

# BRAZOS G

WATER PLANNING GROUP

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## COUNTIES

Bell  
Bosque  
Brazos  
Burleson  
Callahan  
Comanche  
Coryell  
Eastland  
Erath  
Falls  
Fisher  
Grimes  
Hamilton  
Haskell  
Hill  
Hood  
Johnson  
Jones  
Kent  
Knox  
Lampasas  
Lee  
Limestone  
McLennan  
Milam  
Nolan  
Palo Pinto  
Robertson  
Shackelford  
Somervell  
Stephens  
Stonewall  
Taylor  
Throckmorton  
Washington  
Williamson  
Young

BRAZOS RIVER AUTHORITY, Administrative Agent  
P.O. Box 7555 ◊ Waco, Texas 76714-7555  
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October 27, 2010

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NOV 09 2010

TWDB

Mr. Matt Nelson  
Manager, Regional Water Planning  
Texas Water Development Board  
P.O. Box 13231  
Austin, Texas 78711-3231

RE: 2011 Brazos G Regional Water Plan Errata Sheets

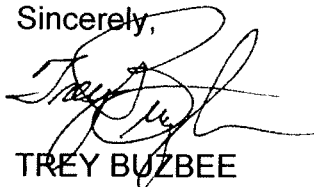
Dear ~~Matt~~ *Matt*:

This letter is drafted in reference to the Texas Water Development Board's (TWDB) recent database changes that have resulted in our consultant, HDR Engineering, having to make some relatively minor changes to planning numbers in some tables in the final 2011 Brazos G Regional Water Plan. Please find enclosed an errata package that details the revisions to the 2011 Brazos G Regional Water Plan made after Brazos G's adoption of the plan.

These changes have been incorporated into the attached memo and errata sheets and include changes to Section 2, Section 4A, Section 4B.12 (Volume II), Section 4B.16 (Volume II), Section 4C, Section 8 and Appendix C. In addition, some minor changes were made to the TWDB database after final plan adoption. Those changes are summarized in the attached memo as well.

If you have any questions regarding this matter, please contact me at (254) 761-3168.

Sincerely,



TREY BUZBEE

Attachment

To: Matt Nelson, TWDB Lann Bookout, TWDB	
From: Grady Reed David Dunn, P.E.	Project: Brazos G 2011 Regional Water Plan
CC: Dale Spurgin, Trey Buzbee	
Date: October 28, 2010	Job No: 00010478-001

**RE:** Brazos G Regional Water Plan Errata Sheets

This memo summarizes revisions to the 2011 Brazos G Regional Water Plan made after submittal to the TWDB. These changes have been incorporated into the attached errata sheets and include changes to Section 2, Section 4A, Section 4B.12 (Volume II), Section 4B.16 (Volume II), Section 4C, Section 8, Appendix C, and Appendix N. In addition, minor changes were made to the TWDB database after final plan adoption. These errata pages will be incorporated into the final electronic plan documents with each individual page noted as "Updated October 2010".

## **Section 2**

Changes were made in Table 2-1 to correct the population for the City of Itasca.

## **Section 4A**

Changes were made in Table 4A-1 to account for a changed water supply allocation for Wickson Creek SUD. This resulted in different needs shown in Brazos and Grimes Counties. In addition, the City of Albany was added to Shackelford County. Albany was inadvertently left out of the previous table.

## **Section 4B.12 (Volume II)**

The costs in Table 4B.12.1-4 did not show relocation costs, although the totals shown were correct. Relocation costs were included on a row that was not printed in the table but included in the totals.

## **Section 4B.16 (Volume II)**

Changes were made in Table 4B.16-1 to account for changes made in the needs values for various WUGs.

## **Section 4C**

Changes were made in Table 4C.15-1 to the City of Itasca. This change is in response to updating the City's water demand values in Appendix C.

## **Section 8**

A typographic error was corrected regarding the number of recommended unique reservoir sites.

## **Appendix C**

Five WUGs supplies and balances (Bitter Creek WSC, City of Roby, Limestone County-Other, City of Mexia, and Nolan County-Other) have been adjusted in Appendix C to reflect updates to prorated contracts from wholesale water providers. The links between the groundwater and surface water spreadsheets were not updated correctly before the appendix tables were printed and did not show the correct volumes in Appendix C.

Supplies for Wickson Creek SUD have been adjusted between Brazos, Grimes and Robertson counties to match the balances in the database.

The demands for the City of Itasca have been updated to reflect the demand values in the TWDB database.

## **Appendix N**

The existing Appendix N was replaced by a TWDB generated table based upon the data contained in DB12.

## **TWDB Database Changes**

Changes made to the TWDB database included the following:

- Harker Heights (Bell County) – supply from the BRA Little River System adjusted to match projected demands.
- Nolanville (Bell County) – supply from the BRA Little River System adjusted to match projected demands.
- Brazos County-Other (Brazos County) – supply from the Carrizo Aquifer was changed from 91 acft/yr to 651 acft/yr.
- Wellborn SUD (Brazos County) – supply from the Carrizo Aquifer was changed from 1,135 acft/yr to 1,695 acft/yr.
- The WMS for Wickson Creek SUD (Robertson County) needs deleted as a WMS for this WUG.
- Hill County-Other (Hill County – Trinity Basin) – supply from the Navarro Mills Lake/Reservoir was reduced by 9 acft/yr in all decades.
- Decordova (Hood County) – supply from the BRA Main Stem System was changed to match projected demands.
- Manville (Lee County) – 100 acft/yr of supply from Other Aquifer (Williamson County) was moved to Manville in Williamson County.
- Manville (Williamson County) – see comment above.
- Limestone County-Other (Limestone County – Brazos Basin) – the following amounts were added (to the already existing supply) for the Carrizo Aquifer (Limestone County – Brazos Basin) supply beginning in 2010: 548, 514, 481, 447, 414, 380 acft.
- Palo Pinto County-Other (Palo Pinto County) – supply from the BRA Main Stem System were reduced by 110 acft/yr in all decades.

