5.17 Johnson County Water Supply Plan

Table 5.17-1 lists each water user group in Johnson 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 5.17-1. Johnson County Surplus/(Shortage)

Water User Group	Surplus/(Shortage)[1]		Comment
	2040 (acft/yr)	2070 (acft/yr)	
Acton MUD			See Hood County
City of Alvarado	1,912	1,728	Projected surplus
Bethany WSC	1,003	852	Projected surplus
Bethesda WSC	(1,139)	(3,406)	Projected shortage - see plan below.
City of Burleson	(2,048)	(5,392)	Projected shortage - see plan below.
City of Cleburne	(1,097)	(7,324)	Projected shortage - see plan below.
City of Crowley	(5)	(21)	Projected shortage
Double Diamond Utilities			See Hill County
City of Forth Worth	0	(1,180)	Projected shortage
City of Godley	(22)	(65)	Projected shortage - see plan below.
City of Grandview	156	82	Projected surplus
Johnson County SUD	1,473	(1,681)	Projected shortage - see plan below.
City of Keene	785	477	Projected surplus
City of Mansfield	(507)	(1,375)	Projected shortage
Mountain Peak SUD	(523)	(1,397)	Projected shortage
Parker WSC	123	(145)	Projected shortage - see plan below.
City of Rio Vista	120	4	Projected surplus
City of Venus	(517)	(865)	Projected shortage
County-Other	1,155	1,365	Projected surplus
Manufacturing	1,438	2,518	Projected surplus
Steam-Electric	(571)	(571)	Projected shortage - see plan below.
Mining	(68)	107	Projected surplus
Irrigation	(269)	(269)	Projected shortage - see plan below.
Livestock	0	0	Supply equals demand

1 – From Tables C-33 and C-34, Appendix C – Comparison of Water Demands with Water Supplies to Determine Needs

5.17.1 City of Alvarado

The City of Alvarado obtains its water supply from the Trinity Aquifer at 196 ac-ft/yr and treated surface water from Johnson County SUD at 2,241 ac-ft/yr. No shortages are projected for the City of Alvarado and no change in water supply is recommended. Conservation was considered; however, the entity's current per capita use rate is below the selected target rate of 140 gpcd.

5.17.2 Bethany WSC

Bethany WSC obtains its water supply from the Trinity Aquifer at 309 to 308 ac-ft/yr and treated surface water from Johnson County SUD at 1,120 ac-ft/yr. No shortages are projected for Bethany WSC and no change in water supply is recommended. Conservation was considered; however, the entity's current per capita use rate is below the selected target rate of 140 gpcd.

5.17.3 Bethesda WSC

Description of Supply

Bethesda WSC is located in Johnson and Tarrant (Region C) counties and obtains its water supply from the Trinity Aquifer at 2,333 ac-ft/yr and surface water from Tarrant Regional Water District (TRWD) through the Fort Worth System at 3,703 to 7,912 ac-ft/yr. Bethesda WSC is projected to have a shortage from 2030 to 2070. Balance and strategies represented in the table below are for the entire WSC in both counties and regions. Conservation is recommended to reduce the City's gallons per capita per day (gpcd) to a goal of 140 gpcd.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, and in coordination with Region C, the following water management strategies are recommended to meet the projected water shortage for Bethesda WSC.

a. Conservation in Brazos G

- Cost Source: Volume II
- Date to be Implemented: before 2030
- Unit Cost: $560/ac-ft
- Annual Cost: maximum of $1,248,493 in 2070

b. Purchase Additional Supplies from Fort Worth

- Cost Source: 2021 Region C Water Plan (Appendix K)
- Date to be Implemented: 2020
- Project Cost: none
- Unit Cost: $531/ac-ft ($1.63/1,000 gal)

c. Purchase Water Supplies from Arlington

- Cost Source: 2021 Region C Water Plan (Appendix K)
- Date to be Implemented: 2020
- Project Cost: none
- Unit Cost: $1,101/ac-ft

