12 Miscellaneous Strategies

12.1 Strategy Overview

Miscellaneous Strategies represent 117 remaining strategies such as transmission projects, well field development, interconnections between water user groups, and water treatment plant expansions which are not included in any of the other water management strategies. Strategies were developed to overcome the water shortages identified between 2020 and 2070 after other specific water management strategies including conservation were applied for all WUGs. The WUGs with Miscellaneous Strategies are organized by county and are detailed in Section 12.3 through Section 12.5.

Strategies are summarized below by the name of the miscellaneous strategy, the source of water for the strategy, a list of the facilities necessary, costs, project yield and a short description of the strategy. Costs are consistent with the TWDB and Brazos G assumptions as described in Volume II, Chapter 1 and are priced in September 2013 dollars. Debt service is calculated at 5.5% for 20 years. Some strategies include estimates of wholesale water costs as verified through discussion with water providers or as base costs from other strategies.

12.2 Implementation Issues

The miscellaneous strategies for each WUG were evaluated and determined based on plan development criteria. Groundwater, surface water and reuse water supplies are projected to be adequate to implement these miscellaneous strategies. Environmental impacts will need to be mitigated to protect instream flow requirements, habitat, cultural resources, threatened and endangered species and wetlands. Generally, it is assumed that pipelines can be routed to avoid environmentally sensitive areas. Strategies were considered to meet municipal and industrial shortages in the planning area and will not have an apparent negative impact on other state water resources, or on agriculture and natural resources. The strategies do not require interbasin transfers.

Some of the miscellaneous strategies are feasible only if other recommended strategies are implemented. Other considerations for implementation of the miscellaneous strategies are summarized below:

- In general, any development of additional groundwater in the Brazos G Area must address several issues including:
  - Competition with others for groundwater in the area.
  - Purchase of groundwater rights.
  - Impact on water levels in the aquifer which could trigger reduction in production permits from the regulating Groundwater Conservation District.
  - Restricted availability under the MAG.

The regulatory permits that are expected to be requirements specific to wells and pipelines include:
- Regulations and permits by the groundwater conservation districts.
- U.S. Army Corps of Engineers Sections 10 and 404 dredge and fill permits for the pipelines impacting wetlands or navigable waters of the United States.
- General Land Office easement for use of state-owned land.
- Texas Parks and Wildlife Department Sand, Gravel, and Marl permit for construction in state-owned streambeds.
- Mitigation requirements would vary depending on impacts, but could include vegetation restoration, wetland creation or enhancement, or additional land acquisition.

12.3 Miscellaneous Pipelines, Pump Stations, and Groundwater Options by County

12.3.1 Bell County

**WUG:** Bell County Irrigation  
**Strategy:** Brackish Trinity Aquifer Development  
**Source:** Trinity Aquifer  
**Facilities:** Well Field, collection pipes  
**Total Capital Cost:** $1,815,000  
**Total Project Cost:** $2,541,000  
**Total Annual Cost:** $231,894 (Maximum of Phased Costs)  
**Available Project Yield:** 140 acft/yr (2070)  
**Annual Cost of Water:** $1,656 per acft/yr or $5.08 per 1,000 gal (Maximum of Phased Costs)

This project will include 5 brackish 150 gpm wells drilled to 800ft with 200 ft of 4 inch diameter transmission pipeline per well.

**WUG:** Bell County Irrigation  
**Strategy:** Edwards Aquifer Development  
**Source:** Edwards Aquifer  
**Facilities:** Well Field, collection pipes  
**Total Capital Cost:** $9,562,000  
**Total Project Cost:** $13,384,000  
**Total Annual Cost:** $1,222,446  
**Available Project Yield:** 1,091 acft/yr (After Full Implementation)  
**Annual Cost of Water:** $1,120 per acft/yr or $3.44 per 1,000 gal

This project will include 29 200 gpm wells drilled to 500 ft as well as 200 ft of transmission pipeline per well.
WUG: Bell County Mining
Strategy: Brackish Trinity Aquifer Development
Source: Trinity Aquifer
Facilities: Well Field, collection pipes

Total Capital Cost: $3,993,000
Total Project Cost: $5,588,000
Total Annual Cost: $514,267
Available Project Yield: 582 acft/yr (After Full Implementation)
Annual Cost of Water: $884 per acft/yr or $2.71 per 1,000 gal (Maximum of Phased Costs)

This project will include 11 brackish 150 gpm wells drilled to 800ft with 200 ft of 4 inch diameter transmission pipeline per well.

WUG: Bell County Mining
Strategy: Edwards Aquifer Development
Source: Edwards Aquifer
Facilities: Well Field, collection pipes

Total Capital Cost: $9,892,000
Total Project Cost: $13,846,000
Total Annual Cost: $1,281,486
Available Project Yield: 2,176 acft/yr (After Full Implementation)
Annual Cost of Water: $589 per acft/yr or $1.81 per 1,000 gal

This project will include 30 200 gpm wells drilled to 500 ft as well as 200 ft of transmission pipeline per well.

WUG: Bell County Other
Strategy: Brackish Trinity Aquifer Development
Source: Trinity Aquifer
Facilities: Well Field, transmission and treatment

Total Capital Cost: $15,824,000
Total Project Cost: $22,147,000
Total Annual Cost: $3,177,000 (Maximum of Phased Costs)
Available Project Yield: 806 acft/yr (After Full Implementation)
Annual Cost of Water: $4,858 per acft/yr or $14.91 per 1,000 gal (Maximum of Phased Costs)

This project will include 10 brackish 100 gpm wells drilled to 800ft, 2,000 ft of 4 inch diameter transmission pipeline, brackish desalination, and disposal of concentrate at a landfill.
WUG: Bell County Other  
Strategy: Edwards Aquifer Development  
Source: Edwards Aquifer  
Facilities: Well Field, collection pipes, transmission and treatment  
Total Capital Cost: $2,672,000  
Total Project Cost: $3,736,000  
Total Annual Cost: $380,823  
Available Project Yield: 2,081 acft/yr (After Full Implementation)  
Annual Cost of Water: $183 per acft/yr or $0.56 per 1,000 gal (Maximum of Phased Costs)  
This project will include two 200 gpm wells drilled to 500 ft as well as 1,000 ft of transmission pipeline and, disinfection treatment.

12.3.2 Bosque County  
WUG: Bosque County Irrigation  
Strategy: Trinity Aquifer Development  
Source: Trinity Aquifer  
Facilities: Well Field, collection pipes  
Total Capital Cost: $7,898,000  
Total Project Cost: $11,048,000  
Total Annual Cost: $1,006,457 (Maximum of Phased Costs)  
Available Project Yield: 475 acft/yr (2070)  
Annual Cost of Water: $2,119 per acft/yr or $6.50 per 1,000 gal (Maximum of Phased Costs)  
This project will include 15 200gpm wells drilled to 1,100 ft with 200 ft of 4 inch diameter transmission pipeline per well.

WUG: Childress Creek  
Strategy: Trinity Well Rehab  
Source: Trinity Aquifer  
Facilities: Rehab Costs  
Total Capital Cost: $10,000  
Total Project Cost: $15,000  
Total Annual Cost: $1,000  
Available Project Yield: 161 acft/yr  
Annual Cost of Water: $6 per acft/yr or $0.2 per 1,000 gal  
This project will involve the rehab of one 100 gpm well.
12.3.3 Brazos County

WUG: Wellbourne SUD  
Strategy: Trinity Aquifer Development  
Source: Trinity Aquifer  
Facilities: Well Field, collection pipes, transmission and treatment  
Total Capital Cost: $11,423,000  
Total Project Cost: $16,016,000  
Total Annual Cost: $2,548,000 (Maximum of Phased Costs)  
Available Project Yield: 3,226 acft/yr (After Full Implementation)  
Annual Cost of Water: $790 per acft/yr or $2.42 per 1,000 gal (Maximum of Phased Costs)  

This project will include four 1,000 gpm wells drilled to 2,000 ft as well as 800 ft of transmission pipeline and, disinfection treatment.

WUG: Brazos County Manufacturing  
Strategy: Gulf Coast Aquifer Development  
Source: Gulf Coast Aquifer  
Facilities: Well Field, collection pipes, treatment  
Total Capital Cost: $6,319,000  
Total Project Cost: $8,932,000  
Total Annual Cost: $961,727 (Maximum of Phased Costs)  
Available Project Yield: 530 acft/yr (After Full Implementation)  
Annual Cost of Water: $1,815 per acft/yr or $5.57 per 1,000 gal (Maximum of Phased Costs)  

This project will include fifteen 100 gpm wells drilled to 1,100 ft as well as 200 ft of transmission pipeline per well and disinfection treatment.

12.3.4 Burleson County

WUG: Burleson County Manufacturing  
Strategy: Sparta Aquifer Development  
Source: Sparta Aquifer  
Facilities: Well Field, collection pipes, treatment  
Total Capital Cost: $656,000  
Total Project Cost: $932,000  
Total Annual Cost: $107,534 (Maximum of Phased Costs)  
Available Project Yield: 85 acft/yr (After 2030)  
Annual Cost of Water: $1,265 per acft/yr or $3.88 per 1,000 gal (Maximum of Phased Costs)
This project will include two 150 gpm wells drilled to 500 ft as well as 200 ft of transmission pipeline per well and disinfection treatment.

