



4

Comparison of Water Demands with Water Supplies to Determine Needs



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4 Comparison of Water Demands with Water Supplies to Determine Needs

4.1 Introduction

In this section, the demand projections from Chapter 2 and the supply projections from Chapter 3 are brought together to estimate projected water needs in the Brazos G Area through year 2070.

As a recap, Chapter 2 presents demand projections for six types of use: municipal, manufacturing, steam-electric, mining, irrigation, and livestock. The projections are for dry-year demands. Chapter 3 presents estimates of surface water and groundwater availability under drought of record conditions.

4.1.1 Methods to Estimate Available Water Supplies in the Region

Surface Water Supplies

Surface water in the region available to meet projected demands consists of firm yield of reservoirs, dependable supply of run-of-river water rights through drought of record conditions, and local on-farm sources. Contracts and/or rights to reservoir yields and supplies to run-of-river rights were allocated as supplies to their stated type of use: municipal, industrial (manufacturing, steam-electric, and mining), and irrigation. Additionally, municipal supply was further allocated among cities and other municipal water supply entities. This was done by obtaining water seller information (i.e., which contract/right holders – a wholesaler – are reselling water to other water supply entities) and water purchase contract limits between buyers and sellers. This information was obtained from TWDB files and follow-up queries to water supply entities. All water supply contracts were assumed to be renewed at their existing levels unless otherwise directed by local entities.

Water associated with a wholesaler that is not resold remains as an available supply to the wholesaler in the supply tables. In the case where a wholesaler's supply is deficient to meet its own demands and contractual commitments, it was assumed that contracts would not be met as well. In these cases, the supply available to each customer's contract was prorated down according to the contract amount.

It was assumed that all livestock demands would be met from local water sources (e.g., shallow groundwater and stock ponds).

In certain instances the entity's available water supply is constrained by lack of infrastructure. For example, an entity may hold a contract to divert water from a reservoir; however, the required pipeline has not been built. In this instance, the contract amount would not be included in the entity's available water supply or would be identified as a constrained supply.

In some instances, specific operational, contractual, or legal constraints required modifications to the general surface water allocation procedure. For example, provisions in the current contract between the City of Abilene and the West Central Texas Municipal

Water District for supplies to the City from Hubbard Creek Reservoir preclude the City from receiving its normal pro-rata share of the reservoir's allocated safe yield during times when the reservoir is significantly drawn down. However, the other member cities of the district (Anson, Albany, and Breckenridge) do not have similar provisions in their contracts with the district.

Groundwater Allocation

Total groundwater availability in the region was determined based on the specific methods identified for each aquifer as discussed in Section 3.4. Total groundwater availability is shown for each county, by aquifer, in Table 3.4-1. For each county, total available groundwater was allocated among the six user groups—municipal, manufacturing, steam-electric, mining, irrigation, and livestock—in the following manner:

Municipal Allocation

Municipal supplies were allocated to users from each aquifer as follows:

- a. Municipal supply is based upon well capacities. For cases in which the total demand on that portion (i.e., county and river basin) of the aquifer exceeds the total Modeled Available Groundwater (MAG), the supply is prorated downward for every entity using that particular source.
- b. For rural areas, it is assumed that the rural household (municipal type) demand would be met from aquifers underlying that river basin portion of the county. The rural supply is generally calculated as 125 percent of the year 2010 use from each particular aquifer. For cases in which the total demand on that portion (i.e., county and river basin) of the aquifer exceeds the MAG, supply is prorated downward for every entity using that particular source.

Industrial (Steam-Electric and Manufacturing) Allocation

Industrial supply from groundwater sources is associated with aquifers underlying the river basin portion of the county. The industrial supply is generally calculated as 130 percent of the year 2010 use from each particular aquifer. For cases in which the total demand on that portion (i.e., county and river basin) of the aquifer exceeds the MAG, supply is prorated downwards for every entity using that particular source.

Irrigation Allocation

Irrigation supply from groundwater sources is associated with aquifers underlying the river basin portion of the county. The irrigation supply is calculated as being equal to the projected demand in each decade. For cases in which the total demand on that portion (i.e., county and river basin) of the aquifer exceeds the MAG, supply is prorated downward for every entity using that particular source.

Mining Allocation

Mining supply from groundwater sources is associated with aquifers underlying the river basin portion of the county. The mining supply is calculated as being equal to the projected demand in each decade. For cases in which the total demand on that portion

(i.e., county and river basin) of the aquifer exceeds the MAG, supply is prorated downward for every entity using that particular source.

In some specific instances, these general procedures were modified to more accurately reflect the interactions between water demands, supplies, and needs.

Constraints on Surface Water Supplies

In determining needs (shortages), an emphasis has been placed not only on a WUG's total raw water supply availability, but also on their infrastructure available to deliver and treat this supply.

Based on TCEQ records, the Normal Rated Design (NRD) of each surface water treatment plant of public water suppliers located in the Brazos G Area was used to determine the existing peaking capacities to treat and deliver surface water supplies. The average annual capacity (AAC) for the WTP was calculated as 50% of the NRD to account for peaking. For each WUG for which these data were available in the TCEQ database, the AAC was utilized to constrain the supply available from surface water sources, and was incorporated into the needs analysis for each WUG by utilizing a term referred to as "constrained supply." Constrained supply is defined as the amount of water available to a WUG considering the limiting effects of existing infrastructure. This methodology allows for water management strategies to be identified and developed that specifically address these constraints caused by limited infrastructure capacity. These strategies could include pipelines to existing reservoirs, treatment plant expansions, or other infrastructure required to deliver and treat water for the end user of the WUG. Generally, the only infrastructure constraint data that will be taken into account for the 2016 Plan is treatment capacity, as data on other types of infrastructure constraints are not readily available. Other constraints may have been added where the planning group was made aware of particular infrastructure capacity or lack of infrastructure. These infrastructure constraints were applied to the supply available for the WUG and to any contractual demands using that supply.

Twenty-two counties in the Brazos G Area have WUGs with potentially limiting surface water treatment capacity constraints. Of these, 11 counties contain WUGs that have their available supply constrained by treatment capacity, resulting in supply shortages in year 2060 in at least four counties. Constraints on surface water supplies are shown in the wholesale water provider tables in Chapter 4.3 and in the WUG supply-demand analyses presented in Appendix C.

Constraints on Groundwater Supplies

Similar to surface water availability, the groundwater supplies assume that the wells will be able to continue producing the supply into the foreseeable future. However, some of the MAGs adopted for use would allow substantial drawdown of aquifer levels, which would require that well pumps be lowered or, in some cases, that deeper replacement wells be drilled in order to continue to utilize the assumed supply available from the aquifer. This has been identified as a particularly crucial issue in the Trinity Aquifer, where the Modeled Available Groundwater adopted by the groundwater conservation districts allows for more than 400 feet of additional aquifer drawdown below current aquifer levels, and numerous WUGs depend largely on Trinity Aquifer supplies.

For groundwater supplies in the Trinity Aquifer, an additional analysis was performed using the Trinity Aquifer Groundwater Availability Model (Trinity GAM) to determine how future aquifer levels might constrain groundwater supplies to entities relying on Trinity Aquifer water. Pumping in the Trinity Aquifer GAM was modified to reflect expected future pumping as determined by water demands for municipal WUGs relying on the Trinity Aquifer. The resulting water levels were then compared to well data (location, depth, casing size) to determine if the expected future water levels would impact each WUG’s wells. The wells potentially impacted by the future groundwater levels were identified, and the groundwater supply to the WUG was reduced correspondingly to reflect that the well would be no longer being useable in its present configuration. This groundwater supply is referred to as “constrained groundwater supply.” Constraints on supplies from the Trinity Aquifer, assuming a MAG level of pumping, result in supply shortages in year 2070 to WUGs in five counties (Bosque, Hood, Johnson, Kent and McLennan). Constraints on groundwater supplies are shown in the tables in Appendix C.

4.2 Water Needs Projections for Water User Groups

If projected demands exceed projected supplies for a water user group, the difference or shortage, is identified as a “water need.” This section contains a summary of the water needs (shortages) for each Water User Group (WUG) located in the Brazos G Area. Tables in Appendix C provide a detailed analysis of water needs for each water user group by county as well as a summary for the region as a whole. The following sections summarize the data presented in Appendix C.

4.2.1 Projected Municipal Shortages

Water shortages are projected for 85 municipal WUGs, which are listed in Table 4.2-1, along with the projected year 2040 and 2070 shortages, and the approximate decade that shortages are expected to begin. Multi-county WUGs are indicated with (P) in Table 4.2-1. Thirty of the 37 counties in the Brazos G Area are projected to have at least one municipal WUG shortage. The County-Other category includes water supply corporations, water districts, privately owned utilities, and small towns that generally supplied less than 280 acft of water in the year 2010 or served populations less than 500 persons. The County-Other category is projected to be water short in 10 counties: Bell, Comanche, Coryell, Erath, Hill, Hood, Knox, Nolan, Robertson and Williamson

Table 4.2-1. Municipal WUGs with Projected Water Shortages

WUG	County	Projected Shortages (acft/yr)		Decade of Need
		Year 2040	Year 2070	
439 WSC	BELL	242	(94)	2060
BARTLETT (P)	BELL	(166)	(241)	2020
BELTON	BELL	2,413	(41)	2070
CHISHOLM TRAIL SUD (P)	BELL	(467)	(746)	2020
ELM CREEK WSC (P)	BELL	15	(136)	2050
HARKER HEIGHTS	BELL	(939)	(3,171)	2040



Table 4.2-1. Municipal WUGs with Projected Water Shortages

WUG	County	Projected Shortages (acft/yr)		Decade of Need
		Year 2040	Year 2070	
KEMPNER WSC (P)	BELL	151	(29)	2070
LITTLE RIVER-ACADEMY	BELL	(59)	(190)	2030
NOLANVILLE	BELL	(858)	(2,188)	2020
SALADO WSC	BELL	219	(278)	2060
TEMPLE	BELL	(3,892)	(12,856)	2030
BELL COUNTY-OTHER	BELL	(718)	(3,738)	2040
CHILDRESS CREEK WSC	BOSQUE	3	(15)	2050
CROSS COUNTRY WSC (P)	BOSQUE	26	(141)	2050
VALLEY MILLS (P)	BOSQUE	10	(1)	2070
BRYAN	BRAZOS	(5,533)	(26,578)	2020
COLLEGE STATION	BRAZOS	(7,372)	(8,401)	2020
WELLBORN SUD (P)	BRAZOS	(625)	(2,588)	2030
COLEMAN COUNTY SUD	CALLAHAN	(10)	(11)	2020
POTOSI WSC (P)	CALLAHAN	(8)	(8)	2020
COMANCHE COUNTY-OTHER	COMANCHE	(135)	(183)	2020
CORYELL COUNTY-OTHER	CORYELL	234	(515)	2050
ELM CREEK WSC (P)	CORYELL	1	(18)	2050
GATESVILLE	CORYELL	(1,406)	(3,995)	2030
KEMPNER WSC (P)	CORYELL	211	(45)	2070
MULTI-COUNTY WSC (P)	CORYELL	(126)	(224)	2020
ERATH COUNTY-OTHER	ERATH	291	(315)	2060
TRI-COUNTY SUD (P)	FALLS	(55)	(61)	2020
WEST BRAZOS WSC (P)	FALLS	(110)	(118)	2020
ROTAN	FISHER	(60)	(84)	2020
MULTI-COUNTY WSC (P)	HAMILTON	(25)	(24)	2020
HASKELL	HASKELL	(193)	(442)	2020
HUBBARD	HILL	(32)	(69)	2030
ACTON MUD (P)	HOOD	1,675	(136)	2070
HOOD COUNTY-OTHER	HOOD	(77)	193	2020
CRESSON (P)	HOOD	(13)	(32)	2030
TOLAR	HOOD	12	(19)	2050
ACTON MUD (P)	JOHNSON	55	(24)	2070
BETHESDA WSC	JOHNSON	(1,692)	(3,137)	2020

