

## 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)		Comment
	2040 (acft/yr)	2070 (acft/yr)	
Birome WSC	197	180	Projected surplus
Bold Springs WSC			See McLennan County
Brandon-Irene WSC	208	151	Projected surplus
Chatt WSC	15	(12)	Projected shortage - see plan below.
Double Diamond Utilities	(25)	(93)	Projected shortage - see plan below.
Files Valley WSC	704	441	Projected surplus
Gholson WSC			See McLennan County
HILCO United Services	167	46	Projected surplus
Hill County WSC	317	262	Projected surplus
City of Hillsboro	1,510	1,185	Projected surplus
City of Hubbard	263	208	Projected surplus
City of Itasca	64	54	Projected surplus
Johnson County SUD			See Johnson County
Parker WSC			See Johnson County
Post Oak SUD	(4)	(184)	Projected shortage - see plan below.
City of Whitney	(49)	(77)	Projected shortage - see plan below.
Woodrow-Osceola WSC	343	297	Projected surplus
County-Other	(59)	(70)	Projected shortage - see plan below.
Manufacturing	54	69	Projected surplus
Steam-Electric	(4,120)	(4,120)	Projected shortage - see plan below.
Mining	623	926	Projected surplus
Irrigation	(210)	(211)	Projected shortage - see plan below.
Livestock	0	0	No projected surplus or shortage

### 5.15.1 Birome WSC

Birome WSC is located in Hill, Limestone, and McLennan Counties, however most of its demand is within Hill County. Birome WSC obtains its water from the Trinity Aquifer and

purchases water from Post Oak SUD. Surpluses are projected through 2070 for Birome WSC, and no changes in water supply are recommended. Conservation was considered; however, the entity’s usage is below the selected goal of 140 gpcd.

### 5.15.2 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. Surpluses are projected through 2070 for Brandon Irene WSC, and no changes in water supply are recommended. Conservation was also considered; however, the entity’s usage is below the selected goal of 140 gpcd.

**Table 5.15-2. Recommended Plan Costs by Decade for Brandon-Irene WSC**

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	203	215	208	193	179	151
<b>Conservation</b>						
Supply From Plan Element (acft/yr)	—	—	—	—	—	—
Annual Cost (\$/yr)	—	—	—	—	—	—
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	203	215	208	193	179	151
<b>Additional Demands from Recommended Strategies from Others</b>						
Increase Supplies to Hill County-Other (acft/yr)	57	63	59	66	63	70
<i>Projected Surplus/(Shortage) after Recommended Strategies (acft/yr)</i>	146	152	149	127	116	81

### 5.15.3 Chatt WSC

#### Description of Supply

Chatt WSC obtains water supply from the Trinity Aquifer and purchases treated surface water from Aquilla Water Supply. The WSC also provides water to Hill County Manufacturing. A shortage is projected for Chatt WSC beginning in 2060 and continuing through 2070.

#### 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 also considered; however, the entity’s usage is below the selected goal of 140 gpcd.

a. Purchase Water from Files Valley WSC

- Cost Source: Volume II

- Date to be Implemented: 2060
- Project Cost: Cost of purchase only
- Unit Cost: \$652/acft

**Table 5.15-3. Recommended Plan Costs by Decade for Chatt WSC**

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	23	22	15	7	(1)	(12)
<b>Conservation</b>						
Supply From Plan Element (acft/yr)	—	—	—	—	—	—
Annual Cost (\$/yr)	—	—	—	—	—	—
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	23	22	15	7	(1)	(12)
<b>Purchase Water from Files Valley WSC</b>						
Supply From Plan Element (acft/yr)	—	—	—	—	1	12
Annual Cost (\$/yr)	—	—	—	—	\$652	\$7,820
Unit Cost (\$/acft)	—	—	—	—	\$652	\$652

#### 5.15.4 Double Diamond Utilities

##### Description of Supply

Double Diamond Utilities is located in Hill and Johnson Counties, however most of its demand is located in Hill County. The Utility obtains water supply from the Trinity Aquifer and has a contract to purchase surface water from the Brazos River Authority (BRA), however the Utility does not have the infrastructure to utilize the BRA supply. With conservation as a recommended water management strategy, Double Diamond Utilities' water supply is projected to be sufficient throughout the planning period. Balances represented in Table 5.15-4 are for the entire Utility.