Table 5.17-2. Recommended Plan Costs by Decade for Bethesda WSC

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*0*	*(536)*	*(1,139)*	*(1,841)*	*(2,559)*	*(3,406)*
Conservation						
Supply From Plan Element (acft/yr)	0	513	1,143	1,829	2,021	2,229
Annual Cost ($/yr)	$0	$287,289	$640,180	$1,024,298	$1,131,512	$1,248,493
Projected Surplus/(Shortage) after Conservation (acft/yr)	*0*	*(23)*	*4*	*(12)*	*(538)*	*(1,177)*
Purchase additional supplies from Fort Worth						
Supply From Plan Element (acft/yr)	0	282	680	1,118	1,548	2,171
Annual Cost ($/yr)	$0	$149,742	$361,080	$593,658	$821,988	$1,152,801
Unit Cost ($/acft)	$531	$531	$531	$531	$531	$531
Purchase additional supplies from Arlington						
Supply From Plan Element (acft/yr)	0	143	344	563	778	1,013
Annual Cost ($/yr)	$157,443	$378,744	$619,863	$856,578	$1,115,313	$157,443
Unit Cost ($/acft)	$1,101	$1,101	$1,101	$1,101	$1,101	$1,101

5.17.4 City of Burleson

Description of Supply

The City of Burleson obtains its water supply from Tarrant Regional Water District (TRWD) through the Fort Worth System, which ranges from 6,466 to 6,917 ac-ft/yr. Burleson is projected to have a shortage from 2030 to 2070. Balance and strategies represented in the table below are for the entire city in both counties and regions. Conservation was considered in Brazos G but the current per capita use is below the targeted gpcd of 140. However, Region C has recommended conservation as a water management strategy.

Water Supply Plan

a. Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategies are recommended to meet the projected water shortage for the City of Burleson. Conservation in Region C

- See the 2021 Region C Water Plan

b. Purchase Additional Supplies from Fort Worth

- Cost Source: 2021 Region C Water Plan (Appendix K)
- Date to be Implemented: 2020
- Project Cost: none
- Unit Cost: $1,039/acft

Table 5.17-3. Recommended Plan Costs by Decade for the City of Burleson

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*0*	*(1,057)*	*(2,048)*	*(3,152)*	*(4,267)*	*(5,392)*
Conservation in Region C						
Supply From Plan Element (acft/yr)	48	54	57	87	118	141
Projected Surplus/(Shortage) after Conservation (acft/yr)	*(1,785)*	*(2,825)*	*(3,918)*	*(5,099)*	*(6,376)*	*(7,723)*
Purchase from Fort Worth						
Supply From Plan Element (acft/yr)	0	1,011	2,002	3,042	4,064	5,136
Annual Cost ($/yr)	$0	$1,050,429	$1,421,420	$2,159,820	$2,885,440	$3,646,560
Unit Cost ($/acft)	$1,039	$1,039	$710	$710	$710	$710

5.17.5 City of Cleburne

The City of Cleburne is projected to have a shortage beginning in 2040. The City of Cleburne obtains its water supply from direct reuse at 1,344 ac-ft/yr, Pat Cleburne Reservoir 5,040 to 4,680 ac-ft/yr, Trinity Aquifer 789 ac-ft/yr and a contract with BRA that ranges from 2,971 to 885 ac-ft/yr at 2020 to 2070, respectively. . Cleburne is projected to have a shortage from 2040 to 2070. Conservation is recommended to reduce the City's gallons per capita per day (gpcd) to a goal of 140 gpcd.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategies are recommended to meet the projected water shortage for the City of Cleburne.

a. Conservation

- Cost Source: Volume II
- Date to be Implemented: before 2030
- Capital Cost: $729,070
- Unit Cost: $560/ac-ft

b. City of Cleburne Reuse

- Cost Source: Volume II
- Date to be Implemented: 2030
- Project Cost: $30,238,000