Table 4.2-1. Municipal WUGs with Projected Water Shortages

WUG	County	Projected Shortages (acft/yr)		Decade of Need
		Year 2040	Year 2070	
BURLESON	JOHNSON	(3,425)	(5,982)	2020
CLEBURNE	JOHNSON	1,177	(2,373)	2060
CRESSON (P)	JOHNSON	(7)	(21)	2030
CROWLEY	JOHNSON	(17)	(35)	2020
FORT WORTH	JOHNSON	0	(1,573)	2050
GODLEY	JOHNSON	22	(25)	2060
JOHNSON COUNTY SUD	JOHNSON	2,194	2,601	2060
MANSFIELD	JOHNSON	(293)	(1,024)	2020
PARKER WSC (P)	JOHNSON	96	(182)	2060
RIO VISTA	JOHNSON	42	(71)	2060
VENUS	JOHNSON	(226)	(573)	2020
ABILENE (P)	JONES	(197)	(287)	2030
JAYTON	KENT	(89)	(88)	2020
KNOX CITY	KNOX	(118)	(226)	2020
MUNDAY	KNOX	(125)	(237)	2020
KEMPNER	LAMPASAS	(6)	(5)	2020
KEMPNER WSC (P)	LAMPASAS	(1,352)	(1,709)	2020
LAMPASAS	LAMPASAS	(227)	(505)	2020
COOLIDGE	LIMESTONE	(38)	(140)	2040
GROESBECK	LIMESTONE	(668)	(672)	2020
MART (P)	LIMESTONE	(1)	(2)	2030
TRI-COUNTY SUD (P)	LIMESTONE	(20)	(23)	2020
CRAWFORD	MCLENNAN	(3)	(7)	2020
ELM CREEK WSC (P)	MCLENNAN	6	(76)	2050
HEWITT	MCLENNAN	(211)	(231)	2020
MART (P)	MCLENNAN	(181)	(243)	2020
NORTH BOSQUE WSC	MCLENNAN	(265)	(628)	2020
RIESEL	MCLENNAN	(11)	(19)	2020
ROBINSON	MCLENNAN	(720)	(1,909)	2030
TRI-COUNTY SUD (P)	MCLENNAN	(2)	(10)	2040
VALLEY MILLS (P)	MCLENNAN	4	(1)	2070
WACO	MCLENNAN	7,377	(1,348)	2070
WEST BRAZOS WSC (P)	MCLENNAN	(63)	(98)	2020



Table 4.2-1. Municipal WUGs with Projected Water Shortages

WUG	County	Projected Shortages (acft/yr)		Decade of Need
		Year 2040	Year 2070	
WOODWAY	MCLENNAN	(20)	(103)	2030
NOLAN COUNTY-OTHER	NOLAN	(108)	(125)	2020
SWEETWATER	NOLAN	(1,410)	(1,576)	2020
POSSUM KINGDOM WSC (P)	PALO PINTO	(137)	(215)	2020
ROBERTSON COUNTY-OTHER	ROBERTSON	168	(39)	2070
TRI-COUNTY SUD (P)	ROBERTSON	(16)	(42)	2020
GLEN ROSE	SOMERVELL	47	(39)	2060
POSSUM KINGDOM WSC (P)	STEPHENS	(6)	(7)	2020
FORT BELKNAPP WSC (P)	STEPHENS	(1)	(1)	2020
ABILENE (P)	TAYLOR	(8,918)	(11,027)	2030
COLEMAN COUNTY SUD	TAYLOR	(6)	(7)	2020
MERKEL	TAYLOR	6	(9)	2060
POTOSI WSC (P)	TAYLOR	(492)	(534)	2020
STEAMBOAT MOUNTAIN WSC	TAYLOR	(189)	(210)	2020
TYE	TAYLOR	(6)	(15)	2020
FORT BELKNAPP WSC (P)	THROCKMORTON	(2)	(2)	2020
BRENHAM	WASHINGTON	(400)	(928)	2030
BARTLETT (P)	WILLIAMSON	(178)	(231)	2020
BRUSHY CREEK MUD	WILLIAMSON	(920)	(1,848)	2020
CEDAR PARK	WILLIAMSON	(3,475)	(3,748)	2020
CHISHOLM TRAIL SUD (P)	WILLIAMSON	(4,599)	(9,624)	2020
WILLIAMSON COUNTY-OTHER	WILLIAMSON	(13,402)	(22,243)	2020
FERN BLUFF MUD	WILLIAMSON	(253)	(259)	2020
FLORENCE	WILLIAMSON	(65)	(92)	2020
GEORGETOWN	WILLIAMSON	(6,695)	(24,121)	2030
GRANGER	WILLIAMSON	(133)	(190)	2020
HUTTO	WILLIAMSON	(5,558)	(11,994)	2020
JONAH WATER SUD	WILLIAMSON	(819)	(2,977)	2030
LEANDER	WILLIAMSON	(8,273)	(28,901)	2030
ROUND ROCK	WILLIAMSON	(15,627)	(45,263)	2020
WILLIAMSON COUNTY MUD #10	WILLIAMSON	(352)	(688)	2020
WILLIAMSON COUNTY MUD #11	WILLIAMSON	(193)	(326)	2020

Table 4.2-1. Municipal WUGs with Projected Water Shortages

WUG	County	Projected Shortages (acft/yr)		Decade of Need
		Year 2040	Year 2070	
WILLIAMSON COUNTY MUD #9	WILLIAMSON	(263)	(448)	2020
FORT BELKNAPP WSC (P)	YOUNG	(39)	(79)	2020

(P) Indicates WUG is in multiple counties.

4.2.2 Projected Manufacturing Shortages

Eleven of the 37 counties in the Brazos G Area are projected to have manufacturing shortages. Table 4.2-2 lists the counties projected to have shortages in the Manufacturing Use category, projected year 2040 and 2070 shortages, and the approximate decade shortages are projected to begin.

Table 4.2-2. Counties with Projected Water Shortages for Manufacturing Use

County	Projected Shortages (acft/yr)		Decade of Need
	Year 2040	Year 2070	
BELL	(1,110)	(1,497)	2020
BOSQUE	(2,501)	(3,431)	2020
BRAZOS	(1,219)	(2,116)	2020
BURLESON	(44)	(102)	2030
FALLS	(1)	(1)	2020
FISHER	(79)	(159)	2020
LIMESTONE	(1)	0	2040
MCLENNAN	(2,204)	(2,834)	2020
NOLAN	(1,260)	(1,770)	2020
WASHINGTON	(192)	(399)	2020
WILLIAMSON	(11)	(11)	2020

4.2.3 Projected Steam-Electric Shortages

Table 4.2-3 lists the ten counties projected to have shortages in the Steam-Electric Use category, projected year 2040 and 2070 shortages, and the approximate decade shortages are projected begin.



Table 4.2-3. Counties with Projected Water Shortages for Steam-Electric Use

County	Projected Shortages (acft/yr)		Decade of Need
	Year 2040	Year 2070	
BELL	(5,804)	(9,693)	2020
BOSQUE	(2,262)	(8,345)	2030
BRAZOS	(197)	(121)	2020
GRIMES	(14,395)	(22,900)	2020
JOHNSON	(5,656)	(5,656)	2020
LIMESTONE	(9,017)	(30,893)	2030
MILAM	(76)	(6,757)	2030
NOLAN	(23,916)	(23,916)	2020
ROBERTSON	(2,012)	(18,478)	2020
SOMERVELL	(35,521)	(35,559)	2020

4.2.4 Projected Mining Shortages

Shortages are projected for mining use in most of the counties. Table 4.2-4 lists the thirty-three counties projected to have shortages in the Mining Use category, projected year 2040 and 2070 shortages, and the approximate decade shortages are projected to begin. Mining water use in Williamson County is primarily associated with dewatering for quarry operations.

Table 4.2-4. Counties with Projected Water Shortages for Mining Use

County	Projected Shortages (acft/yr)		Decade of Need
	Year 2040	Year 2070	
BELL	(4,599)	(6,968)	2020
BOSQUE	(1,763)	(1,692)	2020
BRAZOS	(1,433)	(814)	2020
BURLESON	(1,512)	(428)	2020
CALLAHAN	(214)	(180)	2020
COMANCHE	(337)	(102)	2020
CORYELL	(491)	(437)	2020
EASTLAND	(929)	(432)	2020
ERATH ¹	135	334	
FALLS	(259)	(331)	2020
FISHER	(359)	(238)	2020

Table 4.2-4. Counties with Projected Water Shortages for Mining Use

County	Projected Shortages (acft/yr)		Decade of Need
	Year 2040	Year 2070	
GRIMES	(438)	(95)	2020
HAMILTON	(89)	13	2020
HASKELL	(83)	(59)	2020
HOOD	(998)	(833)	2020
JOHNSON ²	1,347	1,526	
JONES	(218)	(169)	2020
KNOX	(14)	(14)	2020
LAMPASAS	(216)	(288)	2020
LEE	(7,767)	(9,631)	2020
LIMESTONE	(9,056)	(10,616)	2020
MCLENNAN	(2,786)	(3,942)	2020
NOLAN	(200)	(141)	2020
ROBERTSON	(3,563)	(12,735)	2030
SHACKELFORD	(551)	(236)	2020
SOMERVELL	(441)	(266)	2020
STEPHENS	(3,458)	(1,773)	2020
STONEWALL	(337)	(163)	2020
TAYLOR	(366)	(315)	2020
THROCKMORTON	(171)	(116)	2020
WASHINGTON	(703)	(264)	2020
WILLIAMSON	(6,949)	(10,771)	2020
YOUNG	(196)	(73)	2020

1 - Projected shortage in 2030. Surplus in all other decades

2 - Projected shortage in 2020. Surplus in all other decades

4.2.5 Projected Irrigation Shortages

Table 4.2-5 lists the seventeen counties projected to have shortages in the Irrigation Use category, projected year 2040 and 2070 shortages, and the approximate decade shortages are projected to begin.



Table 4.2-5. Counties with Projected Water Shortages for Irrigation Use

County	Projected Shortages (acft/yr)		Decade of Need
	Year 2040	Year 2070	
BELL	(1,103)	(1,038)	2020
BOSQUE	(468)	(377)	2020
BRAZOS	(8,473)	(5,321)	2020
COMANCHE	(1,823)	(968)	2020
EASTLAND	(6,541)	(6,555)	2020
HAMILTON	(61)	(6)	2020
HASKELL	(3,197)	1,880	2020
KNOX	(8,505)	(5,105)	2020
LAMPASAS	(211)	(200)	2020
MCLENNAN	(2,325)	(2,363)	2020
NOLAN	(2,094)	(1,567)	2020
PALO PINTO	(2,513)	(2,394)	2020
ROBERTSON	(49,210)	(44,445)	2020
STEPHENS	(27)	(24)	2020
TAYLOR	(981)	(873)	2020
WILLIAMSON	(71)	(72)	2020
YOUNG	(48)	(44)	2020

4.2.6 Projected Livestock Shortages

There are no livestock shortages projected. As explained in Section 3, livestock demands were assumed to be met from stock tanks and locally-occurring groundwater.

4.3 Water Needs for Wholesale Water Providers

The TWDB’s definition of a Wholesale Water Provider (WWP) is:

“A WWP is any person or entity, including river authorities and irrigation districts, that has contracts to sell more than 1,000 acft of water wholesale in any one year during the five years immediately preceding the adoption of the last Regional Water Plan. The Planning Groups shall include as wholesale water providers other persons and entities that enter or that the Planning Group expects or recommends to enter contracts to sell more than 1,000 acft of wholesale water during the period covered by the plan.”

Under this definition, the list of WWPs for the Brazos G Area is as follows:

- Brazos River Authority,
- Aquilla Water Supply District,

- Bell County WCID No. 1,
- Bistone MWSD,
- Bluebonnet WSC,
- Central Texas WSC,
- Eastland County Water Supply District,
- Heart of Texas Water Suppliers LLC
- North Central Texas Municipal Water Authority,
- Palo Pinto County Municipal Water District No. 1,
- West Central Texas Municipal Water District,
- Upper Leon Municipal Water District,
- City of Abilene,
- City of Anson,
- City of Bryan
- City of Cedar Park,
- City of Cleburne,
- City of Gatesville
- Johnson County SUD
- Kempner WSC
- City of Mineral Wells
- City of Round Rock,
- City of Stamford,
- City of Sweetwater,
- City of Temple, and
- City of Waco

In addition, to these WWPs, there are other WWPs that provide water to Brazos G WUGs and WWPs from outside the Brazos G Area. These include the Lower Colorado River Authority (Region K), Colorado Municipal Water District (Region F), the Trinity River Authority (Region C), and the Cities of Fort Worth, Arlington, and Mansfield (Region C). Water supply plans will be developed for these entities by the regional water planning groups in the planning regions in which they are primarily located. Summaries for each WWP in the Brazos G Area, including a brief description, contracts for water sales, and supplies are provided in Tables 4.3-1 through 4.3-24. Projected demands are total contracts or projected demands of customer entities, whichever is greater, plus demands to be met from water management strategies recommended for that WWP.

4.3.1 Brazos River Authority

The largest provider of water in the Brazos G Area is the Brazos River Authority (BRA). The BRA also operates water and wastewater treatment systems, has programs to assess and protect water quality, does water supply planning and supports water conservation efforts in the Brazos River Basin. BRA provides water from three wholly owned and operated reservoirs: Lake Granbury, Possum Kingdom Lake, and Lake Limestone. BRA also contracts for conservation storage space and holds water rights in eight U.S. Army Corps of Engineers reservoirs in the region: Lakes Proctor, Belton, Stillhouse Hollow, Georgetown, Granger, Somerville, Whitney, and Aquilla. The BRA also contracts for storage space in Lake Waco on behalf of the City of Waco, which owns the water rights in Lake Waco. The total permitted capacity of the 11 reservoirs in the BRA system (Lake Waco excluded) is 2.22 million acft. BRA holds diversion rights in these reservoirs totaling more than 660,000 acft. In addition to these existing reservoirs, the BRA also holds water rights (shared with the City of Houston) to the proposed Allens Creek Reservoir in Region H. The water rights in Allens Creek Reservoir authorize an impoundment of 145,533 acft and diversions of 99,650 acft/yr.