##### 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. Conservation is recommended to reduce usage to a goal of 140 gpcd.

- Conservation
  - Cost Source: Volume II
  - Date to be Implemented: by 2030
  - Project Cost: maximum of \$89,549 in 2070
  - Unit Cost: \$560/acft

- b. BRA System Operations
  - Cost Source: Volume II
  - Date to be Implemented: by 2030
  - Project Cost: maximum of \$29,640 in 2050
  - Unit Cost: \$76/acft

**Table 5.15-4. Recommended Plan Costs by Decade for Double Diamond Utilities**

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	0	(15)	(25)	(39)	(48)	(93)
<b>Conservation</b>						
Supply From Plan Element (acft/yr)	0	38	75	115	148	160
Annual Cost (\$/yr)	\$0	\$21,186	\$42,082	\$64,377	\$82,769	\$89,549
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	0	23	50	76	100	67
<b>BRA System Operations</b>						
Supply From Plan Element (acft/yr)	367	378	390	390	390	390
Annual Cost (\$/yr)	\$27,892	\$28,728	\$29,640	\$29,640	\$29,640	\$29,640
Unit Cost (\$/acft)	\$76	\$76	\$76	\$76	\$76	\$76

### 5.15.5 Files Valley WSC

Files Valley WSC is located in Hill and Ellis (Region C) counties, however most of its demand 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 and Ellis County-Other entities. The WSC has a projected surplus throughout the planning period and no changes in water supply are recommended. Conservation was considered; however, the entity’s usage is below the selected goal of 140 gpcd.

### 5.15.6 HILCO United Services

HILCO United Services is located in Hill, Ellis, and Bosque counties, however most of its demand is located in Hill County. HILCO United Services obtains its water supply from the Trinity Aquifer and has a contract for 150 acft/yr of surface water from Lake Aquilla through the BRA. HILCO United Services has contracted for 150 acft/yr of surface water supplies from the Brazos River Authority, which can supply 150 acft/yr in 2020 and 143 acft/yr in 2070, based on water availability analyses proscribed under water planning guidelines. Surpluses are projected for HILCO United Services throughout all counties for the entire planning period. No changes in water supply are recommended. Conservation was considered; however, the entity’s usage is below the selected goal of 140 gpcd.

### 5.15.7 Hill County WSC

Hill County WSC obtains its water supply from the Trinity Aquifer and a treated 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. No change in water supply is recommended. Conservation was considered; however, the entity’s usage is below the selected goal of 140 gpcd.

### 5.15.8 City of Hillsboro

#### Description of Supply

The City of Hillsboro purchases its water supply from the Aquilla WSD and has surpluses projected through 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 to reduce usage to a goal of 140 gpcd.

#### a. Conservation

- Cost Source: Volume II
- Date to be Implemented: before 2030
- Annual Cost: maximum of \$292,621 in 2070
- Unit Cost: \$560/acft

**Table 5.15-5. Recommended Plan Costs by Decade for the City of Hillsboro**

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	1,846	1,564	1,510	1,442	1,378	1,185
<b>Conservation</b>						
Supply From Plan Element (acft/yr)	0	157	320	493	516	523
Annual Cost (\$/yr)	\$0	\$87,718	\$179,420	\$276,289	\$289,015	\$292,621
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	1,846	1,721	1,830	1,935	1,894	1,708

### 5.15.9 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 City of Hubbard has a projected surplus throughout the planning period. No change in water supply is recommended. Conservation was considered; however, the entity’s usage is below the selected goal of 140 gpcd.