**WUG:** Burleson County Mining  
**Strategy:** Sparta Aquifer Development  
**Source:** Sparta Aquifer  
**Facilities:** Well Field, collection pipes  
**Total Capital Cost:** $3,904,000  
**Total Project Cost:** $5,466,000  
**Total Annual Cost:** $501,602 (Maximum of Phased Costs)  
**Available Project Yield:** 740 acft/yr (After 2030)  
**Annual Cost of Water:** $678 per acft/yr or $2.08 per 1,000 gal (Maximum of Phased Costs)

This project will include fourteen 150 gpm wells drilled to 500 ft as well as 200 ft of transmission pipeline per well.

### 12.3.5 Callahan County

**WUG:** Callahan County Mining  
**Strategy:** Trinity Aquifer Development  
**Source:** Trinity Aquifer  
**Facilities:** Well Field, collection pipes,  
**Total Capital Cost:** $1,208,000  
**Total Project Cost:** $1,695,000  
**Total Annual Cost:** $155,732 (Maximum of Phased Costs)  
**Available Project Yield:** 740 acft/yr  
**Annual Cost of Water:** $692 per acft/yr or $2.12 per 1,000 gal (Maximum of Phased Costs)

This project will include seven 100 gpm wells drilled to 300 ft as well as 200 ft of transmission pipeline per well.

### 12.3.6 Comanche County

**WUG:** Comanche County Other  
**Strategy:** Trinity Aquifer Development  
**Source:** Trinity Aquifer  
**Facilities:** Well Field, collection pipes, transmission and treatment  
**Total Capital Cost:** $1,446,000  
**Total Project Cost:** $2,033,000  
**Total Annual Cost:** $149,000 (Maximum of Phased Costs)  
**Available Project Yield:** 242 acft/yr (After Full Implementation)
Annual Cost of Water: $924 per acft/yr or $2.83 per 1,000 gal (Maximum of Phased Costs)

This project will include three 100 gpm wells drilled to 600 ft as well as 600 ft of transmission pipeline and, disinfection treatment.

WUG: Comanche County Mining
Strategy: Trinity Aquifer Development
Source: Trinity Aquifer
Facilities: Well Field, collection pipes
Total Capital Cost: $3,195,000
Total Project Cost: $4,475,000
Total Annual Cost: $411,796 (Maximum of Phased Costs)
Available Project Yield: 473 acft/yr
Annual Cost of Water: $871 per acft/yr or $2.67 per 1,000 gal (Maximum of Phased Costs)

This project will include thirteen 100 gpm wells drilled to 600 ft as well as 200 ft of transmission pipeline per well.

WUG: Comanche County Irrigation
Strategy: Trinity Aquifer Development
Source: Trinity Aquifer
Facilities: Well Field, collection pipes
Total Capital Cost: $7,865,000
Total Project Cost: $11,015,000
Total Annual Cost: $1,004,806 (Maximum of Phased Costs)
Available Project Yield: 603 acft/yr
Annual Cost of Water: $1,666 per acft/yr or $5.11 per 1,000 gal (Maximum of Phased Costs)

This project will include thirty-two 100 gpm wells drilled to 600 ft as well as 200 ft of transmission pipeline per well.

12.3.7 Coryell County

WUG: Coryell County Other
Strategy: Trinity Aquifer Development
Source: Trinity Aquifer
Facilities: Well Field, transmission and treatment
Total Capital Cost: $3,147,000
Total Project Cost: $4,428,000
Total Annual Cost: $488,806 (Maximum of Phased Costs)
Available Project Yield: 565 acft/yr (After Full Implementation)
Annual Cost of Water: $931 per acft/yr or $2.86 per 1,000 gal (Maximum of Phased Costs)

This project will include seven brackish 100 gpm wells drilled to 200 ft, as well as 200 ft of transmission pipeline per well and disinfection.

WUG: Coryell County Mining  
Strategy: Trinity Aquifer Development  
Source: Trinity Aquifer  
Facilities: Well Field, collection pipes  
Total Capital Cost: $14,447,000  
Total Project Cost: $20,220,000  
Total Annual Cost: $1,853,751 (Maximum of Phased Costs)  
Available Project Yield: 1,500 acft/yr  
Annual Cost of Water: $1,236 per acft/yr or $3.79 per 1,000 gal (Maximum of Phased Costs)

This project will include thirteen 100 gpm wells drilled to 200 ft as well as 200 ft of transmission pipeline per well.

12.3.8 Eastland County

WUG: Eastland County Irrigation  
Strategy: Trinity Aquifer Development (Erath County)  
Source: Trinity Aquifer  
Facilities: Well Field, collection pipes  
Total Capital Cost: $17,291,000  
Total Project Cost: $24,210,000  
Total Annual Cost: $2,213,162 (Maximum of Phased Costs)  
Available Project Yield: 2,033 acft/yr  
Annual Cost of Water: $1,089 per acft/yr or $3.34 per 1,000 gal (Maximum of Phased Costs)

This project will include 62: 150 gpm wells drilled to 500 ft as well as 200 ft of transmission pipeline per well.

WUG: Eastland County Mining  
Strategy: Trinity Aquifer Development (Erath County)  
Source: Trinity Aquifer  
Facilities: Well Field, collection pipes  
Total Capital Cost: $5,857,000  
Total Project Cost: $8,202,000
12.3.9 Erath County

**WUG:** Erath County Other  
**Strategy:** Trinity Aquifer Development  
**Source:** Trinity Aquifer  
**Facilities:** Well Field, collection pipes, transmission and treatment  
**Total Capital Cost:** $1,488,000  
**Total Project Cost:** $2,195,000  
**Total Annual Cost:** $247,000 (Maximum of Phased Costs)  
**Available Project Yield:** 363 acft/yr (After Full Implementation)  
**Annual Cost of Water:** $ 681 per acft/yr or $2.09 per 1,000 gal (Maximum of Phased Costs)  

This project will include three 150 gpm wells drilled to 500 ft as well as 600 ft of transmission pipeline and, disinfection treatment.

12.3.10 Falls County

**WUG:** Tri-County SUD  
**Strategy:** Carrizo Aquifer Development  
**Source:** Carrizo Aquifer  
**Facilities:** Well Field, transmission and treatment  
**Total Capital Cost:** $ 1,030,000  
**Total Project Cost:** $1,445,000  
**Total Annual Cost:** $268,000  
**Available Project Yield:** 202 acft/yr  
**Annual Cost of Water:** $ 1,329 per acft/yr or $ 4.08 per 1,000  

This project will include one 250 gpm wells drilled to 550ft, 200ft of 4 inch diameter transmission pipeline, and Chlorine disinfection.

**WUG:** West BrazosWSC  
**Strategy:** Carrizo Aquifer Development  
**Source:** Carrizo Aquifer  
**Facilities:** Well Field, collection pipes, transmission and treatment  
**Total Capital Cost:** $1,965,000
### 12.3.11 Fisher County

**WUG:** Fisher County Mining  
**Strategy:** Trinity Aquifer Development  
**Source:** Trinity Aquifer (Brackish)  
**Facilities:** Well Field, collection pipes  
**Total Capital Cost:** $2,159,000  
**Total Project Cost:** $3,035,000  
**Total Annual Cost:** $278,431 (Maximum of Phased Costs)  
**Available Project Yield:** 400 acf/yr  
**Annual Cost of Water:** $ 696 per acf/yr or $2.14 per 1,000 gal (Maximum of Phased Costs)  

This project will include twenty-one 50 gpm wells drilled to 200 ft as well as 200 ft of transmission pipeline per well.

**WUG:** Fisher County Manufacturing  
**Strategy:** Trinity Aquifer Development  
**Source:** Trinity Aquifer (Brackish)  
**Facilities:** Well Field, collection pipes, treatment, disposal  
**Total Capital Cost:** $7,207,000  
**Total Project Cost:** $10,081,000  
**Total Annual Cost:** $1,517,030 (Maximum of Phased Costs)  
**Available Project Yield:** 400 acf/yr  
**Annual Cost of Water:** $ 14,040 per acf/yr or $43.08 per 1,000 gal (Maximum of Phased Costs)  

This project will include eight 50 gpm wells drilled to 200 ft as well as 200 ft of transmission pipeline per well and treatment/disposal.

### 12.3.12 Grimes County

**WUG:** Grimes County Mining  
**Strategy:** Brackish Carrizo Aquifer Development  
**Source:** Carrizo Aquifer
Facilities: Well Field, collection pipes
Total Capital Cost: $4,152,000
Total Project Cost: $5,805,000
Total Annual Cost: $881,856 (Maximum of Phased Costs)
Available Project Yield: 550 acft/yr (by 2030)
Annual Cost of Water: $1,764 per acft/yr or $5.41 per 1,000 gal (Maximum of Phased Costs)

This project will include five 300 gpm wells drilled to 3000 ft as well as 200 ft of transmission pipeline per well.