- Unit Cost: $427/ac-ft

Table 5.17-4.Recommended Plan Costs by Decade for the City of Cleburne

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*1,831*	*763*	*(1,097)*	*(2,988)*	*(5,195)*	*(7,324)*
Conservation						
Supply From Plan Element (acft/yr)	0	561	942	1,018	1,171	1,302
Annual Cost ($/yr)	$0	$314,170	$527,611	$569,977	$655,741	$729,070
Projected Surplus/(Shortage) after Conservation (acft/yr)	*1,831*	*763*	*(155)*	*(1,970)*	*(4,024)*	*(6,022)*
Additional Demands from Recommended Strategies from Others						
Increase Reuse Amount to Johnson County Steam Electric (ac-ft/yr)	571	571	571	571	571	571
Increase Reuse Amount to Johnson County Mining (ac-ft/yr)	2,555	1,206	–	–	–	–
Total Surplus/(Shortage) Including Recommended Strategies	*(1,295)*	*(1,014)*	*(726)*	*(2,541)*	*(4,595)*	*(6,593)*
City of Cleburne Reuse						
Supply From Plan Element (acft/yr)	7,616	7,616	7,616	7,616	7,616	7,616
Annual Cost ($/yr)	$3,252,032	$3,252,032	$1,127,168	$1,127,168	$1,127,168	$1,127,168
Unit Cost ($/acft)	$427	$427	$148	$148	$148	$148

5.17.6 City of Crowley

Description of Supply

The City of Crowley is mostly located in Tarrant County; however, a portion of the city limits is within Johnson County. The City obtains its water from Fort Worth and is projected to have a shortage in Johnson County. Conservation was considered, but the entity's per capita usage is less than the target of 140 gpcd.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, and through coordination with Region C, the following water management strategy is recommended to meet water needs for the portion of the city within Johnson County. The full water plan for City of Crowley is discussed in the 2021 Region C Water Plan.

a. Purchase additional supplies from Fort Worth
   - Cost Source: 2016 Region C Water Plan (Appendix K)
   - Date to be Implemented: 2030
   - Project Cost: none

- Unit Cost: $531/ac-ft

Table 5.17-5. Recommended Plan Costs by Decade for the City of Crowley (Brazos G)

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*0*	*(2)*	*(5)*	*(9)*	*(15)*	*(21)*
Conservation						
Supply From Plan Element (acft/yr)	–	–	–	–	–	–
Annual Cost ($/yr)	–	–	–	–	–	–
Projected Surplus/(Shortage) after Conservation (acft/yr)	*0*	*(2)*	*(5)*	*(9)*	*(15)*	*(21)*
Purchase from Fort Worth						
Supply From Plan Element (acft/yr)	0	2	5	9	15	21
Annual Cost ($/yr)	$0	$1,062	$2,655	$4,779	$7,965	$11,151
Unit Cost ($/acft)	$531	$531	$531	$531	$531	$531

5.17.7 City of Fort Worth

Description of Supply

The City of Fort Worth is a wholesale water provider in Region C in Tarrant County; however, a portion of the city limits is within Johnson County in Brazos G. The City obtains its water supply from surface water supplies located in Region C and is projected to have a shortage in Johnson County.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, and through coordination with Region C, the following water management strategies are recommended to meet water needs for the portion of the city within Johnson County. The full water plan for City of Fort Worth is discussed in the 2021 Region C Water Plan.

a. Conservation

- Cost Source: Volume II
- Date to be Implemented: 2060
- Unit Cost: $560/ac-ft
- Annual Cost: maximum of $186,204 in 2070

b. Purchase additional supplies from Tarrant Regional Water District

- Cost Source: 2020 Region C Water Plan
- Date to be Implemented: 2050
- Project Cost: $0 Existing infrastructure assumed sufficient
- Unit Cost: $978/ac-ft/yr

Table 5.17-6. Recommended Plan Costs by Decade for the City of Fort Worth (Brazos G)

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*0*	*0*	*0*	*(466)*	*(580)*	*(847)*
Conservation						
Supply From Plan Element (acft/yr)	–	–	–	–	267	333
Annual Cost ($/yr)	–	–	–	0	$149,240	$186,204
Projected Surplus/(Shortage) after Conservation (acft/yr)	*0*	*0*	*0*	*(466)*	*(313)*	*(514)*
Purchase from Tarrant Regional Water District						
Supply From Plan Element (acft/yr)	–	–	–	466	313	514
Annual Cost ($/yr)	–	–	–	$455,748	$306,114	$502,692
Unit Cost ($/acft)	–	–	–	$978	$978	$978