### 5.15.10 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. No change in water supply is recommended. Conservation was considered; however, the entity’s usage is below the selected goal of 140 gpcd.

### 5.15.11 Post Oak SUD

#### Description of Supply

Post Oak SUD services Hill, Navarro, and Limestone counties, however the majority of demand is in Hill County. Post Oak SUD purchases raw and treated surface water supply from Corsicana and Trinity River Authority. The SUD has a projected water supply shortage beginning in 2020 and continuing throughout the planning period. Balance and strategies represented in Table 5.15-6 are for the entire SUD across all counties and planning areas.

#### 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 also considered; however, the entity’s usage is below the selected goal of 140 gpcd.

- a. Purchase Additional Supply from Corsicana
  - Cost Source: Volume II
  - Date to be Implemented: 2020
  - Annual Cost: maximum of \$281,274 in 2070
  - Unit Cost: \$2,591/acft

**Table 5.15-6. Recommended Plan Costs by Decade for Post Oak SUD**

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	0	0	(4)	(63)	(121)	(184)
Conservation (Region C conservation strategy)						
Supply From Plan Element (acft/yr)	—	—	1	1	1	1
Annual Cost (\$/yr)	—	—	—	—	—	—
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	0	0	(3)	(62)	(120)	(183)
Purchase Additional Supply from Corsicana						
Supply From Plan Element (acft/yr)	—	—	3	62	120	183
Annual Cost (\$/yr)	—	—	\$7,773	\$160,600	\$131,000	\$338,200
Unit Cost (\$/acft)	—	—	\$1,092	\$1,848	\$1,848	\$2,167

### 5.15.12 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.

#### 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. Conservation is recommended to reduce usage to a goal of 140 gpcd.

a. Conservation:

- Cost Source: Volume II
- Date to be Implemented: by 2030
- Annual Cost: maximum of \$43,126 in 2070
- Unit Cost: \$560/acft

**Table 5.15-7. Recommended Plan Costs by Decade for City of Whitney**

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	0	(38)	(49)	(67)	(75)	(77)
<b>Conservation</b>						
Supply From Plan Element (acft/yr)	0	38	76	74	75	77
Annual Cost (\$/yr)	\$0	\$21,109	\$42,318	\$41,530	\$41,905	\$43,126
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	0	0	27	7	0	0

### 5.15.13 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. No change in water supply is recommended. Conservation was considered; however, the entity’s usage is below the selected goal of 140 gpcd.

### 5.15.14 County-Other

#### Description of Supply

Entities in Hill County-Other use Trinity and Woodbine Aquifer groundwater and surface water from Brandon-Irene WSC, Corsicana, and the Trinity River Authority. County-Other entities are projected to have a shortage in water supply from 2020 through 2070.

## 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 also considered; however, the entity's usage is below the selected goal of 140 gpcd.

a. Purchase Additional Supply from Brandon-Irene WSC

- Cost Source: Volume II
- Date to be Implemented: 2020
- Project Cost: Cost of purchase only
- Unit Cost: \$1,629/acft

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

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(57)	(63)	(59)	(67)	(64)	(70)
<b>Conservation</b>						
Supply From Plan Element (acft/yr)	—	—	—	—	—	—
Annual Cost (\$/yr)	—	—	—	—	—	—
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(57)	(63)	(59)	(66)	(63)	(70)
<b>Purchase Additional Supply from Brandon-Irene WSC</b>						
Supply From Plan Element (acft/yr)	57	63	59	66	63	70
Annual Cost (\$/yr)	\$92,868	\$102,643	\$96,126	\$107,531	\$102,643	\$114,048
Unit Cost (\$/acft)	\$1,629	\$1,629	\$1,629	\$1,629	\$1,629	\$1,629

### 5.15.15 Manufacturing

Hill County Manufacturing purchases its water supply from Chatt WSC and is projected to have sufficient water supplies through the year 2070. No changes in water supply are recommended. Conservation was considered; however, the entity's usage is below the selected goal of 140 gpcd.