WUG: Grimes County Steam-Electric
Strategy: Gulf Coast Development
Source: Gulf Coast Aquifer
Facilities: Well Field, collection pipes, treatment
Total Capital Cost: $15,869,000
Total Project Cost: $22,459,000
Total Annual Cost: $2,639,903 (Maximum of Phased Costs)
Available Project Yield: 6,236 acft/yr
Annual Cost of Water: $423 per acft/yr or $1.30 per 1,000 gal (Maximum of Phased Costs)

This project will include thirty-six 250 gpm wells drilled to 500 ft as well as 200 ft of transmission pipeline per well and disinfection.

WUG: Grimes County Steam-Electric
Strategy: Brackish Carrizo Aquifer Development
Source: Carrizo Aquifer
Facilities: Well Field, collection pipes, treatment
Total Capital Cost: $5,831,000
Total Project Cost: $8,182,000
Total Annual Cost: $1,081,979 (Maximum of Phased Costs)
Available Project Yield: 343 acft/yr
Annual Cost of Water: $2,971 per acft/yr or $9.12 per 1,000 gal (Maximum of Phased Costs)

This project will include four 300 gpm wells drilled to 3000 ft as well as 200 ft of transmission pipeline per well.

12.3.13 Hamilton County

WUG: Hamilton County Mining
Strategy: Trinity Aquifer Development
Source: Trinity Aquifer
Facilities: Well Field, collection pipes
Total Capital Cost: $1,952,000
Total Project Cost: $2,734,000
Total Annual Cost: $251,735 (Maximum of Phased Costs)
Available Project Yield: 370 acft/yr (by 2030)
Annual Cost of Water: $680 per acft/yr or $2.09 per 1,000 gal (Maximum of Phased Costs)

This project will include seven 150 gpm wells drilled to 500 ft as well as 200 ft of transmission pipeline per well.

WUG: Hamilton County Irrigation
Strategy: Trinity Aquifer Development
Source: Trinity Aquifer
Facilities: Well Field, collection pipes
Total Capital Cost: $837,000
Total Project Cost: $1,173,000
Total Annual Cost: $106,733 (Maximum of Phased Costs)
Available Project Yield: 60 acft/yr (by 2030)
Annual Cost of Water: $1,779 per acft/yr or $5.46 per 1,000 gal (Maximum of Phased Costs)

This project will include three 150 gpm wells drilled to 500 ft as well as 200 ft of transmission pipeline per well.

12.3.14 Hill County
WUG: Hill County Mining
Strategy: Woodbine Aquifer Development
Source: Woodbine Aquifer
Facilities: Well Field, collection pipes
Total Capital Cost: $3,343,000
Total Project Cost: $4,684,000
Total Annual Cost: $429,460 (Maximum of Phased Costs)
Available Project Yield: 550 acft/yr
Annual Cost of Water: $767 per acft/yr or $2.35 per 1,000 gal (Maximum of Phased Costs)

This project will include fifteen 100 gpm wells drilled to 500 ft as well as 200 ft of transmission pipeline per well.
12.3.15 Hood County

WUG: City of Cresson
Strategy: Groundwater Development – Trinity Aquifer
Source: Trinity Aquifer
Facilities: Well Field, collection pipes, transmission and treatment
Total Capital Cost: $540,000
Total Project Cost: $771,000
Total Annual Cost: $93,379 (Maximum of Phased Costs)
Available Project Yield: 60 acft/yr
Annual Cost of Water: $1,556 per acft/yr or $4.78 per 1,000 gal

This project will include two 150 gpm wells drilled to 600ft, 1,400ft of 4 inch diameter transmission pipeline, and Chlorine disinfection.

WUG: City of Tolar
Strategy: Trinity Aquifer Well Rehab
Source: Trinity Aquifer
Facilities: Well Field, collection pipes, transmission and treatment
Total Capital Cost: $20,000
Total Project Cost: $30,000
Total Annual Cost: $1,100 (Maximum of Phased Costs)
Available Project Yield: 24 acft/yr (After Full Implementation)
Annual Cost of Water: $91 per acft/yr or $0.28 per 1,000 gal (Maximum of Phased Costs)

This project will include the rehab of two 100 gpm well.

WUG: Hood County Other
Strategy: Trinity Aquifer Development
Source: Trinity Aquifer
Facilities: Well Field, transmission and treatment
Total Capital Cost: $4,372,000
Total Project Cost: $6,164,000
Total Annual Cost: $680,000
Available Project Yield: 605 acft/yr
Annual Cost of Water: $703 per acft/yr or $2.16 per 1,000 gal

This project will include eight 150 gpm wells drilled to 600ft, 1,400ft of 4 inch diameter transmission pipeline, and Chlorine disinfection.
12.3.16 Hood County Mining

**WUG:** Hood County Mining  
**Strategy:** Trinity Aquifer Development  
**Source:** Trinity Aquifer  
**Facilities:** Well Field, collection pipes  
**Total Capital Cost:** $4,423,000  
**Total Project Cost:** $6,197,000  
**Total Annual Cost:** $569,308 (Maximum of Phased Costs)  
**Available Project Yield:** 1,120 acft/yr  
**Annual Cost of Water:** $ 508 per acft/yr or $1.56 per 1,000 gal (Maximum of Phased Costs)  

This project will include twenty 150 gpm wells drilled to 300 ft as well as 200 ft of transmission pipeline per well.

12.3.16 Johnson County

**WUG:** City of Godley  
**Strategy:** Woodbine Aquifer Development  
**Source:** Woodbine Aquifer  
**Facilities:** Well Field, collection pipes, transmission and treatment  
**Total Capital Cost:** $263,000  
**Total Project Cost:** $375,000  
**Total Annual Cost:** $44,206 (Maximum of Phased Costs)  
**Available Project Yield:** 216 acft/yr (After Full Implementation)  
**Annual Cost of Water:** $ 1,474 per acft/yr or $4.52 per 1,000 gal (Maximum of Phased Costs)  

This project will include one 100 gpm wells drilled to 500 ft as well as 200 ft of transmission pipeline per well, and disinfection treatment.

12.3.16 Parker WSC

**WUG:** Parker WSC  
**Strategy:** Woodbine Aquifer Development  
**Source:** Woodbine Aquifer  
**Facilities:** Well Field, collection pipes, transmission and treatment  
**Total Capital Cost:** $791,000  
**Total Project Cost:** $1,128,000  
**Total Annual Cost:** $132,617 (Maximum of Phased Costs)  
**Available Project Yield:** 180 acft/yr (After Full Implementation)  
**Annual Cost of Water:** $ 737 per acft/yr or $2.26 per 1,000 gal (Maximum of Phased Costs)  

This project will include three 100 gpm wells drilled to 500 ft as well as 200 ft of transmission pipeline per well, and disinfection treatment.
WUG: City of Rio Vista
Strategy: Woodbine Aquifer Development
Source: Woodbine Aquifer
Facilities: Well Field, collection pipes, transmission and treatment
Total Capital Cost: $528,000
Total Project Cost: $753,000
Total Annual Cost: $88,411 (Maximum of Phased Costs)
Available Project Yield: 75 acft/yr (After Full Implementation)
Annual Cost of Water: $1,179 per acft/yr or $3.62 per 1,000 gal (Maximum of Phased Costs)

This project will include two 100 gpm wells drilled to 500 ft as well as 200 ft of transmission pipeline per well, and disinfection treatment.

WUG: City of Venus
Strategy: Woodbine Aquifer Development
Source: Woodbine Aquifer
Facilities: Well Field, collection pipes, transmission and treatment
Total Capital Cost: $1,055,000
Total Project Cost: $1,503,000
Total Annual Cost: $207,234 (Maximum of Phased Costs)
Available Project Yield: 450 acft/yr (After Full Implementation)
Annual Cost of Water: $589 per acft/yr or $1.81 per 1,000 gal (Maximum of Phased Costs)

This project will include six 100 gpm wells drilled to 500 ft as well as 200 ft of transmission pipeline per well, and disinfection treatment.

WUG: Johnson County Mining
Strategy: Woodbine Aquifer Development
Source: Woodbine Aquifer
Facilities: Well Field, collection pipes, transmission
Total Capital Cost: $3,343,000
Total Project Cost: $4,684,000
Total Annual Cost: $437,051 (Maximum of Phased Costs)
Available Project Yield: 1,140 acft/yr (After Full Implementation)
Annual Cost of Water: $383 per acft/yr or $1.18 per 1,000 gal

This project will include six 100 gpm wells drilled to 500 ft as well as 200 ft of transmission pipeline per well.
12.3.17 Knox County

**WUG:** Knox County Irrigation  
**Strategy:** Blaine Aquifer Development  
**Source:** Blaine Aquifer  
**Facilities:** Well Field, collection pipes  
**Total Capital Cost:** $1,737,000  
**Total Project Cost:** $2,436,000  
**Total Annual Cost:** $222,054 (Maximum of Phased Costs)  
**Available Project Yield:** 461 acft/yr  
**Annual Cost of Water:** $482 per acft/yr or $1.48 per 1,000 gal (Maximum of Phased Costs)

This project will include eleven 100 gpm wells drilled to 250 ft as well as 200 ft of transmission pipeline per well.