- Bell County WCID #1 – 1,000 acft/yr was added to the demands of Belton and Copperas Cove. Bell County-Other was added as a customer with a demand of 1,000 acft/yr in all decades.
- Project costs for the Coryell-County Off-Channel Reservoir were adjusted to account for related infrastructure.
- Capital costs for Irrigation Conservation were removed from DB12.
- The capital costs for the EWCRWTS project were redistributed among participating WUGs to capture the full capital cost of the project.
- Project costs for the BRA System Operations project were adjusted to account for related infrastructure.
- Annual costs for various strategies were updated.
- The BRA Systems Operation Permit WMS was changed to an alternate WMS for the City of Cleburne.
- Reuse was added for Bell County WCID #1 as a WMS in order to be consistent with the plan.

## **Section 2**

### **Current and Projected Population and Water Demand Data for the Region**

#### **2.1 Introduction**

The TWDB publishes population and water demand projections, respectively, for each county in the state for use by the regional water planning groups. Population projections were developed for municipal Water User Groups (WUGs), which are defined as cities with a population greater than 500 in 2000, water supply corporations and special utility districts using volumes of 280 acft or more in 2000, and ‘County-Other’ to capture those people living outside the cities or WUG-sized water supply corporation/special utility districts for each county. In the Brazos G Area, population projections were completed for 226 municipal WUGs, including County-Other. Water demand projections were developed by type of use—specific municipal WUG demands for cities and other water utilities (along with a ‘County-Other’ for each county) and countywide demands for manufacturing, steam-electric, mining, irrigation, and livestock.

The TWDB has adopted several revisions to the population and water demand projections for the Brazos G Area, as forwarded by the Brazos G RWPG. Revisions have been made to the census-based population projections, and municipal and steam-electric water demand projections. Revisions to the population and municipal water demand projections for cities resulted from requests from individual cities and faster growth rates than projected in the 2006 Plan. Water demand projections for steam-electric use were revised to reflect input from industry and the Brazos G RWPG.

#### **2.2 Population Projections**

As shown in Figure 2-1, the population of the 37-county area is projected to increase from 1,621,961 in 2000 to 3,448,879 in 2060, an increase of 113 percent (1.27 percent annual growth). This is somewhat less than the projected statewide population growth during the same period of 117 percent, (1.30 percent annually). In 2060, it is projected that 32 percent of the Brazos G Area population will live in Williamson County, 13 percent in Bell County, 10 percent in Johnson County, 9 percent in McLennan County, 8 percent in Brazos County, 4 percent in Coryell County, 4 percent in Taylor County, and less than 3 percent in each of the remaining

**Table 2-1 (Continued)**

City/County	Historical		Projections <sup>1</sup>						Percent Growth <sup>2</sup> 1990-00	Percent Growth 2000-60
	1990	2000	2010	2020	2030	2040	2050	2060		
<b>Hamilton County</b>										
Hamilton	2,937	2,977	2,942	2,933	2,926	2,928	2,919	2,918	0.14%	-0.03%
Hico	1,342	1,341	1,417	1,417	1,417	1,417	1,417	1,417	-0.01%	0.09%
County-Other	3,454	3,911	3,431	3,331	3,253	3,279	3,176	3,169	1.25%	-0.35%
<b>Hamilton County Total</b>	<b>7,733</b>	<b>8,229</b>	<b>7,790</b>	<b>7,681</b>	<b>7,596</b>	<b>7,624</b>	<b>7,512</b>	<b>7,504</b>	<b>0.62%</b>	<b>-0.15%</b>
<b>Haskell County</b>										
Haskell	3,362	3,106	3,024	2,982	2,925	2,895	2,842	2,752	-0.79%	-0.20%
Rule	783	698	671	657	638	628	610	580	-1.14%	-0.31%
Stamford (P)	36	43	45	46	48	49	50	52	1.79%	0.32%
County-Other	2,639	2,246	2,120	2,056	1,969	1,924	1,843	1,705	-1.60%	-0.46%
<b>Haskell County Total</b>	<b>6,820</b>	<b>6,093</b>	<b>5,860</b>	<b>5,741</b>	<b>5,580</b>	<b>5,496</b>	<b>5,345</b>	<b>5,089</b>	<b>-1.12%</b>	<b>-0.30%</b>
<b>Hill County</b>										
Brandon-Irene WSC (P)		2,009	2,059	2,128	2,207	2,285	2,369	2,462	NA	0.34%
Fills Valley WSC (P)		1,963	1,997	2,045	2,100	2,154	2,212	2,277	NA	0.25%
Hillsboro	7,072	8,232	8,923	9,284	9,692	10,099	10,534	11,017	1.53%	0.49%
Hubbard	1,589	1,586	1,713	1,713	1,713	1,713	1,713	1,713	-0.02%	0.13%
Itasca	1,523	1,503	1,633	1,626	1,619	1,612	1,604	1,595	-0.13%	0.10%
Johnson County SUD (P)		177	191	211	233	255	279	305	NA	0.91%
Lake Whitney Water Company (P)		5,374	5,396	5,426	5,460	5,494	5,530	5,570	NA	0.06%
Parker WSC (P)		371	391	419	451	483	517	555	NA	0.67%
White Bluff Community WS		1,000	1,211	1,507	1,841	2,175	2,531	2,927	NA	1.81%
Whitney	1,626	1,833	2,157	2,227	2,306	2,385	2,470	2,564	1.21%	0.56%
Woodrow-Osceola WSC		5,396	5,671	6,056	6,491	6,925	7,389	7,904	NA	0.64%
County-Other	15,336	2,877	2,074	2,305	2,566	2,827	3,104	3,411	-15.41%	0.28%
<b>Hill County Total</b>	<b>27,146</b>	<b>32,321</b>	<b>33,519</b>	<b>35,050</b>	<b>36,782</b>	<b>38,510</b>	<b>40,355</b>	<b>42,402</b>	<b>1.76%</b>	<b>0.45%</b>
<b>Hood County</b>										
Acton MUD (P)		12,222	15,036	18,435	21,599	24,913	29,088	33,909	NA	1.72%
Cresson (P)			295	360	439	536	654	799	NA	2.01%
DeCordova			3,074	3,125	3,177	3,230	3,283	3,337	NA	0.16%
Granbury	4,045	5,718	8,073	10,083	11,954	13,914	16,383	19,234	3.52%	2.04%
Lipan			599	844	1,189	1,675	2,359	3,323	NA	3.49%
Oak Trail Shores Subdivision		2,985	3,512	3,512	3,512	3,512	3,512	3,512	NA	0.27%
Tolar		504	749	958	1,153	1,357	1,614	1,911	NA	2.25%
County-Other	24,936	19,671	17,869	21,047	23,865	26,677	30,166	34,020	-2.34%	0.92%
<b>Hood County Total</b>	<b>28,981</b>	<b>41,100</b>	<b>49,207</b>	<b>58,364</b>	<b>66,888</b>	<b>75,814</b>	<b>87,059</b>	<b>100,045</b>	<b>3.56%</b>	<b>1.49%</b>
<b>Johnson County</b>										
Acton MUD (P)		101	133	171	211	255	309	376	NA	2.21%
Alvarado	2,918	3,288	4,204	4,627	5,071	5,556	6,158	6,897	1.20%	1.24%
Bethany WSC		3,000	3,373	3,813	4,275	4,780	5,406	6,174	NA	1.21%
Bethesda WSC (P)		14,650	19,035	24,199	29,625	35,552	42,905	51,926	NA	2.13%
Burleson (P)	14,153	17,514	27,206	42,037	52,747	52,747	52,747	52,747	2.15%	1.85%
Cleburne	22,205	26,005	30,572	34,467	38,558	43,027	48,353	52,812	1.59%	1.19%
Cresson (P)			78	95	116	141	172	210	NA	2.00%
Godley		879	1,136	1,439	1,757	2,105	2,536	3,065	NA	2.10%
Grandview	1,245	1,358	1,600	2,000	2,500	2,500	2,500	2,500	0.87%	1.02%
Johnson County SUD (P)		33,656	43,983	56,147	68,926	82,885	100,205	121,454	NA	2.16%
Joshua	3,828	4,528	5,503	6,247	7,028	7,881	8,940	10,239	1.69%	1.37%
Keene	3,944	5,003	5,882	6,917	8,004	9,192	10,666	12,474	2.41%	1.53%