5.17.8 City of Godley

Description of Supply

The City of Godley obtains its water supply from groundwater from the Trinity Aquifer at 99 ac-ft/yr. Based on the available groundwater supply, the City of Godley is projected to have shortages throughout the planning period. Conservation was considered; however, the entity's current per capita use rate is below the selected target rate of 140 gpcd.

Water Supply Plan

a. Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategy is recommended to meet water needs for the City of Godley. Groundwater Development – Trinity Aquifer

- Cost Source: Volume II
- Date to be Implemented: 2020
- Project Cost: $686,000
- Unit Cost: $1,423/acft

Table 5.17-7. Recommended Plan Costs by Decade for the City of Godley

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*(3)*	*(12)*	*(22)*	*(35)*	*(49)*	*(65)*
Conservation						
Supply From Plan Element (acft/yr)	–	–	–	–	–	–
Annual Cost ($/yr)	–	–	–	–	–	–
Projected Surplus/(Shortage) after Conservation (acft/yr)	*(3)*	*(12)*	*(22)*	*(35)*	*(49)*	*(65)*

Table 5.17-7. Recommended Plan Costs by Decade for the City of Godley

Plan Element	2020	2030	2040	2050	2060	2070
Groundwater Development – Trinity Aquifer						
Supply From Plan Element (acft/yr)	3	12	22	35	49	65
Annual Cost ($/yr)	$4,269	$17,076	$5,082	$8,085	$11,319	$15,015
Unit Cost ($/acft)	$1,423	$1,423	$231	$231	$231	$231

5.17.9 City of Grandview

The City of Grandview obtains its water supply from groundwater from the Woodbine Aquifer at 369 ac-ft/yr and is projected to have a surplus of water 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.

5.17.10 Johnson County SUD

Johnson County SUD is projected to have a shortage in 2020, 2060, and 2070, and a surplus in 2030 through 2050. This WUG is located in multiple counties (Johnson, Tarrant (Region C), Ellis (Region C), and Hill). The balance shown in the table below represent the cumulative totals for Johnson County SUD. Conservation was considered; however, the entity's current per capita use rate is below the selected target rate of 140 gpcd.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategy is recommended to meet water needs for Johnson County SUD.

a. Groundwater Development – Trinity Aquifer

- Cost Source: Volume II
- Date to be Implemented: 2020
- Project Cost: $9,306,000
- Unit Cost: $437/acft

Table 5.17-8. Recommended Plan Costs by Decade for Johnson County SUD

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*(317)*	*1,427*	*1,473*	*94*	*(880)*	*(1,681)*
Conservation						
Supply From Plan Element (acft/yr)	–	–	–	–	–	–
Annual Cost ($/yr)	–	–	–	–	–	–

Table 5.17-8. Recommended Plan Costs by Decade for Johnson County SUD

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) after Conservation (acft/yr)	*(317)*	*1,427*	*1,473*	*94*	*(880)*	*(1,681)*
Groundwater Development – Trinity Aquifer						
Supply From Plan Element (acft/yr)	317	–	–	–	880	1,681
Annual Cost ($/yr)	$138,529	–	–	–	$42,240	$80,688
Unit Cost ($/acft)	$437	–	–	–	$48	$48

5.17.11 City of Keene

The City of Keene obtains its water supply from groundwater from the Trinity Aquifer at 326-327 ac-ft/yr and a contract with Johnson County SUD at 1,120 ac-ft/yr. The City of Keene is expected to have a surplus 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.