**WUG:** Knox County Irrigation  
**Strategy:** Seymour Aquifer Development  
**Source:** Seymour Aquifer  
**Facilities:** Well Field, collection pipes  
**Total Capital Cost:** $7,005,000  
**Total Project Cost:** $9,817,000  
**Total Annual Cost:** $896,747 (Maximum of Phased Costs)  
**Available Project Yield:** 1,571 acft/yr  
**Annual Cost of Water:** $571 per acft/yr or $1.75 per 1,000 gal (Maximum of Phased Costs)

This project will include thirty-six 200 gpm wells drilled to 250 ft as well as 200 ft of transmission pipeline per well.

**WUG:** Knox County Mining  
**Strategy:** Blaine Aquifer Development  
**Source:** Blaine Aquifer  
**Facilities:** Well Field, collection pipes  
**Total Capital Cost:** $158,000  
**Total Project Cost:** $223,000  
**Total Annual Cost:** $20,815 (Maximum of Phased Costs)  
**Available Project Yield:** 15 acft/yr  
**Annual Cost of Water:** $1,388 per acft/yr or $4.26 per 1,000 gal (Maximum of Phased Costs)
This project will include one 100 gpm wells drilled to 250 ft as well as 200 ft of transmission pipeline per well.

12.3.18 Lampasas County

WUG: Lampasas County Irrigation
Strategy: Trinity Aquifer Development
Source: Trinity Aquifer
Facilities: Well Field, collection pipes
Total Capital Cost: $2,175,000
Total Project Cost: $3,049,000
Total Annual Cost: $278,636 (Maximum of Phased Costs)
Available Project Yield: 210 acft/yr
Annual Cost of Water: $1,327 per acft/yr or $4.07 per 1,000 gal (Maximum of Phased Costs)

This project will include eleven 100 gpm wells drilled to 400 ft as well as 200 ft of transmission pipeline per well.

WUG: Lampasas County Mining
Strategy: Trinity Aquifer Development
Source: Trinity Aquifer
Facilities: Well Field, collection pipes
Total Capital Cost: $1,582,000
Total Project Cost: $2,219,000
Total Annual Cost: $204,252 (Maximum of Phased Costs)
Available Project Yield: 275 acft/yr
Annual Cost of Water: $743 per acft/yr or $2.28 per 1,000 gal (Maximum of Phased Costs)

This project will include eight 100 gpm wells drilled to 400 ft as well as 200 ft of transmission pipeline per well.

12.3.19 Lee County

WUG: Heart of Texas
Strategy: Carrizo Aquifer Development
Source: Carrizo Aquifer
Facilities: Well Field, collection pipes, transmission and treatment
Total Capital Cost: $81,194,000
Total Project Cost: $127,086,000
Total Annual Cost: $9,054,000 (Maximum of Phased Costs)
Available Project Yield: 11,994 acft/yr (After Full Implementation)
Annual Cost of Water: $1,619 per acft/yr or $4.97 per 1,000 gal (Maximum of Phased Costs)

This project will include five 1000 gpm wells drilled to 2000 ft as well as 25 miles of transmission pipeline, two pump stations, and disinfection treatment.

12.3.20 Limestone County

**WUG:** Limestone County Mining

**Strategy:** Carrizo Aquifer Development

**Source:** Carrizo Aquifer (Brazos Basin)

**Facilities:** Well Field, collection pipes

**Total Capital Cost:** $16,148,000

**Total Project Cost:** $22,689,000

**Total Annual Cost:** $2,541,878 (Maximum of Phased Costs)

**Available Project Yield:** 3,112 acft/yr (After Full Implementation)

**Annual Cost of Water:** $817 per acft/yr or $2.51 per 1,000 gal (Maximum of Phased Costs)

This project will include two 100 gpm wells drilled to 500 ft as well as 200 ft of transmission pipeline per well, and disinfection treatment.

**WUG:** Limestone County Mining

**Strategy:** Carrizo Aquifer Development

**Source:** Carrizo Aquifer (Trinity Basin)

**Facilities:** Well Field, collection pipes

**Total Capital Cost:** $22,552,000

**Total Project Cost:** $31,546,000

**Total Annual Cost:** $2,898,125 (Maximum of Phased Costs)

**Available Project Yield:** 4,806 acft/yr

**Annual Cost of Water:** $603 per acft/yr or $1.85 per 1,000 gal (Maximum of Phased Costs)

This project will include forty-three 300 gpm wells drilled to 800 ft as well as 200 ft of transmission pipeline per well.
Available Project Yield: 888 acft/yr
Annual Cost of Water: $607 per acft/yr or $1.86 per 1,000 gal (Maximum of Phased Costs)

This project will include eight 300 gpm wells drilled to 800 ft as well as 200 ft of transmission pipeline per well.

12.3.21 McLennan County

WUG: McLennan County Irrigation
Strategy: Brazos River Alluvium Development
Source: Brazos River Alluvium
Facilities: Well Field, collection pipes
Total Capital Cost: $11,953,000
Total Project Cost: $16,763,000
Total Annual Cost: $1,531,732 (Maximum of Phased Costs)
Available Project Yield: 2,200 acft/yr
Annual Cost of Water: $696 per acft/yr or $2.14 per 1,000 gal (Maximum of Phased Costs)

This project will include seventy-seven 150 gpm wells drilled to 100 ft as well as 200 ft of transmission pipeline per well.

WUG: McLennan County Irrigation
Strategy: Trinity Aquifer Development
Source: Trinity Aquifer
Facilities: Well Field, collection pipes
Total Capital Cost: $8,201,000
Total Project Cost: $11,477,000
Total Annual Cost: $1,047,405 (Maximum of Phased Costs)
Available Project Yield: 1,000 acft/yr
Annual Cost of Water: $1,047 per acft/yr or $3.21 per 1,000 gal (Maximum of Phased Costs)

This project will include twenty-one 250 gpm wells drilled to 550 ft as well as 200 ft of transmission pipeline per well.

WUG: McLennan County Mining
Strategy: Brazos River Alluvium Development
Source: Brazos River Alluvium
Facilities: Well Field, collection pipes
Total Capital Cost: $5,123,000
Total Project Cost: $7,185,000
Total Annual Cost: $708,732 (Maximum of Phased Costs)
Available Project Yield: 2,900 acft/yr (by 2070)
Annual Cost of Water: $364 per acft/yr or $1.12 per 1,000 gal (Maximum of Phased Costs)

This project will include seventy-seven 150 gpm wells drilled to 100ft as well as 200 ft of transmission pipeline per well.

12.3.22 Nolan County

WUG: Nolan County Mining
Strategy: Edwards-Trinity Development
Source: Edwards-Trinity Aquifer
Facilities: Well Field, collection pipes
Total Capital Cost: $1,745,000
Total Project Cost: $2,448,000
Total Annual Cost: $223,861 (Maximum of Phased Costs)
Available Project Yield: 220 acft/yr (by 2070)
Annual Cost of Water: $1,018 per acft/yr or $3.12 per 1,000 gal (Maximum of Phased Costs)

This project will include twelve 50 gpm wells drilled to 400ft as well as 200 ft of transmission pipeline per well.

12.3.23 Robertson County

WUG: Robertson County Other
Strategy: Carrizo Aquifer Development
Source: Carrizo Aquifer
Facilities: Well Field, transmission and treatment
Total Capital Cost: $588,000
Total Project Cost: $825,000
Total Annual Cost: $87,000
Available Project Yield: 81 acft/yr
Annual Cost of Water: $1,079 per acft/yr or $3.31 per 1,000 gal

This project will include one 100 gpm wells drilled to 1000 ft, 200 ft of 4 inch diameter transmission pipeline, and Chlorine disinfection.

WUG: Robertson County Irrigation
Strategy: Carrizo Aquifer Development
Source: Carrizo Aquifer
Facilities: Well Field, collection pipes
Total Capital Cost: $91,556,000
Total Project Cost: $128,018,000
Total Annual Cost: $11,713,251 (Maximum of Phased Costs)
Available Project Yield: 16,143 acf/yr
Annual Cost of Water: $726 per acft/yr or $2.23 per 1,000 gal (Maximum of Phased Costs)

This project will include 113: 750 gpm wells drilled to 1,000 ft as well as 200 ft of transmission pipeline per well.

12.3.24 Shackelford County

WUG: Shackelford County Mining
Strategy: Other Aquifer Development
Source: Other Aquifer
Facilities: Well Field, collection pipes
Total Capital Cost: $5,750,000
Total Project Cost: $8,095,000
Total Annual Cost: $741,015 (Maximum of Phased Costs)
Available Project Yield: 710 acf/yr
Annual Cost of Water: $1,044 per acft/yr or $3.20 per 1,000 gal (Maximum of Phased Costs)

This project will include seventy-six 25 gpm wells drilled to 200 ft as well as 200 ft of transmission pipeline per well.