**Table 2-2.  
TWDB Approved Revisions to the 2006 Population Projections**

Plan	County	WUG	2006 and Revised (2011) Population Projection					
			2010	2020	2030	2040	2050	2060
2006 RWP	BELL	BELL COUNTY-OTHER	1,810	1,813	1,810	1,809	1,808	1,809
2011 RWP	BELL	BELL COUNTY-OTHER	1,289	1,223	1,157	1,116	1,089	1,071
2006 RWP	BELL	HARKER HEIGHTS	22,477	29,147	34,822	39,636	41,096	41,818
2011 RWP	BELL	HARKER HEIGHTS	23,869	30,952	36,978	42,090	43,640	44,407
2006 RWP	BELL	KILLEEN	104,528	117,239	130,315	142,772	156,151	169,937
2011 RWP	BELL	KILLEEN	113,217	126,985	141,148	154,641	169,132	184,064
2006 RWP	BELL	MORGANS POINT RESORT	3,698	4,191	4,637	4,924	5,109	5,243
2011 RWP	BELL	MORGANS POINT RESORT	4,219	4,781	5,290	5,617	5,828	5,981
2006 RWP	BELL	NOLANVILLE	2,333	2,460	2,575	2,649	2,697	2,732
2011 RWP	BELL	NOLANVILLE	2,611	2,753	2,882	2,965	3,019	3,058
2006 RWP	BOSQUE	BOSQUE COUNTY-OTHER	19,831	22,646	24,622	25,364	25,667	26,032
2011 RWP	BOSQUE	BOSQUE COUNTY-OTHER	5,521	6,877	7,782	8,029	8,025	8,025
2006 RWP	BOSQUE	MORGAN	1,164	1,211	1,244	1,256	1,261	1,267
2011 RWP	BOSQUE	MORGAN	569	668	784	920	1,080	1,268
2006 RWP	BOSQUE	VALLEY MILLS	804	857	894	908	914	921
2011 RWP	BOSQUE	VALLEY MILLS	1,279	1,449	1,568	1,613	1,631	1,653
2006 RWP	CALLAHAN	CALLAHAN COUNTY-OTHER	6,371	6,443	6,332	6,208	6,070	5,955
2011 RWP	CALLAHAN	CALLAHAN COUNTY-OTHER	5,958	6,024	5,922	5,808	5,681	5,575
2006 RWP	CALLAHAN	CLYDE	3,320	3,368	3,296	3,215	3,125	3,050
2011 RWP	CALLAHAN	CLYDE	3,733	3,787	3,706	3,615	3,514	3,430
2006 RWP	EASTLAND	EASTLAND	3,777	3,787	3,720	3,618	3,500	3,342
2011 RWP	EASTLAND	EASTLAND	4,017	4,028	3,957	3,849	3,723	3,555
2006 RWP	EASTLAND	EASTLAND COUNTY-OTHER	6,021	6,036	5,932	5,769	5,579	5,329
2011 RWP	EASTLAND	EASTLAND COUNTY-OTHER	5,781	5,795	5,695	5,538	5,356	5,116
2006 RWP	HAMILTON	HAMILTON COUNTY-OTHER	3,507	3,407	3,329	3,355	3,252	3,245
2011 RWP	HAMILTON	HAMILTON COUNTY-OTHER	3,431	3,331	3,253	3,279	3,176	3,169
2006 RWP	HAMILTON	HICO	1,341	1,341	1,341	1,341	1,341	1,341
2011 RWP	HAMILTON	HICO	1,417	1,417	1,417	1,417	1,417	1,417
2006 RWP	HILL	HILL COUNTY-OTHER	2,892	3,144	3,428	3,712	4,014	4,349
2011 RWP	HILL	HILL COUNTY-OTHER	2,074	2,305	2,566	2,827	3,104	3,411
2006 RWP	HILL	HILLSBORO	8,477	8,820	9,208	9,595	10,008	10,467
2011 RWP	HILL	HILLSBORO	8,923	9,284	9,692	10,099	10,534	11,017
2006 RWP	HILL	HUBBARD	1,586	1,586	1,586	1,586	1,586	1,586
2011 RWP	HILL	HUBBARD	1,713	1,713	1,713	1,713	1,713	1,713
2006 RWP	HILL	ITASCA	1,499	1,493	1,487	1,481	1,474	1,466
2011 RWP	HILL	ITASCA	1,633	1,626	1,619	1,612	1,604	1,595
2006 RWP	HILL	WHITNEY	2,046	2,112	2,187	2,262	2,343	2,432
2011 RWP	HILL	WHITNEY	2,157	2,227	2,306	2,385	2,470	2,564
2006 RWP	HOOD	CRESSON	0	0	0	0	0	0
2011 RWP	HOOD	CRESSON	295	360	439	536	654	799
2006 RWP	HOOD	DECORDOVA	0	0	0	0	0	0
2011 RWP	HOOD	DECORDOVA	3,074	3,125	3,177	3,230	3,283	3,337
2006 RWP	HOOD	GRANBURY	6,843	8,202	9,467	10,792	12,461	14,388
2011 RWP	HOOD	GRANBURY	8,073	10,083	11,954	13,914	16,383	19,234
2006 RWP	HOOD	HOOD COUNTY-OTHER	23,312	27,711	31,806	36,093	41,494	47,732
2011 RWP	HOOD	HOOD COUNTY-OTHER	17,869	21,047	23,865	26,677	30,166	34,020

