



5.35 Washington County Water Supply Plan

Table 5.35-1 lists each water user group in Washington County and their corresponding surplus or shortage in years 2040 and 2070. A brief summary of the water user groups and the plan for the selected water user are presented in the following subsections.

Table 5.35-1. Washington County Surplus/(Shortage)

Water User Group	Surplus/(Shortage) ¹		Comment
	2040 (acft/yr)	2070 (acft/yr)	
City of Brenham	(1,120)	(1,681)	Projected shortage - see plan below.
Central Washington County WSC	184	163	Projected surplus
Chappell Hill WSC	118	105	Projected surplus
Corix Utilities Texas, Inc	(120)	(281)	Projected shortage - see plan below.
West End WSC	0	0	OOR WUG Region H
County-Other	51	48	Projected surplus
Manufacturing	(6)	(6)	Projected shortage - see plan below.
Steam-Electric	0	0	No projected demand
Mining	(625)	(186)	Projected shortage - see plan below.
Irrigation	200	200	Projected surplus
Livestock	0	0	Demand equals supply

1 – From Tables C-3 and C-4, Appendix C – Comparison of Water Demands with Water Supplies to Determine Needs.

5.35.1 City of Brenham

Description of Supply

The City of Brenham obtains its water supply through a contract with the Brazos River Authority for 4,200 acft/yr of water supply from Lake Somerville. The supply is currently restrained by water treatment plant capacity to 3,701 acft/yr, creating shortages starting in 2020. The city is also considering reuse strategies. Conservation is recommended to reduce the City of Brenham gallons per capita per day (gpcd) to a goal 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 for Brenham.

a. Conservation

- Cost Source: Volume II
- Date to be Implemented: before 2020
- Unit Cost: \$560/acft

- Annual Cost: maximum of \$770,288 in 2070
- b. Groundwater Development – Gulf Coast Aquifer
 - Cost Source: Volume II
 - Date to be Implemented: 2020
 - Project Cost: \$2,918,420
 - Unit Cost: \$497 acft/yr

Table 5.35-2. Recommended Plan Costs by Decade for City of Brenham

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(628)	(926)	(1,120)	(1,337)	(1,524)	(1,681)
Conservation						
Supply From Plan Element (acft/yr)	0	367	755	1,170	1,592	1,648
Annual Cost (\$/yr)	\$0	\$205,297	\$422,922	\$654,982	\$891,575	\$922,943
<i>Projected Surplus/(Shortage) after Conservation</i>	(628)	(559)	(365)	(167)	68	(33)
Groundwater Development – Gulf Coast Aquifer						
Supply From Plan Element (acft/yr)	628	559	365	167	–	33
Annual Cost (\$/yr)	\$312,116	\$277,823	\$62,050	\$28,390	–	\$5,610
Unit Cost (\$/acft)	\$497	\$497	\$170	\$170	–	\$170

5.35.2 Central Washington County WSC

Central Washington County WSC obtains water from the Gulf Coast Aquifer System at 452 acft/yr. It is projected to have a surplus through the year 2070 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.

5.35.3 Chappell Hill WSC

Chappell Hill WSC obtains water from the Gulf Coast Aquifer System at 268 ac-ft/yr. It is projected to have a surplus through the year 2070 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.

5.35.4 Corix Utilities

Description of Supply

Corix Utilities Texas Inc. obtains its water supply from surface water from LCRA at 526 to 525 acft/yr and other groundwater sources at 758 acft/yr from Ellenberger-San Saba, Gulf Coast Aquifer, and other alluvial sources. Shortages are projected for Corix Utilities from 2020 to 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 strategies are recommended to meet water needs for Corix Utilities.

a. Groundwater Development – Gulf Coast Aquifer

- Cost Source: Volume II
- Date to be Implemented: 2020
- Project Cost: \$1,853,359
- Unit Cost: \$591/acft

Table 5.35-3. Recommended Plan Costs by Decade for Corix Utilities

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(31)	(73)	(120)	(180)	(230)	(281)
Conservation						
Supply From Plan Element (acft/yr)	–	–	–	–	–	–
Annual Cost (\$/yr)	–	–	–	–	–	–
<i>Projected Surplus/(Shortage) after Conservation</i>	(31)	(73)	(120)	(180)	(230)	(281)
Groundwater Development – Gulf Coast Aquifer						
Supply From Plan Element (acft/yr)	31	73	120	180	230	281
Annual Cost (\$/yr)	\$18,321	\$43,143	\$15,240	\$22,860	\$29,210	\$35,687
Unit Cost (\$/acft)	\$591	\$591	\$127	\$127	\$127	\$127

5.35.5 County-Other

Washington County-Other is projected to have a surplus through the year 2070 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.

5.35.6 Manufacturing

Description of Supply

Water supply for manufacturing in Washington County is obtained by from the Gulf Coast Aquifer at 369 acft/yr and from Brenham at 208 acft/yr. Washington County Manufacturing is projected to have shortages beginning in 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 Washington County Manufacturing.

a. Conservation

- Cost Source: Volume II
- Date to be Implemented: 2020
- Annual Cost: Not determined

Table 5.35-4. Recommended Plan Costs by Decade for Washington County – Manufacturing

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	0	(6)	(6)	(6)	(6)	(6)
Conservation						
Supply From Plan Element (acft/yr)	17	29	41	41	41	41
Annual Cost (\$/yr)	ND	ND	ND	ND	ND	ND
<i>Projected Surplus/(Shortage) after Conservation</i>	0	23	35	35	35	35

5.35.7 Steam-Electric

No Steam-Electric demand exists nor is projected for the county.

5.35.8 Mining

Description of Supply

Mining operations in Washington County are supplied by Brazos River Alluvium groundwater at 78 acft/yr. Demands for Mining are projected to increase significantly resulting in shortages beginning in 2020. Conservation is recommended for Mining to reduce demands.

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 Washington County-Mining.

a. Conservation

- Cost Source: Volume II
- Date to be Implemented: before 2020
- Annual Cost: not determined

b. Groundwater Development – Gulf Coast Aquifer

- Cost Source: Volume II
- Date to be Implemented: before 2020
- Project Cost: \$2,918,420
- Unit Cost: \$437/acft



Table 5.35-5. Recommended Plan Costs by Decade for Washington County – Mining

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(491)	(788)	(625)	(460)	(295)	(186)
Conservation						
Supply From Plan Element (acft/yr)	17	43	49	38	26	18
Annual Cost (\$/yr)	ND	ND	ND	ND	ND	ND
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(474)	(745)	(576)	(422)	(269)	(168)
Groundwater Development – Gulf Coast Aquifer						
Supply From Plan Element (acft/yr)	474	745	576	422	269	168
Annual Cost (\$/yr)	\$241,266	\$379,205	\$110,592	\$81,024	\$51,648	\$32,256
Unit Cost (\$/acft)	\$509	\$509	\$192	\$192	\$192	\$192

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

5.35.9 Irrigation

Irrigation obtains water from the Gulf Coast Aquifer at 416 acft/yr and Brazos River Alluvial Aquifer at 93 acft/yr. There is a projected surplus of water supplies and no changes in water supply are recommended.

Table 5.35-6. Recommended Plan Costs by Decade for Washington County – Irrigation

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	200	200	200	200	200	200
Conservation						
Supply From Plan Element (acft/yr)	–	–	–	–	–	–
Annual Cost (\$/yr)	–	–	–	–	–	–
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	200	200	200	200	200	200

5.35.10 Livestock

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

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