

5.26 Nolan County Water Supply Plan

Table 5.26-1 lists each water user group in Nolan 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 5.26-1. Nolan County Surplus/(Shortage)

Water User Group	Surplus/(Shortage) ¹		Comment
	2040 (acft/yr)	2070 (acft/yr)	
Bitter Creek WSC	(213)	(229)	Projected shortage - see plan below.
City of Roscoe	(90)	(107)	Projected shortage - see plan below.
City of Sweetwater	(1,668)	(1,839)	Projected shortage - see plan below.
The Bitter Creek WSC	(213)	(229)	Projected shortage - see plan below.
County-Other	11	2	Projected surplus
Manufacturing	(33)	(35)	Projected shortage - see plan below.
Steam-Electric	0	0	No projected demand
Mining	(53)	6	Shortage to Projected surplus
Irrigation	(6,919)	(6,919)	Projected shortage
Livestock	0	0	Demand equals supply

1 – From Tables C-51 and C-52, Appendix C – Comparison of Water Demands with Water Supplies to Determine Needs.

5.26.1 Bitter Creek WSC

The Bitter Creek WSC obtains its water supply from the Dockum Aquifer at 109 acft/yr. This WUG is located in Nolan and Fisher Counties. The surpluses shown in the table below represent the cumulative totals for Bitter Creek WSC in both counties. Shortages are projected through 2070. Conservation was considered; however, the entity’s current per capita use rate is below the selected target rate of 140 gpcd.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategy is recommended to meet water needs for Bitter Creek WSC.

- a. Purchase Water Supply from Sweetwater
 - Cost Source: Volume II
 - Date to be Implemented: 2020
 - Project Cost: Existing infrastructure assumed sufficient
 - Unit Cost: \$1,031/acft (Sweetwater Wholesale Rate)

Table 5.26-2. Recommended Plan Costs by Decade for Bitter Creek WSC

Plan Element	2020	2030	2040	2050	2070	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(218)	(216)	(213)	(219)	(224)	(229)
Conservation						
Supply From Plan Element (acft/yr)	–	–	–	–	–	–
Annual Cost (\$/yr)	–	–	–	–	–	–
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(218)	(216)	(213)	(219)	(224)	(229)
Additional Water from Sweetwater						
Supply From Plan Element (acft/yr)	218	216	213	219	224	229
Annual Cost (\$/yr)	\$224,758	\$222,696	\$219,603	\$225,789	\$230,944	\$236,099
Unit Cost (\$/acft)	\$1,031	\$1,031	\$1,031	\$1,031	\$1,031	\$1,031

5.26.2 City of Roscoe

The City of Roscoe obtains groundwater from the Dockum Aquifer at 115 acft/yr. A need is projected for the City of Roscoe through 2070. Conservation was considered; however, the entity’s current per capita use rate is below the selected target rate of 140 gpcd.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategy is recommended to meet water needs for Bitter Creek WSC.

- a. Purchase Water Supply from Sweetwater
 - Cost Source: Volume II
 - Date to be Implemented: 2020
 - Project Cost: Existing infrastructure assumed sufficient
 - Unit Cost: \$1,031/acft (Sweetwater Wholesale Rate)

Table 5.26-3. Recommended Plan Costs by Decade for Roscoe

Plan Element	2020	2030	2040	2050	2070	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(84)	(88)	(90)	(96)	(101)	(107)
Conservation						
Supply From Plan Element (acft/yr)	–	–	–	–	–	–
Annual Cost (\$/yr)	–	–	–	–	–	–
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(84)	(88)	(90)	(96)	(101)	(107)

Table 5.26-3. Recommended Plan Costs by Decade for Roscoe

Plan Element	2020	2030	2040	2050	2070	2070
Additional Water from Sweetwater to meet Contract						
Supply From Plan Element (acft/yr)	84	88	90	96	101	107
Annual Cost (\$/yr)	\$86,604	\$90,728	\$92,790	\$98,976	\$104,131	\$110,317
Unit Cost (\$/acft)	\$1,031	\$1,031	\$1,031	\$1,031	\$1,031	\$1,031