## **8.2 Recommendations Concerning Sites Uniquely Suited for Reservoirs**

The Brazos G RWPG has chosen to identify the following four sites as uniquely suited for reservoir construction. Each of these sites is associated with a recommended water management strategy in the 2011 Plan, and local entities have requested these sites be identified as unique reservoir sites.

- Cedar Ridge Reservoir,
- Turkey Peak Reservoir,
- Millers Creek Reservoir Augmentation (downstream dam site), and
- Coryell County Off-Channel Reservoir.

## **8.3 Legislative and Policy Recommendations**

The Brazos G RWPG established a Water Policy Workgroup to discuss various issues concerning State water policy and to formulate proposed positions for the planning group to consider for recommendation to the TWDB and the Texas Legislature. For the 2006 Plan, the Brazos G RWPG formulated recommendations for several legislative and water policy positions. For the 2011 Plan, these policy recommendations were revisited by the Water Policy Workgroup, and specific revised recommendations were offered to the full planning group for consideration.

The Brazos G RWPG offers the following specific recommendations concerning State water policy to the TWDB and the Texas Legislature. Issue number refers to a larger list of topics considered by the Brazos G RWPG for the 2006 Plan. Only those issues for which the Brazos G RWPG has formulated a recommendation are included here.

### ***Issue #1: Interaction of State Agencies with Regional Water Planning Groups***

“The Brazos G Regional Water Planning Group (Brazos G) recognizes that all State agencies involved in planning and/or permitting regional water projects need to act consistently with the current statewide water plan and to work cooperatively with Regional Water Planning Groups that are considering significant new regional water projects requiring State agency input and/or permits.”



**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)	(140)
Little River - Academy	2010	(18)	(27)
Morgans Point Resort	2010	(272)	(332)
Temple	2050	-	(3,577)
<b>Bosque County</b>			
Cross Country WSC (P)	2040	-	(52)
Valley Mills (P)	2030	(2)	(12)
<b>Brazos County</b>			
Bryan	2050	-	(809)
College Station	2030	(68)	(5,631)
Wickson Creek SUD (P)	2030	(191)	(791)
<b>Burleson County</b>			
Southwest Milam WSC (P)	2020	(10)	(22)
<b>Callahan County</b>			
Baird	2010	(241)	(232)
Potosi WSC (P)	2010	(1)	(0)
<b>Comanche County</b>			
None			
<b>Coryell County</b>			
Gatesville	2030	(72)	(1,450)
Kempner WSC (P)	2050	-	(812)
<b>Eastland County</b>			
Eastland County-Other	2010	(184)	(81)
Rising Star	2010	(9)	-
<b>Erath County</b>			
None			
<b>Falls County</b>			
Bell-Milam Falls WSC (P)	2010	(120)	(246)
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)	2030	(162)	(518)

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	(2)	-
Haskell	2010	(506)	(472)
<b>Hill County</b>			
Files Valley WSC	2050	-	(150)
White Bluff Community WS	2010	(235)	(557)
Woodrow-Osceola WSC	2010	(81)	(116)
<b>Hood County</b>			
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	(4,841)	(16,704)
Keene	2060	-	(97)
Parker WSC (P)	2050	-	(124)
<b>Jones County</b>			
Abilene (P)	2020	(107)	(1)
Jones County-Other	2010	(46)	(29)
Stamford (P)	2010	(2,750)	(2,684)
<b>Kent County</b>			
Jayton	2010	(95)	(57)
<b>Knox County</b>			
Knox County-Other	2010	(9)	-
Knox City	2010	(220)	(216)
Munday	2010	(255)	(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	(86)	(179)
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)
Groesbeck	2050	-	(109)
Kosse	2010	(74)	(74)
<b>McLennan County</b>			
Chalk Bluff WSC	2040	-	(190)
Cross Country WSC (P)	2040	-	(245)
Hallsburg	2010	(21)	(45)
Lacy-Lakeview	2040	-	(357)
Mart	2010	(224)	(272)
North Bosque WSC	2040	-	(199)
Riesel	2040	(14)	(31)
Robinson	2060	-	(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>			
None			
<b>Shackelford County</b>			
Albany	2010	(15)	-
<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)	-
Throckmorton	2010	(9)	-
<b>Washington County</b>			
None			
<b>Williamson County</b>			
Aqua WSC (P)	2020	(27)	(85)
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	-	(3,992)
Williamson County-Other	2040	-	(3,677)
Florence	2010	(161)	(344)
Georgetown	2030	(763)	(16,082)
Jarrell	2010	(169)	(164)
Jarrell-Schwertner WSC (P)	2020	(372)	(1,359)
Jonah Water SUD	2010	(1)	(1,575)
Leander	2030	(719)	(7,039)
Liberty Hill	2010	(863)	(1,797)
Round Rock	2010	(22,273)	(60,139)
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 4B.12.1-4.  
Cost Estimate Summary for  
Cedar Ridge Reservoir  
(September 2008 Prices)**

