

## 5.27 Palo Pinto County Water Supply Plan

Table 5.27-1 lists each water user group in Palo Pinto 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 5.27-1. Palo Pinto County Surplus/(Shortage)**

Water User Group	Table 5.27-1. Palo Pinto County Surplus/(Shortage)		Comment
	2040 (acft/yr)	2070 (acft/yr)	
City of Graford	29	25	Projected surplus
City of Mineral Wells	0	0	See Chapter 5.38
Possum Kingdom WSC	(142)	(221)	Projected shortage – see plan below
Stephens Regional SUD			See Stephens County
City of Strawn	63	51	Projected surplus
County-Other	1,407	1,324	Projected surplus
Manufacturing	1,154	1,137	Projected surplus
Steam-Electric	9,028	7,839	Projected surplus
Mining	589	930	Projected surplus
Irrigation	(2,513)	(2,394)	Projected shortage – see plan below
Livestock	0	0	Demand equals Supply

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

### 5.27.1 City of Graford

The City of Graford obtains surface water from Keechi Creek and purchases treated water from the City of Mineral Wells. Projections indicate a surplus for the City of Graford and no changes in water supply are recommended. Conservation was considered; however, the entity’s current per capita use rate is below the selected target rate of 140 gpcd.

### 5.27.2 City of Mineral Wells

The recommended water supply plan for the City of Mineral Wells is included in Chapter 5.38 with the wholesale water providers.

### 5.27.3 Possum Kingdom WSC

#### Description of Supply

Possum Kingdom WSC is split between Stephens and Palo Pinto County. The WSC receives supply from the Brazos River Authority. Water shortages are projected between 2020 and 2070.

#### 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 the Possum Kingdom WSC.

a. Conservation

- Cost Source: Volume II, Chapter 2
- Date to be Implemented: 2020
- Annual Cost: \$203,360 in 2070
- Unit Cost: \$496/acft

b. Leave needs unmet

Advanced conservation eliminates the WSC’s projected water shortages, except for a small shortage in 2020 prior to full implantation of the advanced conservation strategy. It is recommended that this shortage be addressed through drought management, or planning to simply not meet that portion of the entity’s demands during a drought.

- Cost Source: Cost of not meeting needs – see Appendix H
- Date to be Implemented: 2020

**Table 5.27-2. Recommended Plan Costs by Decade for Possum Kingdom WSC**

Plan Element	2020	2030	2040	2050	2070	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(60)	(110)	(142)	(173)	(199)	(221)
<b>Conservation</b>						
Supply From Plan Element (acft/yr)	53	126	198	271	342	410
Annual Cost (\$/yr)	\$26,288	\$62,496	\$98,208	\$134,416	\$169,632	\$203,360
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(7)	16	56	98	143	189
<b>Leave Needs Unmet</b>						
Supply From Plan Element (acft/yr)	7	—	—	—	—	—
Annual Cost (\$/yr)	—	—	—	—	—	—
Unit Cost (\$/acft)	—	—	—	—	—	—



### 5.27.4 City of Strawn

#### Description of Supply

The City of Strawn is supplied by surface water from Lake Tucker and Trinity Aquifer and is projected to have surplus supplies through 2070. The city is participating in a joint drought response groundwater project with the cities of Mingus, Gordon and Barton WSC for Trinity supplies in Erath County.

#### Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategy is recommended for the City of Strawn.

- a. Conservation
  - Cost Source: Volume II, Chapter 2
  - Date to be Implemented: 2020
  - Annual Cost: \$10,912 in 2070
  - Unit Cost: \$496/acft

**Table 5.27-3. Recommended Plan Costs by Decade for City of Strawn**

Plan Element	2020	2030	2040	2050	2070	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	73	66	63	58	54	51
<b>Conservation</b>						
Supply From Plan Element (acft/yr)	5	16	22	22	22	22
Annual Cost (\$/yr)	\$2,480	\$7,936	\$10,912	\$10,912	\$10,912	\$10,912
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	78	82	85	80	76	73

### 5.27.5 County-Other

Entities in Palo Pinto County-Other obtain their water from Palo Pinto County MWD No. 1, City of Mineral Wells, City of Strawn and from Possum Kingdom Reservoir through BRA, and run-of-the-river diversions. Conservation was considered but the current per capita use is below the targeted gpcd of 140. Projections indicate a surplus of supply through the planning period and no changes in water supply are recommended.