5.26.3 City of Sweetwater

The City of Sweetwater obtains groundwater from the Dockum Aquifer at 339 to 353 acft/yr from 2020 to 2070. The City of Sweetwater supplies water to Bronte, County Other-Taylor, Manufacturing-Nolan, and Roby. A shortage is projected for the City of Sweetwater through 2070. Conservation was considered; however, the entity’s current per capita use rate is below the selected target rate of 140 gpcd.

Water Supply Plan

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

a. Purchase from Abilene (Cedar Ridge Reservoir)

The City of Abilene is pursuing the Cedar Ridge Reservoir project to develop the supplies necessary to meet Abilene’s future municipal demands and contractual sales.

- Cost Source: Volume II
- Date to be Implemented: 2020
- Project Cost: \$21,667,019
- Unit Cost: \$1,115 /acft

Table 5.26-4. Recommended Plan Costs by Decade for Sweetwater

Plan Element	2020	2030	2040	2050	2070	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	<i>(1,614)</i>	<i>(1,651)</i>	<i>(1,668)</i>	<i>(1,731)</i>	<i>(1,787)</i>	<i>(1,839)</i>
Conservation						
Supply From Plan Element (acft/yr)	–	–	–	–	–	–
Annual Cost (\$/yr)	–	–	–	–	–	–
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	<i>(1,614)</i>	<i>(1,651)</i>	<i>(1,668)</i>	<i>(1,731)</i>	<i>(1,787)</i>	<i>(1,839)</i>
Additional Demands from Recommended Strategies from Others						

Table 5.26-4. Recommended Plan Costs by Decade for Sweetwater

Plan Element	2020	2030	2040	2050	2070	2070
Sell water to Bitter Creek WSC (acft/yr)	218	216	213	219	224	229
Sell water to City of Roscoe (a-ft/yr)	84	88	90	96	101	107
Increase Reuse Amount to Nolan County Manufacturing (acft/yr)	–	5	–	–	–	–
<i>Total Needs Including Recommended Strategies</i>	<i>(1,295)</i>	<i>(1,014)</i>	<i>(726)</i>	<i>(2,541)</i>	<i>(4,595)</i>	<i>(6,593)</i>
Purchase from Abilene (Cedar Ridge Reservoir)						
Supply From Plan Element (acft/yr)	1,614	1,651	1,668	1,731	1,787	1,839
Annual Cost (\$/yr)	\$1,799,610	\$1,840,865	\$428,676	\$444,867	\$459,259	\$472,623
Unit Cost (\$/acft)	\$1,115	\$1,115	\$257	\$257	\$257	\$257
Additional Water from Oak Creek Conjunctive Use						
Supply From Plan Element (acft/yr)	1,076	1,076	1,076	1,076	1,076	1,076
Annual Cost (\$/yr)	\$1,799,610	\$1,840,865	\$428,676	\$444,867	\$459,259	\$472,623
Unit Cost (\$/acft)	\$1,115	\$1,115	\$257	\$257	\$257	\$257

5.26.4 County-Other

Description of Supply

Entities in Nolan County-Other obtains water from the Edwards-Trinity Aquifer at 139 acft/yr. A surplus is projected through 2070. Conservation was considered; however, the entity’s current per capita use rate is below the selected target rate of 140 gpcd. No changes are recommended to the Water Supply Plan.

5.26.5 Manufacturing

Description of Supply

Nolan County Manufacturing obtains its water supply from the Dockum Aquifer, City of Sweetwater and from the Edwards-Trinity (Plateau) Aquifer. Manufacturing is projected to have a shortage beginning in year 2030.

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 Nolan County-Manufacturing.

