

5.34 Throckmorton County Water Supply Plan

Table 5.34-1 lists each water user group in Throckmorton County and their corresponding surplus or shortage in years 2040 and 2070. For each water user group with a projected shortage, a water supply plan has been developed and is presented in the following subsections.

Table 5.34-1. Throckmorton County Surplus/(Shortage)

Water User Group	Surplus/(Shortage)		Comment
	2040 (acft/yr)	2070 (acft/yr)	
Baylor SUD			See Young County
Fort Belknap WSC			See Young County
Fort Griffin SUD			See Stephens County
Stephens Regional SUD			See Stephens County
City of Throckmorton	(147)	(177)	Projected shortage - see plan below.
County-Other	71	72	Projected surplus
Manufacturing	—	—	No projected demand
Steam-Electric	—	—	No projected demand
Mining	(67)	(12)	Projected shortage - see plan below.
Irrigation	(157)	(157)	Projected shortage - see plan below.
Livestock	0	0	No projected surplus or shortage

5.34.1 City of Throckmorton

Description of Supply

The City of Throckmorton obtains its water supply through diversions from Lake Throckmorton authorized under a water right held by the City; projected availability of supply under this water right is limited to 50 acft/yr at the beginning of the planning period and decreases to zero by 2070. Should Lake Throckmorton become unreliable, the City is connected to receive supply from Graham through Fort Belknap WSC. Water supply shortages are projected for the City of Throckmorton throughout the planning period.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and the TWDB, the following water supply plan is recommended for the City of Throckmorton. Conservation is recommended to reduce usage to a goal of 140 gpcd. Associated costs are included for each strategy. Needs remain unmet in 2020. These needs will only occur during a drought equivalent or worse than the drought of record. While not a strategy recommended by the Brazos G RWPG, the impacts of the unmet needs can be mitigated through demand management in the event of a serious drought prior to the recommended strategies coming online.

- a. Conservation
 - Cost Source: Volume II
 - Date to be Implemented: before 2030
 - Annual Cost: maximum of \$24,640 in 2060
 - Unit Cost: \$560/acft
- b. Water Supply from New Throckmorton Reservoir:
 - Cost Source: Volume II
 - Project requires a subordination agreement with the BRA
 - Date to be Implemented: before 2030
 - Project Cost: \$68,103,000
 - Unit Cost: maximum of \$1,687/acft

Table 5.34-2. Recommended Plan Costs by Decade for the City of Throckmorton

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(135)	(141)	(147)	(157)	(167)	(177)
Conservation						
Supply From Plan Element (acft/yr)	—	14	26	40	44	44
Annual Cost (\$/yr)	—	\$7,840	\$14,560	\$22,400	\$24,640	\$24,640
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(135)	(127)	(121)	(117)	(123)	(133)
Additional Needs in Recommended Strategies for Others						
Provide Treated Water Sales to City of Graham (acft/yr)		1,500	1,500	1,500	1,500	1,500
<i>Total Surplus/(Shortage) Including Recommended Strategies</i>	(135)	(1,627)	(1,621)	(1,617)	(1,623)	(1,633)
New Throckmorton Reservoir						
Supply From Plan Element (acft/yr)	—	3,500	3,500	3,500	3,500	3,500
Annual Cost (\$/yr)	—	\$5,905,000	\$5,905,000	\$3,497,000	\$1,911,000	\$1,911,000
Unit Cost (\$/acft)	—	\$1,687	\$1,687	\$999	\$546	\$546

5.34.2 County-Other

The entities in Throckmorton County-Other receive their water supply through groundwater production from the Cross Timbers Aquifer, through diversions of local surface water authorized under a water right, and through purchases of treated surface water supplies under contract from Stephens Regional SUD. Future water supply is projected to be available from Stephens Regional SUD, only, in the amount of 99 acft/yr. No shortages are projected no change in water supply is recommended. Conservation was also considered; however, the entity’s usage is below the selected goal 140 gpcd.



5.34.3 Manufacturing

No Manufacturing demand exists or is projected for the county.

5.34.4 Steam-Electric

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

5.34.5 Mining

Description of Supply

Mining in Throckmorton County obtains water supply through groundwater production from local aquifers. Projections show Mining will experience water supply shortages in each decade of the planning period.

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 Mining. Conservation is recommended. Associated costs are included for each strategy.

- a. Conservation:
 - Cost Source: Volume II
 - Date to be Implemented: before 2030
 - Unit Cost: not determined
- b. Cross Timbers Aquifer Development:
 - Cost Source: Volume II
 - Date to be Implemented: before 2030
 - Project Cost: \$344,000
 - Unit Cost: maximum of \$321/acft

Table 5.34-3. Recommended Plan Costs by Decade for Throckmorton County – Mining

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(90)	(87)	(67)	(46)	(28)	(12)
Conservation						
Supply From Plan Element (acft/yr)	6	10	12	11	9	8
Annual Cost (\$/yr)	ND	ND	ND	ND	ND	ND
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(84)	(77)	(55)	(36)	(19)	(4)
Groundwater Development – Cross Timbers Aquifer						
Supply From Plan Element (acft/yr)	84	84	84	84	84	84
Annual Cost (\$/yr)	\$27,000	\$27,000	\$3,000	\$3,000	\$3,000	\$3,000
Unit Cost (\$/acft)	\$321	\$321	\$36	\$36	\$36	\$36

ND – Not determined. Costs to implement industrial conservation technologies will vary based on each location

5.34.6 Irrigation

Description of Supply

Irrigation in Throckmorton County does not have a defined source for water supply. Water demands for irrigation are projected to remain constant across the planning period; with no defined supply, water supply shortages are also projected across the entire planning period.

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 Mining. Conservation is recommended. Associated costs are included for each strategy:

- a. Conservation:
 - Cost Source: Volume II
 - Date to be Implemented: before 2030
 - Annual Cost: maximum of \$23,273
 - Unit Cost: \$2,118/acft
- b. Cross Timbers Aquifer Development:
 - Cost Source: Volume II
 - Date to be Implemented: before 2030
 - Project Cost: \$405,000
 - Unit Cost: maximum of \$217/acft



Table 5.34-4. Recommended Plan Costs by Decade for Throckmorton County – Irrigation

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(157)	(157)	(157)	(157)	(157)	(157)
Conservation						
Supply From Plan Element (acft/yr)	5	8	11	11	11	11
Annual Cost (\$/yr)	\$9,974	\$16,624	\$23,273	\$23,273	\$23,273	\$23,273
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(152)	(149)	(146)	(146)	(146)	(146)
Groundwater Development – Cross Timbers Aquifer						
Supply From Plan Element (acft/yr)	152	152	152	152	152	152
Annual Cost (\$/yr)	\$33,000	\$33,000	\$2,000	\$2,000	\$2,000	\$2,000
Unit Cost (\$/acft)	\$217	\$217	\$33	\$33	\$33	\$33

5.34.7 Livestock

No water supply shortages are projected and no change in water supply is recommended.

This page intentionally left blank.