5.17.12 City of Mansfield

Description of Supply

The City of Mansfield is located in Tarrant, Ellis and Johnson counties with a majority of its population and demand in Tarrant County. The City obtains its water supply from surface water from the Tarrant Regional Water District (TRWD), principally located in Region C. The tableincludes the balance for the Johnson County (Brazos G) portion only. More information on City of Mansfield is discussed in the 2020 Region C Water Plan. Conservation was considered but the current per capita use is below the targeted gpcd of 140. The City of Mansfield is projected to have shortages starting in 2020.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, and in coordination with Region C, the following water management strategy is recommended for the City of Mansfield.

a. Conservation
   - Cost Source: Volume II
   - Date to be Implemented: 2030
   - Unit Cost: $560/ac-ft
   - Annual Cost: maximum of $516,488 in 2070

b. Purchase additional supplies from Tarrant Regional Water District
   - Cost Source: 2021 Region C Water Plan
   - Date to be Implemented: 2020

- Project Cost: $0 Existing infrastructure assumed sufficient
- Unit Cost: $978/ac-ft/yr

Table 5.17-9. Recommended Plan Costs by Decade for City of Mansfield (Brazos G)

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*(48)*	*(289)*	*(507)*	*(783)*	*(1,063)*	*(1,375)*
Conservation						
Supply From Plan Element (acft/yr)	0	87	223	407	641	922
Annual Cost ($/yr)	$0	$48,803	$124,900	$228,097	$359,186	$516,488
Projected Surplus/(Shortage) after Conservation	*(48)*	*(202)*	*(284)*	*(376)*	*(422)*	*(453)*
Purchase additional supplies from Tarrant Regional Water District						
Supply from Plan Element (acft/yr)	48	202	284	376	422	453
Annual Cost ($/yr)	$46,944	$197,556	$277,752	$367,728	$412,716	$443,034
Unit Cost ($/acft)	$978	$978	$978	$978	$978	$978

5.17.13 Mountain Peak SUD

Description of Supply

Mountain Peak SUD is located in Johnson and Ellis counties, with a majority of its population and demand in Ellis County (Region C). The WUG obtains its water supply from the City of Midlothian. A small shortage is projected for 2020, but after conservation a surplus is projected for Mountain Peak SUD through 2070. The Table below includes the balance for the Johnson County (Brazos G) portion only. More information on Mountain Peak SUD is discussed in the 2021 Region C Water Plan. Conservation is recommended to reduce the City's gallons per capita per day (gpcd) to a goal of 140 gpcd.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB and in coordination with Region C, the following water management strategy is recommended for Mountain Peak SUD.

a. Conservation
   - Cost Source: Volume II
   - Date to be Implemented: 2030
   - Unit Cost: $560/ac-ft
   - Annual Cost: maximum of $2,405,711 in 2070

b. Purchase additional supplies from Midlothian
   - Cost Source: 2020 Region C Water Plan

- Date to be Implemented: 2050
- Project Cost: $0 Existing infrastructure assumed sufficient
- Unit Cost: $978/ac-ft/yr

Table 5.17-10. Recommended Plan Costs by Decade for Mountain Peak SUD (Brazos G)

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*(55)*	*(287)*	*(523)*	*(793)*	*(1,081)*	*(1,397)*
Conservation						
Supply From Plan Element (acft/yr)	0	427	1,030	1,895	2,970	4,296
Annual Cost ($/yr)	$0	$239,127	$576,786	$1,061,351	$1,663,222	$2,405,711
Projected Surplus/(Shortage) after Conservation	*(55)*	*140*	*507*	*1,102*	*1,889*	*2,899*
Purchase additional supplies from Midlothian						
Supply From Plan Element (acft/yr)	55	–	–	–	–	–
Annual Cost ($/yr)	$53,790	–	–	–	–	–
Unit Cost ($/acft)	$978	–	–	–	–	–

5.17.14 Parker WSC

Description of Supply

Parker WSC is located in Hill and Johnson counties and obtains its water supply from the Trinity Aquifer at 274 ac-ft/yr and surface water supplies from Files Valley WSC. Based on the existing supply available from groundwater, a shortage begins in 2060. The surplus/shortages shown in the table below represent the cumulative totals for Parker WSC. Conservation was considered; however, the entity's current per capita use rate is below the selected target rate of 140 gpcd.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategy is recommended to meet water needs for Parker WSC.

