

## **Section 4A**

### **Comparison of Water Demands with Water Supplies to Determine Needs**

#### **4A.1 Introduction**

In this section, the demand projections from Section 2 and the supply projections from Section 3, are brought together to estimate projected water needs in the Brazos G Area through year 2060.

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

#### **4A.1.1 Methods to Estimate Available Water Supplies in the Region**

##### **4A.1.1.1 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 reservoirs, and 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 from 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 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.

#### **4A.1.1.2 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 3-14. 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 supplies from each aquifer were estimated as follows:
  - a. For cities using groundwater sources, 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 availability, 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 2000 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 total availability, supply is prorated downward for every entity using that particular source.
- 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 2000 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 total availability, supply is prorated downwards for every entity using that particular source.
- Steam-electric supply from groundwater sources is associated with aquifers underlying the river basin portion of the county. The steam-electric supply is

generally calculated as 130 percent of the year 2000 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 total availability, supply is prorated downward for every entity using that particular source.

- 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 total availability, supply is prorated downward for every entity using that particular source.
- 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 total availability, 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. The demands and supplies for College Station as a WUG include Texas A&M University, by TWDB definition. However, Texas A&M utilizes its own supply source separate from the City. Recent improvements to the university's supply wells and effective water conservation efforts have increased supplies in excess of the university's demands. This surplus should not be considered as excess supply available to the City because the two utilities are interconnected only for emergency purposes. For College Station as a WUG, the supply from Texas A&M University wells was set equal to the university's projected demands (supplied by Texas A&M), in order to more accurately define needs for College Station.

#### **4A.1.1.3 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 new 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 2011 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 Section 4A.3 and in the WUG supply-demand analyses presented in Appendix C.

#### **4A.1.1.4 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 groundwater availability estimates adopted for use allow for 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 Managed Available Groundwater (MAG) 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 2060 to WUGs in five counties (Bosque, Hood, Johnson, McLennan and Williamson). Constraints on groundwater supplies are shown in the tables in Appendix C.

#### **4A.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 for that water user group. 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.

##### **4A.2.1 Projected Municipal Shortages**

Water shortages are projected for 76 municipal WUGs, which are listed in Table 4A-1, along with the projected year 2030 and 2060 shortages, and the approximate decade that shortages are expected to begin. Multi-county WUGs are indicated with (P) in Table 4A-1; however total balances are described in Section 4C only in the primary county. Twenty-eight 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 2000. The County-Other category is projected to be water short in 6 counties: Eastland, Haskell, Jones, Knox, Throckmorton and Williamson.

**Table 4A-1.  
Municipal WUGs with Projected Water Shortages**

County	Shortages Begin	Projected Shortages (acft/yr)	
		Year 2030	Year 2060
<b>Bell County</b>			
Bartlett (P)	2010	(80)	(94)
Bell Milam Falls WSC (P)	2020	(47)	(84)
Jarrell-Schwertner WSC (P)	2010	(70)	(114)
Killeen	2040	-	(4,468)
Little River - Academy	2010	(18)	(27)
Morgans Point Resort	2010	(272)	(332)
Temple	2010	(8,876)	(14,319)
<b>Bosque County</b>			
Cross Country WSC (P)	2040	-	(52)
Valley Mills (P)	2030	(2)	(12)
<b>Brazos County</b>			
Bryan	2060	-	(313)
College Station	2030	(68)	(5,631)
Wickson Creek SUD (P)	2010	(604)	(1,204)
<b>Burleson County</b>			
Southwest Milam WSC (P)	2020	(10)	(22)
<b>Callahan County</b>			
Baird	2010	(241)	(232)
Cross Country WSC (P)	2010	(6)	(0)
Potosi WSC (P)	2010	(1)	(0)
<b>Comanche County</b>			
None			
<b>Coryell County</b>			
Elm Creek WSC (P)	2030	(5)	(16)
Gatesville	2030	(72)	(1,450)
Kempner WSC (P)	2030	(498)	(1,759)
<b>Eastland County</b>			
Eastland County-Other	2010	(183)	(80)
Rising Star	2010	(9)	2
<b>Erath County</b>			
None			
<b>Falls County</b>			
Bell-Milam Falls WSC (P)	2010	(120)	(246)
Elm Creek WSC (P)	2030	(1)	(4)
Marlin	2010	(2,039)	(2,276)
West Brazos WSC (P)	2010	(140)	(241)
<b>Fisher County</b>			
None			
<b>Grimes County</b>			
Wickson Creek SUD (P)	2010	(713)	(1,065)

**Table 4A-1 (Continued)**

County	Shortages Begin	Projected Shortages (acft/yr)	
		Year 2030	Year 2060
<b>Hamilton County</b>			
None			
<b>Haskell County</b>			
Haskell County-Other	2010	-	-
Haskell	2010	(494)	(472)
<b>Hill County</b>			
Files Valley WSC	2050	-	(150)
Johnson County SUD (P)	2050	-	(6)
White Bluff Community WS	2010	(235)	(557)
Woodrow-Osceola WSC	2010	(81)	(116)
<b>Hood County</b>			
Acton MUD	2060	1,445	(9)
Granbury	2010	(3,109)	(5,577)
Lipan	2030	(94)	(683)
Oak Trail Shores Subdivision	2010	(345)	(333)
Tolar	2030	(18)	(147)
<b>Johnson County</b>			
Alvarado	2010	(300)	(504)
Bethany WSC	2030	(73)	(244)
Bethesda WSC	2030	(502)	(3,660)
Cleburne	2050	-	(1,954)
Godley	2010	(174)	(353)
Johnson County SUD (P)	2020	(4,801)	(16,658)
Keene	2060	-	(97)
Parker WSC (P)	2050	-	(152)
<b>Jones County</b>			
Abilene (P)	2020	(107)	(1)
Jones County-Other	2010	(46)	(29)
Hawley WSC (P)	2010	(8)	(5)
Stamford (P)	2010	(2,759)	(2,693)
<b>Kent County</b>			
Jayton	2010	(95)	(57)
<b>Knox County</b>			
Knox County-Other	2010	(7)	2
Knox City	2010	(215)	(216)
Munday	2010	(250)	(250)
<b>Lampasas County</b>			
None			

