5.15 Hill County Water Supply Plan

Table 5.15-1 lists each water user group in Hill 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. 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.

Table 5.15-1. Hill County Surplus/(Shortage)

Water User Group	Surplus/(Shortage)[1]		Comment
	2040 (acft/yr)	2070 (acft/yr)	
Brandon-Irene WSC[2]	93	50	Projected surplus
Files Valley WSC[2]	679	496	Projected surplus
City of Hillsboro	1,554	1,373	Projected surplus
City of Hubbard	(32)	(69)	Projected shortage – see plan below
City of Itasca	83	73	Projected surplus
Hill County WSC	415	375	Projected surplus
Johnson County SUD			See Johnson County for Plan
Parker WSC			See Johnson County for Plan
White Bluff Community WS	126	83	Projected surplus
City of Whitney	139	100	Projected surplus
Woodrow-Osceola WSC	217	184	Projected surplus
County-Other	247	63	Projected surplus
Manufacturing	0	0	Demand equals supply
Steam-Electric	0	0	No projected demand
Mining	223	477	Projected surplus
Irrigation	832	851	Projected surplus
Livestock	0	0	Demand equals supply

1 – From Tables C-29 and C-30, Appendix C – Comparison of Water Demands with Water Supplies to Determine Needs.
2 – Balance includes totals from Brazos G and Region C.

5.15.1 Brandon-Irene WSC

Brandon-Irene WSC is located in Hill, Ellis and Navarro County, however most of its demand is located in Hill County. Brandon-Irene WSC obtains its water from the Trinity Aquifer and surface water through a contract with Aquilla WSD. The WSC also provides supply to the City of Bynum in Hill County. Conservation was considered; however, the entity's current per capita use rate is below the selected target rate of 140 gpcd.

Surpluses are projected through 2070 for Brandon Irene WSC, and no changes in water supply are recommended.

5.15.2 Files Valley WSC

Description of Supply

Files Valley WSC is located in Hill and Ellis (Region C) counties, however most of its demands is located in Hill County. The WSC has a contract for 1,709 acft/yr of treated surface water from Lake Aquilla through Aquilla Water Supply District. Files Valley WSC also provides water to Parker WSC and Milford. Balance and strategies represented in Table 5.15-2 are for the entire WSC in both counties and regions.

Water Supply Plan

Although the City has sufficient supplies, working within the planning criteria established by the Brazos G RWPG and TWDB and in coordination with Region C, the following plan is recommended to meet projected needs.

a. Conservation:

- Cost Source: 2016 Region C Water Plan (Appendix K)
- Date to be Implemented: 2020
- Project Cost: $2,010
- Unit Cost: $169/acft

b. Purchase Water from Waxahachie

- Cost Source: 2016 Region C Water Plan (Appendix K)
- Date to be Implemented: 2030
- Project Cost: $23,452,400
- Unit Cost: $570/acft

Table 5.15-2. Recommended Plan Costs by Decade for the Files Valley WSC

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*618*	*722*	*679*	*625*	*564*	*496*
Conservation						
Supply From Plan Element (acft/yr)	1	2	2	3	5	7
Annual Cost ($/yr)	$169	$338	$0	$0	$0	$0
Projected Surplus/(Shortage) after Conservation (acft/yr)	*619*	*724*	*681*	*628*	*569*	*503*
Purchase Water from Waxahachie (Region C)						
Supply From Plan Element (acft/yr)	—	55	59	63	68	72
Annual Cost ($/yr)	—	$31,000	$34,000	$36,000	$39,000	$41,000
Unit Cost ($/acft)	—	$570	$570	$570	$570	$570

5.15.3 City of Hillsboro

Description of Supply

The City of Hillsboro purchases its water supply from the Aquilla WSD and has surpluses projected through 2070. No change in water supply is recommended.

Water Supply Plan

Although the City has sufficient supplies, working within the planning criteria established by the Brazos G RWPG and TWDB, conservation is recommended for the City as the current per capita use rate is above the selected target rate. Associated costs are included for each strategy.

a. Conservation

- Cost Source: Volume II, Chapter 2
- Date to be Implemented: before 2020 – use rate exceeds 140 gpcd
- Annual Cost: maximum of $245,040 in 2070
- Unit Cost: $474/acft

Table 5.15-3. Recommended Plan Costs by Decade for the City of Hillsboro

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*1,888*	*1,606*	*1,554*	*1,486*	*1,425*	*1,373*
Conservation						
Supply From Plan Element (acft/yr)	79	230	385	495	506	517
Annual Cost ($/yr)	$37,526	$109,198	$182,668	$234,424	$239,672	$245,040
Projected Surplus/(Shortage) after Conservation (acft/yr)	*1,968*	*1,836*	*1,939*	*1,981*	*1,931*	*1,890*

5.15.4 City of Hubbard

Description of Supply

The City of Hubbard obtains its water supply the Trinity Aquifer and from Lake Navarro Mills through the Post Oak Special Utility District (SUD). The Post Oak SUD purchases treated water from the City of Corsicana and delivers it to the City of Hubbard. The existing contractual arrangements and conveyance capacity of the system are adequate; however Corsicana's supplies are constrained causing a shortage on Hubbard.