BRA contracts to supply water to municipal, industrial and agricultural water customers in the BGRWPA and other regions. Although some BRA contracts may have an expiration date prior to 2070, all of these contracts are long term and considered perpetual through 2070 for regional water planning purposes. However, in reality, the BRA will consider contract renewals on a case by case basis as contracts expire. BRA's largest municipal customers include Bell County Water Control and Improvement District No. 1, the City of Round Rock, and the Central Texas Water Supply Corporation. For planning purposes, the overall BRA system has been divided into three separate systems: the Lake Aquilla system consisting of Lake Aquilla and its associated contracts; the Little River System consisting of Lake Proctor, Lake Belton, Stillhouse Hollow Reservoir, Lake Georgetown, and Lake Granger; and the Main Stem/Lower Basin System consisting of Possum Kingdom Reservoir, Lake Granbury, Lake Whitney, Lake Somerville, and Lake Limestone. The demands shown in Table 4.3-1 include all projected demands for water from the BRA in Brazos G, and Regions C, H, O and K, but they do not include water from the Lower Colorado River Authority to be supplied to entities in Williamson County or the yield impact of the subordination agreements that the BRA has with certain water purveyors in the basin.

Table 4.3-1. Projected Demands, Supplies and Balance for BRA

Projected Demands by System for Major Water Contract Holders (contracts as of January 2013)	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
Lake Aquilla System						
Existing Contracts (Brazos G)	11,403	11,403	11,403	11,403	11,403	11,403
Existing Contracts (Region C) ¹	-	-	-	-	-	-
New Demands (Brazos G)	-	-	-	-	-	-
New Demands (Region C)	-	-	-	-	-	-
Total Demands Lake Aquilla System	11,403	11,403	11,403	11,403	11,403	11,403
Little River System						
Existing Contracts (Brazos G)	251,643	251,643	251,643	251,643	251,643	251,643
Existing Contracts (Region K)	-	-	-	-	-	-
New Demands (Brazos G)	20,036	23,549	25,352	31,631	50,785	50,285
New Demands (Region K)	-	-	-	-	-	-
Total Demands Little River System	271,679	275,192	276,995	283,274	302,428	301,928
Main Stem/Lower Basin						
Existing Contracts (Brazos G)	247,595	247,595	247,595	247,595	247,595	247,595
Existing Contracts (Region C)	1,100	1,100	1,100	1,100	1,100	1,100
Existing Contracts (Region H)	163,450	163,450	163,450	163,450	163,450	163,450
New Demands (Brazos G)	78,548	79,293	80,693	84,518	88,703	93,238
New Demands (Region C)	-	-	-	-	-	-
New Demands (Region H) ²	25,000	25,000	25,000	25,000	25,000	25,000
Total Demands Main Stem/Lower Basin	515,693	516,438	517,838	521,663	525,848	530,383
Total Demand (Brazos G)	609,225	613,483	616,686	626,790	650,129	654,164
Total Demand (Region C)	1,100	1,100	1,100	1,100	1,100	1,100
Total Demand (Region K)	-	-	-	-	-	-
Total Demand (Region H)	188,450	188,450	188,450	188,450	188,450	188,450
Projected Total Demand	798,775	803,033	806,236	816,340	839,679	843,714
1 – BRA supplies from Lake Aquilla to Region C are included in Existing Contracts (Brazos G).						
2 – New demands in Region H are proposed to be supplied from the pending BRA System Operations Permit. BRA demands to be met in Region H from the proposed Allens Creek Reservoir are not shown.						
Supply Source	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
Lake Aquilla System	13,315	13,072	12,829	12,585	12,342	12,099
Little River System	211,294	210,249	209,204	208,159	207,114	206,069
Main Stem/Lower Basin System	420,470	414,567	408,664	402,761	396,858	390,955
Total Supply	645,079	637,888	630,697	623,505	616,314	609,123
Projected Balance	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
Lake Aquilla System	1,912	1,669	1,426	1,182	939	696
Little River System	(60,385)	(64,943)	(67,791)	(75,115)	(95,314)	(95,859)
Main Stem/Lower Basin System	(95,223)	(101,871)	(109,174)	(118,902)	(128,990)	(139,428)
Total Balance/(Shortage)	(153,696)	(165,145)	(175,539)	(192,835)	(223,365)	(234,591)



4.3.2 Aquilla Water Supply District

Aquilla Water Supply District is located in Hill County, and obtains raw water from Lake Aquilla through a contract with the BRA. The district supplies treated water to five wholesale customers. The City of Hillsboro is the district's largest customer with a contract to purchase up to 4,200 acft/yr. Projected demands, supplies and balances are shown in Table 4.3-2.

Table 4.3-2. Projected Demands, Supplies and Balance for Aquilla WSD

<i>Projected Demands</i> <i>Major Water Contract Holders</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Brandon-Irene WSC	287	287	287	287	287	287
Chatt WSC (Hill C-O)	86	86	86	86	86	86
Files Valley WSC	1,709	1,709	1,709	1,709	1,709	1,709
Hill County WSC	230	230	230	230	230	230
Hillsboro	4,200	3,640	3,640	3,640	3,640	3,640
Total Demand	6,512	5,952	5,952	5,952	5,952	5,952

<i>Supply Source</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Lake Aquilla (BRA Contract)	5,953	5,953	5,953	5,953	5,953	5,953

<i>Projected Balance</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Balance/(Shortage)	(559)	1	1	1	1	1

4.3.3 Bell County Water Control and Improvement District No. 1

Bell County Water Control and Improvement District (WCID) No. 1 obtains and treats water for its customers from Lake Belton through contracts with the Brazos River Authority for 62,509 acft/yr. Bell County WCID No. 1 also diverts and treats water for Fort Hood using the Department of the Army's water right in Lake Belton, which, for planning purposes, is not listed as a supply for Bell County WCID No. 1. Projected demands, supplies and balances are shown in Table 4.3-3.

Table 4.3-3. Projected Demands, Supplies and Balance for Bell County WCID No. 1

<i>Projected Demands</i> <i>Major Water Contract Holders</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
439 Water Supply Corp	750	750	750	750	750	750
City of Belton	5,966	5,966	5,966	5,966	5,966	5,966
City of Copperas Cove	8,824	8,824	8,824	8,824	8,824	8,824
City of Harker Heights	5,265	5,265	5,265	5,265	5,265	5,265
City of Killeen	39,964	39,964	39,964	39,964	39,964	39,964
City of Nolanville	990	990	990	990	990	990
Bell County-Other	750	750	750	750	750	750
Bell County-Other (Recommended)	0	0	23	467	731	995
Total Fresh Water Demands	62,509	62,509	62,532	62,976	63,240	63,504
Reuse Water Demands						
City of Harker Heights (Recommended)	185	185	185	185	185	185
439 WSC (Recommended)						20
Bell County - Manufacturing (Recommended)	1,000	1,000	1,000	1,360	1,360	1,360
City of Killeen (Recommended)	2,488	2,488	2,488	2,488	2,488	2,488
Total Reuse Water Demands	3,173	3,173	3,173	3,173	3,173	3,193

<i>Supply Source</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Fresh Water Supplies						
Lake Belton (BCWCID #1 BRA Contract)	62,509	62,202	61,602	58,420	57,623	56,364
Reuse Water Supplies						
Undeveloped Bell Co. WCID No.1 Reuse Supply	19,264	20,732	22,199	23,667	25,134	26,602

<i>Projected Balance</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Fresh Water Balance/(Shortage)	0	(307)	(931)	(4,556)	(5,617)	(7,140)
Reuse Water Balance/(Shortage)	16,091	17,559	19,026	20,494	21,961	23,409



4.3.4 Bistone Municipal Water Supply District

Bistone Municipal Water Supply District (MWSD) owns and operates Lake Mexia in Limestone County with authorized diversions for municipal and industrial use of 2,887 acft. The MWSD serves the City of Mexia and other entities in Limestone County. The District's largest customer is the City of Mexia which receives 4,480 acft/yr. Other contract holders include Mexia State School, Coolidge and Whiterock WSC. Mexia State School contract is limited at 250,000 gallons per day. The City of Coolidge has the right to purchase 200,000 gallons per day. Whiterock WSC has a total contract right to purchase 245,000 gallons per day. Projected demands, supplies and balances are shown in Table 4.3-4.

Table 4.3-4. Projected Demands, Supplies and Balance for Bistone MWSD

<i>Projected Demands</i> <i>Major Water Contract Holders</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Bistone MWSD	146	144	142	141	141	141
City of Mexia	4,480	4,480	4,480	4,480	4,480	4,480
Mexia State School (Limestone C-O)	280	280	280	280	280	280
City of Coolidge	225	225	225	225	225	225
Whiterock WSC (Limestone C-O)	274	274	274	274	274	274
Total Demand	5,405	5,403	5,401	5,400	5,400	5,400

<i>Supply Source</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Lake Mexia	1,135	1,028	921	814	707	600
Carrizo – Wilcox Aquifer	1,688	1,688	1,688	1,688	1,688	1,688
Total Supply	2,823	2,716	2,609	2,502	2,395	2,288

<i>Projected Balance</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Balance/(Shortage)	(2,582)	(2,687)	(2,792)	(2,898)	(3,005)	(3,112)

4.3.5 Bluebonnet Water Supply Corporation

The Bluebonnet Water Supply Corporation (WSC) is located in Bell County. The WSC obtains raw water from Lake Belton through contracts with the BRA totaling 8,301 acft. The WSC sells treated water to eight entities in the BGRWPA. The largest customer is the City of McGregor, which has a contract for 2,139 acft/yr. Projected demands, supplies and balances are shown in Table 4.3-5.

Table 4.3-5. Projected Demands, Supplies and Balance for Bluebonnet WSC

<i>Projected Demands</i> <i>Major Water Contract Holders</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
City of Bruceville-Eddy	938	938	938	938	938	938
Elm Creek WSC	654	654	654	654	654	654
City of McGregor	2,139	2,139	2,139	2,139	2,139	2,139
Moffat WSC	869	869	869	869	869	869
City of Moody	401	401	401	401	401	401
Pendleton WSC	461	461	461	461	461	461
Spring Valley WSC (McLennan C-O)	301	301	301	301	301	301
City of Woodway	1,362	1,362	1,362	1,362	1,362	1,362
Total Demand	7,125	7,125	7,125	7,125	7,125	7,125

<i>Supply Source</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Lake Belton (BRA Contract)	7,365	7,090	7,022	6,829	6,736	6,589
Total Supply	7,365	7,090	7,022	6,829	6,736	6,589

<i>Projected Balance</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Balance/(Shortage)	240	(35)	(103)	(296)	(389)	(536)



4.3.6 Central Texas Water Supply Corporation

The Central Texas Water Supply Corporation (WSC) provides water to a number of water supply corporations and cities in Bell, Williamson, Milam and Lampasas Counties. The Central Texas WSC obtains water under contract with the Brazos River Authority (BRA) from Lake Stillhouse Hollow, with a total contracted supply of 12,045 acft/yr, of which 8,332 acft/yr is reliable supply, and two Trinity Aquifer wells. Central Texas WSC provides supply from four separate three-party contracts (BRA, Central Texas WSC, and third party) to Belton, Lampasas, Kempner WSC and Rosebud, in addition to treating and transmitting water to Lampasas and Kempner WSC that those entities have contracted for (raw supply) directly from BRA. Those supplies for which Lampasas and Kempner WSC have contracted directly to BRA are not shown in this table. Projected demands, supplies and balances are shown in Table 4.3-6.

Table 4.3-6. Projected Demands, Supplies and Balance for Central Texas WSC

<i>Projected Demands</i> <i>Major Water Contract Holders</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Armstrong WSC	783	783	783	783	783	783
Bell County WCID No. 5 (Bell C-O)	67	67	67	67	67	67
Bell-Milam-Falls WSC	2,327	2,327	2,327	2,327	2,327	2,327
City of Belton	100	100	100	100	100	100
Dog Ridge WSC	840	840	840	840	840	840
EAST BELL WSC	691	691	691	691	691	691
City of Holland	331	331	331	331	331	331
Little Elm Valley WSC (Milam C-O)	548	548	548	548	548	548
City of Lott	234	234	234	234	234	234
City of Rodgers	468	468	468	468	468	468
City of Rosebud	500	500	500	500	500	500
Salem-Elm Ridge WSC (Milam C-O)	245	245	245	245	245	245
Town of Buckholts	244	244	244	244	244	244
Town of Oenaville and Belfalls (Bell C-O)	157	157	157	157	157	157
West Bell County WSC	1,660	1,660	1,660	1,660	1,660	1,660
Westphalia WSC (Falls C-O)	45	45	45	45	45	45
Jarrell-Schwertner WSC	1,000	1,000	1,000	1,000	1,000	1,000
Bell County-Other (Recommended Strategy)			500	500	500	500
Total Demand	10,240	10,240	10,740	10,740	10,740	10,740

<i>Supply Source</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Trinity Aquifer	2,421	2,421	2,421	2,421	2,421	2,421
Lake Stillhouse Hollow (BRA Contract)	9,644	9,195	9,106	8,636	8,518	8,332
Total Supply	12,065	11,616	11,527	11,057	10,939	10,753

<i>Projected Balance</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Balance/(Shortage)	1,825	1,376	787	317	199	13

4.3.7 Eastland County Water Supply District

The Eastland County Water Supply District owns and operates Lake Leon and has a water right to divert 5,800 acft for municipal and industrial purposes and 500 acft for irrigation. The district currently provides treated water to entities in Eastland County through the Cities of Eastland and Ranger. Projected demands, supplies and balances are shown in Table 4.3-7.

