

5B.27 Palo Pinto County Water Supply Plan

Table 5B.27-1 lists each water user group in Palo Pinto 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.27-1.
Palo Pinto 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 Graford	93	6	Projected surplus
City of Mineral Wells	3,905	3,798	Projected surplus
City of Palo Pinto	(82)	(83)	Projected shortage – see plan below
City of Strawn	85	94	Projected surplus
County-Other	1,172	1,020	Projected surplus
Manufacturing	(86)	(118)	Projected shortage – see plan below
Steam-Electric	66,034	46,034	Projected surplus
Mining	6,093	6,093	Projected surplus
Irrigation	2,969	2,980	Projected surplus
Livestock	0	0	Supply equals demand

¹ From Tables 4-53 and 4-54, Section 4 – Comparison of Water Demands with Water Supplies to Determine Needs.

5B.27.1 City of Graford

The City of Graford obtains surface water from Keechi Creek and purchases water from Palo Pinto MWD No 1. No shortages are projected and no changes in water supply are recommended.

5B.27.2 City of Mineral Wells

The City of Mineral Wells obtains surface water from Lake Palo Pinto from a contract with the Palo Pinto Municipal Water District No. 1 (District). The District owns Lake Palo Pinto

on Palo Pinto Creek as well as a water treatment plant. The District sells raw industrial water to Brazos Electric Power Cooperative and raw municipal water to the Lake Palo Pinto WSC, which is the water supply system for the area around Lake Palo Pinto. Under a contract with the City of Mineral Wells, the City operates the District's filter plant and delivers treated water to Mineral Wells as well as the City of Graford and six rural water supply corporations. One of the water supply corporations sells water to the City of Palo Pinto. The District is concerned that Lake Palo Pinto may not be an adequate supply source for anticipated needs of all of its customers. Consequently, the District initiated planning studies of an additional reservoir on Palo Pinto Creek known as the Turkey Peak Dam and Reservoir. Construction of Turkey Peak Dam and Reservoir would result in significantly greater water availability to the area. Because this water source has not yet been evaluated under SB 1 criteria nor considered by the Brazos G RWPG, it is recommended that it be included for study in the next SB 1 planning cycle.

5B.27.3 City of Palo Pinto

5B.27.3.1 Description of Supply

The City of Palo Pinto surface water supply is limited due to expiring contract with the City of Mineral Wells in 2007. The City has a projected shortage of 82 acft in 2030, which is 100 percent of the City's demand.

5B.27.3.2 Options Considered

Table 5B.27-2 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 Palo Pinto's shortage.

5B.27.3.3 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 the City of Palo Pinto:

- Extend existing contract with Mineral Wells

Palo Pinto MWD No. 1 has conducted planning studies of the Turkey Peak Dam and Reservoir on Palo Pinto Creek. This project would provide a significantly greater water supply to the District and possibly to the City of Palo Pinto. Because this water source has not yet been

evaluated under SB 1 criteria nor considered by the Brazos G RWPG, it is recommended that it be included for study in the next SB 1 planning cycle.

**Table 5B.27-2.
Water Management Strategies Considered for the City of Palo Pinto**

Option	Yield (acft/yr)	Approximate Cost ¹	
		Total	Unit (\$/acft)
Extend existing contract with Mineral Wells	179	\$116,000	\$650 ²
Wastewater Reuse (Section 5A.3)	5	\$20,192	\$326
Additional Water Conservation (Section 5A.2)	4	\$2,300/yr	\$574
South Bend Reservoir (Section 5A.14.2)	106,700	\$241,761,000	\$173 ³
No Action	-	\$3,480,341 ⁴	\$42,443 ⁴

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 included.
² Estimated wholesale cost of treated water from the City of Mineral Wells.
³ Raw water supply only. Does not include costs for treatment and delivery.
⁴ Economic impact of not meeting shortage (i.e., "no action") in 2030 as estimated by TWDB.

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; however, if the BRA pursues it, this source should be considered by local entities.