<i>Item</i>	<i>Estimated Costs for Facilities</i>
<b>Capital Costs</b>	
Dam and Reservoir (Conservation Pool 227,127 acft, 6,635 acres, 1489 ft. msl)	\$65,538,000
Intake and Pump Station (20.9 MGD)	\$12,197,000
Transmission Pipeline (36 in dia., 29 miles)	\$35,566,000
Water Treatment Plant (13.9 MGD)	\$24,226,000
Relocations & Other	<u>\$11,500,000</u>
<b>Total Capital Cost</b>	<b>\$149,027,000</b>
Engineering, Legal Costs and Contingencies	\$55,398,000
Environmental & Archaeology Studies and Mitigation	\$30,842,000
Land Acquisition and Surveying (16,314 acres)	\$24,519,000
Interest During Construction (3 years)	<u>\$25,428,000</u>
<b>Total Project Cost</b>	<b>\$285,214,000</b>
<b>Annual Costs</b>	
Debt Service (6 percent, 20 years)	\$11,337,000
Reservoir Debt Service (6 percent, 40 years)	\$10,314,000
Operation and Maintenance	
Intake, Pipeline, Pump Station	\$661,000
Dam and Reservoir	\$983,000
Water Treatment Plant	\$2,013,000
Pumping Energy Costs (19,067,256 kW-hr @ 0.09 \$/kW-hr)	\$1,716,000
Purchase of Water (5000 acft/yr @ 54.5 \$/acft)	<u>\$273,000</u>
<b>Total Annual Cost</b>	<b>\$27,297,000</b>
<b>Available Project Yield (acft/yr)</b>	23,380
<b>Annual Cost of Water (\$ per acft)</b>	\$1,168
<b>Annual Cost of Water (\$ per 1,000 gallons)</b>	\$3.58

## **4B.16 Voluntary Redistribution**

### **4B.16.1 Description of Option**

For the purposes of this discussion, “voluntary redistribution” is defined as an entity in possession of water rights or water purchase contracts freely selling, leasing, giving, or otherwise providing water to another entity. Typically, the entity providing the water has determined that it does not need the water for the duration of the transfer. The water could be transferred for a set period of years or permanently.

Voluntary redistribution is nothing new to Texas or to the Brazos G Area, and is essentially a water purchase. Typical examples of voluntary redistribution occurring in the region are the sale of water by entities such as the BRA, City of Waco, LCRA, and the City of Abilene through purchase contracts. The most common water sales occur when cities such as Waco or Abilene sell water to their surrounding communities.

Voluntary redistribution has many benefits over other supply options because it avoids implementation issues associated with new reservoir projects such as environmental, local impacts, and large capital costs. Most importantly, redistribution of water makes use of existing resources and provides a more immediate source of water.

### **4B.16.2 Available Supply and Shortages**

The first step towards voluntary distribution is determining where water supplies are available and are projected to be available for some future period. Water available for the voluntary redistribution option was identified for municipal and industrial uses only.

As potential sources of water for voluntary redistribution are identified, it is important to remember that the redistribution of water is voluntary. No entity is required to participate. For this reason, entities with available water will not be specifically identified in this analysis, and the quantity of unused water is aggregated on a county-wide basis.

The amount of water available for municipal use was determined from the projected demands and supplies. Each municipal water user group was examined for water that is projected to be in excess of projected demands.

#### **4B.16.2.1 Available Municipal Supplies**

The municipal water supplies available as a potential source for voluntary redistribution are approximately 98,250 acft/yr and 66,837 acft/yr, in 2030 and 2060, respectively. The total

municipal need for the region in 2030 and 2060 is 79,940 acft/yr and 194,370 acft/yr, respectively. It is important to note that municipal voluntary redistribution is typically only feasible when an entity with a projected shortage is located in close proximity to an entity with a projected surplus. The projected municipal shortages and the amount of water available for transfer within each county are shown for 2030 and 2060 in Table 4B.16-1.

#### **4B.16.2.2 Available Industrial Supply**

Industrial uses include manufacturing, steam-electric, and mining. The industrial water supplies available as a potential source for voluntary redistribution are approximately 133,420 acft/yr and 113,192 acft/yr, in 2030 and 2060, respectively. The total industrial need for the region in 2030 and 2060 is 97,953 acft/yr and 151,084 acft/yr, respectively. The projected industrial shortages and the amount of water available for transfer are shown by county for 2030 and 2060 in Table 4B.16-2.

#### **4B.16.3 Environmental Issues**

No substantial environmental impacts are anticipated, as available water resources identified for this option are from existing supplies. A summary of the few environmental issues that might arise for this alternative are presented in Table 4B.16-3.

#### **4B.16.4 Engineering and Costing**

A cost estimate to this option cannot be fully assessed. Many unknowns exist including the price of the water, potential costs of new pipelines or water treatment facilities, and the proximity of the water needs to the water supply.

Potential costs of purchasing and using water available from voluntary redistribution are listed below:

- Cost of raw water;
- Treatment costs;
- Conveyance costs;
- Engineering costs of designing and constructing treatment and conveyance systems; and
- Additional costs required by water supplier. Many times when the water supplier is a city, water will be sold for 1.5 times the price of water sold within the city limits.