Table 4.3-7. Projected Demands, Supplies and Balance for Eastland County WSD

<i>Projected Demands</i> <i>Major Water Contract Holders</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
City of Eastland	3,314	3,314	3,314	3,314	3,314	3,314
City of Ranger	2025	2025	2025	2025	2025	2025
Eastland County Manufacturing	72	77	82	85	91	97
Total Demand	5,411	5,416	5,421	5,424	5,430	5,436

<i>Supply Source</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Run-of-the-River Right	345	344	342	341	339	338
Lake Leon	5,488	5,456	5,425	5,394	5,362	5,331
Total Supply	5,833	5,800	5,767	5,734	5,701	5,668

<i>Projected Balance</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Balance/(Shortage)	422	384	346	310	271	232



4.3.8 Heart of Texas Water Suppliers LLC

Heart of Texas has a contract to provide 5,600 acft/yr to the City of Hutto. Heart of Texas has a well field in the Carrizo-Wilcox Aquifer (Hooper formation) in Williamson County; however, the current MAG for the Carrizo-Wilcox in Williamson County is only 7 acft/yr. Heart of Texas also holds permits with the Lost Pines Groundwater Conservation District in Lee County for 3,300 acft/yr. A well has been constructed in Lee County, but it has not yet been brought online and is not counted as a current source of supply. Projected demands, supplies and balances are shown in Table 4.3-8.

Table 4.3-8. Projected Demands, Supplies and Balance for Heart of Texas

Projected Demands Major Water Contract Holders	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
City of Hutto	5,600	5,600	5,600	5,600	5,600	5,600
City of Hutto (Recommended Strategy)				1,910	4,117	6,401
Total Demand	5,600	5,600	5,600	7,510	9,717	12,001

Supply Source	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
Carrizo-Wilcox (Williamson County)	7	7	7	7	7	7
Carrizo-Wilcox (Lee County)	0	0	0	0	0	0
Total Supply	7	7	7	7	7	7

Projected Balance	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
Balance/(Shortage)	(5,593)	(5,593)	(5,593)	(7,503)	(9,710_)	(11,994)

4.3.9 North Central Texas Municipal Water Authority

North Central Texas Municipal Water District supplies treated water to entities in Knox, Haskell and Stonewall Counties. The district has water rights to divert 5,000 acft from Millers Creek Reservoir for municipal, industrial, and mining purposes. Projected demands, supplies and balances are shown in Table 4.3-9.

Table 4.3-9. Projected Demands, Supplies and Balance for North Central Texas MWA

Projected Demands Major Water Contract Holders	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
City of Aspermont	118	118	118	118	118	118
City of Benjamin (Knox C-O)	13	13	13	13	13	13
City of Goree (Knox C-O)	63	63	63	63	63	63
City of Haskell	637	637	637	637	637	637
City of Knox City	260	260	260	260	260	260
City of Munday	268	268	268	268	268	268
City of O'Brian (Haskell C-O)	10	10	10	10	10	10
City of Rochester (Haskell C-O)	26	26	26	26	26	26
City of Rule	45	45	45	45	45	45
Weinert (Haskell C-O)	44	44	44	44	44	44
Baylor WSC (Region B)	147	147	147	147	147	147
Knox County Rural WSC (Knox C-O)	55	55	55	55	55	55
Rhineland WSC (Haskell C-O)	37	37	37	37	37	37
Paint Creek WSC (Haskell C-O)	74	74	74	74	74	74
Total Demand	1,797	1,797	1,797	1,797	1,797	1,797

Supply Source	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
Millers Creek Reservoir	1,300	1,080	860	640	420	200

Projected Balance	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
Balance/(Shortage)	(497)	(717)	(937)	(1,157)	(1,377)	(1,597)



4.3.10 Palo Pinto County Municipal Water District No. 1

Palo Pinto Municipal Water District owns and operates Lake Palo Pinto, which is used to supply water to entities in Palo Pinto and Parker Counties (Region C). The district has rights to 18,500 acft a year for municipal and steam electric power uses. Treated water is supplied to the City of Mineral Wells (and its customers) and Lake Palo Pinto Area Water Supply Corporation. The district is currently pursuing the Turkey Peak Dam project to increase its total reservoir storage capacity to the volume authorized in its water right permit. Projected demands, supplies and balances are shown in Table 4.3-10.

Table 4.3-10. Projected Demands, Supplies and Balance for Palo Pinto County MWD No. 1

<i>Projected Demands</i> <i>Major Water Contract Holders</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
City of Mineral Wells ¹	5,164	5,265	5,320	5,391	5,462	5,521
Lake Palo Pinto Area WSC (Palo Pinto C-O)	250	250	250	250	250	250
Palo Pinto County Steam-Electric	4,000	4,000	4,000	4,000	4,000	4,000
Palo Pinto County Irrigation (Recommended)	2,494	2,392	2,299	2,260	2,222	2,188
Total Demand	11,908	11,907	11,869	11,901	11,934	11,959

1 – Includes municipal supply to portion of Mineral Wells located in Region C.

<i>Supply Source</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Lake Palo Pinto	7,655	7,481	7,307	7,133	6,959	6,785

<i>Projected Balance</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Balance/(Shortage)	(4,253)	(4,426)	(4,562)	(4,768)	(4,975)	(5,174)

4.3.11 Upper Leon Municipal Water District

The Upper Leon Municipal Water District obtains water from Lake Proctor through contracts with the BRA totaling 6,437 acft. The MWD provides treated water to the Cities of Comanche, De Leon, Dublin, Gorman, Hamilton and Stephenville. Projected demands, supplies and balances are shown in Table 4.3-11.

Table 4.3-11. Projected Demands, Supplies and Balance for Upper Leon MWD

<i>Projected Demands</i> <i>Major Water Contract Holders</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
City of Comanche	706	706	706	706	706	706
City of De Leon	307	307	307	307	307	307
City of Dublin	598	598	598	598	598	598
City of Gorman	169	169	169	169	169	169
City of Hamilton	921	921	921	921	921	921
City of Stephenville	1,862	1,862	1,862	1,862	1,862	1,862
Comanche County WSC	9	9	9	9	9	9
Total Demand	4,572	4,572	4,572	4,572	4,572	4,572

<i>Supply Source</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Lake Proctor (BRA Contract)	4,980	4,541	4,497	4,264	4,206	4,114

<i>Projected Balance</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Balance/(Shortage)	408	(31)	(75)	(308)	(366)	(458)



4.3.12 West Central Texas Municipal Water District

The West Central Texas Municipal Water District (MWD) holds a water right in Hubbard Creek Reservoir that authorize it to divert up to 56,000 acft of water per year from the reservoir for municipal, industrial, irrigation, mining, domestic, and livestock use. The District provides raw water to its member cities of Abilene, Albany, Anson, and Breckenridge. The District has opted to utilize a 2-year safe yield as the basis for supply from Hubbard Creek Reservoir for the 2016 Brazos G Plan. The District has currently contracted with its member cities up to an allocation of 85% of the one-year safe yield supply. The District also holds a long-term contract with the Colorado River Municipal Water District (CRMWD) for 16 percent of the yield in O.H. Ivie Reservoir (~15,000 acft) and a supporting contract with the City of Abilene to provide this water to the city. Currently the City of Abilene has facilities to utilize up to 6,720 acft/yr (6 MGD) of the supply from O.H. Ivie Reservoir. The O.H. Ivie supply is shown on summaries for the City of Abilene. Projected demands, supplies and balances are shown in Table 4.3-12.

Table 4.3-12. Projected Demands, Supplies and Balance for West Central Texas MWD

<i>Projected Demands</i> <i>Major Water Contract Holders</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
City of Abilene	20,400	20,400	20,400	20,400	20,400	20,400
City of Albany	2,200	2,200	2,200	2,200	2,200	2,200
City of Anson	2,400	2,400	2,400	2,400	2,400	2,400
City of Breckenridge	2,900	2,900	2,900	2,900	2,900	2,900
Total Demand	27,900	27,900	27,900	27,900	27,900	27,900

<i>Supply Source</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Hubbard Creek Reservoir	27,010	26,872	26,733	26,594	26,456	26,317

<i>Projected Balance</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Balance/(Shortage)	(890)	(1,028)	(1,167)	(1,306)	(1,444)	(1,583)

4.3.13 City of Abilene

The City of Abilene has water rights for three reservoirs Lake Fort Phantom Hill, Lake Abilene, and Lake Kirby, all of which it owns and operates. Abilene obtains raw water supply from Lake Fort Phantom Hill. Lakes Abilene and Kirby are the original water supplies for Abilene but are no longer considered to provide reliable supply. The total permitted capacity of Lake Fort Phantom Hill is 73,960 acft. The City has the right to divert up to 30,690 acft/yr from the lake for municipal, industrial, and irrigation use. The City also uses surface water purchased from the West Central Texas Municipal Water District from Lake Hubbard, and Lake O.H. Ivie (operated by the CRMWD). The City currently has reverse osmosis facilities to utilize 6,720 acft/yr of the supply from O.H. Ivie. The City supplies treated water to 14 entities in the BGRWPA and Dyess Air Force Base, which is located in Abilene. The City also has a contract with the City of Hamlin to treat raw water from Hubbard Creek Reservoir that is purchased from the City of Anson. Projected demands, supplies and balances are shown in Table 4.3-13.

Table 4.3-13. Projected Demands, Supplies and Balance for City of Abilene

<i>Projected Demands</i> <i>Major Water Contract Holders</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
City of Abilene ¹	22,032	20,857	21,302	21,901	22,350	22,694
Blair WSC (Taylor C-O)	77	77	77	77	77	77
City of Baird	77	77	77	77	77	77
City of Clyde	307	307	307	307	307	307
City of Lawn (Taylor C-O)	77	77	77	77	77	77
City of Merkel	353	353	353	353	353	353
City of Tye	184	184	184	184	184	184
Eula WSC (Callahan C-O)	61	61	61	61	61	61
Hamby WSC (Taylor C-O)	308	308	308	308	308	308
Hawley WSC	307	307	307	307	307	307
Potosi WSC	307	307	307	307	307	307
Steamboat Mountain WSC	307	307	307	307	307	307
S.U.N. WSC (Taylor C-O)	230	230	230	230	230	230
View Caps WSC (Taylor C-O)	199	199	199	199	199	199
Taylor County Manufacturing	1,248	1,395	1,537	1,658	1,831	2,019
City of Merkel (Recommended Strategy)	0	0	0	0	4	9
City of Potosi (Recommended Strategy)	466	485	500	515	529	542
Steamboat Mountain WSC (Recommended Strategy)	182	185	189	194	203	210
City of Sweetwater (Recommended Strategy)	742	974	1,137	1,355	1,562	1,777
City of Tye (Recommended Strategy)	2	4	6	9	13	15
City of Winters (Region F Recommended Strategy)	100	100	100	100	100	100
Total Treated Water Demand	27,566	26,794	27,565	28,526	29,286	30,160
City of Clyde (for steam-electric supply)	11,837	11,837	11,837	11,837	11,837	11,837
West Texas Water Partnership (Recommended)		10,000	10,000	10,000	10,000	10,000
Taylor County Mining (Recommended)	379	371	340	322	306	293
Taylor County Irrigation (Recommended)	1,010	943	877	842	807	776
Nolan County Steam-Electric (Recommended)		10,000	9,299	7,901	6,702	5,384



Raw Water Only Demand	13,226	33,151	32,453	31,002	29,752	28,390
Total Demand	40,692	59,845	59,918	59,428	58,939	58,449

1 – Demands include any conservation applied to the City's demands as a municipal WUG.