### 5.27.6 Manufacturing

Palo Pinto County Manufacturing obtains its water supply from the City of Mineral Wells, Brazos River Authority and the Trinity Aquifer. Palo Pinto County Manufacturing shows a projected surplus and no changes in water supply are recommended.

### 5.27.7 Steam-Electric

Palo Pinto County Steam-Electric obtains its water supply from Palo Pinto County MWD No. 1 and from the Brazos River Authority. Steam-Electric is projected to have surplus supplies through the planning period and no change to water supply is recommended.

### 5.27.8 Mining

Palo Pinto County Mining obtains its water supply from Trinity Aquifer, Palo Pinto County MWD No. 1 and from the Brazos River Authority and run-of-the river water rights. Mining is projected to have adequate supplies through the planning period and no change to water supply is recommended.

### 5.27.9 Irrigation

#### Description of Supply

Palo Pinto County Irrigation obtains its water supply from run of the river water rights and the BRA. Based on the available supply, Palo Pinto County Irrigation is projected to have a shortage between 2020 and 2070.

#### 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 Palo Pinto County-Irrigation.

- a. Conservation
  - Cost Source: Volume II, Chapter 2
  - Date to be Implemented: before 2020
  - Annual Cost: \$49,220 in 2040
  - Unit Cost: \$230/acft
- b. Purchase Supply from Palo Pinto County Municipal Water District No. 1
  - Cost Source: Volume II, Chapter 4.13 (Lake Palo Pinto Enlargement)
  - Date to be Implemented: 2020
  - Project Cost: Not enough information to cost delivery
  - Unit Cost: \$479/acft (Wholesale Rate Only)
- c. Alternative: Leave needs unmet

New supplies for irrigation would be cost prohibitive to develop and most farms would switch to dry-land crops or allow fields to go fallow during a prolonged drought.

- Cost Source: Cost of not meeting needs – see Appendix H
- Date to be Implemented: 2020



d. Alternative: BRA System Operation

- Cost Source: Volume II, Chapter 7.11
  - Supply dependent on BRA obtaining the System Operations permit from TCEQ
- Date to be Implemented: 2020
- Project Cost: Infrastructure assumed sufficient
- Unit Cost: \$65.65/acft

**Table 5.27-4. Recommended Plan Costs by Decade for Palo Pinto County – Irrigation**

Plan Element	2020	2030	2040	2050	2070	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(2,588)	(2,547)	(2,513)	(2,472)	(2,431)	(2,394)
<b>Conservation</b>						
Supply From Plan Element (acft/yr)	94	155	214	212	209	206
Annual Cost (\$/yr)	\$21,620	\$35,650	\$49,220	\$48,760	\$48,070	\$47,380
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(2,494)	(2,392)	(2,299)	(2,260)	(2,222)	(2,188)
<b>Purchase Supply from Palo Pinto County MWD No. 1</b>						
Supply From Plan Element (acft/yr)	2,494	2,392	2,299	2,260	2,222	2,188
Annual Cost (\$/yr)	\$1,194,626	\$1,145,768	\$1,101,221	\$1,082,540	\$1,064,338	\$1,048,052
Unit Cost (\$/acft)	\$479	\$479	\$479	\$479	\$479	\$479
<b>Alternative: Leave Needs Unmet</b>						
Supply From Plan Element (acft/yr)	2,494	2,392	2,299	2,260	2,222	2,188
Annual Cost (\$/yr)	—	—	—	—	—	—
Unit Cost (\$/acft)	—	—	—	—	—	—
<b>Alternative: Purchase Supply from Brazos River Authority (System Operations)</b>						
Supply From Plan Element (acft/yr)	2,494	2,392	2,299	2,260	2,222	2,188
Annual Cost (\$/yr)	\$163,731	\$157,035	\$150,929	\$148,369	\$145,874	\$143,642
Unit Cost (\$/acft)	\$65.65	\$65.65	\$65.65	\$65.65	\$65.65	\$65.65

### 5.27.10 Livestock

Livestock water supply is projected to meet demands through 2070 and no changes in water supply are recommended.

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