**Table 4A-1 (Continued)**

County	Shortages Begin	Projected Shortages (acft/yr)	
		Year 2030	Year 2060
<b>Lee County</b>			
Aqua WSC	2020	(83)	(176)
Lee County WSC (P)	2010	(383)	(595)
Southwest Milam WSC (P)	2020	(11)	(23)
<b>Limestone County</b>			
Bistone MWSD	2010	(2,870)	(3,539)
Coolidge	2040	-	(33)
Groesbeck	2050	-	(109)
Kosse	2010	(74)	(74)
<b>McLennan County</b>			
Chalk Bluff WSC	2040	-	(190)
Cross Country WSC (P)	2030	(21)	(245)
Hallsburg	2010	(21)	(45)
Lacy-Lakeview	2040	-	(357)
Mart	2010	(224)	(272)
North Bosque WSC	2040	-	(199)
Riesel	2040	(14)	(31)
Robinson	2060	307	(112)
West Brazos WSC (P)	2010	(82)	(131)
Western Hills WS	2040	-	(163)
<b>Milam County</b>			
Bell-Milam Falls WSC (P)	2010	(78)	(109)
Southwest Milam WSC (P)	2010	(407)	(508)
<b>Nolan County</b>			
Sweetwater	2010	(3,435)	(3,117)
<b>Palo Pinto County</b>			
Mineral Wells (P)	2020	(1,583)	(2,565)
Strawn	2020	(7)	(23)
<b>Robertson County</b>			
Wickson Creek SUD (P)	2010	(26)	(30)
<b>Shackelford County</b>			
None			
<b>Somerville County</b>			
Glen Rose	2030	(26)	(77)
<b>Stephens County</b>			
None			
<b>Stonewall County</b>			
None			
<b>Taylor County</b>			
ABILENE (P)	2010	(19,048)	(17,811)
MERKEL	2010	(116)	(83)

**Table 4A-1 (Concluded)**

County	Shortages Begin	Projected Shortages (acft/yr)	
		Year 2030	Year 2060
Potosi WSC (P)	2010	(119)	(84)
Steamboat Mountain WSC	2010	(34)	(4)
<b>Throckmorton County</b>			
Throckmorton County-Other	2010	(14)	4
Throckmorton	2010	(9)	32
<b>Washington County</b>			
None			
<b>Williamson County</b>			
Aqua WSC (P)	2010	(30)	(88)
Bartlett (P)	2010	(56)	(85)
Bell-Milam Falls WSC (P)	2010	(35)	(94)
Blockhouse MUD	2030	(418)	(2,058)
Brushy Creek MUD	2020	(478)	(478)
Cedar Park	2010	(6,100)	(10,156)
Chisholm Trail SUD (P)	2050	-	(3,991)
Williamson County-Other	2040	-	(3,355)
Florence	2010	(161)	(344)
Georgetown	2030	(763)	(16,082)
Jarrell	2010	(169)	(164)
Jarrell-Schwertner WSC (P)	2020	(372)	(1,385)
Jonah Water SUD	2030	(305)	(2,346)
Leander	2030	(719)	(7,039)
Liberty Hill	2010	(863)	(1,797)
Round Rock	2010	(22,271)	(60,137)
Southwest Milam WSC (P)	2020	(105)	(357)
Thrall	2010	(185)	(293)
Weir	2010	(288)	(568)
Williamson-Travis County MUD #1	2020	(784)	(2,267)
<b>Young County</b>			
None			
(P) Indicates WUG is in multiple counties.			

#### 4A.2.2 Projected Manufacturing Shortages

Table 4A-2 lists the counties projected to have shortages in the Manufacturing Use category, projected year 2030 and 2060 shortages, and the approximate decade shortages are projected to begin. Five of the 37 counties in the Brazos G Area are projected to have manufacturing shortages, including Johnson, Lampasas, Nolan, Limestone, and Williamson Counties.

**Table 4A-2.  
Counties with Projected Water Shortages  
for Manufacturing Use**

County	Shortages Begin	Projected Shortages (acft/yr)	
		Year 2030	Year 2060
Johnson County	2010	(2,141)	(3,232)
Lampasas County	2010	(135)	(169)
Limestone County	2010	(39)	(69)
Nolan County	2060	-	(64)
Williamson County	2010	(1,784)	(2,520)

#### 4A.2.3 Projected Steam-Electric Shortages

Table 4A-3 lists the nine counties projected to have shortages in the Steam-Electric Use category, projected year 2030 and 2060 shortages, and the approximate decade shortages are projected begin.

**Table 4A-3.  
Counties with Projected Water Shortages  
for Steam-Electric Use**

County	Shortages Begin	Projected Shortages (acft/yr)	
		Year 2030	Year 2060
Bell County	2020	(4,296)	(7,102)
Bosque County	2030	(735)	(5,461)
Grimes County	2020	(16,699)	(23,199)
Johnson County	2010	(5,656)	(5,656)
Limestone County	2040	-	(17,576)
Milam County	2050	-	(2,000)
Nolan County	2010	(20,000)	(20,000)
Robertson County	2040	-	(16,485)
Somervell County	2010	(35,505)	(35,392)

**4A.2.4 Projected Mining Shortages**

Table 4A-4 lists the four counties projected to have shortages in the Mining Use category, projected year 2030 and 2060 shortages, and the approximate decade shortages are projected to begin. Shortages are projected for Milam, Nolan, Stephens and Williamson Counties. Mining water use in Williamson County is primarily associated with dewatering for quarry operations.

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

County	Shortages Begin	Projected Shortages (acft/yr)	
		Year 2030	Year 2060
Milam County	2010	(70)	-
Nolan County	2010	(108)	(108)
Stephens County	2010	(8,473)	(9,253)
Williamson County	2010	(2,310)	(2,795)

**4A.2.5 Projected Irrigation Shortages**

Table 4A-5 lists the six counties projected to have shortages in the Irrigation Use category, projected year 2030 and 2060 shortages, and the approximate decade shortages are projected to begin.