### 5.15.16 Steam-Electric

#### Description of Supply

There is no current water supply for steam-electric operations in Hill County, however a shortage is projected from 2020 through 2070. A planned power generation project which formed the basis for those demand projections is no longer being pursued and the resulting shortages should be left unmet.



### Water Supply Plan

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

- a. Leave Needs Unmet:
  - Cost Source: Cost of leaving needs unmet – see Appendix G
  - Date to be Implemented: 2020

**Table 5.15-9. Recommended Plan Costs by Decade for Hill County – Steam-Electric**

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(4,120)	(4,120)	(4,120)	(4,120)	(4,120)	(4,120)
<b>Conservation</b>						
Supply From Plan Element (acft/yr)	—	—	—	—	—	—
Annual Cost (\$/yr)	—	—	—	—	—	—
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(4,120)	(4,120)	(4,120)	(4,120)	(4,120)	(4,120)
Leave Needs Unmet (acft/yr)	(4,120)	(4,120)	(4,120)	(4,120)	(4,120)	(4,120)

### 5.15.17 Mining

#### Description of Supply

Supplies for Mining in Hill County include groundwater from the Trinity, Woodbine, and Brazos River Alluvium Aquifers and from a BRA contract for 1,000 acft/yr. Mining is projected to have a shortage in 2020, while 2030 through 2070 show projected surpluses.

### 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. Conservation is recommended.

- a. Conservation:
  - Cost Source: Volume II
  - Date to be Implemented: by 2030
  - Annual Cost: not determined
- b. Leave Needs Unmet:
  - Cost Source: Cost of leaving needs unmet – see Appendix G
  - Date to be Implemented: 2020

**Table 5.15-10. Recommended Plan Costs by Decade for Hill County – Mining**

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(236)	208	623	995	962	926
<b>Conservation</b>						
Supply From Plan Element (acft/yr)	49	60	54	28	31	33
Annual Cost (\$/yr)	ND	ND	ND	ND	ND	ND
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(187)	208	623	995	962	926
Leave Needs Unmet (acft/yr)	(187)	—	—	—	—	—

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

### 5.15.18 Irrigation

#### Description of Supply

Supplies for Irrigation in Hill County include groundwater from the Woodbine and Brazos River Alluvium Aquifers, and from a BRA contract for 1,000 acft/yr. Irrigation is projected to have shortages from 2020 through 2070.

#### Water Supply Plan

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

- a. Conservation:
  - Cost Source: Volume II
  - Date to be Implemented: by 2030
  - Annual Cost: maximum of \$83,334
  - Unit Cost: \$680/acft
- b. Groundwater Development – Woodbine Aquifer:
  - Cost Source: Volume II
  - Date to be Implemented: by 2030
  - Project Cost: \$870,000
  - Unit Cost: \$468/acft



**Table 5.15-11. Recommended Plan Costs by Decade for Hill County – Irrigation**

Plan Element	2020	2030	2040	2050	2060	2070
<i>Projected Surplus/(Shortage) (acft/yr)</i>	(210)	(211)	(210)	(211)	(210)	(211)
<b>Conservation</b>						
Supply From Plan Element (acft/yr)	53	88	123	123	123	123
Annual Cost (\$/yr)	\$35,714	\$59,524	\$83,334	\$83,334	\$83,334	\$83,334
<i>Projected Surplus/(Shortage) after Conservation (acft/yr)</i>	(158)	(124)	(88)	(89)	(88)	(89)
<b>Groundwater Development – Woodbine Aquifer</b>						
Supply From Plan Element (acft/yr)	158	158	158	158	158	158
Annual Cost (\$/yr)	\$74,000	\$74,000	\$13,000	\$13,000	\$13,000	\$13,000
Unit Cost (\$/acft)	\$468	\$468	\$82	\$82	\$82	\$82

### 5.15.19 Livestock

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

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