12.3.25 Somervell County

WUG: Somervell County Mining
Strategy: Trinity Aquifer Development
Source: Trinity Aquifer
Facilities: Well Field, collection pipes
Total Capital Cost: $2,500,000
Total Project Cost: $3,502,000
Total Annual Cost: $320,542 (Maximum of Phased Costs)
Available Project Yield: 550 acf/yr
Annual Cost of Water: $583 per acft/yr or $1.79 per 1,000 gal (Maximum of Phased Costs)

This project will include ten 150 gpm wells drilled to 400 ft as well as 200 ft of transmission pipeline per well.

WUG: Somervell County Steam-Electric
Strategy: BRA System Operations
Source: Brazos River
### Facilities
Intakes, pump stations, and transmission lines for makeup and blowdown lines

| **Facilities** | Intakes, pump stations, and transmission lines for makeup and blowdown lines |
| **Total Capital Cost** | $89,493,000 |
| **Total Project Cost** | $128,162,000 |
| **Total Annual Cost** | $22,866,000 (Maximum of Phased Costs) |
| **Available Project Yield** | 103,717 acft/yr |
| **Annual Cost of Water** | $285 per acft/yr or $0.87 per 1,000 gal (Maximum of Phased Costs) |

The project will include two 12-mile, 42-inch makeup lines for the Comanche Peak Cooling Tower from Lake Granbury and two 12-mile, 36-in blowdown lines. The 103,717 acft/yr of yield includes existing Luminant contract supplies from BRA of 27,447 acft/yr and 76,270 acft/yr of new supplies from Sys-Ops.

### 12.3.26 Stephens County

**WUG:** Stephens County Irrigation  
**Strategy:** Other Aquifer Development  
**Source:** Other Aquifer  
**Facilities:** Well Field, collection pipes

| **Total Capital Cost** | $454,000 |
| **Total Project Cost** | $640,000 |
| **Total Annual Cost** | $58,592 (Maximum of Phased Costs) |
| **Available Project Yield** | 26 acft/yr |
| **Annual Cost of Water** | $2,254 per acft/yr or $6.91 per 1,000 gal (Maximum of Phased Costs) |

This project will include six 25 gpm wells drilled to 200 ft as well as 200 ft of transmission pipeline per well.

### 12.3.27 Stonewall County

**WUG:** Stonewall County Mining  
**Strategy:** Blaine Aquifer Development  
**Source:** Blaine Aquifer  
**Facilities:** Well Field, collection pipes

| **Total Capital Cost** | $2,444,000 |
| **Total Project Cost** | $3,434,000 |
| **Total Annual Cost** | $316,023 (Maximum of Phased Costs) |
| **Available Project Yield** | 400 acft/yr |
| **Annual Cost of Water** | $790 per acft/yr or $2.42 per 1,000 gal (Maximum of Phased Costs) |

This project will include twenty-two 50 gpm wells drilled to 250 ft as well as 200 ft of transmission pipeline per well.
12.3.28 Throckmorton County

WUG: Throckmorton County Mining
Strategy: Other Aquifer Development
Source: Other Aquifer
Facilities: Well Field, collection pipes

Total Capital Cost: $1,664,000
Total Project Cost: $2,344,000
Total Annual Cost: $214,373 (Maximum of Phased Costs)
Available Project Yield: 200 acft/yr
Annual Cost of Water: $1,072 per acft/yr or $3.29 per 1,000 gal (Maximum of Phased Costs)

This project will include twenty-two 25 gpm wells drilled to 200 ft as well as 200 ft of transmission pipeline per well.

12.3.29 Washington County

WUG: Washington County Manufacturing
Strategy: Gulf Coast Aquifer Development
Source: Gulf Coast Aquifer
Facilities: Well Field, collection pipes, disinfection

Total Capital Cost: $2,374,000
Total Project Cost: $3,380,000
Total Annual Cost: $393,990 (Maximum of Phased Costs)
Available Project Yield: 326 acft/yr
Annual Cost of Water: $1,209 per acft/yr or $3.71 per 1,000 gal (Maximum of Phased Costs)

This project will include nine 100 gpm wells drilled to 500 ft as well as 200 ft of transmission pipeline per well and disinfection.

WUG: Washington County Mining
Strategy: Gulf Coast Aquifer Development
Source: Gulf Coast Aquifer
Facilities: Well Field, collection pipes

Total Capital Cost: $4,457,000
Total Project Cost: $6,245,000
Total Annual Cost: $571,931 (Maximum of Annual Costs)
Available Project Yield: 823 acft/yr
Annual Cost of Water: $695 per acft/yr or $2.13 per 1,000 gal (Maximum of Phased Costs)
This project will include twenty 100 gpm wells drilled to 500 ft as well as 200 ft of transmission pipeline per well.

### Williamson County

**WUG:** Bartlett  
**Strategy:** Brackish Trinity Aquifer Development  
**Source:** Bell County- Trinity Aquifer  
**Facilities:** Well Field, transmission and treatment  
**Total Capital Cost:** $7,454,000  
**Total Project Cost:** $10,428,000  
**Total Annual Cost:** $1,388,000 (Maximum of Phased Costs)  
**Available Project Yield:** 645 acft/yr (After Full Implementation)  
**Annual Cost of Water:** $2,827 per acft/yr or $8.68 per 1,000 gal (Maximum of Phased Costs)

This project will include two brackish 400 gpm wells drilled to 2,500 ft, 400ft of 4 inch diameter transmission pipeline, brackish desalination, and disposal of concentrate at a landfill.

**WUG:** Brushy Creek MUD  
**Strategy:** Edwards BFZ Aquifer Development  
**Source:** Edwards BFZ Aquifer  
**Facilities:** Well Field, transmission and treatment  
**Total Capital Cost:** $124,000  
**Total Project Cost:** $182,000  
**Total Annual Cost:** $23,028  
**Available Project Yield:** 12 acft/yr (After Full Implementation)  
**Annual Cost of Water:** $1,919 per acft/yr or $5.89 per 1,000

This project will include one 50 gpm wells drilled to 200ft, 200ft of 4 inch diameter transmission pipeline, and treatment.

**WUG:** Florence  
**Strategy:** Edwards BFZ Aquifer Development  
**Source:** Edwards BFZ Aquifer  
**Facilities:** Well Field, transmission and treatment  
**Total Capital Cost:** $150,000  
**Total Project Cost:** $218,000  
**Total Annual Cost:** $26,226  
**Available Project Yield:** 24 acft/yr (After Full Implementation)  
**Annual Cost of Water:** $1,093 per acft/yr or $3.35 per 1,000
This project will include one 50 gpm wells drilled to 300ft, 200ft of 4 inch diameter transmission pipeline, and treatment.

**WUG:** Florence  
**Strategy:** Brackish Trinity Aquifer Development (Bell)  
**Source:** Bell County- Trinity Aquifer  
**Facilities:** Well Field, transmission and treatment  
**Total Capital Cost:** $2,608,000  
**Total Project Cost:** $3,778,000  
**Total Annual Cost:** $701,000  
**Available Project Yield:** 121 acft/yr (After Full Implementation)  
**Annual Cost of Water:** $5,795 per acft/yr or $17.78 per 1,000 gal

This project will include one brackish 400 gpm wells drilled to 2,500ft, 200ft of 4 inch diameter transmission pipeline per well, brackish desalination, and disposal of concentrate at a landfill.

**WUG:** Williamson County Irrigation  
**Strategy:** Edwards Aquifer Development  
**Source:** Edwards Aquifer  
**Facilities:** Well Field, collection pipes  
**Total Capital Cost:** $868,000  
**Total Project Cost:** $1,220,000  
**Total Annual Cost:** $110,802 (Maximum of Phased Costs)  
**Available Project Yield:** 66 acft/yr  
**Annual Cost of Water:** $1,679 per acft/yr or $5.15 per 1,000 gal (Maximum of Phased Costs)

This project will include seven 50 gpm wells drilled to 300ft as well as 200 ft of transmission pipeline per well.

12.3.31 Young County

**WUG:** Young County Mining  
**Strategy:** Other Aquifer Development  
**Source:** Other Aquifer  
**Facilities:** Well Field, collection pipes  
**Total Capital Cost:** $2,194,000  
**Total Project Cost:** $3,089,000  
**Total Annual Cost:** $282,900  
**Available Project Yield:** 270 acft/yr
Annual Cost of Water: $1,048 per acft/yr or $3.22 per 1,000 gal (Maximum of Phased Costs)

This project will include twenty-nine 25 gpm wells drilled to 200 ft as well as 200 ft of transmission pipeline per well.