**Table 4B.16-1.  
Municipal Needs/Available Supplies for Voluntary Redistribution**

<b>County</b>	<b>Shortages</b>		<b>Available Supplies</b>	
	<b>2030 (acft/yr)</b>	<b>2060 (acft/yr)</b>	<b>2030 (acft/yr)</b>	<b>2060 (acft/yr)</b>
Bell	487	3,841	10,613	7,816
Bosque	2	64	850	604
Brazos	259	6,422	8,126	5,648
Burleson	10	22	2,027	1,777
Callahan	242	232	796	895
Comanche	0	0	394	482
Coryell	72	2,262	3,148	2,108
Eastland	193	81	1,471	1,715
Erath	0	0	4,262	2,478
Falls	2,299	2,763	1,006	1,084
Fisher	0	0	490	547
Grimes	162	518	1,296	1,201
Hamilton	0	0	832	886
Haskell	508	472	48	89
Hill	316	823	4,082	2,793
Hood	3,566	6,740	3,807	380
Johnson	5,890	23,640	7,672	4,389
Jones	2,902	2,713	461	622
Kent	95	57	8	21
Knox	484	466	0	2
Lampasas	0	0	4,027	3,543
Lee	480	797	776	459
Limestone	2,944	3,722	2,126	1,316
McLennan	341	1,745	17,733	11,616
Milam	485	617	2,291	2,377
Nolan	3,435	3,117	263	327
Palo Pinto	1,590	2,588	1,413	974
Robertson	0	0	2,669	2,684
Shackelford	15	0	449	737
Somervell	26	77	2,057	2,038
Stephens	0	0	1,112	1,286
Stonewall	0	0	143	193
Taylor	19,317	17,982	614	660
Throckmorton	23	0	45	84
Washington	0	0	1,074	863
Williamson	33,797	112,609	8,339	625
Young	0	0	1,730	1,518



#### 4C.15 Hill County Water Supply Plan

Table 4C.15-1 lists each water user group in Hill County and their corresponding surplus or shortage in years 2030 and 2060. For each water user group with a projected shortage, a water supply plan has been developed and is presented in the following subsections. Water supply plans are also presented for some entities that need pumping/conveyance facilities to utilize their existing water resources, or to become a regional provider.

**Table 4C.15-1.  
Hill County Surplus/(Shortage)**

Water User Group	Surplus/(Shortage) <sup>1</sup>		Comment
	2030 (acft/yr)	2060 (acft/yr)	
Brandon-Irene WSC	108	34	Projected surplus
Files Valley WSC	99	(150)	Projected shortage – see plan below
City of Hillsboro	2,208	1,305	Projected surplus
City of Hubbard	400	400	Projected surplus
City of Itasca	32	43	Projected surplus
Johnson County SUD			See Johnson County for Plan
Lake Whitney Water Co.	407	416	Projected surplus
Parker WSC			See Johnson County for Plan
White Bluff Community WS	(235)	(557)	Projected shortage – see plan below
City of Whitney	104	74	Projected surplus
Woodrow-Osceola WSC	(81)	(116)	Projected shortage – see plan below
County-Other	833	661	Projected surplus
Manufacturing	284	252	Projected surplus
Steam-Electric	0	0	No projected demand
Mining	1,054	1,059	Projected surplus
Irrigation	3,308	3,310	Projected surplus
Livestock	0	0	Demand equals supply

<sup>1</sup> From Tables C-29 and C-30, Appendix C – Comparison of Water Demands with Water Supplies to Determine Needs.

##### 4C.15.1 Brandon-Irene WSC

Brandon-Irene WSC obtains its water from the Trinity Aquifer and surface water through a contract with Aquilla WSD. Surpluses are projected through 2060 for Brandon Irene WSC, and no changes in water supply are recommended.

**Table C-5  
Brazos County  
Population, Water Supply, and Water Demand Projections**

Population Projection	Year						
	2000	2010	2020	2030	2040	2050	2060
	152,415	178,187	205,099	229,850	248,962	271,608	279,182

Supply and Demand by Type of Use		Year						
		2000	2010	2020	2030	2040	2050	2060
		(acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Municipal	Municipal Demand	30,317	34,992	39,587	43,776	46,937	50,976	52,417
	Contractual Demand	0	1,120	1,120	1,120	1,120	1,120	1,120
	Municipal Existing Supply							
	Groundwater (Less Contractual Demand) <sup>1</sup>	47,570	47,643	47,643	47,643	47,643	47,643	47,643
	Surface water	4,000	2,880	2,880	2,880	2,880	2,880	2,880
	Total Existing Municipal Supply	51,570	50,523	50,523	50,523	50,523	50,523	50,523
	Municipal Balance	21,253	15,531	10,936	6,747	3,586	(453)	(1,894)
Industrial	Manufacturing Demand	244	316	365	413	462	506	549
	Manufacturing Existing Supply							
	Groundwater	2,475	2,475	2,475	2,475	2,475	2,475	2,475
	Surface water	14,720	14,720	14,720	14,720	14,720	14,720	14,720
	Total Manufacturing Supply	17,195	17,195	17,195	17,195	17,195	17,195	17,195
	Manufacturing Balance	16,951	16,879	16,830	16,782	16,733	16,689	16,646
	Steam-Electric Demand	545	526	488	394	446	303	393
	Steam-Electric Existing Supply							
	Groundwater	460	460	460	460	460	460	460
	Surface water	85	85	85	85	85	85	85
	Total Steam-Electric Supply	545	545	545	545	545	545	545
	Steam-Electric Balance	0	19	57	151	99	242	152
	Mining Demand	25	27	28	29	30	31	31
	Mining Existing Supply							
	Groundwater	32	32	32	32	32	32	32
Surface water	0	0	0	0	0	0	0	
Total Mining Supply	32	32	32	32	32	32	32	
Mining Balance	7	5	4	3	2	1	1	
Agriculture	Irrigation Demand	6,918	6,584	6,267	5,964	5,676	5,403	5,142
	Irrigation Existing Supply							
	Groundwater	12,133	12,133	12,133	12,133	12,133	12,133	12,133
	Surface water	4,359	4,379	4,399	4,420	4,440	4,460	4,480
	Total Irrigation Supply	16,492	16,512	16,532	16,553	16,573	16,593	16,613
	Irrigation Balance	9,574	9,928	10,265	10,589	10,897	11,190	11,471
	Livestock Demand	1,032	1,032	1,032	1,032	1,032	1,032	1,032
	Livestock Existing Supply							
	Groundwater	0	0	0	0	0	0	0
	Surface water	1,032	1,032	1,032	1,032	1,032	1,032	1,032
Total Livestock Supply	1,032	1,032	1,032	1,032	1,032	1,032	1,032	
Livestock Balance	0	0	0	0	0	0	0	
Total	Municipal & Industrial Demand	31,131	35,861	40,468	44,612	47,875	51,816	53,390
	Existing Municipal & Industrial Supply							
	Groundwater	50,537	50,610	50,610	50,610	50,610	50,610	50,610
	Surface water	18,805	17,685	17,685	17,685	17,685	17,685	17,685
	Total Municipal & Industrial Supply	69,342	68,295	68,295	68,295	68,295	68,295	68,295
	Municipal & Industrial Balance	38,211	32,434	27,827	23,683	20,420	16,479	14,905
	Agriculture Demand	7,950	7,616	7,299	6,996	6,708	6,435	6,174
	Existing Agricultural Supply							
	Groundwater	12,133	12,133	12,133	12,133	12,133	12,133	12,133
	Surface water	5,391	5,411	5,431	5,452	5,472	5,492	5,512
	Total Agriculture Supply	17,524	17,544	17,564	17,585	17,605	17,625	17,645
	Agriculture Balance	9,574	9,928	10,265	10,589	10,897	11,190	11,471
	Total Demand	39,081	43,477	47,767	51,608	54,583	58,251	59,564
	Total Supply							
	Groundwater	62,670	62,743	62,743	62,743	62,743	62,743	62,743
Surface water	24,196	23,096	23,116	23,137	23,157	23,177	23,197	
Total Supply	86,866	85,839	85,859	85,880	85,900	85,920	85,940	
Total Balance	47,785	42,362	38,092	34,272	31,317	27,669	26,376	