**Table 4A-5.  
Counties with Projected Water Shortages  
for Irrigation Use**

County	Shortages Begin	Projected Shortages (acft/yr)	
		Year 2030	Year 2060
Eastland County	2010	(9,385)	(9,418)
Haskell County	2010	(26,223)	(22,215)
Knox County	2010	(13,267)	(10,389)
Nolan County	2010	(1,465)	(1,091)
Shackelford County	2010	(94)	(80)
Throckmorton County	2010	(3,988)	(3,988)

#### **4A.2.6 Projected Livestock Shortages**

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

#### **4A.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,
- Bluebonnet WSC,
- Central Texas WSC,
- Upper Leon Municipal Water District,
- Eastland County Water Supply District,
- Palo Pinto County Municipal Water District No. 1,
- West Central Texas Municipal Water District,
- North Central Texas Municipal Water Authority,
- City of Abilene,
- Bistone MWSD,
- City of Cedar Park,
- 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 the Brazos G Area. These include the Lower Colorado River Authority (Region K), Colorado Municipal Water District (Region F), and the Trinity River Authority (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.

#### **4A.3.1 Wholesale Water Provider Summary Tables**

Summaries for each WWP, including a brief description, contracts for water sales, and supplies are provided in Tables 4A-6 through 4A-23. 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.

#### **4A.4 Water Supplied to Meet Demands Not in Region 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 4A-6 through Table 4A-23). Supplies have been coordinated with adjacent regions.

#### **4A.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 I.

**Table 4A-6.  
Wholesale Water Provider Summary  
Brazos River Authority**

**Name: Brazos River Authority**

**Description:** 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 in the region: Lake Granbury, Possum Kingdom Lake, and Lake Limestone. BRA also contracts for conservation storage space in the nine U.S. Army Corps of Engineers reservoirs in the region: Lakes Waco, Proctor, Belton, Stillhouse Hollow, Georgetown, Granger, Somerville, Whitney, and Aquilla. The total permitted capacity of these twelve reservoirs in the BRA system is approximately 2.3 million acft. BRA holds rights for diversion in the region totaling more than 660,000 acft, and contracts to supply water to municipal, industrial and agricultural water customers in the BGRWPA and other regions. BRA's largest municipal customers in 2000 included 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 below 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.

**Projected Demands:**

<b>Major Long-Term Water Contracts/ Demands from Recommended Strategies</b> <i>(contracts as of August 2009)</i>	<b>Year (acft/yr)</b>					
	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>
Lake Aquilla System						
Existing Contracts (Brazos G)	11,403	11,403	11,403	11,403	11,403	11,403
Existing Contracts (Region C) <sup>1</sup>	-	-	-	-	-	-
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)	250,140	249,747	249,381	249,110	248,788	248,446
Existing Contracts (Region K)	830	1,223	1,589	1,860	2,182	2,524
New Demands (Brazos G)	1,250	2,896	3,525	3,901	40,625	41,705
New Demands (Region K)	-	-	-	-	-	-
Total Demands Little River System	252,220	253,866	254,495	254,871	291,595	292,675
Main Stem/Lower Basin						
Existing Contracts (Brazos G)	259,472	259,472	259,472	259,472	259,472	259,472
Existing Contracts (Region C)	-	-	-	-	-	-
Existing Contracts (Region H)	153,693	153,693	153,693	153,693	153,693	153,693
New Demands (Brazos G)	77,020	77,020	77,020	79,520	79,520	79,677
New Demands (Region C)	-	-	-	-	-	-
New Demands (Region H)	-	-	30,000	30,000	211,000	211,000
Total Demands Main Stem/Lower Basin	490,185	520,185	520,185	703,685	703,685	703,842
Total Demand (Brazos G)	599,285	600,538	600,801	603,406	639,808	640,703
Total Demand (Region C)	-	-	-	-	-	-
Total Demand (Region K)	830	1,223	1,589	1,860	2,182	2,524
Total Demand (Region H)	153,693	183,693	183,693	364,693	364,693	364,693
<b>Projected Total Demand</b>	<b>753,808</b>	<b>785,454</b>	<b>786,083</b>	<b>969,959</b>	<b>1,006,683</b>	<b>1,007,920</b>

<sup>1</sup> BRA supplies from Lake Aquilla to Region C are included in Existing Contracts (Brazos G).

**Table 4A-6 (Concluded)****Name: Brazos River Authority****Supplies (reservoir firm yield):**

Source	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
Lake Aquilla System	13,746	12,895	12,044	11,192	10,341	9,490
Little River System	215,739	215,526	215,313	215,099	214,886	214,673
Main Stem/Lower Basin System	420,992	416,977	412,962	408,946	404,931	400,916
Total Supply	650,477	645,397	640,318	635,238	630,159	625,079

**Projected Balances:**

Source	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
Lake Aquilla System	2,343	1,492	641	(211)	(1,062)	(1,913)
Little River System	(36,481)	(38,340)	(39,182)	(39,772)	(76,709)	(78,002)
Main Stem/Lower Basin System	(69,193)	(103,208)	(107,223)	(294,739)	(298,754)	(302,926)
Total Balance/(Shortage)	(103,331)	(140,056)	(145,764)	(334,722)	(376,525)	(382,841)

**Table 4A-7.  
Wholesale Water Provider Summary  
Aquila Water Supply District**

**Name: Aquilla Water Supply District**

**Description:** 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 six wholesale customers. The City of Hillsboro is the district's largest customer, and utilized 3,889 acft in 2000. Total sales for Aquilla Water Supply District in 2000 were 4,844 acft.

**Projected Demands:**

<b>Major Water Contract Holders</b>	<b>Year (acft/yr)</b>					
	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>
Brandon-Irene WSC	280	280	280	280	280	280
Chatt WSC (Hill C-O)	84	84	84	84	84	84
Files Valley WSC	1,125	1,125	1,125	1,125	1,125	1,125
Hill County WSC (Hill C-O)	336	336	336	336	336	336
Hillsboro	4,200	4,200	4,200	4,200	4,200	4,200
Menlow WSC (Hill C-O)	45	45	45	45	45	45
<b>Total Demand</b>	<b>6,070</b>	<b>6,070</b>	<b>6,070</b>	<b>6,070</b>	<b>6,070</b>	<b>6,070</b>

**Supply:**

<b>Source</b>	<b>Year (acft/yr)</b>					
	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>
Lake Aquilla (BRA Contract)	5,953	5,953	5,953	5,695	5,325	4,954