WUG: Young County Irrigation
Strategy: Other Aquifer Development
Source: Other Aquifer
Facilities: Well Field, collection pipes
Total Capital Cost: $832,000
Total Project Cost: $1,172,000
Total Annual Cost: $107,418 (Maximum of Phased Costs)
Available Project Yield: 50 acft/yr
Annual Cost of Water: $2,148 per acft/yr or $6.59 per 1,000 gal (Maximum of Phased Costs)

This project will include eleven 25 gpm wells drilled to 200 ft as well as 200 ft of transmission pipeline per well.

12.4 Miscellaneous Purchases, Interconnects & Reallocations

12.4.1 Bell County

WUG: City of Harker Heights
Strategy: Additional Purchase from BRA
Source: BRA
Facilities: None, existing infrastructure assumed sufficient
Total Capital Cost: N/A
Total Project Cost: N/A
Total Annual Cost: $109,701 (Maximum of Phased Costs)
Available Project Yield: 1,671 acft/yr
Annual Cost of Water: $65.65 per acft/yr or $0.20 per 1,000 gal (BRA Wholesale Costs)

This project will include a contract increase of up to 1,671 additional acft/yr utilizing existing infrastructure from BRA to the City of Harker Heights.

WUG: City of Harker Heights
Strategy: Purchase water from City of Killeen
Source: City of Killeen
Facilities: Pump Station, storage tank, transmission pipeline
Total Capital Cost: $1,670,000  
Total Project Cost: $2,580,000  
Total Annual Cost: $541,000 (Maximum of Phased Costs)  
Available Project Yield: 302 acft/yr  
Annual Cost of Water: $1,791 per acft/yr or $5.50 per 1,000 gal

This project will include an interconnection between the City of Killeen and the City of Harker Heights including six miles of 6 inch diameter transmission pipeline, a pump station and storage tank. Water will be purchased from the City of Killeen at an estimated wholesale rate of $977/acft. Project costs to be shared between the two entities.

WUG: City of Nolanville  
Strategy: Voluntary Redistribution of Supplies from Bell WCID #1  
Source: Bell WCID #1  
Facilities: None, existing infrastructure assumed sufficient  
Total Capital Cost: N/A  
Total Project Cost: N/A  
Total Annual Cost: $202,110 (Maximum of Phased Costs)  
Available Project Yield: 1,088 acft/yr  
Annual Cost of Water: $185.76 per acft/yr or $0.58 per 1,000 gal (Bell County WCID #1 Wholesale Costs)

This project will include a contract increase of up to 1,088 additional acft/yr utilizing existing infrastructure from Bell County WCID #1 to the City of Nolanville.

WUG: Little River Academy  
Strategy: Voluntary Redistribution of Supplies from the City of Temple  
Source: Temple  
Facilities: None, existing infrastructure assumed sufficient  
Total Capital Cost: N/A  
Total Project Cost: N/A  
Total Annual Cost: $175,860 (Maximum of Phased Costs)  
Available Project Yield: 180 acft/yr  
Annual Cost of Water: $977 per acft/yr or $3.03 per 1,000 gal (Assumed Temple Wholesale Costs)

This project will include a contract increase of up to 180 additional acft/yr utilizing existing infrastructure from the City of Temple to Little River Academy.

WUG: Bell County-Other  
Strategy: Voluntary Redistribution from Central Texas WSC  
Source: Central Texas WSC
Facilities: None, existing infrastructure assumed sufficient  
Total Capital Cost: N/A  
Total Project Cost: N/A  
Total Annual Cost: $125,000  
Available Project Yield: 500 acft/yr  
Annual Cost of Water: $ 250 per acft/yr or $ 0.78 per 1,000 gal (Assumed Redistribution Cost)

This project will include a contract increase of up to 500 additional acft/yr utilizing existing infrastructure from Central Texas WSC to Bell County-Other.

WUG: Bell County-Other  
Strategy: Purchase Additional Supply from Bell County WCID #1  
Source: Bell County WCID #1  
Facilities: None, existing infrastructure assumed sufficient  
Total Capital Cost: N/A  
Total Project Cost: N/A  
Total Annual Cost: $185,036  
Available Project Yield: 995 acft/yr  
Annual Cost of Water: $ 185.76 per acft/yr or $ 0.58 per 1,000 gal (Bell County WCID #1 Wholesale Costs)

This project will include a contract increase of up to 919 additional acft/yr in 2070 utilizing existing infrastructure from Bell County WCID #1 to Bell County-Other. For these supplies to be made available would require a reallocation of contract with Killeen.

12.4.2 Brazos County

WUG: City of College Station  
Strategy: Purchase water from BRA  
Source: BRA  
Facilities: Pump Station, storage tank, transmission pipeline, WTP Upgrades  
Total Capital Cost: $26,354,000  
Total Project Cost: $37,109,000  
Total Annual Cost: $6,388,000  
Available Project Yield: 6,000 acft/yr  
Annual Cost of Water: $ 1,065 per acft/yr or $ 3.27 per 1,000 gal

This project will include an interconnection between BRA and the City of College Station including four miles of 18 inch diameter transmission pipeline, a pump station storage tank, and WTP upgrades. Water will be purchased from the City of Killeen at an estimated wholesale rate of $56.65/acft. Project costs to be shared between the two entities.

WUG: Brazos County Irrigation
Strategy: Additional Purchase from BRA
Source: BRA
Facilities: None, existing infrastructure assumed sufficient
Total Capital Cost: N/A
Total Project Cost: N/A
Total Annual Cost: $669,630
Available Project Yield: 10,200 acft/yr
Annual Cost of Water: $185.76 per acft/yr or $0.58 per 1,000 gal (BRA Wholesale Costs)

This project will include a contract increase of up to 10,200 additional acft/yr utilizing existing infrastructure from BRA to Brazos County Irrigation.

WUG: Brazos County Manufacturing
Strategy: Purchase of water from Texas A&M
Source: Texas A&M
Facilities: Wholesale rate included only. Not enough information to cost delivery.
Total Capital Cost: N/A
Total Project Cost: N/A
Total Annual Cost: $1,367,800
Available Project Yield: 1,400 acft/yr
Annual Cost of Water: $977 per acft/yr or $3.03 per 1,000 gal

This project will include a contract for the purchase of water up to 1,400 acft/yr. Infrastructure such as pipelines, pump stations, and storage tanks will be needed once the location(s) of use are determined.

12.4.3 Burleson County

WUG: Burleson County Manufacturing
Strategy: Purchase of water from the City of Caldwell
Source: The City of Caldwell
Facilities: Wholesale rate included only. Not enough information to cost delivery.
Total Capital Cost: N/A
Total Project Cost: N/A
Total Annual Cost: $42,500
Available Project Yield: 85 acft/yr
Annual Cost of Water: $500 per acft/yr or $1.55 per 1,000 gal

This project will include a contract for the purchase of water up to 85 acft/yr. Infrastructure such as pipelines, pump stations, and storage tanks will be needed once the location(s) of use are determined.
12.4.4 Coryell County

WUG: Coryell County-Other
Strategy: Additional Purchase from the City of Gatesville
Source: The City of Gatesville
Facilities: None, existing infrastructure assumed sufficient

Total Capital Cost: N/A
Total Project Cost: N/A
Total Annual Cost: $687,225
Available Project Yield: 525 acft/yr
Annual Cost of Water: $1,309 per acft/yr or $4.06 per 1,000 gal (City of Gatesville Wholesale Costs)

This project will include a contract increase of up to 525 additional acft/yr utilizing existing infrastructure from the City of Gatesville to Coryell County-Other.

WUG: Multi-County WSC
Strategy: Additional Purchase from the City of Hamilton
Source: The City of Hamilton
Facilities: None, existing infrastructure assumed sufficient

Total Capital Cost: N/A
Total Project Cost: N/A
Total Annual Cost: $25,000
Available Project Yield: 100 acft/yr
Annual Cost of Water: $250 per acft/yr or $0.78 per 1,000 gal (City of Hamilton Wholesale Costs)

This project will include a contract increase of up to 100 additional acft/yr utilizing existing infrastructure from the City of Hamilton to Multi-County WSC.

12.4.5 Falls County

WUG: Falls County Manufacturing
Strategy: Additional Purchase from the City of Marlin
Source: The City of Marlin
Facilities: None, existing infrastructure assumed sufficient

Total Capital Cost: N/A
Total Project Cost: N/A
Total Annual Cost: $1,522
Available Project Yield: 1 acft/yr
Annual Cost of Water: $1,522 per acft/yr or $4.72 per 1,000 gal (City of Marlin Wholesale Costs)
This project will include a contract increase of up to 1 additional acft/yr utilizing existing infrastructure from the City of Marlin to manufacturing entities.

12.4.6 Fisher County

WUG: City of Rotan
Strategy: Additional Purchase from the City of Snyder
Source: The City of Snyder
Facilities: None, existing infrastructure assumed sufficient
Total Capital Cost: N/A
Total Project Cost: N/A
Total Annual Cost: $74,252
Available Project Yield: 76 acft/yr
Annual Cost of Water: $ 977 per acft/yr or $ 3.03 per 1,000 gal (City of Snyder Wholesale Costs)

This project will include a contract increase of up to 76 additional acft/yr utilizing existing infrastructure from the City of Snyder to the City of Rotan.