Supply Source	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
Lake Abilene ¹	0	0	0	0	0	0
Lake Kirby ²	0	0	0	0	0	0
Lake O.H. Ivie (Colorado River MWD) ³	4,811	4,668	4,525	4,383	4,240	4,097
Fort Phantom Hill ⁴	10,000	9,792	9,584	9,376	9,168	8,960
West Central Texas MWD (Hubbard) ⁵	19,510	19,372	19,233	19,094	18,956	18,817
Total Raw Water Supply	34,321	33,832	33,343	32,853	32,364	31,874
Treated Supply (Hubbard and Ft. Phantom) ^{6,7}	27,552	13,440	13,440	13,440	13,440	13,440
Total Treated Water Supply	32,363	18,108	17,965	17,823	17,680	17,537

- 1 – Lake Abilene is not considered a dependable supply by the City and is currently not used.
- 2 – Lake Kirby is not considered a dependable supply by the City and is used primarily to store water for the City's reuse customers. Reuse demands are not included in the water demand projections for the City.
- 3 – Updated yields with subordination, 16.54% of Ivie yield. Reduced by 15% for RO efficiency. Current treatment capacity (desalination) is approximately 6 MGD (6,720 acft/yr). Supply located in Region F.
- 4 – Abilene's portion of FPHR supply is based on a 2 year safe yield (10,320 acft/yr in 2070) for of the reservoir, less the 1 year safe yield of the City of Clyde's water right (1,360 acft/yr in 2070).
- 5 – The ongoing drought is not contained in the Brazos WAM and is not reflected in the yields presented. Abilene's supply from Hubbard Creek Reservoir will be reduced to zero (contractual stipulation) as lake levels decrease. As such, Brazos Basin supplies may be overstated.
- 6 – Supply has been constrained based on average annual capacity of the existing Northeast and Grimes treatment plants for 2010. The average annual capacity is determined as 50% of the normal rated design capacity (49.2 MGD). By 2020, the capacity of the Grimes treatment plant is reduced to zero for a total constrained supply of 13,440 AF.
- 7 – Abilene has a treatment contract with Hamlin to treat supplies for Hamlin using Anson supply from WCTMWD.

Projected Balance	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
Treated Water Balance/(Shortage)	4,797	(8,686)	(9,600)	(10,703)	(11,707)	(12,623)
Total Raw Water Balance/(Shortage)	(6,471)	(26,114)	(26,575)	(26,575)	(26,575)	(26,575)

4.3.14 City of Anson

The City of Anson receives surface water supplies from West Central Texas MWD and Lake Anson North. Although the City owns Lake Anson North, the water resource is unreliable and is not considered a supply. The City has a 1.8 MGD WTP for its own demand. Anson sells supply to Hawley WSC and City of Hamlin and contracts with Abilene to provide treatment for these supplies. Projected demands, supplies and balances are shown in Table 4.3-14.

Table 4.3-14. Projected Demands, Supplies and Balance for City of Anson

<i>Projected Demands</i> <i>Major Water Contract Holders</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
City of Anson ¹	367	375	378	388	397	405
HAWLEY WSC	350	350	350	350	350	350
City of Hamlin	767	767	767	767	767	767
Total Demand	1,484	1,492	1,495	1,505	1,514	1,522

1 – Demand includes any conservation applied to the City's demands as a municipal WUG.

<i>Supply Source</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
West Central Texas MWD	2,400	2,400	2,400	2,400	2,400	2,400
Anson North Lake ¹	202	202	202	202	202	202
Total Supplies	2,400	2,400	2,400	2,400	2,400	2,400
Constrained Supply (WTP Capacity)	2,128	2,128	2,128	2,128	2,128	2,128

1 – The City does not consider Anson North Lake a reliable supply and does not intend to use as a water source.

<i>Projected Balance</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Balance/(Shortage)	644	636	633	623	614	606



4.3.15 City of Bryan

The City of Bryan owns a total of twelve wells located in the Simsboro and Sparta formations of the Carrizo-Wilcox Aquifer with a production capacity of 43 MGD. The Brazos Valley Groundwater Conservation District has permitted the City to withdraw 33,540 acft/yr. The City supplies several neighboring communities as well as manufacturing and steam-electric entities. The City of College Station, Wellborn SUD and Wickson Creek SUD have agreements with Bryan to purchase or sell potable water through metered lines. These connections are typically only used during times of high demand or in emergency situations. The city has a bed and banks water right permit for reuse of the city's wastewater effluent. Projected demands, supplies and balances are shown in Table 4.3-15.

Table 4.3-15. Projected Demands, Supplies and Balance for City of Bryan

Projected Demands <i>Major Water Contract Holders</i>	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
City of Bryan ¹	15,203	14,670	18,726	21,795	25,027	28,509
Wellborn SUD	2,240	2,240	2,240	2,240	2,240	2,240
Wickson Creek SUD	1,710	1,534	1,366	1,241	1,129	1,041
City of College Station	385	450	1,656	4,973	8,566	12,716
Brazos County Manufacturing	95	95	95	95	95	95
Brazos County Steam Electric	1	1	1	1	1	1
Total Demand	19,634	18,990	24,084	30,345	37,058	44,602
Reuse Water Demands						
Grimes County Steam Electric (Recommended)	949	1,074	1,040	1,178	1,091	1,111
Brazos County Steam Electric (Recommended)	256	131	165	27	114	94
Total Reuse Demand	1,205	1,205	1,205	1,205	1,205	1,205

1 – Demand includes any conservation applied to the City's demands as a municipal WUG.

Supply Source	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
Carrizo – Wilcox Aquifer	16,042	18,525	19,398	19,398	19,398	19,398
Sparta Aquifer	750	769	769	769	769	769
Total Supply	16,792	19,294	20,167	20,167	20,167	20,167
Reuse Water Supplies						
Undeveloped Reuse Supply	6,645	8,340	10,035	11,730	13,425	15,120

Projected Balance	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
Fresh Water Balance/(Shortage)	(2,841)	304	(3,917)	(10,178)	(16,891)	(24,436)
Reuse Water Balance/(Shortage)	5,440	7,135	8,830	10,525	12,220	13,915

4.3.16 City of Cedar Park

The City of Cedar Park is located in Williamson County and part of Travis County (Region K) and provides wholesale water to entities in Williamson and Travis Counties. The City is a participant in the Brushy Creek Regional Utility Authority to develop additional supplies from the Highland Lakes. Projected demands, supplies and balances are shown in Table 4.3-16.

Table 4.3-16. Projected Demands, Supplies and Balance for City of Cedar Park

<i>Projected Demands</i> <i>Major Water Contract Holders</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
City of Cedar Park ¹	14,124	14,169	12,814	12,440	12,440	12,440
City of Cedar Park (Region K) ¹	2,186	2,100	2,153	2,039	1,939	1,839
Indian Springs Subdivision (Williamson C-O)	13	13	13	13	13	13
Williamson-Travis Co. MUD No.1	989	989	989	989	989	989
Blockhouse MUD	1,098	1,098	1,098	1,098	1,098	1,098
Williamson County-Manufacturing	790	912	1,033	1,142	1,243	1,355
Total Demand	19,200	19,281	18,100	17,721	17,722	17,734

1 – Demand includes any conservation applied to the City's demands as a municipal WUG.

<i>Supply Source</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Highland Lakes System (LCRA)	18,000	18,000	18,000	18,000	18,000	18,000

<i>Projected Balance</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Balance/(Shortage)	(1,200)	(1,281)	(100)	279	278	266



4.3.17 City of Cleburne

The City of Cleburne obtains its water supply from Lake Pat Cleburne, Lake Aquilla, and groundwater from the Trinity Aquifer. The City of Cleburne also has contracted supplies from Lake Whitney that are not yet connected. The City of Cleburne provides treated supplies for manufacturing use and wastewater reuse supplies for steam-electric customers in Johnson County. The city's water treatment plant has an average annual capacity of 11,200 acft/yr, which is sufficient for the current surface water supply. Projected demands, supplies and balances are shown in Table 4.3-17.

Table 4.3-17. Projected Demands, Supplies and Balance for City of Cleburne

Projected Demands Major Water Contract Holders	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
City of Cleburne ¹	5,720	5,761	6,274	6,929	7,636	8,393
Johnson County-Manufacturing	2,329	2,714	3,105	3,455	3,801	4,182
Johnson County SE (Recommended)	3,415	3,275	3,135	3,135	3,135	3,135
Total Fresh Water Demands	11,464	11,750	12,514	13,519	14,572	15,710
Reuse Water Demands						
Johnson County-SE	1,344	1,344	1,344	1,344	1,344	1,344
Johnson County SE (Recommended Strategy)	2,031	2,031	2,031	2,031	2,031	2,031
Total Reuse Demands	3,375	3,375	3,375	3,375	3,375	3,375

1 – Demand includes any conservation applied to the City's demands as a municipal WUG.

Supply Source	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
Fresh Water Supplies						
Trinity Aquifer	1,292	1,292	1,292	1,292	1,292	1,292
Lake Pat Cleburne	4,838	4,769	4,700	4,631	4,562	4,493
Lake Aquilla	5,300	5,300	5,300	5,300	5,300	5,300
Lake Whitney	9,700	9,628	9,556	9,484	9,412	9,340
Lake Whitney Constrained Supplies ¹	0	0	0	0	0	0
Total Fresh Water Supplies	11,430	11,361	11,292	11,223	11,154	11,085
Constrained Fresh Water Supply ²	11,200	11,200	11,200	11,200	11,154	11,085
Reuse Water Supplies						
Johnson County SE	1,344	1,344	1,344	1,344	1,344	1,344
Undeveloped Reuse Supply	2,283	3,089	3,895	4,702	5,508	6,314
Total Reuse Supply	3,627	4,433	5,239	6,046	6,852	7,658

1 – No current infrastructure to take Lake Whitney supplies.
2 – Fresh water supply has been constrained based on average annual capacity of the existing treatment plant(s). The average annual capacity is determined as 50% of the normal rated design capacity (20 MGD).

Projected Balance	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
Fresh Water Balance/(Shortage)	(264)	(550)	(1,314)	(2,319)	(3,418)	(4,625)
Reuse Water Balance/(Shortage)	252	1,058	1,864	2,671	3,477	4,283

4.3.18 City of Gatesville

The City of Gatesville is supplied by multiple contracts with BRA for a total of 5,898 acft/yr from Lake Belton. The City provides treated supplies to five municipal water user groups in Coryell County including supply for all the projected demand for Coryell City Water Supply District. The water supply plan for Coryell County-Other includes the City providing for the remaining water need. Projected wholesale demand on the City in 2070 is 3,931 acft. Projected demands, supplies and balances are shown in Table 4.3-18.

Table 4.3-18. Projected Demands, Supplies and Balance for City of Gatesville

<i>Projected Demands</i> <i>Major Water Contract Holders</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
City of Gatesville	4,216	4,329	4,435	4,422	4,397	4,791
Coryell City Water Supply District	934	1,046	1,172	1,287	1,415	1,543
Fort Gates WSC (Coryell C-O)	120	120	120	120	120	120
Mountain WSC (Coryell C-O)	280	280	280	280	280	280
Grove WSC (Coryell C-O)	0	0	0	0	0	0
Flat WSC (Coryell C-O)	102	102	102	102	102	102
Coryell County-Manufacturing	10	11	12	13	14	15
Coryell County-Other (Recommended)				93	171	515
Total Demand	5,662	5,888	6,121	6,317	6,499	7,366

1 – Demand includes any conservation applied to the City's demands as a municipal WUG.

<i>Supply Source</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
BRA Contract	5,898	5,869	5,812	5,512	5,437	5,318
Total Supplies	5,898	5,869	5,812	5,512	5,437	5,318

<i>Projected Balance</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Balance/(Shortage)	236	(19)	(308)	(805)	(1,062)	(2,048)



4.3.19 Johnson County Special Utility District

Johnson County Special Utility District (SUD) is located in Johnson, Hill, Ellis (Region C) and Tarrant (Region C) counties. The SUD obtains its water supply from groundwater from the Trinity Aquifer, and a contract with the Brazos River Authority for water from Lake Granbury and a contract with the City of Mansfield (10,089 acft/yr) for water from the Tarrant Regional Water District. Supplies from Tarrant have been constrained based on availability from the District. Johnson County SUD also has a contract with Grand Prairie for 6,720 acft/yr, which will be implemented by 2020. The SUD has contracts to supply treated supplies to nine water user groups. Projected demands, supplies and balances are shown in Table 4.3-19.

Table 4.3-19. Projected Demands, Supplies and Balance for Johnson County SUD

<i>Projected Demands</i> <i>Major Water Contract Holders</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Johnson County SUD (Region G) ¹	4,837	5,408	6,029	6,759	7,589	8,490
Johnson County SUD (Region C) ¹	295	323	356	391	431	470
City of Alvarado	2,241	2,241	2,241	2,241	2,241	2,241
Bethany WSC	1,120	1,120	1,120	1,120	1,120	1,120
Monarch Utilities (Johnson C-O)	282	282	282	282	282	282
City of Keene	1,120	1,120	1,120	1,120	1,120	1,120
City of Joshua ²	951	1,115	1,292	1,494	1,722	1,968
Sundance (Johnson C-O)	56	56	56	56	56	56
Blue Water Oaks (Johnson C-O)	31	31	31	31	31	31
Walnut Creek MHP (Johnson C-O)	68	68	68	68	68	68
Johnson County-Mining	20	20	20	20	20	20
Total Demand	11,022	11,785	12,616	13,583	14,681	15,867

1 – Demand includes any conservation applied to the entity's demands as a municipal WUG.

2 – Contract to provide supplies to meet needs less assuming conservation has been applied to the entity.