<sup>1</sup> Contractual demands are subtracted from the supplies available to municipal water user groups in order to not double-count demands and supplies available within a County.

**Table C-6**  
**Brazos G Regional Water Planning Area**  
**Municipal Water Demand & Supply By City/County**  
**(acft)**

<u>City/County</u>	<u>2000</u>	<u>2010</u>	<u>2020</u>	<u>2030</u>	<u>2040</u>	<u>2050</u>	<u>2060</u>
<i>Brazos County</i>							
<b>BRYAN</b>							
Demand	10,812	11,957	13,179	14,221	15,022	16,096	16,493
Contractual Demand		1,120	1,120	1,120	1,120	1,120	1,120
Supply	18,304	18,304	18,304	18,304	18,304	18,304	18,304
Groundwater	18,304	18,304	18,304	18,304	18,304	18,304	18,304
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	-	-	-	-	-	-	-
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	7,492	5,227	4,005	2,963	2,162	1,088	691
<b>COLLEGE STATION</b>							
Demand	17,110	20,032	22,977	25,779	27,844	30,432	31,342
Supply	25,711	25,711	25,711	25,711	25,711	25,711	25,711
Groundwater	25,711	25,711	25,711	25,711	25,711	25,711	25,711
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	-	-	-	-	-	-	-
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	8,601	5,679	2,734	(68)	(2,133)	(4,721)	(5,631)
<b>WELLBORN SUD</b>							
Demand	858	1,069	1,285	1,482	1,637	1,820	1,886
Supply	5,135	5,695	5,695	5,695	5,695	5,695	5,695
Groundwater	1,135	1,695	1,695	1,695	1,695	1,695	1,695
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	4,000	4,000	4,000	4,000	4,000	4,000	4,000
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	4,277	4,626	4,410	4,213	4,058	3,875	3,809
<b>WICKSON CREEK SUD</b>							
Demand	624	1,126	1,451	1,701	1,924	2,206	2,301
Supply	1,437	1,510	1,510	1,510	1,510	1,510	1,510
Groundwater	1,437	1,510	1,510	1,510	1,510	1,510	1,510
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	-	-	-	-	-	-	-
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	813	384	59	(191)	(414)	(696)	(791)
<b>COUNTY-OTHER</b>							
Demand	913	808	695	593	510	422	395
Supply	983	1,543	1,543	1,543	1,543	1,543	1,543
Groundwater	983	1,543	1,543	1,543	1,543	1,543	1,543
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	-	-	-	-	-	-	-
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	70	735	848	950	1,033	1,121	1,148

(P) Indicates city is in multiple counties. Projections shown are for this county's portion only.  
Dash represents a value of zero (0)  
NC indicates the supply is "not constrained"

**Table C-21  
Fisher County  
Population, Water Supply, and Water Demand Projections**

Population Projection		Year						
		2000	2010	2020	2030	2040	2050	2060
		4,344	4,264	4,259	4,097	3,972	3,910	3,717

