

**5B.34 Throckmorton County Water Supply Plan**

Table 5B.34-1 lists each water user group in Throckmorton 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. Throckmorton County, through its county commissioner’s court, and the City of Woodson have submitted a series of resolutions supporting a variety of regional water supply planning and development initiatives. The specific resolutions are included at the end of Volume 1. The recommended plan described below either includes specific proposed projects mentioned in the resolutions, or are generally consistent with them.

**Table 5B.34-1.  
Throckmorton County Surplus/(Shortage)**

<i>Water User Group</i>	<i>Surplus/(Shortage)<sup>1</sup></i>		<i>Comment</i>
	<i>2030 (acft/yr)</i>	<i>2050 (acft/yr)</i>	
City of Throckmorton	(234)	(210)	Projected shortage – see plan below
County-Other	(50)	(43)	Projected shortage – see plan below
Manufacturing	0	0	No demand or supply
Steam-Electric	0	0	No demand or supply
Mining	77	76	Projected surplus
Irrigation	9	9	Projected surplus
Livestock	0	0	Supply equals demand

<sup>1</sup> From Tables 4-67 and 4-68, Section 4 – Comparison of Water Demands with Water Supplies to Determine Needs.

**5B.34.1 The City of Throckmorton**

**5B.34.1.1 Description of Supply**

The City of Throckmorton obtains surface water from Lake Throckmorton. A 1969 study by Freese, Nichols, and Endress calculated the firm yield of Lake Throckmorton to be 230 acft/yr, based on the drought of the 1950s. However, current drought conditions in the

reservoir show that the yield is insufficient for current demand; therefore, a water supply plan was developed.

#### 5B.34.1.2 Options Considered

Table 5B.34-2 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 Throckmorton's shortage.

**Table 5B.34-2.  
Water Management Strategies Considered for the City of Throckmorton**

Option	Yield (acft/yr)	Approximate Capital Cost <sup>1</sup>	
		Total	Unit (\$/acft)
New Reservoir for Throckmorton (Section 5A.14.7)	1,000	\$7,500,000	\$1,540
Raise Lake Throckmorton	N/A	\$2,000,000	N/A
Voluntary Redistribution from Lake Graham	300	\$13,000,000	\$4,300
Kerr McGee Pipeline (Section 5A.20.2)	560	\$8,327,000	\$2,048
South Bend Reservoir (Section 5A.14.2)	106,700	\$241,761,000	\$173
Breckenridge Reservoir (Section 5A.14.1)	20,000	\$171,462,000	\$629
No Action	-	2	2
<sup>1</sup> 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 included. <sup>2</sup> Economic impact of not meeting shortage (i.e., "no action") in 2030 as estimated by TWDB.			

#### 5B.34.1.3 Water Supply Plan

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

- New Reservoir<sup>1</sup> on Elm Creek
- Voluntary Redistribution from Lake Graham

The South Bend Reservoir has been recommended for consideration for long-term needs for the Brazos River Authority, as a major water provider, as described in Section 5B.38. The project is much too large to be pursued by any individual municipality, but if the BRA pursues it, this source should be considered by local entities.

<sup>1</sup> New reservoir would require additional investigation to determine if supply is available. If supply is not available, the alternative to obtain water from Lake Graham should be implemented.

The Breckenridge Reservoir has been recommended for consideration for long-term needs for the West Central Texas Municipal Water District, as a major water provider, as described in Section 5B.38. The project is much too large to be pursued by any individual municipality, but if it is pursued by the WCTMWD, this source should be considered by local entities.

**5B.34.1.4 Costs**

Costs of the Recommended Plan for the City of Throckmorton:

- a. New Reservoir on Elm Creek
  - Cost Source: Section 5A.14.7
  - Date to be Implemented: before 2010
  - Total Project Cost: \$7,500,000
- b. Voluntary Redistribution from Lake Graham
  - Cost is based on 34 miles of 8” pipeline and two 0.27 mgd pump stations, pumping water into the existing Lake Throckmorton.
  - Date to be Implemented: before 2010
  - Total Project Cost: \$13,000,000

**Table 5B.34-3.  
Recommended Plan Costs by Decade for the City of Throckmorton**

<i>Plan Element</i>	<i>2000</i>	<i>2010</i>	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>
Projected Surplus/(Shortage) (acft/yr)	(193)	(184)	(171)	(158)	(148)	(140)
<b>New Reservoir on Elm Creek</b>						
Supply From Plan Element (acft/yr)	0	1,000	1,000	1,000	1,000	1,000
Annual Cost (\$/yr)	\$0	\$1,540,000	\$1,540,000	\$1,540,000	\$180,000	\$180,000
Unit Cost (\$/acft)	\$0	\$1,540	\$1,540	\$1,540	\$180	\$180
<b>Voluntary Redistribution From Lake Graham</b>						
Supply From Plan Element (acft/yr)	0	300	300	300	300	300
Annual Cost (\$/yr)	\$0	\$1,290,000	\$1,290,000	\$1,290,000	\$250,000	\$250,000
Unit Cost (\$/acft)	\$0	\$4,300	\$4,300	\$4,300	\$833	\$833
Total New Supply (acft/yr)	0	1,300	1,300	1,300	1,300	1,300