Water Supply Plan

Although the City has sufficient supplies, working within the planning criteria established by the Brazos G RWPG and TWDB and in coordination with Region C, the following plan is recommended to meet projected needs. Conservation was considered; however, the entity's current per capita use rate is below the selected target rate of 140 gpcd.

a. Water Supply from Post Oak SUD

- Cost Source: 2016 Region C Water Plan (Appendix K)
- Date to be Implemented: 2030
- Project Cost: no cost to Hubbard
- Unit Cost: $570/acft

Table 5.15-4. Recommended Plan Costs by Decade for the City of Hubbard

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*29*	*(25)*	*(32)*	*(44)*	*(57)*	*(69)*
Conservation						
Supply From Plan Element (acft/yr)	—	—	—	—	—	—
Annual Cost ($/yr)	—	—	—	—	—	—
Projected Surplus/(Shortage) after Conservation (acft/yr)	*29*	*(25)*	*(32)*	*(44)*	*(57)*	*(69)*
Water Supply from Post Oak SUD (Region C)						
Supply From Plan Element (acft/yr)	—	25	32	44	57	69
Annual Cost ($/yr)	—	$14,000	$18,000	$25,000	$32,000	$39,000
Unit Cost ($/acft)	—	$570	$570	$570	$570	$570

5.15.5 City of Itasca

The City of Itasca obtains its water supply from the Trinity Aquifer. The production capacity of the wells and groundwater availability are adequate to supply the demands of the City of Itasca through the year 2070. Conservation was considered; however, the entity's current per capita use rate is below the selected target rate of 140 gpcd. No change in water supply is recommended.

5.15.6 Hill County WSC

Hill County WSC obtains its water supply from the Trinity Aquifer and a surface water contract with Aquilla Water Supply District. The existing contract and production capacity of the wells and groundwater availability are adequate to supply the needs of the WSC through the year 2070. Conservation was considered; however, the entity's current per capita use rate is below the selected target rate of 140 gpcd. No change in water supply is recommended.

5.15.7 White Bluff Community WS

Description of Supply

White Bluff Community WS obtains its water supply from the Trinity Aquifer. The existing production capacity of the wells and groundwater availability are adequate to supply the needs of the WUG through the year 2070.

Water Supply Plan

Although the WUG has sufficient supplies, working within the planning criteria established by the Brazos G RWPG and TWDB, conservation is recommended as the current per capita use rate is above the selected target rate. Conservation was considered; however, the entity's current per capita use rate is below the selected target rate of 140 gpcd. Associated costs are included for each strategy.

a. Conservation:

- Cost Source: Volume II, Chapter 2
- Date to be Implemented: By year 2020 - use rate exceeds 140 gpcd
- Annual Cost: maximum of $65,242 in 2070
- Unit Cost: $474/acft

Table 5.15-5. Recommended Plan Costs by Decade for White Bluff Community WS

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*166*	*142*	*126*	*109*	*95*	*83*
Conservation						
Supply From Plan Element (acft/yr)	24	63	103	125	128	132
Annual Cost ($/yr)	$12,066	$31,494	$50,907	$62,069	$63,646	$65,242
Projected Surplus/(Shortage) after Conservation (acft/yr)	*190*	*205*	*229*	*234*	*223*	*214*

5.15.8 City of Whitney

Description of Supply

The City of Whitney obtains its water supply from the Trinity Aquifer. The City of Whitney has also contracted with the Brazos River Authority for 750 acft/yr of supply from Lake Whitney; however, the City has not constructed the required infrastructure to utilize this supply. The production capacity of the City's existing wells and groundwater availability are adequate to supply the needs of the City of Whitney through the year 2070.

