

## 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) |                | 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    | (399)              | (498)          | 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              | No projected surplus or shortage     |

### 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.

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

##### a. Conservation

- Cost Source: Volume II
- Date to be Implemented: 2030
- Unit Cost: \$560/acft
- Annual Cost: maximum of \$922,943 in 2070

b. Groundwater Development – Gulf Coast Aquifer

- Cost Source: Volume II
- Date to be Implemented: 2020
- Project Cost: \$2,958,000
- Unit Cost: \$527 acft/yr

c. BRA System Operation

- Cost Source: Volume II
- Date to be Implemented: 2020
- Project Cost: \$58,824
- Unit Cost: \$76 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)   |
| <b>Conservation</b>                                    |           |           |           |           |           |           |
| 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)      |
| <b>BRA System Operation</b>                            |           |           |           |           |           |           |
| Supply From Plan Element (acft/yr)                     | 774       | 774       | 774       | 774       | 774       | 774       |
| Annual Cost (\$/yr)                                    | \$58,824  | \$58,824  | \$58,824  | \$58,824  | \$58,824  | \$58,824  |
| Unit Cost (\$/acft)                                    | \$76      | \$76      | \$76      | \$76      | \$76      | \$76      |
| <b>Groundwater Development – Gulf Coast Aquifer</b>    |           |           |           |           |           |           |
| Supply From Plan Element (acft/yr)                     | 628       | 559       | 365       | 167       | –         | 33        |
| Annual Cost (\$/yr)                                    | \$330,956 | \$294,593 | \$71,540  | \$32,732  | –         | \$6,468   |
| Unit Cost (\$/acft)                                    | \$527     | \$52      | \$196     | \$196     | –         | \$196     |

### 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 in Region G.

#### 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. Conservation was considered; however, the entity’s current per capita use rate is below the selected target rate of 140 gpcd.

- a. Groundwater Development – Gulf Coast Aquifer
  - Cost Source: Volume II
  - Date to be Implemented: 2020
  - Project Cost: \$1,853,359
  - Unit Cost: \$512/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>          | (349)     | (370)     | (399)    | (437)    | (468)    | (498)    |
| <b>Conservation</b>                                    |           |           |          |          |          |          |
| Supply From Plan Element (acft/yr)                     | –         | –         | –        | –        | –        | –        |
| Annual Cost (\$/yr)                                    | –         | –         | –        | –        | –        | –        |
| <i>Projected Surplus/(Shortage) after Conservation</i> | (349)     | (370)     | (399)    | (437)    | (468)    | (498)    |
| <b>Groundwater Development – Gulf Coast Aquifer</b>    |           |           |          |          |          |          |
| Supply From Plan Element (acft/yr)                     | 349       | 370       | 399      | 437      | 468      | 498      |
| Annual Cost (\$/yr)                                    | \$178,688 | \$189,440 | \$41,496 | \$45,448 | \$48,672 | \$51,792 |
| Unit Cost (\$/acft)                                    | \$512     | \$512     | \$104    | \$104    | \$104    | \$104    |

### 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. Conservation is recommended.

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)  |
| <b>Conservation</b>                                    |      |      |      |      |      |      |
| 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   |

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

### 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.

#### 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. Conservation is recommended.



- a. Conservation
  - Cost Source: Volume II
  - Date to be Implemented: 2020
  - Annual Cost: not determined
- b. Groundwater Development – Gulf Coast Aquifer
  - Cost Source: Volume II
  - Date to be Implemented: 2020
  - Project Cost: \$3,348,000
  - Unit Cost: \$508/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)    |
| <b>Conservation</b>  |           |           |           |          |          |          |
| 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)    |
| <b>Groundwater Development – Gulf Coast Aquifer</b>              |           |           |           |          |          |          |
| Supply From Plan Element (acft/yr)                               | 474       | 745       | 576       | 422      | 269      | 168      |
| Annual Cost (\$/yr)  | \$240,792 | \$378,460 | \$110,592 | \$81,024 | \$51,648 | \$32,256 |
| Unit Cost (\$/acft)  | \$508     | \$508     | \$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.

### 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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