- a. Conservation
 - Cost Source: Volume II



- Date to be Implemented: 2020
 - Annual Cost: not determined
- b. Additional Water Supply from Sweetwater
- Cost Source: Volume II
 - Date to be Implemented: 2030
 - Project Cost: N/A. Infrastructure assumed sufficient
 - Unit Cost: \$1031/acft

Table 5.26-5. Recommended Plan Costs by Decade for Nolan County – Manufacturing

Plan Element	2020	2030	2040	2050	2070	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	52	(31)	(33)	(35)	(35)	(35)
Conservation						
Supply From Plan Element (acft/yr)	13	26	37	37	37	37
Annual Cost (\$/yr)	ND	ND	ND	ND	ND	ND
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	52	(5)	4	2	2	2
Purchase from Sweetwater						
Supply From Plan Element (acft/yr)	–	5	–	–	–	–
Annual Cost (\$/yr)	–	\$5,155	–	–	–	–
Unit Cost (\$/yr)	–	\$1,031	–	–	–	–

5.26.6 Mining

Description of Supply

Nolan County Mining obtains its water supply from the Dockum and Edwards-Trinity (Plateau) Aquifers. Based on the available groundwater supply, Nolan County Mining 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 Nolan County-Mining.

- a. Conservation
- Cost Source: Volume II, Chapter 2
 - Date to be Implemented: 2020
 - Annual Cost: not determined
- b. Purchase Water Supply from Sweetwater
- Cost Source: Volume II

- Date to be Implemented: 2020
- Project Cost: Existing infrastructure assumed sufficient
- Unit Cost: \$1,031/acft (Sweetwater Wholesale Rate)

Table 5.26-6. Recommended Plan Costs by Decade for Nolan County – Mining

Plan Element	2020	2030	2040	2050	2070	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(225)	(222)	(200)	(178)	(158)	(141)
Conservation						
Supply From Plan Element (acft/yr)	7	11	14	12	11	10
Annual Cost (\$/yr)	ND	ND	ND	ND	ND	ND
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(218)	(211)	(186)	(166)	(147)	(131)
Additional Water from Sweetwater to meet Contract						
Supply From Plan Element (acft/yr)	(218)	(211)	(186)	(166)	(147)	(131)
Annual Cost (\$/yr)	\$223,861	\$223,861	\$18,861	\$18,861	\$18,861	\$18,861
Unit Cost (\$/acft)	\$1,018	\$1,018	\$86	\$86	\$86	\$86

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

5.26.7 Irrigation

Description of Supply

Nolan County Irrigation obtains its water supply from the Dockum and Edwards Trinity Aquifer and run-of-river diversions from the Brazos River. Based on the available supply, Nolan County Irrigation is projected to have a shortage between 2020 and 2070. Conservation is recommended.

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 Nolan County-Irrigation.

- Conservation
 - Cost Source: Volume II
 - Date to be Implemented: before 2020
 - Annual Cost: max \$109,733 in 2040
 - Unit Cost: \$136/acft
- 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 – will be provided by TWDB



- Date to be Implemented: 2020

Table 5.26-7. Recommended Plan Costs by Decade for Nolan County – Irrigation

Plan Element	2020	2030	2040	2050	2070	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(6,919)	(6,919)	(6,919)	(6,919)	(6,919)	(6,919)
Conservation						
Supply From Plan Element (acft/yr)	347	578	809	809	809	809
Annual Cost (\$/yr)	\$47,028	\$78,381	\$109,733	\$109,733	\$109,733	\$109,733
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(6,572)	(6,341)	(6,110)	(6,110)	(6,110)	(6,110)
Leave Needs Unmet						
Supply From Plan Element (acft/yr)	–	–	–	–	–	–
Annual Cost (\$/yr)	–	–	–	–	–	–
Unit Cost (\$/acft)	–	–	–	–	–	–

5.26.8 Livestock

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

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