5B.27.3.4 Costs

Costs of the recommended plan for the City of Palo Pinto to meet 2030 shortages are:

- a. Extension of existing contract with Mineral Wells:
 - Cost Source: Estimated wholesale treated water cost of \$650/acft
 - Date to be Implemented: 2007
 - Total Annual Cost: \$53,000

5B.27.4 The City of Strawn

The City of Strawn obtains surface water from Lake Tucker. No future shortages are projected and no changes in water supply are projected.

**Table 5B.27-3.
Recommended Plan Costs by Decade for City of Palo Pinto**

	2000	2010	2020	2030	2040	2050
Projected shortage ⁽¹⁾ (acft/yr)	0	85	82	82	82	83
Supply from Plan Elements (acft/yr)	0	179	179	179	179	179
Annual Costs (\$/yr)	0	\$116,000	\$116,000	\$116,000	\$116,000	\$116,000
Unit costs (\$/acft)	0	\$650	\$650	\$650	\$650	\$650

5B.27.5 County-Other

Although no shortages are projected, County-Other surface water supply is affected by expiring contracts with the City of Mineral Wells. Consideration should be given by each of the water purchasing entities and by the City of Mineral Wells to extend current water supply contracts through the planning period. County-Other entities also rely on the Trinity Aquifer for groundwater. No future shortages are projected and no changes in water supply are recommended.

Palo Pinto MWD No. 1, through the City of Mineral Wells, supplies six water supply corporations in Palo Pinto County. The District has conducted planning studies of a possible new source of water known as the Turkey Peak Dam and Reservoir on Palo Pinto Creek. This project would provide a significantly greater water supply to the District and possibly to other entities in the county. Because this water source has not yet been evaluated under SB 1 criteria nor considered by the Brazos G RWPG, it is recommended that it be included for study in the next SB 1 planning cycle.

5B.27.6 Manufacturing

5B.27.6.1 Description of Supply

Manufacturing supplies are obtained from local surface water sources and groundwater from the Trinity Aquifer. Manufacturing industries have a projected shortage of 86 acft in 2030, which is about 92 percent of demand.

5B.27.6.1 Options Considered

Table 5B.27-5 lists the water management strategies, references to the report section discussing the strategy, total project cost, and unit costs that were considered for meeting Manufacturing’s shortage.

**Table 5B.27-4.
Water Management Strategies Considered for Palo Pinto County Manufacturing**

Option	Yield (acft/yr)	Approximate Cost	
		Total	Unit (\$/acft)
Voluntary redistribution from Municipal Supply	120	\$78,000/yr	\$650 ¹
South Bend Reservoir (Section 5A.14.2)	106,700	\$241,761,000	\$173
No Action	-	\$18,686,000 ²	\$217,275 ²

¹ Estimated cost for treated water from municipal source in Palo Pinto County.
² Economic impact of not meeting shortage (i.e., “no action”) in 2030 as estimated by TWDB.

5B.27.6.1 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 the Manufacturing category:

- Voluntary redistribution from appropriate Municipal supply

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 it is pursued by the BRA, this source should be considered by local entities.

5B.27.6.1 Costs

Costs of the recommended plan for Manufacturing to meet 2050 shortages are:

- Voluntary redistribution from Municipal supply:
 - No modifications to existing system needed
 - Date to be Implemented: 2010
 - Total Annual Cost: \$78,000 per year

5B.27.7 Steam-Electric

Steam-Electric demand in Palo Pinto County is associated with the R.W. Miller Steam-Electric Station, owned and operated by the Brazos Electric Coop. Water supply for the R.W. Miller Plant is obtained from Lake Palo Pinto through a contract with Palo Pinto Municipal Water District No. 1. No future shortages are projected and no changes in water supply are recommended.

5B.27.8 Mining

No future shortages are projected and no changes in water supply are recommended.

5B.27.9 Irrigation

No future shortages are projected and no changes in water supply are recommended.

5B.27.10 Livestock

No future shortages are projected and no changes in water supply are recommended.