**Projected Balance:**

<b>Source</b>	<b>Year (acft/yr)</b>					
	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>
Balance/(Shortage)	(117)	(117)	(117)	(375)	(745)	(1,116)

**Table 4A-8.  
Wholesale Water Provider Summary  
Bell County WCID No. 1**

**Name: Bell County Water Control and Improvement District No.1**

**Description:** 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:**

<b>Major Water Contract Holders</b>	<b>Year (acft/yr)</b>					
	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>
439 Water Supply Corp	750	750	750	750	750	750
City of Belton	4,966	4,966	4,966	4,966	4,966	4,966
City of Copperas Cove	7,824	7,824	7,824	7,824	7,824	7,824
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	740	740	740	740	740	740
<b>Total Demand</b>	<b>59,509</b>	<b>59,509</b>	<b>59,509</b>	<b>59,509</b>	<b>59,509</b>	<b>59,509</b>

**Supply:**

<b>Source</b>	<b>Year (acft/yr)</b>					
	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>
Lake Belton (BRA Contract)	53,428	53,428	53,428	53,428	53,428	53,428

**Projected Balance:**

<b>Source</b>	<b>Year (acft/yr)</b>					
	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>
Balance/(Shortage)	(6,081)	(6,081)	(6,081)	(6,081)	(6,081)	(6,081)

**Table 4A-9.  
Wholesale Water Provider Summary  
Bluebonnet Water Supply Corporation**

**Name: Bluebonnet Water Supply Corporation**

**Description:** 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; however the firm supply of those contracts is 7,037 acft/yr. The WSC sells treated water to nine entities in the BGRWPA. The largest customer is the City of McGregor, which purchased 943 acft in 2000. Wholesale sales in year 2000 totaled 2,848 acft.

**Projected Demands:**

<b>Major Water Contract Holders</b>	<b>Year (acft/yr)</b>					
	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>
City of Bruceville-Eddy	827	964	1,081	1,200	1,275	1,389
Elm Creek WSC	420	502	571	632	671	723
City of McGregor	933	923	913	902	894	899
Moffat WSC	402	430	457	468	477	488
City of Moody	202	203	203	204	206	212
Pendleton WSC	250	265	273	278	282	287
Spring Valley WSC (McLennan C-O)	250	298	331	336	331	331
City of Woodway	110	110	110	110	110	110
<b>Total Demand</b>	<b>3,394</b>	<b>3,695</b>	<b>3,939</b>	<b>4,130</b>	<b>4,246</b>	<b>4,439</b>

**Supply:**

<b>Source</b>	<b>Year (acft/yr)</b>					
	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>
Lake Belton (BRA Contract)	7,037	7,037	7,037	7,037	7,037	7,037

**Projected Balance:**

<b>Source</b>	<b>Year (acft/yr)</b>					
	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>
Balance/(Shortage)	3,643	3,342	3,098	2,907	2,791	2,598

**Table 4A-10.  
Wholesale Water Provider Summary  
Central Texas Water Supply Corporation**

**Name: Central Texas Water Supply Corporation**

**Description:** The Central Texas Water Supply Corporation (WSC) provides treated water to a number of water supply corporations and cities in Bell, Williamson, and Lampasas Counties. The Central Texas WSC obtains raw water under contracts with the Brazos River Authority (BRA) from Lake Stillhouse Hollow. The total contracted supply of 13,795 acft/yr, of which 11,695 acft/yr is reliable supply. Central Texas WSC provides supply from four separate three-party raw water contracts (BRA, Central Texas WSC, and “third party”) with the third parties being Belton, Lampasas, Kempner WSC, and Rosebud. Lampasas and Kempner WSC have contracted for additional raw supply directly from BRA, which are not shown in this table.

**Projected Demands:**

Major Water Contract Holders	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
Armstrong WSC (Bell C-O)	92	92	92	92	92	92
Bell County WCID No. 5 (Bell C-O)	37	37	37	37	37	37
Bell-Milam-Falls WSC	446	446	446	446	446	446
City of Belton	100	100	100	100	100	100
Dog Ridge WSC	671	671	671	671	671	671
East Bell County WSC	341	341	341	341	341	341
City of Holland	258	258	258	258	258	258
Kempner WSC	2,000	2,000	2,000	2,000	2,000	2,000
Little Elm Valley WSC (Milam C-O)	147	147	147	147	147	147
City of Lott	184	184	184	184	184	184
City of Lampasas	2,000	2,000	2,000	2,000	2,000	2,000
City of Rodgers	368	368	368	368	368	368
City of Rosebud	500	500	500	500	500	500
Town of Buckholts-Water Dept. (Milam C-O)	174	174	174	174	174	174
Town of Oenaville and Belfalls (Bell C-O)	57	57	57	57	57	57
West Bell County WSC	921	921	921	921	921	921
Westphalia WSC (Falls C-O)	45	45	45	45	45	45
Bell-Milam-Falls WSC (Recommended Strategy)	100	204	334	438	512	600
Kempner WSC (Recommended Strategy)						
<b>Total Demand</b>	<b>8,441</b>	<b>8,545</b>	<b>8,675</b>	<b>8,779</b>	<b>8,853</b>	<b>8,941</b>

**Supply:**

Source	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
Lake Stillhouse Hollow (BRA Contract)	11,695	11,695	11,695	11,695	11,695	11,695

**Projected Balance:**

Source	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
Balance/(Shortage)	3,254	3,150	3,020	2,916	2,842	2,754

**Table 4A-11.  
Wholesale Water Provider Summary  
Upper Leon Municipal Water District**

**Name: Upper Leon Municipal Water District**

**Description:** 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. Total 2000 sales were 2,445 acft.

**Projected Demands:**

<b>Major Water Contract Holders</b>	<b>Year (acft/yr)</b>					
	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>
City of Comanche	634	632	622	605	587	568
City of De Leon	280	280	274	265	256	248
City of Dublin	485	516	544	576	682	753
City of Gorman	137	134	127	120	113	108
City of Hamilton	2,000	2,000	2,000	2,000	2,000	2,000
City of Stephenville	1,862	1,862	1,862	1,862	1,862	1,862
<b>Total Demand</b>	<b>5,398</b>	<b>5,424</b>	<b>5,429</b>	<b>5,428</b>	<b>5,500</b>	<b>5,539</b>