a. Trinity Aquifer Development
   - Cost Source: Volume II
   - Date to be Implemented: before 2060
   - Project Cost: $1,045,000
   - Unit Cost: $661

Table 5.17-11. Recommended Plan Costs by Decade for Parker WSC

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*261*	*194*	*123*	*42*	*(48)*	*(145)*
Conservation						
Supply From Plan Element (acft/yr)	–	–	–	–	–	–
Annual Cost ($/yr)	–	–	–	–	–	–
Projected Surplus/(Shortage) after Conservation	*261*	*194*	*123*	*42*	*(48)*	*(145)*
Groundwater Development – Woodbine Aquifer						
Supply From Plan Element (acft/yr)	0	0	0	0	48	145
Annual Cost ($/yr)	–	–	–	–	$31,728	$95,845
Unit Cost ($/acft)	–	–	–	–	$661	$661

5.17.15 City of Rio Vista

Description of Supply

The City of Rio Vista obtains its water supply from groundwater from the Trinity Aquifer at 334 ac-ft/yr. No shortages are projected for the City of Alvarado and no change in water supply is recommended. Conservation was considered; however, the entity's current per capita use rate is below the selected target rate of 140 gpcd.

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5.17.16 City of Venus

Description of Supply

The City of Venus obtains its water supply from the Woodbine Aquifer at 103 ac-ft/yr and surface water from the City of Midlothian in Region C ranges from 200 to 268 ac-ft/yr. The city has a projected shortage starting in 2020. Conservation is recommended to reduce the City's gallons per capita per day (gpcd) to a goal of 140 gpcd.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB and in coordination with Region C, the following water management strategies are recommended to meet water needs for the City of Venus.

a. Conservation
   - Cost Source: Volume II
   - Date to be Implemented: 2030
   - Annual Cost: maximum of $91,183 in 2070
   - Unit Cost: $560/acft

a. Purchase Water from Midlothian
   - Cost Source: 2020 Region C Water Plan
   - Date to be Implemented: 2020
   - Project Cost: NA
   - Unit Cost: $978/ac-ft

Table 5.17-12. Recommended Plan Costs by Decade for City of Venus

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*(267)*	*(425)*	*(517)*	*(629)*	*(740)*	*(865)*
Conservation						
Supply From Plan Element (acft/yr)	0	61	118	130	145	163
Annual Cost ($/yr)	$0	$34,058	$65,814	$72,670	$81,085	$91,183
Projected Surplus/(Shortage) after Conservation	*(267)*	*(364)*	*(399)*	*(499)*	*(595)*	*(702)*
Purchase Water from Midlothian						
Supply From Plan Element (acft/yr)	267	424	516	627	737	862
Annual Cost ($/yr)	$261,126	$414,672	$504,648	$613,206	$720,786	$843,036
Unit Cost ($/yr)	$978	$978	$978	$978	$978	$978

5.17.17 County-Other

Entities in Johnson County-Other obtain water supply from the Trinity Aquifer at 7 ac-f/yr and as well as treated surface water from Johnson County SUD at 1,507 to 2,981 ac-ft/yr and Grand Prairie at 188 to 531 ac-ft/yr. A surplus of supply is projected for Johnson County-Other through 2070. No changes in water supply are recommended. Conservation was considered; however, the current per capita use rate for the entities in County-Other are below the selected target rate of 140 gpcd.

5.17.18 Manufacturing

Johnson County Manufacturing is supplied by the Trinity Aquifer at 194 ac-ft/yr, and the cities of Burleson at 2 ac-ft/yr, Cleburne at 2,239 to 4,182 ac-ft/yr and Hillsboro at 6 to 12 ac-ft/yr. No shortage is projected for Johnson County Manufacturing and no changes in water supply are recommended.

5.17.19 Steam-Electric

Description of Supply

Johnson County Steam-Electric currently receives 1,344 ac-ft/yr of reuse and potable water supplies from the City of Cleburne. Johnson County Steam-Electric is projected to

have shortages through year 2070. Conservation for Steam-Electric use is not recommended by the Brazos G RWPG.