<i>Supply Source</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
City of Mansfield	6,884	6,302	5,631	4,717	4,260	3,858
BRA Contract (Lake Granbury)	9,210	9,210	9,210	9,210	9,210	9,210
Grand Prairie	0	0	0	0	0	0
Groundwater (Trinity)	2,081	2,081	2,081	2,081	2,081	2,081
Total Supplies	18,175	17,593	16,922	16,008	15,551	15,149
Constrained Supply (Total Treated)	16,626	16,044	15,373	14,459	14,002	13,600

<i>Projected Balance</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Balance/(Shortage)	5,604	4,259	2,757	876	(679)	(2,267)

4.3.20 Kempner Water Supply Corporation

Kempner WSC has service area in portions of Coryell, Bell, Burnet (Region C) and Lampasas Counties. The WSC receives surface water supplies from the Brazos River Authority out of Lake Stillhouse Hollow. Kempner WSC sells supplies to the cities of Kempner, Copperas Cove, Lampasas, as well as to Salado WSC and Lampasas County-Mining. Projected demands, supplies and balances are shown in Table 4.3-20.

Table 4.3-20. Projected Demands, Supplies and Balance for Kempner WSC

<i>Projected Demands</i> <i>Major Water Contract Holders</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Kempner WSC ¹	2,336	2,444	2,684	2,918	3,143	3,356
Kempner WSC (Region K)	129	146	167	188	206	221
City of Kempner ²	195	209	225	240	254	267
City of Copperas Cove	252	252	252	252	252	252
City of Lampasas	1,281	1,281	1,281	1,281	1,281	1,281
Salado WSC	183	183	183	183	183	183
Lampasas County-Mining	25	25	25	25	25	25
City of Lampasas (Recommended Strategy)	22	148	227	318	414	505
Total Demand	4,422	4,687	5,043	5,405	5,757	6,089

1 – Demand includes any conservation applied to the entity's demands as a municipal WUG.
 2 – Contract to provide supplies to meet needs less assuming conservation has been applied to the entity.

<i>Supply Source</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
BRA Contract	4,822	4,694	4,649	4,408	4,348	4,253
Other Buyer's BRA Contracts	1,871	1,846	1,828	1,734	1,742	1,802
Total Supplies	6,694	6,540	6,477	6,142	6,091	6,056
Constrained Supply (WTP Capacity)	3,965	3,965	3,965	3,965	3,965	3,965

<i>Projected Balance</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Balance/(Shortage)	(458)	(723)	(1,078)	(1,440)	(1,792)	(2,125)



4.3.21 City of Mineral Wells

City of Mineral Wells obtains raw water from Lake Mineral Wells and additional surface water supplies from Palo Pinto MWD No. 1. The city supplies treated water to ten water user groups in Palo Pinto and Parker County (Region C). Projected demands, supplies and balances are shown in Table 4.3-21

Table 4.3-21. Projected Demands, Supplies and Balance for City of Mineral Wells

Projected Demands Major Water Contract Holders	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
City of Mineral Wells	2,523	2,677	2,775	2,856	2,935	3,002
City of Mineral Wells (Region C)	336	328	320	310	302	294
City of Graford	92	92	92	92	92	92
Palo Pinto WSC (Palo Pinto C-O)	179	179	179	179	179	179
Santo SUD (Palo Pinto C-O)	331	331	331	331	331	331
Sturdivant-Progress WSC (Palo Pinto C-O)	307	307	307	307	307	307
North Rural WSC (Palo Pinto C-O)	324	324	324	324	324	324
Palo Pinto County Manufacturing	10	10	10	10	10	10
Parker County SUD (Region C)	294	294	294	294	294	294
Millsap WSC (Region C)	184	184	184	184	184	184
Parker County Other (Region C)	479	479	479	479	479	479
Parker County Manufacturing (Region C)	25	25	25	25	25	25
Total Demand	5,084	5,230	5,320	5,391	5,462	5,521

1 – Demand includes any conservation applied to the City's demands as a municipal WUG.

Supply Source	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
Palo Pinto Co MWD No. 1 (Lake Palo Pinto)	5,164	5,265	5,320	5,391	5,462	5,521
Lake Mineral Wells ¹	2,520	2,497	2,474	2,452	2,429	2,406
Total Treated Supply	5,164	5,265	5,320	5,391	5,462	5,521

1 – The City does not have a WTP to utilize this resource for municipal demand.

Projected Balance	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
Balance/(Shortage)	80	35	0	0	0	0

4.3.22 City of Round Rock

The City of Round Rock obtains its water supply from groundwater from the Edwards-BFZ (Northern Segment) Aquifer and contracts with the Brazos River Authority for water from Lake Georgetown and Lake Stillhouse Hollow. Based on the available groundwater and surface water supply and existing contractual demands, the City of Round Rock is projected to have a shortage from 2030 through 2070. Round Rock is a participant in the Brushy Creek Regional Utility Authority project to obtain supplies from the Highland Lakes. The City's reuse project provides 4,320 acft/yr for parkland within the city limits, reducing potable demand for irrigation water. Projected demands, supplies and balances are shown in Table 4.3-22.

Table 4.3-22. Projected Demands, Supplies and Balance for City of Round Rock

Projected Demands Major Water Contract Holders	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
City of Round Rock ¹	23,635	29,691	37,049	44,943	53,991	63,377
City of Round Rock (Region K) ¹	259	299	336	377	414	448
Williamson County MUD #9 (Vista Oaks MUD) ^{1,2}	797	906	1,027	1,247	1,500	1,762
Fern Bluff MUD ^{1,2}	1,153	1,043	943	930	930	930
Williamson County MUD #10 ¹	935	1,062	1,204	1,403	1,687	1,982
Williamson County MUD #11 ¹	542	616	707	862	1,037	1,218
Walsh Ranch MUD (Williamson C-O)	114	111	110	109	109	109
Paloma Lake MUD (Williamson C-O)	137	166	205	277	374	475
Round Rock Ranch PUD (Williamson C-O)	33	44	60	89	127	168
Williamson County (Williamson C-O)	110	132	164	221	299	379
Blessing MHP (Williamson C-O)	96	116	143	194	262	332
Tal Tex (Williamson C-O)	164	198	244	331	447	567
Williamson County-Mining	3	3	3	3	3	3
Williamson County-Manufacturing	1,042	1,200	1,359	1,503	1,638	1,784
Total Demand	29,019	35,586	43,555	52,488	62,818	73,534
1 – Demand includes any conservation applied to the entity's demands as a municipal WUG.						
2 – Projected demands for Fern Bluff MUD and Williamson County MUD #9 are likely overstated.						
Supply Source	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
Stillhouse Hollow Reservoir (BRA Contract)	18,134	18,045	17,871	16,948	16,717	16,351
Lake Georgetown (BRA Contract)	6,720	6,687	6,622	6,280	6,195	6,059
Edwards-BFZ (Northern Segment) Aquifer	579	579	579	579	579	579
Manville WSC (Portion inside City Limits)	134	134	134	134	134	134
Reuse Supplies	4,320	4,320	4,320	4,320	4,320	4,320
LCRA – Lake Travis (Out of Region)	20,928	20,928	20,928	20,928	20,928	20,928
Constrained LCRA Supplies ³	0	0	0	0	0	0
Total Supply	29,887	29,765	29,527	28,262	27,945	27,444
3 – Entities in Williamson County are implementing a strategy to access this supply by 2020.						
Projected Balance	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
Balance/(Shortage)	868	(5,821)	(14,028)	(24,227)	(34,874)	(46,089)



4.3.23 City of Stamford

The City of Stamford obtains supply from Lake Stamford and supplies water to several entities in Jones and Haskell Counties. The City of Stamford is authorized to store up to 60,000 acre-feet in Lake Stamford and to divert 10,000 acft/yr from the reservoir. The City also constructed a diversion structure on California Creek to divert from California Creek to Lake Stamford to augment supplies in the reservoir. The City has contracts to supply treated supplies to six water user groups. Projected demands, supplies and balances are shown in Table 4.3-23

Table 4.3-23. Projected Demands, Supplies and Balance for City of Stamford

Projected Demands Major Water Contract Holders	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
City of Stamford ¹	803	769	722	673	625	616
City of Leuders (Jones C-O)	52	52	52	52	52	52
Ericksdahl WSC (Jones C-O)	37	37	37	37	37	37
Paint Creek WSC (Haskell C-O)	87	87	87	87	87	87
Sagerton WSC (Haskell C-O)	73	73	73	73	73	73
Total Treated Water Demand	1,052	1,018	971	922	874	865
Haskell County SE	2,200	2,200	2,200	2,200	2,200	2,200
Raw Water Only Demand	2,200	2,200	2,200	2,200	2,200	2,200
Total Demand	3,252	3,218	3,171	3,122	3,074	3,065

1 – Demand includes any conservation applied to the City's demands as a municipal WUG.

Supply Source	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
Lake Stamford	5,510	5,390	5,270	5,150	5,030	4,910
Treated Supply (WTP Capacity)	1,458	1,458	1,458	1,458	1,458	1,458

Projected Balance	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
Treated Water Balance/(Shortage)	406	441	487	536	584	593
Raw Water Balance/(Shortage)	2,258	2,172	2,099	2,028	1,956	1,845

4.3.24 City of Sweetwater

The City of Sweetwater owns and operates the Oak Creek Reservoir in Coke County (Region F) in the Colorado River Basin. Oak Creek Reservoir has a zero firm or safe yield supply, which can be increased through a proposed subordination agreement with downstream water rights holders (recommended strategy in Region F). The City also operates a groundwater well field in the Dockum Aquifer. Although the City owns Lake Sweetwater, the water resource is unreliable and is not considered a supply. The City of Sweetwater provides wholesale water to entities in Nolan and Fisher Counties, and the City of Bronte in Region F. Projected demands, supplies and balances are shown in Table 4.3-24.

Table 4.3-24. Projected Demands, Supplies and Balance for City of Sweetwater

<i>Projected Demands</i> <i>Major Water Contract Holders</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
City of Sweetwater ¹	1,813	1,893	1,913	1,977	2,030	2,079
Bitter Creek WSC	460	460	460	460	460	460
City of Blackwell	168	168	168	168	168	168
City of Bronte (Region F)	504	504	504	504	504	504
City of Roby	350	350	350	350	350	350
City of Trent	187	187	187	187	187	187
Nolan County Manufacturing	368	368	368	368	368	368
Nolan County Manufacturing (Recommended)	838	991	1,134	1,288	1,442	1,608
Total Demand	4,688	4,921	5,084	5,302	5,509	5,724

1 – Demand includes any conservation applied to the City's demands as a municipal WUG.

<i>Supply Source</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Lake Trammel ¹	0	0	0	0	0	0
Lake Sweetwater ¹	0	0	0	0	0	0
Oak Creek Reservoir (Region F)	0	0	0	0	0	0
Dockum Aquifer	2,540	2,540	2,540	2,540	2,540	2,540
Total Supply	2,540	2,540	2,540	2,540	2,540	2,540

1 – The City does not consider Lake Sweetwater or Lake Trammel a reliable supply and does not intend to use either as a water source.

<i>Projected Balance</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Balance/(Shortage)	(2,149)	(2,381)	(2,544)	(2,762)	(2,969)	(3,184)



4.3.25 City of Temple

The City of Temple has a contract with the Brazos River authority to provide 30,453 acft/yr of raw water and an additional 10,100 acft/yr from a run-of-the-river water right (Certificate of Adjudication C2938). The BRA contract can yield a reliable supply of 23,524 acft/yr and the City's water right can provide a reliable supply up to 1,869 acft/yr (supplies from the right increase over time due to sedimentation in the upstream Lake Belton and increased wastewater treatment plant discharges). A few water supply corporations provide water to customers inside the city limits which has been accounted in the supply to the City. The City provides supply to the Cities of Little River-Academy, Morgans Point Resort, and Troy. The City's water treatment plants have an annual average capacity of 27,955 acft. The water supply plan for Little River-Academy includes Temple supplying an additional 180 acft/yr of treated water by 2030. The City has a contract to supply effluent from its wastewater treatment plan to a new generating station owned by Panda Power. Projected demands, supplies and balances are shown in Table 4.3-25.

Table 4.3-25. Projected Demands, Supplies and Balance for City of Temple

Projected Demands Major Water Contract Holders	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
City of Temple ¹	18,571	19,446	20,197	20,691	20,873	22,992
City of Little River-Academy	323	323	323	323	323	323
City of Morgans Point Resort	1,935	1,935	1,935	1,935	1,935	1,935
City of Troy	968	968	968	968	968	968
Arrowhead Hill (Bell C-O)	323	323	323	323	323	323
Bell County Manufacturing	481	481	481	481	481	481
Little River-Academy (Recommended)		180	180	180	180	180
Total Demand	22,601	23,656	24,407	24,901	25,083	27,202
Reuse Water Demands						
Bell County Steam-Electric (Panda Power)	8,407	8,407	8,407	8,407	8,407	8,407
Bell County Steam-Electric (Recommended)						1,300
Total Reuse Water Demand	8,407	8,407	8,407	8,407	8,407	9,707
1 – Demand includes any conservation applied to the City's demands as a municipal WUG.						