**Supply:**

<b>Source</b>	<b>Year (acft/yr)</b>					
	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>
Lake Proctor (BRA Contract)	6,029	6,029	6,029	6,029	6,029	6,029

**Projected Balance:**

<b>Source</b>	<b>Year (acft/yr)</b>					
	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>
Balance/(Shortage)	631	605	600	601	529	490

**Table 4A-12.  
Wholesale Water Provider Summary  
Eastland County Water Supply District**

**Name: Eastland County Water Supply District**

**Description:** 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. Total water sales in 2000 were 1,762 acft.

**Projected Demands:**

<b>Major Water Contract Holders</b>	<b>Year (acft/yr)</b>					
	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>
City of Eastland	1,791	1,791	1,791	1,791	1,791	1,791
City of Ranger	710	710	710	710	710	710
<b>Total Demand</b>	<b>2,501</b>	<b>2,501</b>	<b>2,501</b>	<b>2,501</b>	<b>2,501</b>	<b>2,501</b>

**Supplies:**

<b>Source</b>	<b>Year (acft/yr)</b>					
	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>
Run-of-the-River Right	225	225	225	225	225	225
Lake Leon	5,938	5,925	5,913	5,900	5,875	5,875
<b>Total Supply</b>	<b>6,163</b>	<b>6,150</b>	<b>6,138</b>	<b>6,125</b>	<b>6,100</b>	<b>6,100</b>

**Projected Balance:**

<b>Source</b>	<b>Year (acft/yr)</b>					
	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>
Balance/(Shortage)	3,662	3,649	3,637	3,624	3,599	3,599

**Table 4A-13.  
Wholesale Water Provider Summary  
Palo Pinto County Municipal Water District No. 1**

**Name: Palo Pinto County Municipal Water District No. 1**

**Description:** 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. 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. Wholesale municipal sales totaled 4,616 acft in 2000 and steam electric power sales were 1,378 acft.

**Projected Demands:**

Major Water Contract Holders*	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
City of Mineral Wells <sup>1</sup>	3,653	3,802	3,928	4,008	4,151	4,337
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)	228	228	228	228	228	228
North Rural WSC (Palo Pinto C-O)	368	368	368	368	368	368
Lake Palo Pinto Area WSC (Palo Pinto C-O)	250	250	250	250	250	250
Palo Pinto County Steam-Electric	1,000	4,000	4,000	4,000	4,000	4,000
Parker County SUD (Region C)	407	407	407	407	407	407
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
Parker County Mining (Region C)	2,000	2,000	2,000	2,000	2,000	2,000
<b>Total Demand</b>	<b>9,196</b>	<b>12,345</b>	<b>12,471</b>	<b>12,551</b>	<b>12,694</b>	<b>12,880</b>

<sup>1</sup> Includes municipal supply to portion of Mineral Wells located in Region C.

\* Volumes represent the greater of the 2008 actual use or the contract amounts

**Supply:**

Source	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
Lake Palo Pinto	8,158	7,717	7,275	6,833	6,392	5,950

**Projected Balance:**

Source	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
Balance/(Shortage)	(1,038)	(4,628)	(5,196)	(5,718)	(6,302)	(6,930)

**Table 4A-14.  
Wholesale Water Provider Summary  
West Central Texas Municipal Water District**

**Name: West Central Texas Municipal Water District**

**Description:** The West Central Texas Municipal Water District (MWD) holds water rights 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 2011 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 16.54 percent (~10,900 acft/yr) of the yield in O.H. Ivie Reservoir 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:**

Major Water Contract Holders	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
City of Abilene	20,587	20,514	20,441	20,369	20,296	20,223
City of Albany	2,231	2,223	2,216	2,208	2,200	2,192
City of Anson	2,443	2,434	2,426	2,417	2,408	2,400
City of Breckenridge	2,948	2,937	2,927	2,917	2,906	2,896
Total Demand	28,209	28,108	28,010	27,911	27,810	27,711

**Supply:**

Source	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
Hubbard Creek Reservoir	27,708	27,640	27,573	27,505	27,438	27,370

**Projected Balance:**

Source	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
Balance/(Shortage)	(502)	(468)	(437)	(406)	(373)	(341)

**Table 4A-15.  
Wholesale Water Provider Summary  
North Central Texas Municipal Water Authority**

**Name: North Central Texas Municipal Water Authority**

**Description:** North Central Texas Municipal Water Authority supplies treated water to entities in Knox, Haskell and Stonewall Counties. The authority has water rights to divert 5,000 acft from Millers Creek Reservoir for municipal, industrial, and mining purposes. Wholesale water sales totaled 1,410 acft in 2000.

**Projected Demands:**

Major Water Contract Holders	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
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)	55	55	55	55	55	55
City of Haskell	558	558	558	558	558	558
City of Knox City	228	228	228	228	228	228
City of Munday	235	235	235	235	235	235
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
Rhineland WSC (Haskell C-O)	37	37	37	37	37	37
Paint Creek WSC (Haskell C-O)	74	74	74	74	74	74
Baylor WSC (Region B) (Recommended)	250	250	250	250	250	250
Total Demand	1,649	1,649	1,649	1,649	1,649	1,649

**Supply:**

Source	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
Millers Creek Reservoir	50	40	30	20	10	0

**Projected Balance:**

Source	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
Balance/(Shortage)	(1,599)	(1,609)	(1,619)	(1,629)	(1,639)	(1,649)

**Table 4A-16.**  
**Wholesale Water Provider Summary**  
**City of Abilene**

**Name/Location: City of Abilene**

**Description:** The City of Abilene relies on Fort Phantom Hill Reservoir, and contract water supplies from West Central Texas MWD (Hubbard Creek Reservoir). The City also has a contract with West Central Texas MWD for 16.54 percent (~10,900 acft/yr) of the safe yield of O.H Ivie Reservoir, owned by the Colorado River Municipal Water District. The City currently has facilities to utilize 6,720 acft/yr of the supply from O.H. Ivie.