12.4.7 Grimes County

WUG: Grimes County Steam-Electric
Strategy: Purchase of reuse supply from cities of College Station and Bryan
Source: Treated effluent from College Station and Bryan
Facilities: None
Total Capital Cost: N/A
Total Project Cost: N/A
Total Annual Cost: maximum of $3,336,100
Available Project Yield: varies by decade up to 11,056 acft/yr in 2070
Annual Cost of Water: $ 304 per acft/yr or $ 0.93 per 1,000 gal

This strategy provides available treated effluent to Grimes County Steam-Electric to meet future projected shortages. Supply will be made available at the WWTP. Infrastructure may be necessary to deliver these supplies.

12.4.8 Hood County

WUG: Hood County-Other
Strategy: Additional Purchase from Acton MUD
Source: Acton MUD
Facilities: None, existing infrastructure assumed sufficient
Total Capital Cost: N/A
Total Project Cost: N/A
Total Annual Cost: $946,000
Available Project Yield: 968 acft/yr
Annual Cost of Water: $977 per acft/yr or $3.03 per 1,000 gal (Acton MUD Wholesale Costs)

This project will include a contract increase of up to 968 additional acft/yr utilizing existing infrastructure from Acton MUD to entities in Hood County-Other.

12.4.9 Lampasas County

WUG: City of Lampasas
Strategy: Increase Treated Water Contract with Kempner WSC
Source: Kempner WSC
Facilities: None, existing infrastructure assumed sufficient
Total Capital Cost: N/A
Total Project Cost: N/A
Total Annual Cost: $252,500
Available Project Yield: 505 acft/yr
Annual Cost of Water: $500 per acft/yr or $1.55 per 1,000 gal (City of Lampasas Wholesale Costs)

This project will include a treated water contract increase of up to 505 additional acft/yr utilizing existing infrastructure from Kempner WSC to the City of Lampasas. The City already has a BRA contract for the raw water supply.

12.4.10 McLennan County

WUG: City of Bruceville-Eddy
Strategy: Additional Purchase from Bluebonnet WSC
Source: Bluebonnet WSC
Facilities: None, existing infrastructure assumed sufficient
Total Capital Cost: N/A
Total Project Cost: N/A
Total Annual Cost: $35,500
Available Project Yield: 71 acft/yr
Annual Cost of Water: $500 per acft/yr or $1.55 per 1,000 gal (Bluebonnet WSC Wholesale Costs)

This project will include a contract increase of up to 71 additional acft/yr utilizing existing infrastructure from Bluebonnet WSC to the City of Bruceville-Eddy.

WUG: Cross County WSC
Strategy: Purchase water from City of Waco
Source: City of Waco
Facilities: Pump Station, storage tank, transmission pipeline
Total Capital Cost: $1,672,000
Total Project Cost: $2,579,000
Total Annual Cost: $491,000
Available Project Yield: 150 acft/yr
Annual Cost of Water: $3,273 per acft/yr or $10.04 per 1,000 gal

This project will include an interconnection between the City of Waco and Cross County WSC including six miles of 6 inch diameter transmission pipeline, a pump station and storage tank. Water will be purchased from the City of Waco at an estimated wholesale rate of $979/acft.

WUG: Mart
Strategy: Purchase water from City of Waco
Source: City of Waco
Facilities: Pump Station, storage tank, transmission pipeline
Total Capital Cost: $3,601,000
Total Project Cost: $5,617,000
Total Annual Cost: $788,000
Available Project Yield: 250 acft/yr
Annual Cost of Water: $3,152 per acft/yr or $9.67 per 1,000 gal

This project will include an interconnection between the City of Waco and City of Mart including fifteen miles of 6 inch diameter transmission pipeline, a pump station, booster station and storage tank. Water will be purchased from the City of Waco at an estimated wholesale rate of $979/acft.

WUG: North Bosque WSC
Strategy: Purchase water from City of Waco
Source: City of Waco
Facilities: Pump Station, storage tank, transmission pipeline
Total Capital Cost: $1,462,000
Total Project Cost: $2,203,000
Total Annual Cost: $465,000
Available Project Yield: 200 acft/yr
Annual Cost of Water: $2,325 per acft/yr or $7.13 per 1,000 gal

This project will include an interconnection between the City of Waco and North Bosque WSC including four miles of 6 inch diameter transmission pipeline, a pump station and storage tank. Water will be purchased from the City of Waco at an estimated wholesale rate of $979/acft.

WUG: City of Riesel
Strategy: Additional Purchase from RMS WSC
Source: RMS WSC (Trinity Groundwater)
Facilities: None, existing infrastructure assumed sufficient
Total Capital Cost: N/A
Total Project Cost: N/A
Total Annual Cost: $19,540
Available Project Yield: 20 acft/yr
Annual Cost of Water: $ 977 per acft/yr or $ 3.03 per 1,000 gal (RMS-WSC Wholesale Costs)

This project will include a contract increase of up to 20 additional acft/yr utilizing existing infrastructure from RMS WSC to the City of Riesel.

WUG: City of Woodway
Strategy: Additional Purchase from Bluebonnet WSC
Source: Bluebonnet WSC
Facilities: None, existing infrastructure assumed sufficient
Total Capital Cost: N/A
Total Project Cost: N/A
Total Annual Cost: $51,500
Available Project Yield: 103 acft/yr
Annual Cost of Water: $ 500 per acft/yr or $ 1.55 per 1,000 gal (Bluebonnet WSC Wholesale Costs)

This project will include a contract increase of up to 103 additional acft/yr utilizing existing infrastructure from Bluebonnet WSC to the City of Woodway.

12.4.11 Nolan County

WUG: City of Sweetwater
Strategy: Purchase water from City of Abilene
Source: City of Abilene
Facilities: Pump Station, storage tank, transmission pipeline
Total Capital Cost: $8,311,000
Total Project Cost: $13,036,000
Total Annual Cost: $1,448,000
Available Project Yield: 1,777 acft/yr
Annual Cost of Water: $ 815 per acft/yr or $ 2.50 per 1,000 gal

This project will include an interconnection between the City of Abilene and the City of Sweetwater including 40 miles of 6 inch diameter transmission pipeline, a pump station and storage tank. Water will be purchased from the City of Abilene at an estimated wholesale rate of $100/acft. Project costs to be shared between the two entities.

WUG: Nolan County-Other
Strategy: Additional Purchase from the City of Sweetwater
Source: Oak Creek Reservoir
Facilities: None, existing infrastructure assumed sufficient
Total Capital Cost: N/A
Total Project Cost: N/A
Total Annual Cost: $173,208
Available Project Yield: firm up existing contract of 168 acft/yr
Annual Cost of Water: $ 1,031 per acft/yr or $ 3.20 per 1,000 gal (City of Sweetwater Wholesale Costs)

Sweetwater’s Oak Creek Reservoir conjunctive use project with subordination will firm up the existing contract with City of Blackwell (Nolan County-Other entity). Delivery of supplies uses utilizing existing infrastructure from the City of Sweetwater.

WUG: Nolan County-Manufacturing
Strategy: Additional Purchase from the City of Sweetwater
Source: The City of Sweetwater
Facilities: None, existing infrastructure assumed sufficient
Total Capital Cost: N/A
Total Project Cost: N/A
Total Annual Cost: $1,657,848
Available Project Yield: 1,608 acft/yr
Annual Cost of Water: $ 1,031 per acft/yr or $ 3.20 per 1,000 gal (City of Sweetwater Wholesale Costs)

This project will include a contract increase of up to 1,608 additional acft/yr utilizing existing infrastructure from the City of Sweetwater to Nolan County-Manufacturing.

WUG: Nolan County Steam-Electric
Strategy: Purchase of water from Abilene
Source: The City of Abilene
Facilities: Wholesale rate included only. Not enough information to cost delivery.
Total Capital Cost: N/A
Total Project Cost: N/A
Total Annual Cost: $1,000,000
Available Project Yield: 10,000 acft/yr
Annual Cost of Water: $ 100 per acft/yr or $ 0.31 per 1,000 gal

This project will include a contract for the purchase of water up to 10,000 acft/yr. Infrastructure such as pipelines, pump stations, and storage tanks will be needed once the location(s) of use are determined.
12.4.12  Palo Pinto County

WUG: Palo Pinto County Irrigation
Strategy: Purchase of water from PPMWD #1
Source: PPMWD #1
Facilities: Wholesale rate included only. Not enough information to cost delivery.

Total Capital Cost: N/A
Total Project Cost: N/A
Total Annual Cost: $1,194,626
Available Project Yield: 2,492 acft/yr
Annual Cost of Water: $ 479 per acft/yr or $ 1.48 per 1,000

This project will include a contract for the purchase of water up to 2,492 acft/yr. Infrastructure such as pipelines, pump stations, and storage tanks will be needed once the location(s) of use are determined.

12.4.13  Robertson County

WUG: Robertson County Steam-Electric
Strategy: Purchase of water from Walnut Creek Mine
Source: Walnut Creek Mine
Facilities: Wholesale rate included only. Not enough information to cost delivery.