Supply Source	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
Fresh Water Supplies						
Run-of-River Water Right	1,706	1,739	1,771	1,804	1,836	1,869
BRA Contract	23,890	22,432	22,956	22,232	22,096	23,524
Constrained Supply (WTP Capacity)	27,955	27,955	27,955	27,955	27,955	27,955
Little Elm Valley WSC ¹	50	50	50	50	50	50
Moffat WSC ¹	11	11	11	11	11	11
Pendleton WSC ¹	81	81	81	81	81	81
Total Fresh Water Supply	25,738	24,312	24,869	24,177	24,074	25,535
Reuse Water Supplies						

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BRA TBRSS	14,092	14,092	14,092	14,092	14,092	14,092
1 – These entities provide to customers counted as part of the WUG population for Temple.						

<i>Projected Balance</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
Fresh Water Balance/(Shortage)	3,137	656	461	(724)	(1,009)	(1,668)
Reuse Water Balance/(Shortage)	5,685	5,685	5,685	5,685	5,685	4,385



4.3.26 City of Waco

The City of Waco obtains raw water from Lake Waco, from a diversion authorized from Lake Brazos, and a small amount of groundwater from the Trinity Aquifer. In 2003, the City, in cooperation with the BRA and the U.S. Army Corps of Engineers, implemented a project to raise the water level in Lake Waco to provide for additional supply. With this additional supply, the City has the right to divert 79,870 acft/yr from Lake Waco for municipal, industrial, and irrigation uses. The City provides treated water to multiple neighboring communities and water supply corporations. The Waco Metropolitan Area Regional Sewerage System (WMARSS) facility is operated by the City of Waco on behalf of the member cities of Bellmead, Hewitt, Lacy Lakeview, Lorena, Robinson and Woodway. Effluent from the WMARSS is used to supply steam-electric cooling supply, and multiple other reuse projects are planned to offset potable water use for manufacturing and landscape irrigation in McLennan County. Projected demands, supplies and balances are shown in Table 4.3-26.

Table 4.3-26. Projected Demands, Supplies and Balance for City of Waco

<i>Projected Demands</i> <i>Major Water Contract Holders</i>	<i>Year (acft/yr)</i>					
	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>	<i>2070</i>
<u>Fresh Water Demands</u>						
City of Waco ¹	30,114	29,344	28,224	27,059	26,921	28,333
City of Bellmead ²	0	0	0	0	0	0
City of Hewitt ²	383	558	877	1,198	1,519	1,833
City of Lacy-Lakeview	1,120	1,120	1,120	1,120	1,120	1,120
City of Woodway ²	431	657	859	1,083	1,316	1,548
City of Beverly Hills ²	252	261	268	281	297	312
City of West	1,120	1,120	1,120	1,120	1,120	1,120
City of Robinson	560	560	560	560	560	560
Bold Springs Water Supply (McLennan C-O)	560	560	560	560	560	560
Hilltop Water Supply (McLennan C-O)	97	97	97	97	97	97
Central Bosque WSC (McLennan C-O)	70	70	70	70	70	70
McLennan County Manufacturing	2,503	2,888	3,249	3,618	3,948	4,403
Cross County WSC (Recommended Strategy)				150	150	150
City of Mart (Recommended Strategy)	250	250	250	250	250	250
North Bosque WSC (Recommended Strategy)		200	200	200	200	200
City of Riesel (Recommended Strategy)	20	20	20	20	20	20
Total Fresh Water Demands	37,481	37,706	37,475	37,386	38,148	40,576
<u>Reuse Water Demands</u>						
McLennan County SE (SCEA)	15,000	15,000	15,000	15,000	15,000	15,000
City of Bellmead (Bellmead/Lacy-Lakeview)	1,120	1,120	1,120	1,120	1,120	1,120
City of Hallsburg (Waco East)	31	31	31	31	31	31
City of Hewitt (Bullhide Creek)	1,223	1,223	1,223	1,223	1,223	1,223
City of Lacy-Lakeview (Bellmead/Lacy-Lakeview)	1,120	1,120	1,120	1,120	1,120	1,120
City of Lorena (Bullhide Creek)	448	448	448	448	448	448
City of Mart (Waco East)	134	134	134	134	134	134
City of Riesel (Alternative: Waco East)	43	43	43	43	43	43

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McLennan County Manufacturing (Flat Creek)	1,600	1,700	1,800	2,000	2,200	2,500
McLennan County Mining (North Reuse)	811	811	811	811	811	811
Total Reuse Water Demands	21,530	21,630	21,730	21,930	22,130	22,430
1 – Demand includes any conservation applied to the City’s municipal demands as a WUG.						
2 – Contract to provide supplies to meet needs less assumed conservation has been applied to the entity.						

Supply Source	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
<u>Fresh Water Supplies</u>						
Lake Waco (Municipal & Industrial)	79,877	79,877	79,877	79,877	79,877	79,877
Lake Brazos	5,600	5,600	5,600	5,600	5,600	5,600
Total Fresh Water Supplies	85,477	85,477	85,477	85,477	85,477	85,477
Constrained Fresh Water Supply ¹	50,400	50,400	50,400	50,400	50,400	50,400
<u>Reuse Water Supplies (WMARSS)</u>						
McLennan County SE (SCEA)	15,000	15,000	15,000	15,000	15,000	15,000
Undeveloped WMARSS Reuse Supply	12,035	13,902	15,769	17,636	19,503	21,370
Total Reuse Supply from WMARSS²	27,035	28,902	30,769	32,636	34,503	36,370
1 – Fresh water supply has been constrained based on average annual capacity of the existing Waco treatment plant. The average annual capacity is determined as 50% of the normal rated design capacity (90 MGD).						
2 – Reuse supplies are based on projected WMARSS plant flows.						

Projected Balance	Year (acft/yr)					
	2020	2030	2040	2050	2060	2070
Fresh Water Balance/(Shortage)	12,919	12,694	12,925	13,014	12,252	9,824
Reuse Water Balance/(Shortage)	5,505	7,272	9,039	10,706	12,373	13,940



4.3.27 WWP Summary

Table 4.3-27 summarizes the contractual demands by WWP as applied to use type (municipal, manufacturing, irrigation, mining or steam electric power) by county and by river basin. The volumes do not correlate to the contract amounts but to the available supply applied to meet current and projected needs. These volumes typically are less than the volumes assigned to recommended strategies for the WWPs or its customers.

Table 4.3-27. WWP Projected Contract Water Use by Type, County and Basin

Buyer/Use	County	Basin	Year					
			2020	2030	2040	2050	2060	2070
ABILENE								
MANUFACTURING	TAYLOR	BRAZOS	1,248	1,395	1,537	1,658	1,831	2,019
MUNICIPAL	CALLAHAN	BRAZOS	356	357	357	357	356	357
MUNICIPAL	CALLAHAN	COLORADO	94	93	93	93	94	93
MUNICIPAL	JONES	BRAZOS	210	209	209	208	207	205
MUNICIPAL	TAYLOR	BRAZOS	1,833	1,834	1,834	1,834	1,831	1,830
MUNICIPAL	TAYLOR	COLORADO	147	146	146	146	146	146
STEAM ELECTRIC	JONES	BRAZOS	8,247	11,837	11,837	11,837	11,837	11,837
ABILENE TOTAL			12,135	15,871	12,135	15,871	16,013	16,133
ANSON								
MUNICIPAL	JONES	BRAZOS	1,014	1,013	1,013	1,012	1,011	1,009
MUNICIPAL	TAYLOR	BRAZOS	26	26	26	26	25	25
ANSON TOTAL			1,040	1,039	1,040	1,039	1,039	1,038
AQUILLA WSD								
MUNICIPAL	ELLIS	TRINITY	268	347	399	448	502	556
MUNICIPAL	HILL	BRAZOS	4,420	4,272	4,251	4,236	4,220	4,203
MUNICIPAL	HILL	TRINITY	786	850	815	778	737	696
MUNICIPAL	NAVARRO	TRINITY	23	25	26	27	28	30
AQUILLA WSD TOTAL			5,497	5,494	5,497	5,494	5,491	5,489
BELL COUNTY WCID #1								
MUNICIPAL	BELL	BRAZOS	53,678	53,414	52,899	50,166	49,482	48,400
MUNICIPAL	CORYELL	BRAZOS	8,571	8,451	8,335	7,873	7,749	7,571
MUNICIPAL	LAMPASAS	BRAZOS	253	330	361	374	385	386
BELL COUNTY WCID #1 TOTAL			62,502	62,195	62,502	62,195	61,595	58,413
BISTONE MWSD								
MUNICIPAL	LIMESTONE	BRAZOS	1,486	1,411	1,340	1,272	1,200	1,128
MUNICIPAL	LIMESTONE	TRINITY	869	827	783	737	692	648
BISTONE MWSD TOTAL			2,355	2,238	2,355	2,238	2,123	2,009

Table 4.3-27. WWP Projected Contract Water Use by Type, County and Basin

Buyer/Use	County	Basin	Year					
			2020	2030	2040	2050	2060	2070
BLUEBONNET WSC								
MUNICIPAL	BELL	BRAZOS	1,572	1,569	1,557	1,519	1,501	1,469
MUNICIPAL	CORYELL	BRAZOS	57	56	56	53	52	51
MUNICIPAL	FALLS	BRAZOS	3	3	3	3	2	2
MUNICIPAL	MCLENNAN	BRAZOS	5,276	5,245	5,188	5,036	4,964	4,849
BLUEBONNET WSC TOTAL			6,908	6,873	6,908	6,873	6,804	6,611
BRAZOS RIVER AUTHORITY								
IRRIGATION	BELL	BRAZOS	308	307	304	288	284	278
IRRIGATION	BRAZOS	BRAZOS	350	349	347	346	345	344
IRRIGATION	BURNET	BRAZOS	89	89	89	89	89	89
IRRIGATION	COMANCHE	BRAZOS	4,968	3,616	3,474	4,557	3,988	3,511
IRRIGATION	HILL	BRAZOS	1,000	1,000	1,000	1,000	1,000	1,000
IRRIGATION	HOOD	BRAZOS	4,060	4,060	4,060	4,060	4,060	4,060
IRRIGATION	PALO PINTO	BRAZOS	550	550	550	550	550	550
IRRIGATION	PARKER	BRAZOS	393	393	393	393	393	393
IRRIGATION	PARKER	TRINITY	107	107	107	107	107	107
IRRIGATION	WALLER	BRAZOS	50	50	50	50	50	50
IRRIGATION	WILLIAMSON	BRAZOS	67	67	67	66	66	66
MANUFACTURING	HOOD	BRAZOS	10,000	10,000	10,000	10,000	10,000	10,000
MANUFACTURING	PALO PINTO	BRAZOS	1,200	1,200	1,200	1,200	1,200	1,200
MINING	HILL	BRAZOS	1,000	952	843	901	878	855
MINING	HILL	TRINITY	0	32	124	50	56	63
MINING	PALO PINTO	BRAZOS	1,235	1,219	1,202	1,186	1,169	1,153
MINING	PARKER	BRAZOS	27	22	16	11	6	0
MINING	PARKER	TRINITY	17	13	10	7	3	0
MINING	STEPHENS	BRAZOS	1,000	1,000	1,000	1,000	1,000	1,000
MINING	STONEWALL	BRAZOS	175	175	175	175	175	175
MUNICIPAL	BELL	BRAZOS	25,590	24,087	24,655	24,554	24,939	26,345
MUNICIPAL	BRAZOS	BRAZOS	938	938	938	938	938	938
MUNICIPAL	BURNET	BRAZOS	201	239	273	304	333	358
MUNICIPAL	CORYELL	BRAZOS	5,401	5,266	5,096	4,662	4,715	4,456
MUNICIPAL	EASTLAND	BRAZOS	21	22	22	22	21	21
MUNICIPAL	ELLIS	TRINITY	18	19	20	20	20	20