**Projected Demands:**

Major Water Contract Holders	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
City of Abilene	22,891	23,485	23,507	23,181	22,588	21,879
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
Sun WSC (Taylor C-O)	230	230	230	230	230	230
View Caps WSC (Taylor C-O)	199	199	199	199	199	199
West Texas Utilities	11,837	11,837	11,837	11,837	11,837	11,837
Taylor County Manufacturing	972	1,081	1,177	1,270	1,349	1,462
City of Baird (Recommended Strategy)	260	240	240	240	240	240
Nolan County Steam-Electric (Recommended)	1,000	11,500	20,000	20,000	20,000	20,000
City of Merkel (Recommended Strategy)	128	139	139	132	120	105
City of Potosi (Recommended Strategy)	136	142	141	129	116	104
Steamboat Mountain WSC (Recommended)	55	54	51	43	30	20
City of Tye (Recommended Strategy)	3	6	6	2	0	0
<b>Total Treated Water Demand</b>	<b>27,239</b>	<b>27,941</b>	<b>28,055</b>	<b>27,791</b>	<b>27,237</b>	<b>26,604</b>
<b>Raw Water Only Demand<sup>1</sup></b>	<b>12,837</b>	<b>23,337</b>	<b>31,837</b>	<b>31,837</b>	<b>31,837</b>	<b>31,837</b>
<b>Total Demand</b>	<b>40,076</b>	<b>51,278</b>	<b>59,892</b>	<b>59,628</b>	<b>59,074</b>	<b>58,441</b>

<sup>1</sup>Raw water demands include West Texas Utilities, Nolan County Steam-Electric.

**Table 4A-16 (Concluded)**

**Name/Location: City of Abilene**

**Supplies:**

Source	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
Lake Abilene <sup>1</sup>	0	0	0	0	0	0
Lake Kirby <sup>2</sup>	0	0	0	0	0	0
Lake O.H. Ivie (Colorado River MWD) <sup>3</sup>	6,720	6,720	6,720	6,720	6,720	6,720
Fort Phantom Hill	9,316	9,082	8,848	8,614	8,380	8,145
West Central Texas MWD (Hubbard)	20,086	20,046	20,004	19,963	19,923	19,882
Treated Supply (Hubbard and Ft. Phantom) <sup>4</sup>	27,552	13,440	13,440	13,440	13,440	13,440
<b>Total Treated Water Supply</b>	<b>34,272</b>	<b>20,160</b>	<b>20,160</b>	<b>20,160</b>	<b>20,160</b>	<b>20,160</b>
<b>Total Raw Water Supply</b>	<b>36,122</b>	<b>35,848</b>	<b>35,572</b>	<b>35,297</b>	<b>35,023</b>	<b>34,747</b>

<sup>1</sup> Lake Abilene is not considered a dependable supply by the City and is currently not used.  
<sup>2</sup> Lake Kirby is used primarily to store reuse water for the City's reuse customers. Reuse demands are not included in the water demand projections for the City.  
<sup>3</sup> Current treatment capacity (desalination) is approximately 6 MGD (6,720 acft/yr).  
<sup>4</sup> Supply has been constrained based on average annual capacity of the existing Northeast and Grimes treatment plant 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 acft/yr.

**Projected Balances:**

Source	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
Treated Water Balance/(Shortage)	7,033	(7,781)	(7,895)	(7,631)	(7,077)	(6,444)
<b>Total Raw Water Balance/(Shortage)</b>	<b>(3,954)</b>	<b>(15,430)</b>	<b>(24,320)</b>	<b>(24,331)</b>	<b>(24,051)</b>	<b>(23,694)</b>

**Table 4A-17.  
Wholesale Water Provider Summary  
Bistone MWSD**

**Name: Bistone Municipal Water Supply District**

**Description:** 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 also utilizes groundwater from the Carrizo-Wilcox Aquifer. 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 cities of Tehuacana/Coolidge have 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:**

Major Water Contract Holders	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
Bistone MWSD	148	146	144	142	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
Limestone C-O	275	275	275	275	275	275
Total Demand	5,682	5,680	5,678	5,676	5,675	5,675

**Supplies:**

Source	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
Lake Mexia	1,319	1,095	871	647	423	199
Carrizo – Wilcox Aquifer	1,937	1,937	1,937	1,937	1,937	1,937
Total Supply	3,256	3,032	2,808	2,584	2,360	2,136

**Projected Balance:**

Source	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
Balance/(Shortage)	(2,426)	(2,648)	(2,870)	(3,092)	(3,315)	(3,539)

**Table 4A-18.  
Wholesale Water Provider Summary  
City of Cedar Park**

**Name:** City of Cedar Park

**Description:** 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. In 2000, the City purchased all of its raw water from the LCRA Highland Lakes System (Region K). The City sold 2,378 acft to its wholesale customers and provided 6,000 acft of water to retail customers.

**Projected Demands:**

Major Water Contract Holders	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
City of Cedar Park	11,961	16,571	17,910	21,779	21,779	21,780
Indian Springs Subdivision (Williamson C-O)	13	13	13	13	13	13
Leander	1,219	0	0	0	0	0
Williamson-Travis Co. MUD No.1	1,022	1,022	1,022	1,022	1,022	1,022
Blockhouse MUD	1,331	1,331	1,331	1,331	1,331	1,331
Increase Blockhouse MUD (Recommended)	0	0	500	1,000	1,500	2,100
Increase Williamson-Travis C. MUD No.1 (Recommended)	0	350	800	1,250	1,750	2,300
<b>Total Demand</b>	<b>15,546</b>	<b>19,287</b>	<b>21,576</b>	<b>26,395</b>	<b>27,395</b>	<b>28,546</b>

**Supply:**

Source	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
Highland Lakes System (LCRA)	18,000	18,000	18,000	18,000	18,000	18,000
Constrained Supply <sup>1</sup>	14,372	14,270	14,176	14,117	14,054	13,990

<sup>1</sup> Supply has been constrained based on average annual capacity of the existing Cedar Park treatment plant. The average annual capacity is determined as 50% of the normal rated design capacity (26 MGD), or 14,560 acft/yr. This has been further reduced to account for supplies to the portion of Cedar Park located in Travis County (Region K).