Total Capital Cost: N/A
Total Project Cost: N/A
Total Annual Cost: $4,500,000
Available Project Yield: 9,000 acft/yr
Annual Cost of Water: $ 500 per acft/yr or $ 1.55 per 1,000

This project will include a contract for the purchase of water up to 9,000 acft/yr. Infrastructure such as pipelines, pump stations, and storage tanks will be needed once the location(s) of use are determined.

12.4.14  Taylor County

WUG: City of Merkel
Strategy: Additional Purchase from the City of Abilene
Source: The City of Abilene
Facilities: None, existing infrastructure assumed sufficient

Total Capital Cost: N/A
Total Project Cost: N/A
Total Annual Cost: $900
Available Project Yield: 9 acft/yr
Annual Cost of Water: $ 100 per acft/yr or $ 0.31 per 1,000 gal (City of Abilene Wholesale Costs)
This project will include a contract increase of up to 9 additional acft/yr utilizing existing infrastructure from the City of Abilene to the City of Merkel.

**WUG:** Potosi WSC  
**Strategy:** Additional Purchase from the City of Abilene  
**Source:** The City of Abilene  
**Facilities:** None, existing infrastructure assumed sufficient  
**Total Capital Cost:** N/A  
**Total Project Cost:** N/A  
**Total Annual Cost:** $54,200  
**Available Project Yield:** 542 acft/yr  
**Annual Cost of Water:** $100 per acft/yr or $0.31 per 1,000 gal (City of Abilene Wholesale Costs)

This project will include a contract increase of up to 542 additional acft/yr utilizing existing infrastructure from the City of Abilene to Potosi WSC.

**WUG:** Steamboat Mountain WSC  
**Strategy:** Additional Purchase from the City of Abilene  
**Source:** The City of Abilene  
**Facilities:** None, existing infrastructure assumed sufficient  
**Total Capital Cost:** N/A  
**Total Project Cost:** N/A  
**Total Annual Cost:** $21,000  
**Available Project Yield:** 210 acft/yr  
**Annual Cost of Water:** $100 per acft/yr or $0.31 per 1,000 gal (City of Abilene Wholesale Costs)

This project will include a contract increase of up to 210 additional acft/yr utilizing existing infrastructure from the City of Abilene to Steamboat Mountain WSC.

**WUG:** The City of Tye  
**Strategy:** Additional Purchase from the City of Abilene  
**Source:** The City of Abilene  
**Facilities:** None, existing infrastructure assumed sufficient  
**Total Capital Cost:** N/A  
**Total Project Cost:** N/A  
**Total Annual Cost:** $1,500  
**Available Project Yield:** 15 acft/yr  
**Annual Cost of Water:** $100 per acft/yr or $0.31 per 1,000 gal (City of Abilene Wholesale Costs)
This project will include a contract increase of up to 15 additional acft/yr utilizing existing infrastructure from the City of Abilene to The City of Tye.

**WUG:** Taylor County Mining  
**Strategy:** Purchase of water from Abilene  
**Source:** The City of Abilene  
**Facilities:** Wholesale rate included only. Not enough information to cost delivery.  
**Total Capital Cost:** N/A  
**Total Project Cost:** N/A  
**Total Annual Cost:** $37,900  
**Available Project Yield:** 379 acft/yr  
**Annual Cost of Water:** $100 per acft/yr or $0.31 per 1,000 gal

This project will include a contract for the purchase of water up to 379 acft/yr. Infrastructure such as pipelines, pump stations, and storage tanks will be needed once the location(s) of use are determined.

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This project will include a contract for the purchase of water up to 1,010 acft/yr. Infrastructure such as pipelines, pump stations, and storage tanks will be needed once the location(s) of use are determined.

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**WUG:** Taylor County Irrigation  
**Strategy:** Purchase of water from Abilene  
**Source:** The City of Abilene  
**Facilities:** Wholesale rate included only. Not enough information to cost delivery.  
**Total Capital Cost:** N/A  
**Total Project Cost:** N/A  
**Total Annual Cost:** $101,000  
**Available Project Yield:** 1,010 acft/yr  
**Annual Cost of Water:** $100 per acft/yr or $0.31 per 1,000 gal

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12.4.15  Williamson County

**WUG:** Chisholm Trail SUD  
**Strategy:** Reallocation from Georgetown  
**Source:** Brazos River Authority  
**Facilities:** None, existing infrastructure assumed sufficient  
**Total Capital Cost:** N/A  
**Total Project Cost:** N/A  
**Total Annual Cost:** $391,000  
**Available Project Yield:** 400 acft/yr
Annual Cost of Water: $ 977 per acft/yr or $ 3.03 per 1,000 gal (Georgetown Wholesale Costs)

This project will include a contract increase of up to 400 additional acft/yr utilizing existing infrastructure from Georgetown to Chisholm Trail SUD.

WUG: The City of Hutto
Strategy: Additional Purchase from Heart of Texas
Source: Heart of Texas
Facilities: None, existing infrastructure assumed sufficient
Total Capital Cost: N/A
Total Project Cost: N/A
Total Annual Cost: $3,886,506
Available Project Yield: 3,978 acft/yr
Annual Cost of Water: $ 977 per acft/yr or $ 3.03 per 1,000 gal (Heart of Texas Wholesale Costs)

This project will include a contract increase of up to 3,978 additional acft/yr utilizing existing infrastructure from Heart of Texas to the City of Hutto.

WUG: Williamson County-Other
Strategy: Purchase from SAWS Vista Ridge Project
Source: Carrizo-Wilcox Aquifer, Burleson County
Facilities: assumed delivery through existing infrastructure
Total Capital Cost: None – SAWS will bear the cost
Total Project Cost: None – SAWS will bear the cost
Total Annual Cost: $12,408,900
Available Project Yield: 5,700 acft/yr
Annual Cost of Water: $2,177 per acft/yr or $6.68 per 1,000 gal

This project will be a contract to purchase 5,700 acft/yr from Vista Ridge Project sponsored by San Antonio Water Systems. Costs are based on costs in the Region L Plan.

12.4.16 Young County

WUG: Fort Belknapp WSC
Strategy: Additional Purchase from the City of Graham
Source: City of Graham
Facilities: None, existing infrastructure assumed sufficient
Total Capital Cost: N/A
Total Project Cost: N/A
Total Annual Cost: $74,800
Available Project Yield: 85 acft/yr

Annual Cost of Water: $880 per acft/yr or $2.70 per 1,000 gal (City of Graham Wholesale Costs)

This project will include a contract increase of up to 85 additional acft/yr utilizing existing infrastructure from the City of Graham to Fort Belknap WSC.

12.5 Miscellaneous WTP Upgrades and Facilities Expansions

There are a total of eleven water user groups and or wholesale water providers that will require a water treatment plant expansion, treated water reallocation or a new water treatment plant to meet potable water demand during the planning period. New or expanded treatment plants are sized for peaking capacity. However the yield of these projects is assumed to be 50% of the expansion or plant size to be consistent with the methodology for the surface water constraints. Table 12.5-1 summarizes water treatment plant strategies. This table includes only the water treatment plant strategies that are not included in any of the other Volume II water management strategy evaluations.

Table 12.5-1. Miscellaneous Strategies: Water Treatment Plant Strategies for WUGs/WWPs

<table>
<thead>
<tr>
<th>WUG/WWP</th>
<th>Strategy</th>
<th>Project Yield (acft/yr)</th>
<th>Capital Cost</th>
<th>Total Project Cost</th>
<th>Annual Cost</th>
<th>Unit Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$/acft</td>
</tr>
<tr>
<td>Abilene</td>
<td>Expand WTP by 23.2</td>
<td>12,992</td>
<td>$34,537,000</td>
<td>$48,257,000</td>
<td>$7,492,000</td>
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<tr>
<td>Acton MUD</td>
<td>Reallocate SWATS Capacity</td>
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<td>N/A</td>
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<td>$552</td>
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<td>Chisholm Trail SUD</td>
<td>Expand WTP by 13.4 MGD</td>
<td>7,500</td>
<td>$22,675,000</td>
<td>$31,675,000</td>
<td>$4,918,000</td>
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<td>Georgetown</td>
<td>Expand WTP by 21 MGD</td>
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<td>Jayton</td>
<td>New WTP (0.4 MGD)</td>
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<td>Robinson</td>
<td>Expand WTP by 4 MGD</td>
<td>2,240</td>
<td>$9,413,000</td>
<td>$13,153,000</td>
<td>$2,042,000</td>
<td>$912</td>
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<tr>
<td>Wellborn SUD</td>
<td>Expand WTP by 4 MGD</td>
<td>2,240</td>
<td>$9,413,000</td>
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<tr>
<td>McLennan County-Other</td>
<td>Upgrade Treatment for Arsenic</td>
<td>917</td>
<td>$2,455,000</td>
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<td>Upgrade Treatment for Arsenic</td>
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<td>Limestone County-Other</td>
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