**5B.34.2 County-Other****5B.34.2.1 Description of Supply**

Water supply is obtained from local sources and limited groundwater use. Within the County-Other category, the town of Woodson has projected shortages.

**5B.34.2.2 Options Considered**

Table 5B.34-4 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 (Woodson).

**Table 5B.34-4.  
Water Management Strategies Considered for Throckmorton County-Other**

<i>Option</i>	<i>Yield (acft/yr)</i>	<i>Approximate Cost<sup>1</sup></i>	
		<i>Total</i>	<i>Unit (\$/acft)</i>
Voluntary redistribution from Hubbard Creek Reservoir to Woodson	50	2,100,000	\$4,200
New reservoir for Woodson (Section 5A.14.7)	100	\$4,500,000	\$3,600
Raise Lake Woodson	<sup>2</sup>	\$2,000,000	<sup>2</sup>
Kerr-McGee Pipeline (Section 5A.14.8)	560	\$8,327,000	\$2,048
South Bend Reservoir (Section 5A.14.2)	106,700	\$241,761,000	\$173
Breckenridge Reservoir (Section 5A.14.1)	20,000	\$171,462,000	\$629
No Action	-	\$904,000 <sup>3</sup>	\$18,080 <sup>3</sup>

<sup>1</sup> 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 included.

<sup>2</sup> Not available at time of printing.

<sup>3</sup> Economic impact of not meeting shortage (i.e., "no action") in 2030 as estimated by TWDB.

**5B.34.2.3 Water Supply Plan**

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

- New Reservoir<sup>2</sup>
- Voluntary Redistribution from Hubbard Creek Reservoir

The South Bend Reservoir has been recommended for consideration for long-term needs for the Brazos River Authority, as a major water provider, as described in Section 5B.38. The

<sup>2</sup> New reservoir would require additional investigation to determine if supply is available. If supply is not available, the alternative to obtain water from Hubbard Creek Reservoir should be implemented.

project is much too large to be pursued by any individual municipality, but if the BRA pursues it, this source should be considered by local entities.

The Breckenridge Reservoir has been recommended for consideration for long-term needs for the West Central Texas Municipal Water District, as a major water provider, as described in Section 5B.38. The project is much too large to be pursued by any individual municipality, but if it is pursued by the WCTMWD, this source should be considered by local entities.

**5B.34.2.4 Costs**

Costs of the Recommended Plan for County-Other.

- a. New Reservoir
  - Cost Source: Section 5A.14.7
  - Date to be Implemented: before 2010
  - Total Project Cost: \$4,500,000
- b. Voluntary Redistribution from Hubbard Creek Reservoir
  - Cost Source: *Regional Water Supply Plan*, developed for West Central Texas Municipal Water District in 1991 by Freese and Nichols. This cost includes 130 gpm pump, 64,000’ of 8” line, a 100,000 gallon water storage tank, and a 0.03 MGD treatment plant expansion.
  - Date to be Implemented: before 2010
  - Total Project Cost: \$2,100,000

**Table 5B.34-5.  
Recommended Plan Costs by Decade for Throckmorton County-Other**

	2000	2010	2020	2030	2040	2050
Projected shortage <sup>(1)</sup> (acft)	73	67	58	50	43	43
Supply from Plan Elements (acft)	0	100	100	100	100	100
Annual Costs (\$/yr)	0	\$360,000	\$360,000	\$360,000	\$33,000	\$33,000
Unit costs (\$/ac-ft)	0	\$3,600	\$3,600	\$3,600	\$330	\$330

<sup>1</sup> Assumes safe yield, extension of all existing contracts, and provisions for manufacturing use deficit.

**5B.34.3 Manufacturing**

No Manufacturing demand exists or is projected for the county.

**5B.34.4 Steam-Electric**

No Steam-Electric demand exists or is projected for the county.

**5B.34.5 Mining**

The water supply entities for Mining show a projected surplus and no changes in water supply system are recommended.

**5B.34.6 Irrigation**

No projected shortage exists and no change in water supply is recommended.

**5B.34.7 Livestock**

No projected shortage exists and no change in water supply is recommended.