**Projected Balance:**

Source	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
Balance/(Shortage)	(1,174)	(5,017)	(7,400)	(12,278)	(13,341)	(14,556)

**Table 4A-19.  
Wholesale Water Provider Summary  
City of Round Rock**

**Name: City of Round Rock**

**Description:** The City of Round Rock obtains raw water from the Edwards-BFZ (Northern Segment) Aquifer and purchases additional water from BRA through Lake Georgetown. The City sells wholesale water to local providers in Williamson County. In addition to the 3,090 acft of wholesale water sales in 2000, the City provided approximately 14,000 acft of treated water to retail and manufacturing customers. The City of Round Rock has contracted to purchase 18,134 acft/yr from the BRA at Stillhouse Hollow Reservoir in Bell County. The pipeline that delivers this water to Lake Georgetown was completed in late 2004. Round Rock has plans to introduce a new supply (20,928 acft/yr) through the Brushy Creek RUA Water Supply Project.

**Projected Demands:**

Major Water Contract Holders	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
City of Round Rock	23,103	31,146	40,704	51,176	62,801	75,268
Fern Bluff MUD <sup>1</sup>	1,339	2,049	2,882	3,805	4,810	5,888
Williamson County MUD #9 (Williamson C-O) <sup>1</sup>	230	230	230	230	230	230
Williamson Co Manufacturing (Recommended)	1,472	1,572	1,772	2,072	2,272	2,472
Total Demand	26,144	34,997	45,588	57,283	70,113	83,858

1 – Projected demands for Fern Bluff MUD and Williamson County MUD #9 are likely overstated

**Supplies:**

Source	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
Stillhouse Hollow Reservoir (BRA Contract)	15,374	15,374	15,374	15,374	15,374	15,374
Lake Georgetown (BRA Contract)	5,697	5,697	5,697	5,697	5,697	5,697
Edwards-BFZ (Northern Segment) Aquifer	823	823	823	823	823	823
Portion of Demand in Travis County (Region K)	(126)	(246)	(349)	(426)	(536)	(645)
LCRA – Lake Travis (Out of Region)	20,928	20,928	20,928	20,928	20,928	20,928
Constrained LCRA Supplies	0	0	0	0	0	0
Total Supply	21,768	21,648	21,545	21,468	21,358	21,249

**Projected Balance:**

Source	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
Balance/(Shortage)	(4,376)	(13,349)	(24,043)	(35,815)	(48,755)	(62,609)

**Table 4A-20.  
Wholesale Water Provider Summary  
City of Stamford**

**Name: City of Stamford**

**Description:** The City of Stamford obtains supply from Lake Stamford and supplies water to several entities in Jones and Haskell Counties.

**Projected Demands:**

Major Water Contract Holders	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
City of Stamford	645	648	634	612	590	568
City of Hamlin	1,120	1,120	1,120	1,120	1,120	1,120
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)	92	92	92	92	92	92
Sagerton WSC (Haskell C-O)	73	73	73	73	73	73
Haskell County SE	2,200	2,200	2,200	2,200	2,200	2,200
<b>Total Demand</b>	<b>4,219</b>	<b>4,222</b>	<b>4,208</b>	<b>4,186</b>	<b>4,164</b>	<b>4,142</b>

**Supplies:**

Source	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
Lake Stamford	5,667	5,593	5,520	5,447	5,373	5,300
Constrained Supply (WTP Capacity)	1,458	1,458	1,458	1,458	1,458	1,458
<b>Total Supply</b>	<b>1,458</b>	<b>1,458</b>	<b>1,458</b>	<b>1,458</b>	<b>1,458</b>	<b>1,458</b>

**Projected Balance:**

Source	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
Balance/(Shortage)	(2,761)	(2,764)	(2,750)	(2,728)	(2,706)	(2,684)

**Table 4A-21.  
Wholesale Water Provider Summary  
City of Sweetwater**

**Name: City of Sweetwater**

**Description:** 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. The City also operates a groundwater well field in the Dockum Aquifer. Although the City owns Lake Sweetwater and Lake Trammel, those water resources are unreliable and are not considered supplies. The City of Sweetwater provides wholesale water to entities in Nolan and Fisher Counties, and the City of Bronte in Region F. In 2000, Sweetwater sold approximately 750 acft of wholesale water to its municipal customers and 370 acft for steam-electric power.

**Projected Demands:**

Major Water Contract Holders	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
City of Sweetwater	3,013	3,072	3,081	3,029	2,900	2,763
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
Brian C and Garland Richards (Out of Region)	135	135	135	135	135	135
Nolan County Manufacturing	550	550	550	550	550	550
<b>Total Demand</b>	<b>5,367</b>	<b>5,426</b>	<b>5,435</b>	<b>5,383</b>	<b>5,254</b>	<b>5,117</b>

**Supplies:**

Source	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
Lake Trammel <sup>1</sup>	0	0	0	0	0	0
Lake Sweetwater <sup>1</sup>	0	0	0	0	0	0
Oak Creek Reservoir (Region F)	0	0	0	0	0	0
Dockum Aquifer	2,000	2,000	2,000	2,000	2,000	2,000
<b>Total Supply</b>	<b>2,000</b>	<b>2,000</b>	<b>2,000</b>	<b>2,000</b>	<b>2,000</b>	<b>2,000</b>

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.

**Projected Balance:**

Source	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
Balance/(Shortage)	(3,367)	(3,426)	(3,435)	(3,383)	(3,254)	(3,117)

**Table 4A-22.  
Wholesale Water Provider Summary  
City of Temple**

**Name: City of Temple:**

**Description:** The City of Temple has contracts 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 28,633 acft/yr and the City's water right can provide a reliable supply of almost its entire authorized diversion (supplies from the right increase over time due to sedimentation in the upstream Lake Belton and increased wastewater treatment plant discharges). Temple sells approximately 506 acft/yr of treated water to nearby water user groups. Although the City has sufficient raw water supply to meet its future needs, the City's water treatment plants have an annual average capacity of 16,800 acft. The water supply plans for Little River-Academy and Morgan's Point Resort include Temple supplying an additional 350 acft/yr of treated water to those entities by 2030, increasing to 413 acft/yr in 2060.

