | | | |

5B.30.1.3 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 shortage of the City of Glen Rose:

- Off-channel storage reservoir

5B.30.1.4 Costs

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

- a. Off-channel reservoir:
 - Cost Source: Section 5A.13.3, Table 5A.15-7
 - Date to be Implemented: 2005
 - Total Project Cost: \$24,633,000
 - Total Annual Cost: \$1,100

**Table 5B.30-3.
Recommended Plan Costs by Decade for the City of Glen Rose**

| | 2000 | 2010 | 2020 | 2030 | 2040 | 2050 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------|-----------|-----------|-----------|-----------|
| Projected Shortage (acft/yr) | (88) | (161) | (231) | (300) | (367) | (432) |
| Supply from Plan Elements (acft/yr) ⁽²⁾ | 0 | 748 | 748 | 748 | 748 | \$748 |
| Annual Cost (\$/yr) ⁽²⁾ | 0 | \$768,000 | \$768,000 | \$768,000 | \$171,000 | \$171,000 |
| Unit Cost (\$/acft) ^{(1) (2)} | 0 | \$1,027 | \$1,027 | \$1,027 | \$228 | \$228 |
| ¹ Unit cost is for full utilization of capacity. Operation and maintenance of existing facilities is not included. ² Includes 33% of cost of off-channel storage reservoir. | | | | | | |

5B.30.2 County-Other

5B.30.2.1 Description of Supply

Water supply for County-Other is groundwater from the Trinity Aquifer. The County-Other entities have a projected shortage of 640 acft in 2030, which is about 57 percent of demand.

5B.30.2.2 Options Considered

Table 5B.30-4 lists the water management strategies, references to the report section detailing the strategy, total project cost, and unit costs that were considered for County-Other.

**Table 5B.30-4.
Water Management Strategies Considered for Somervell County-Other**

| Option | Yield (acft/yr) | Approximate Cost ¹ | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------------------|-----------------------|
| | | Total | Unit (\$/acft) |
| Off-channel storage reservoir ⁽²⁾ | 2,000 | \$24,633,000 | \$1,100 |
| No Action | - | \$13,271,000 ³ | \$18,080 ³ |
| 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. Operation and maintenance of existing facilities is not needed. ² Multiple sites are feasible. Cost based on Barker Branch site. ³ Economic impact of not meeting shortage (i.e., "no action") in 2030 as estimated by TWDB. | | | |

5B.30.2.3 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 2050 shortage of County-Other:

- Off-channel storage reservoir

5B.30.2.4 Costs

Costs of the recommended plan for County-Other to meet 2030 shortages are:

- a. Off-channel reservoir:
- Cost Source: Section 5A.13.3, Table 5A.15-7
 - Date to be Implemented: 2005
 - Total Project Cost: \$24,633,000

**Table 5B.30-5.
Recommended Plan Costs by Decade for Somervell County-Other**

| <i>Plan Element</i> | <i>2000</i> | <i>2010</i> | <i>2020</i> | <i>2030</i> | <i>2040</i> | <i>2050</i> |
|-------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Projected Shortage (acft/yr) | 74 | 271 | 439 | 640 | 888 | 1188 |
| Supply from Plan Elements (acft/yr) ⁽²⁾ | 0 | 1334 | 1334 | 1334 | 1334 | 1334 |
| Annual Cost (\$/yr) ⁽²⁾ | 0 | \$1,467,000 | \$1,467,000 | \$1,467,000 | \$273,000 | \$273,000 |
| Unit Cost (\$/acft) ^{(1) (2)} | 0 | \$1,100 | \$1,100 | \$1,100 | \$204 | \$204 |
| ¹ Unit cost is for full utilization of capacity. Operation and maintenance of existing facilities is not included. | | | | | | |
| ² Includes 33% of cost of off-channel storage reservoir. | | | | | | |

5B.30.3 Manufacturing

No manufacturing demand exists or is projected for the county.

5B.30.4 Steam-Electric

Squaw Creek Reservoir provides water for TXU's Comanche Peak nuclear power plant. Its supply is set equal to the projected demand, as much of the needed water is pumped from Lake Granbury to keep Squaw Creek Reservoir full. No modifications to the existing system are recommended.

5B.30.5 Mining**5B.30.5.1 Description of Supply**

The water supply entities for Mining show a projected surplus through 2030. Therefore, no changes in the water supply system are recommended. However, there is a deficit in 2050, and long-term plans recommend redistribution from municipal supply.

5B.30.5.2 Water Supply Plan

The following plan meets the planning criteria established by the Brazos G RWPG.

- Redistribution from Municipal supply

5B.30.5.3 Costs

Costs of the Recommended Plan for Mining:

- a. Redistribution from Municipal supply
 - No modifications to existing system needed
 - Date to be Implemented: In place
 - Total Project Cost: \$0

5B.30.6 Irrigation

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

5B.30.7 Livestock

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