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 Johnson County Steam-Electric.

a. Purchase reuse water from the City of Cleburne
   - Cost Source: Volume II
   - Date to be Implemented: 2020
   - Project Cost: $30,238,000
   - Unit Cost: $427/acft
-

Table 5.17-13. Recommended Plan Costs by Decade for Johnson County – Steam-Electric

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*(571)*	*(571)*	*(571)*	*(571)*	*(571)*	*(571)*
Conservation						
Supply From Plan Element (acft/yr)	–	–	–	–	–	–
Annual Cost ($/yr)	–	–	–	–	–	–
Projected Surplus/(Shortage) after Conservation	*(571)*	*(571)*	*(571)*	*(571)*	*(571)*	*(571)*
Purchase reuse water from the City of Cleburne						
Supply From Plan Element (acft/yr)	571	571	571	571	571	571
Annual Cost ($/yr)	$243,817	$243,817	$84,508	$84,508	$84,508	$84,508
Unit Cost ($/acft)	$427	$427	$148	$148	$148	$148
Projected Surplus/(Shortage) after Reuse (acft/yr)	*0*	*0*	*0*	*0*	*0*	*0*

5.17.20 Mining

Description of Supply

Johnson County Mining obtains its water supply from Cleburne at 1,344 ac-ft/yr. Johnson County Mining is projected to have a shortage in 2020 and 2030,surpluses from 2040 through 2070.

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 Johnson County Mining.

a. Conservation
   - Cost Source: Volume II
   - Date to be Implemented: 2030
   - Annual Cost: Not determined

b. Purchase reuse water from the City of Cleburne
   - Cost Source: Volume II
   - Date to be Implemented: 2020
   - Project Cost: $2,099,198
   - Unit Cost: $211/acft

Table 5.17-14. Recommended Plan Costs by Decade for Johnson County – Mining

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*(2,679)*	*(1,345)*	*(68)*	*430*	*286*	*107*
Conservation						
Supply From Plan Element (acft/yr)	124	139	106	71	81	94
Annual Cost ($/yr)	ND	ND	ND	ND	ND	ND
Projected Surplus/(Shortage) after Conservation	*(2,555)*	*(1,206)*	*38*	*430*	*286*	*107*
Purchase reuse water from the City of Cleburne						
Supply From Plan Element (acft/yr)	2,555	1,206	–	–	–	–
Annual Cost ($/yr)	$539,105	$254,466	–	–	–	–
Unit Cost ($/acft)	$211	$211	–	–	–	–

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

5.17.21 Irrigation

Johnson County Irrigation obtains its water supply from the Trinity Aquifer at 167 ac-ft/yr and the Woodbine Aquifer at 130 ac-ft/yr. Shortages are projected for Johnson County Irrigation..

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 Johnson County Irrigation.

a. Conservation

- Cost Source: Volume II
- Date to be Implemented: 2020
- Unit Cost $163/acft
- Annual Cost: maximum of $6,464

b. BRA System Operations

- Cost Source: Volume II
- Date to be Implemented: 2020
- Project Cost: $95,792,000
- Unit Cost: $4,497 /acft

Table 5.17-15. Recommended Plan Costs by Decade for Johnson County – Irrigation

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*(269)*	*(269)*	*(269)*	*(269)*	*(269)*	*(269)*
Conservation						
Supply From Plan Element (acft/yr)	17	28	40	40	40	40
Annual Cost ($/yr)	$2,770	$4,617	$6,464	$6,464	$6,464	$6,464
Projected Surplus/(Shortage) after Conservation	*(252)*	*(241)*	*(229)*	*(229)*	*(229)*	*(229)*
Groundwater Development – Woodbine Aquifer						
Supply From Plan Element (acft/yr)	252	241	229	229	229	229
Annual Cost ($/yr)	$1,133,244	$1,083,777	$318,310	$318,310	$318,310	$318,310
Unit Cost ($/acft)	$4,497	$4,497	$1,390	$1,390	$1,390	$1,390

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

5.17.22 Livestock

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

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