Water Supply Plan

Although the City has sufficient supplies, working within the planning criteria established by the Brazos G RWPG and TWDB, conservation is recommended as the current per capita use rate is above the selected target rate. Associated costs are included for each strategy.

a. Conservation:

- Cost Source: Volume II, Chapter 2
- Date to be Implemented: By year 2020 - use rate exceeds 140 gpcd
- Annual Cost: maximum of $33,626 in 2070
- Unit Cost: $474/acft

Table 5.15-6. Recommended Plan Costs by Decade for City of Whitney

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*169*	*151*	*139*	*125*	*112*	*100*
Conservation						
Supply From Plan Element (acft/yr)	17	50	70	68	69	71
Annual Cost ($/yr)	$7,857	$23,644	$33,054	$32,182	$32,621	$33,626
Projected Surplus/(Shortage) after Conservation (acft/yr)	*185*	*201*	*209*	*193*	*181*	*171*

5.15.9 Woodrow-Osceola WSC

Woodrow-Osceola WSC obtains its water supply from the Trinity Aquifer. The existing production capacity of the wells and groundwater availability are adequate to supply the demands of the WSC through the year 2070. Conservation was considered; however, the entity's current per capita use rate is below the selected target rate of 140 gpcd. No change in water supply is recommended.

5.15.10 County-Other

Description of Supply

Entities in Hill County-Other use Trinity Aquifer groundwater and surface water from Aquilla Water Supply District and Brandon-Irene WSC. The WUG is projected to have a surplus of water in the year 2070. Various entities are dealing with elevated levels of arsenic in groundwater supplies and have been pursuing water management strategies through the FHLM WSC. Through a TWDB sponsored study coordinated by FHLM WSC, these entities have considered a regional brackish RO WTP in Limestone County, Carrizo-Wilcox Regional Groundwater in Limestone County, Tehuacana Reservoir, and supplies from City of Marlin (Brushy Creek Reservoir), and City of Waco. The recommended strategy is to provide for arsenic treatment for individual entities. This strategy does not provide new supply.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following plan is recommended to meet projected needs. Associated costs are included for each strategy. Conservation was considered but the current per capita use is below the targeted gpcd of 140.

a. Upgrade Treatment for Arsenic

Entities within County-Other for which Arsenic treatment is recommended include Birome WSC and City of Mount Calm.

- Cost Source: Volume II, Chapter 12.5
- Date to be Implemented: 2020
- Project Cost: $1,042,000
- Unit Cost: $1,453/acft

Table 5.15-7. Recommended Plan Costs by Decade for Hill County – Other

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	492	297	247	185	124	63
Conservation						
Supply From Plan Element (acft/yr)	—	—	—	—	—	—
Annual Cost ($/yr)	—	—	—	—	—	—
Projected Surplus/(Shortage) after Conservation (acft/yr)	*492*	*297*	*247*	*185*	*124*	*63*
Upgrade Treatment for Arsenic						
Supply From Plan Element (acft/yr)	250	250	250	250	250	250
Annual Cost ($/yr)	$364,000	$364,000	$277,000	$277,000	$277,000	$277,000
Unit Cost ($/acft)	$1,453	$1,453	$1,108	$1,108	$1,108	$1,108

5.15.11 Manufacturing

Hill County Manufacturing is projected to have sufficient water supplies through the year 2070 and no changes in water supply are recommended.

5.15.12 Steam-Electric

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

5.15.13 Mining

Description of Supply

Supplies for Mining in Hill County include groundwater and a BRA contract for 1,000 acre feet/yr for Western Company of Texas. Mining is projected to have shortages in 2020 – 2030.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following plan is recommended for Hill County Mining. Associated costs are included for each strategy.

a. Conservation:
   - Cost Source: Volume II, Chapter 2
   - Date to be Implemented: before 2020
   - Annual Cost: not determined

b. Groundwater Development from the Woodbine Aquifer (Trinity Basin):
   - Cost Source: Volume II, Chapter 12.1
   - Date to be Implemented: By year 2020
   - Project Cost: $4,684,000
   - Unit Cost: $767/acft

Table 5.15-8. Recommended Plan Costs by Decade for Mining – Hill County

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*(603)*	*(175)*	*223*	*579*	*529*	*477*
Conservation						
Supply From Plan Element (acft/yr)	49	60	—	—	—	—
Annual Cost ($/yr)	ND	ND	—	—	—	—
Projected Surplus/(Shortage) after Conservation (acft/yr)	*(554)*	*(116)*	*223*	*579*	*529*	*477*
Groundwater Well Development						
Supply From Plan Element (acft/yr)	560	560	—	—	—	—
Annual Cost ($/yr)	$429,460	$429,460	—	—	—	—
Unit Cost ($/acft)	$767	$767	—	—	—	—

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

5.15.14 Irrigation

Irrigation is projected to have a surplus of water through the year 2070 and no changes in water supply are recommended.

5.15.15 Livestock

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