Table 4.3-27. WWP Projected Contract Water Use by Type, County and Basin

Buyer/Use	County	Basin	Year					
			2020	2030	2040	2050	2060	2070
MUNICIPAL	FALLS	BRAZOS	1,300	1,300	1,300	1,300	1,300	1,300
MUNICIPAL	FORT BEND	BRAZOS	5,732	5,700	5,670	5,639	5,607	5,578
MUNICIPAL	FORT BEND	SAN JACINTO	30	31	30	30	30	30
MUNICIPAL	HILL	BRAZOS	202	199	198	196	194	193
MUNICIPAL	HILL	TRINITY	27	27	26	26	26	26
MUNICIPAL	HOOD	BRAZOS	7,695	7,709	7,705	7,691	7,679	7,669
MUNICIPAL	JOHNSON	BRAZOS	6,239	6,120	5,885	5,674	5,458	5,215
MUNICIPAL	JOHNSON	TRINITY	2,282	2,173	2,053	1,917	1,761	1,594
MUNICIPAL	LAMPASAS	BRAZOS	1,189	1,143	1,087	1,041	994	950
MUNICIPAL	LIMESTONE	BRAZOS	200	200	200	200	200	200
MUNICIPAL	MCLENNAN	BRAZOS	461	461	459	437	432	422
MUNICIPAL	PALO PINTO	BRAZOS	1,851	1,852	1,853	1,854	1,855	1,855
MUNICIPAL	PARKER	BRAZOS	561	561	561	561	561	561
MUNICIPAL	ROBERTSON	BRAZOS	182	182	182	182	182	182
MUNICIPAL	SHACKELFORD	BRAZOS	3	3	3	3	3	3
MUNICIPAL	STEPHENS	BRAZOS	435	435	433	434	434	434
MUNICIPAL	TARRANT	TRINITY	174	161	148	134	119	104
MUNICIPAL	THROCKMORTON	BRAZOS	25	23	24	22	22	22
MUNICIPAL	TRAVIS	COLORADO	225	203	177	146	123	102
MUNICIPAL	WASHINGTON	BRAZOS	3,909	3,909	3,909	3,909	3,909	3,909
MUNICIPAL	WILLIAMSON	BRAZOS	48,434	48,586	47,813	45,482	43,980	42,481
MUNICIPAL	YOUNG	BRAZOS	1,000	1,000	1,000	1,000	1,000	1,000
STEAM ELECTRIC	BOSQUE	BRAZOS	6,500	6,374	6,248	6,122	5,996	5,870
STEAM ELECTRIC	GRIMES	BRAZOS	2,520	2,460	2,399	2,339	2,278	2,218
STEAM ELECTRIC	GRIMES	SAN JACINTO	1,080	1,054	1,028	1,002	976	950
STEAM ELECTRIC	HOOD	BRAZOS	43,447	43,447	43,447	43,447	43,271	40,337
STEAM ELECTRIC	LIMESTONE	BRAZOS	21,837	21,530	21,223	20,916	20,609	20,302
STEAM ELECTRIC	MILAM	BRAZOS	2,683	4,329	4,352	4,673	4,609	4,508
STEAM ELECTRIC	PALO PINTO	BRAZOS	11,600	11,445	11,290	11,134	10,979	10,824
STEAM ELECTRIC	ROBERTSON	BRAZOS	25,000	24,819	24,638	24,457	24,275	24,094
STEAM ELECTRIC	SOMERVELL	BRAZOS	40,000	40,000	40,000	40,000	40,000	40,000
STEAM ELECTRIC	YOUNG	BRAZOS	14,000	14,000	14,000	14,000	14,000	14,000
BRAZOS RIVER AUTHORITY TOTAL			309,588	307,208	309,588	307,208	305,356	302,504

Table 4.3-27. WWP Projected Contract Water Use by Type, County and Basin

Buyer/Use	County	Basin	Year					
			2020	2030	2040	2050	2060	2070
BRYAN								
MANUFACTURING	BRAZOS	BRAZOS	95	95	95	95	95	95
MUNICIPAL	BRAZOS	BRAZOS	2,168	1,967	2,893	5,950	9,474	13,570
MUNICIPAL	GRIMES	BRAZOS	379	314	257	214	179	151
MUNICIPAL	GRIMES	TRINITY	51	43	35	29	25	21
MUNICIPAL	ROBERTSON	BRAZOS	140	100	62	21	17	15
STEAM ELECTRIC	BRAZOS	BRAZOS	1	1	1	1	1	1
BRYAN TOTAL			2,834	2,520	2,834	2,520	3,343	6,310
CEDAR PARK								
MANUFACTURING	WILLIAMSON	BRAZOS	790	912	1,033	1,142	1,243	1,355
MUNICIPAL	TRAVIS	COLORADO	201	201	201	202	201	202
MUNICIPAL	WILLIAMSON	BRAZOS	1,886	1,886	1,886	1,885	1,886	1,885
MUNICIPAL	WILLIAMSON	COLORADO	10	9	8	7	6	5
CEDAR PARK TOTAL			2,887	3,008	2,887	3,008	3,128	3,236
CENTRAL TEXAS WSC								
MUNICIPAL	BELL	BRAZOS	6,276	6,257	6,252	6,254	6,238	6,227
MUNICIPAL	FALLS	BRAZOS	1,375	1,360	1,330	1,287	1,273	1,259
MUNICIPAL	MILAM	BRAZOS	1,741	1,735	1,723	1,721	1,709	1,695
MUNICIPAL	WILLIAMSON	BRAZOS	848	888	935	978	1,020	1,059
CENTRAL TEXAS WSC TOTAL			10,240	10,240	10,240	10,240	10,240	10,240
CLEBURNE								
IRRIGATION	JOHNSON	BRAZOS	102	100	99	97	96	94
IRRIGATION	JOHNSON	TRINITY	100	99	97	96	94	93
MANUFACTURING	JOHNSON	BRAZOS	2,329	2,714	3,105	3,455	3,801	4,182
STEAM ELECTRIC	JOHNSON	BRAZOS	1,344	1,344	1,344	1,344	1,344	1,344
CLEBURNE TOTAL			3,875	4,257	3,875	4,257	4,645	4,992
EASTLAND COUNTY WSD								
MANUFACTURING	EASTLAND	BRAZOS	72	77	82	85	91	97
MUNICIPAL	EASTLAND	BRAZOS	5,219	5,219	5,219	5,219	5,219	5,219
EASTLAND COUNTY WSD TOTAL			5,291	5,296	5,291	5,296	5,301	5,304
GATESVILLE								
MANUFACTURING	CORYELL	BRAZOS	10	11	12	13	14	15
MUNICIPAL	CORYELL	BRAZOS	1,311	1,401	1,508	1,603	1,710	1,818



Table 4.3-27. WWP Projected Contract Water Use by Type, County and Basin

Buyer/Use	County	Basin	Year					
			2020	2030	2040	2050	2060	2070
MUNICIPAL	MCLENNAN	BRAZOS	125	147	166	186	207	227
GATESVILLE TOTAL			1,446	1,559	1,446	1,559	1,686	1,802
JOHNSON COUNTY SUD								
MINING	JOHNSON	BRAZOS	10	10	10	10	10	10
MINING	JOHNSON	TRINITY	10	10	10	10	10	10
MUNICIPAL	JOHNSON	BRAZOS	1,171	1,271	1,379	1,500	1,639	1,788
MUNICIPAL	JOHNSON	TRINITY	4,699	4,763	4,832	4,913	5,002	5,099
JOHNSON COUNTY SUD TOTAL			5,890	6,054	5,890	6,054	6,231	6,433
KEMPNER WSC								
MINING	LAMPASAS	BRAZOS	25	25	25	25	25	25
MUNICIPAL	BELL	BRAZOS	183	183	183	183	183	183
MUNICIPAL	CORYELL	BRAZOS	245	243	242	241	240	240
MUNICIPAL	LAMPASAS	BRAZOS	1,346	1,348	1,351	1,354	1,352	1,347
KEMPNER WSC TOTAL			1,799	1,799	1,799	1,799	1,801	1,803
MINERAL WELLS								
MANUFACTURING	PALO PINTO	BRAZOS	10	10	10	10	10	10
MANUFACTURING	PARKER	BRAZOS	1	1	0	0	0	1
MANUFACTURING	PARKER	TRINITY	24	24	25	25	25	24
MUNICIPAL	PALO PINTO	BRAZOS	1,158	1,158	1,158	1,158	1,158	1,158
MUNICIPAL	PARKER	BRAZOS	687	801	861	801	729	664
MUNICIPAL	PARKER	TRINITY	270	156	96	156	228	293
MINERAL WELLS TOTAL			2,150	2,150	2,150	2,150	2,150	2,150
NORTH CENTRAL TEXAS MUNICIPAL WATER AUTHORITY								
MUNICIPAL	BAYLOR	BRAZOS	147	147	119	89	60	28
MUNICIPAL	HASKELL	BRAZOS	739	613	489	363	239	114
MUNICIPAL	KNOX	BRAZOS	467	388	308	230	152	72
MUNICIPAL	KNOX	RED	10	8	7	5	3	2
MUNICIPAL	STONEWALL	BRAZOS	85	71	56	42	28	13
NORTH CENTRAL TEXAS MWA TOTAL			1,448	1,227	1,448	1,227	979	729
PALO PINTO COUNTY MWD No. 1								
MUNICIPAL	PALO PINTO	BRAZOS	2,768	2,883	2,950	3,031	3,110	3,177
MUNICIPAL	PARKER	BRAZOS	346	332	320	310	302	294
STEAM ELECTRIC	PALO PINTO	BRAZOS	2,241	1,966	1,737	1,492	1,247	1,014

Table 4.3-27. WWP Projected Contract Water Use by Type, County and Basin

Buyer/Use	County	Basin	Year					
			2020	2030	2040	2050	2060	2070
PALO PINTO COUNTY MWD No. 1 TOTAL			5,355	5,181	5,355	5,181	5,007	4,833
ROUND ROCK								
MANUFACTURING	WILLIAMSON	BRAZOS	565	651	780	924	1,059	1,205
MINING	WILLIAMSON	BRAZOS	3	3	3	3	3	3
MUNICIPAL	WILLIAMSON	BRAZOS	3,916	4,199	4,572	5,290	6,315	7,370
MUNICIPAL	WILLIAMSON	COLORADO	165	195	235	373	457	552
ROUND ROCK TOTAL			4,649	5,048	4,649	5,048	5,590	6,590
STAMFORD								
MUNICIPAL	HASKELL	BRAZOS	160	160	160	160	160	160
MUNICIPAL	JONES	BRAZOS	89	89	89	89	89	89
STEAM ELECTRIC	HASKELL	BRAZOS	2,200	2,200	2,200	2,200	2,200	2,200
STAMFORD TOTAL			2,449	2,449	2,449	2,449	2,449	2,449
SWEETWATER								
MANUFACTURING	NOLAN	BRAZOS	368	368	368	368	368	368
MUNICIPAL	FISHER	BRAZOS	538	533	528	525	521	519
MUNICIPAL	NOLAN	BRAZOS	272	277	282	285	289	291
MUNICIPAL	TAYLOR	BRAZOS	187	187	187	187	187	187
SWEETWATER TOTAL			1,365	1,365	1,365	1,365	1,365	1,365
TEMPLE								
MANUFACTURING	BELL	BRAZOS	481	481	481	481	481	481
MUNICIPAL	BELL	BRAZOS	3,540	3,540	3,540	3,540	3,540	3,540
TEMPLE TOTAL			4,021	4,021	4,021	4,021	4,021	4,021
UPPER LEON MWD								
MUNICIPAL	COMANCHE	BRAZOS	996	985	972	910	893	867
MUNICIPAL	EASTLAND	BRAZOS	169	168	166	156	153	149
MUNICIPAL	ERATH	BRAZOS	2,383	2,366	2,344	2,234	2,206	2,160
MUNICIPAL	HAMILTON	BRAZOS	673	665	654	599	584	562
UPPER LEON MWD TOTAL			4,221	4,184	4,221	4,184	4,136	3,899
WACO								
MANUFACTURING	MCLENNAN	BRAZOS	2,503	2,888	3,249	3,618	3,948	4,403
MUNICIPAL	MCLENNAN	BRAZOS	4,448	4,858	5,386	5,944	6,514	7,075
STEAM ELECTRIC	MCLENNAN	BRAZOS	15,000	15,000	15,000	15,000	15,000	15,000
WACO TOTAL			21,951	22,746	21,951	22,746	23,635	24,562



Table 4.3-27. WWP Projected Contract Water Use by Type, County and Basin

Buyer/Use	County	Basin	Year					
			2020	2030	2040	2050	2060	2070
WEST CENTRAL TEXAS MWD								
MUNICIPAL	JONES	BRAZOS	1,324	1,027	1,029	1,031	1,032	1,032
MUNICIPAL	SHACKELFORD	BRAZOS	448	460	465	466	466	466
MUNICIPAL	STEPHENS	BRAZOS	1,700	1,703	1,707	1,711	1,714	1,718
MUNICIPAL	TAYLOR	BRAZOS	6,852	344	383	442	451	446
WEST CENTRAL TEXAS MWD TOTAL			10,324	3,534	10,324	3,534	3,584	3,650

4.4 Water Supplied to Meet Demands Not in Brazos G

Existing or recommended water contracts in the Brazos G Area that are currently or projected to provide water to another region are included in the wholesale water provider summary tables (Table 4.3-1 through Table 4.3-26). These supplies have been coordinated with the adjacent regions.

4.5 Social and Economic Impacts of Not Meeting Projected Water Needs

Section 357.7(4) of the rules for implementing Senate Bill 1 requires that the social and economic impacts of not meeting regional water supply needs be evaluated by regional water planning groups. TWDB has provided technical assistance by conducting the required analysis for the Brazos G Area using a methodology similar to that used for other regions.

The purpose of this element of Senate Bill 1 planning is to provide an estimate of the social and economic importance of meeting projected water needs or, conversely, to provide estimates of potential costs of not meeting the projected needs of each water user group. The social and economic effects of not meeting a projected water need can be viewed as the potential benefit to be gained from implementing a strategy to meet the particular need. The summation of all the impacts gives a view of the ultimate magnitude of the economic impacts of not meeting all of the projected needs.

The information provided by the TWDB is summarized in a report included in Appendix H.

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