**Projected Demands:**

Major Water Contract Holders	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
<b>Fresh Water Demands</b>						
City of Temple	21,033	23,018	25,170	26,892	28,804	30,613
City of Little River-Academy	68	68	68	68	68	68
City of Morgans Point Resort	291	291	291	291	291	291
City of Troy	124	124	124	124	124	124
Rolling Hills MHP (Bell C-O)	23	23	23	23	23	23
Morgan's Point Resort (Recommended)	206	255	300	330	346	363
Little River-Academy	50	50	50	50	50	50
<b>Total Fresh Water Demand</b>	<b>21,795</b>	<b>23,829</b>	<b>26,026</b>	<b>27,778</b>	<b>29,706</b>	<b>31,532</b>
<b>Reuse Water Demands</b>						
Bell County Steam-Electric (Panda Power)	0	8,407	8,407	8,407	8,407	8,407
<b>Total Reuse Water Demand</b>	<b>0</b>	<b>8,407</b>	<b>8,407</b>	<b>8,407</b>	<b>8,407</b>	<b>8,407</b>

**Supplies:**

Source	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
<b>Fresh Water Supplies</b>						
Run-of-River Water Right	9,614	9,711	9,808	9,904	10,001	10,097
BRA Contract	28,633	28,633	28,633	28,633	28,633	28,633
<b>Total Fresh Water Supplies</b>	<b>38,247</b>	<b>38,344</b>	<b>38,441</b>	<b>38,037</b>	<b>38,634</b>	<b>38,730</b>
Constrained Supply (WTP Capacity)	16,800	16,800	16,800	16,800	16,800	16,800
<b>Reuse Water Supplies</b>						
BRA TBRSS	14,092	14,092	14,092	14,092	14,092	14,092

**Projected Balances:**

Source	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
Fresh Water Balance/(Shortage)	(4,995)	(7,029)	(9,226)	(10,978)	(12,906)	(14,732)
Reuse Water Balance/(Shortage)	14,092	5,685	5,685	5,685	5,685	5,685

**Table 4A-23.  
Wholesale Water Provider Summary  
City of Waco**

**Name: City of Waco**

**Description:** The City has the right to divert 78,970 acft/yr for municipal and industrial purposes, and 900 acft/yr for irrigation uses from Lake Waco. In 2000, the City provided 1,278 acft of treated wholesale water to the City of Hewitt, City of Woodway, and Bosqueville Green Acres WSC. Total water used by Waco in 2000 was over 30,000 acft, including wholesale sales. Irrigation supply of 900 acft/yr from the City's rights is included in McLennan County Irrigation and is not shown here.

The City of Waco also operates the Waco Metropolitan Area Sewage System (WMARSS), which is projected to be a substantial source of reuse supply.

**Projected Demands:**

Current and Projected Contract Holders	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
<b>Fresh Water Demands</b>						
City of Waco	24,876	26,453	27,781	29,159	30,033	31,304
City of Bellmead	2,622	2,751	2,873	2,984	3,065	3,202
City of Hewitt	2,029	2,237	2,395	2,571	2,684	2,877
City of Lacy-Lakeview	1,120	1,120	1,120	1,120	1,120	1,120
City of Woodway	2,944	2,925	2,903	2,882	2,867	2,874
City of Beverly Hills	414	416	416	414	416	424
City of West	1,120	1,120	1,120	1,120	1,120	1,120
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
McLennan County Manufacturing	2,503	2,888	3,249	3,618	3,948	4,403
Cross County WSC (Recommended Strategy)				251	282	333
City of Hallsburg (Recommended Strategy)	5	11	21	32	38	49
City of Mart (Recommended Strategy)	225	250	250	275	300	300
North Bosque WSC (Recommended Strategy)				70	120	194
City of Riesel (Recommended Strategy)	8	16	20	26	29	38
<b>Total Fresh Water Demands</b>	<b>38,523</b>	<b>40,844</b>	<b>42,805</b>	<b>45,179</b>	<b>46,679</b>	<b>48,895</b>
<b>Reuse Water Demands</b>						
Steam-Electric (LS Power)	16,000	16,000	16,000	16,000	16,000	16,000
City of Bellmead (Bellmead/Lacy-Lakeview)	113	113	113	113	113	113
City of Hewitt (Bullhide Creek)	1,223	1,223	1,223	1,223	1,223	1,223
City of Lacy-Lakeview (Bellmead/Lacy-Lakeview)	1,121	1,121	1,121	1,121	1,121	1,121
City of Lorena (Bullhide Creek)	448	448	448	448	448	448
McLennan County Manufacturing (Flat Creek)	6,337	7,847	7,847	7,847	7,847	7,847
<b>Total Reuse Water Demands</b>	<b>25,242</b>	<b>26,752</b>	<b>26,752</b>	<b>26,752</b>	<b>26,752</b>	<b>26,752</b>

**Table 4A-23 (Concluded)**

<b>Name: City of Waco</b>						
<b>Supplies:</b>						
Source	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
<b>Fresh Water Supplies</b>						
Lake Waco (Municipal & Industrial)	78,198	77,418	76,639	75,859	75,080	74,300
Lake Brazos	5,600	5,600	5,600	5,600	5,600	5,600
<b>Total Fresh Water Supplies</b>	<b>83,798</b>	<b>83,018</b>	<b>82,239</b>	<b>81,459</b>	<b>80,680</b>	<b>79,900</b>
Constrained Fresh Water Supply <sup>1</sup>	50,400	50,400	50,400	50,400	50,400	50,400
<b>Reuse Water Supplies (WMARSS)</b>						
McLennan County Steam-Electric (LS Power)	16,000	16,000	16,000	16,000	16,000	16,000
Undeveloped WMARSS Reuse Supply	9,242	10,842	12,190	13,587	14,475	15,765
<b>Total Reuse Supply from WMARSS<sup>2</sup></b>	<b>25,242</b>	<b>26,842</b>	<b>28,190</b>	<b>29,587</b>	<b>30,475</b>	<b>31,765</b>
<sup>1</sup> Fresh Water Supply has been constrained based on average annual capacity of the existing Waco treatment plant(s). The average annual capacity is determined as 50% of the normal rated design capacity (90 MGD). <sup>2</sup> Reuse supplies are based on projected WMARSS plant flows.						
<b>Projected Balance:</b>						
Source	Year (acft/yr)					
	2010	2020	2030	2040	2050	2060
Fresh Water Balance/(Shortage)	11,877	9,556	7,595	5,221	3,721	1,505
Reuse Water Balance/(Shortage)	0	90	1,438	2,836	3,723	5,013