Supply and Demand by Type of Use		Year						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
		<b>Municipal</b>	Municipal Demand	689	656	641	592	550
	Contractual Demand	0	0	0	0	0	0	0
	Municipal Existing Supply							
	Groundwater	341	341	341	341	341	341	341
	Surface water	783	770	763	741	723	714	695
	Total Existing Municipal Supply	1,124	1,111	1,104	1,082	1,064	1,055	1,036
	Municipal Balance	435	455	463	490	514	525	547
<b>Industrial</b>	Manufacturing Demand	158	192	225	255	284	310	336
	Manufacturing Existing Supply							
	Groundwater	340	340	340	340	340	340	340
	Surface water	0	0	0	0	0	0	0
	Total Manufacturing Supply	340	340	340	340	340	340	340
	Manufacturing Balance	182	148	115	85	56	30	4
	Steam-Electric Demand	0	0	0	0	0	0	0
	Steam-Electric Existing Supply							
	Groundwater	0	0	0	0	0	0	0
	Surface water	0	0	0	0	0	0	0
	Total Steam-Electric Supply	0	0	0	0	0	0	0
	Steam-Electric Balance	0	0	0	0	0	0	0
	Mining Demand	468	375	359	354	349	344	337
	Mining Existing Supply							
	Groundwater	583	583	583	583	583	583	583
	Surface water	0	0	0	0	0	0	0
	Total Mining Supply	583	583	583	583	583	583	583
	Mining Balance	115	208	224	229	234	239	246
<b>Agriculture</b>	Irrigation Demand	2,459	2,386	2,314	2,245	2,178	2,113	2,049
	Irrigation Existing Supply							
	Groundwater	3,924	3,924	3,924	3,924	3,924	3,924	3,924
	Surface water	758	758	758	758	758	758	758
	Total Irrigation Supply	4,682	4,682	4,682	4,682	4,682	4,682	4,682
	Irrigation Balance	2,223	2,296	2,368	2,437	2,504	2,569	2,633
	Livestock Demand	585	585	585	585	585	585	585
	Livestock Existing Supply							
	Groundwater	0	0	0	0	0	0	0
	Surface water	585	585	585	585	585	585	585
	Total Livestock Supply	585	585	585	585	585	585	585
	Livestock Balance	0	0	0	0	0	0	0
<b>Total</b>	Municipal & Industrial Demand	1,315	1,223	1,225	1,201	1,183	1,184	1,162
	Existing Municipal & Industrial Supply							
	Groundwater	1,264	1,264	1,264	1,264	1,264	1,264	1,264
	Surface water	783	770	763	741	723	714	695
	Total Municipal & Industrial Supply	2,047	2,034	2,027	2,005	1,987	1,978	1,959
	Municipal & Industrial Balance	732	811	802	804	804	794	797
	Agriculture Demand	3,044	2,971	2,899	2,830	2,763	2,698	2,634
	Existing Agricultural Supply							
	Groundwater	3,924	3,924	3,924	3,924	3,924	3,924	3,924
	Surface water	1,343	1,343	1,343	1,343	1,343	1,343	1,343
	Total Agriculture Supply	5,267	5,267	5,267	5,267	5,267	5,267	5,267
	Agriculture Balance	2,223	2,296	2,368	2,437	2,504	2,569	2,633
	Total Demand	4,359	4,194	4,124	4,031	3,946	3,882	3,796
	Total Supply							
	Groundwater	5,188	5,188	5,188	5,188	5,188	5,188	5,188
	Surface water	2,126	2,113	2,106	2,084	2,066	2,057	2,038
	Total Supply	7,314	7,301	7,294	7,272	7,254	7,245	7,226
	Total Balance	2,955	3,107	3,170	3,241	3,308	3,363	3,430

**Table C-22**  
**Brazos G Regional Water Planning Area**  
**Municipal Water Demand & Supply By City/County**  
**(acft)**

<u>City/County</u>	<u>2000</u>	<u>2010</u>	<u>2020</u>	<u>2030</u>	<u>2040</u>	<u>2050</u>	<u>2060</u>
<i>Fisher County</i>							
BITTER CREEK WSC							
Demand	121	117	114	113	111	110	113
Supply	253	253	253	253	253	253	253
Groundwater	58	58	58	58	58	58	58
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	195	195	195	195	195	195	195
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	132	136	139	140	142	143	140
ROBY							
Demand	78	76	75	75	74	74	76
Supply	331	331	331	331	331	331	331
Groundwater	34	34	34	34	34	34	34
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	297	297	297	297	297	297	297
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	253	255	256	256	257	257	255
ROTAN							
Demand	291	278	271	249	231	222	203
Supply	291	278	271	249	231	222	203
Groundwater	-	-	-	-	-	-	-
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	291	278	271	249	231	222	203
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	-	-	-	-	-	-	-
COUNTY-OTHER							
Demand	199	185	181	155	134	124	97
Supply	249	249	249	249	249	249	249
Groundwater	249	249	249	249	249	249	249
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	-	-	-	-	-	-	-
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	50	64	68	94	115	125	152

(P) Indicates city is in multiple counties. Projections shown are for this county's portion only.  
Dash represents a value of zero (0)  
NC indicates the supply is "not constrained"

**Table C-23  
Grimes County  
Population, Water Supply, and Water Demand Projections**

Population Projection		Year						
		2000	2010	2020	2030	2040	2050	2060
		23,552	26,635	30,073	32,785	34,670	36,176	37,657

Supply and Demand by Type of Use		Year						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
		<b>Municipal</b>	Municipal Demand	2,923	3,320	3,629	3,855	3,983
	Contractual Demand	0	0	0	0	0	0	0
	Municipal Existing Supply							
	Groundwater	4,391	5,004	4,994	4,989	4,985	4,985	4,985
	Surface water	0	0	0	0	0	0	0
	Total Existing Municipal Supply	4,391	5,004	4,994	4,989	4,985	4,985	4,985
	Municipal Balance	1,468	1,684	1,365	1,134	1,002	856	683
<b>Industrial</b>	Manufacturing Demand	197	257	297	336	375	410	445
	Manufacturing Existing Supply							
	Groundwater	445	445	445	445	445	445	445
	Surface water	112	112	112	112	112	112	112
	Total Manufacturing Supply	557	557	557	557	557	557	557
	Manufacturing Balance	360	300	260	221	182	147	112
	Steam-Electric Demand	4,405	12,000	31,760	33,160	34,660	36,660	39,660
	Steam-Electric Existing Supply							
	Groundwater	0	0	0	0	0	0	0
	Surface water	9,740	16,461	16,461	16,461	16,461	16,461	16,461
	Total Steam-Electric Supply	9,740	16,461	16,461	16,461	16,461	16,461	16,461
	Steam-Electric Balance	5,335	4,461	(15,299)	(16,699)	(18,199)	(20,199)	(23,199)
	Mining Demand	158	166	169	171	173	174	175
	Mining Existing Supply							
	Groundwater	114	114	114	114	114	114	114
	Surface water	78	79	80	81	82	84	85
	Total Mining Supply	192	193	194	195	196	198	199
	Mining Balance	34	27	25	24	23	24	24
<b>Agriculture</b>	Irrigation Demand	241	241	241	241	241	241	241
	Irrigation Existing Supply							
	Groundwater	315	315	315	315	315	315	315
	Surface water	1,679	1,679	1,679	1,678	1,678	1,678	1,678
	Total Irrigation Supply	1,994	1,994	1,994	1,993	1,993	1,993	1,993
	Irrigation Balance	1,753	1,753	1,753	1,752	1,752	1,752	1,752
	Livestock Demand	1,554	1,554	1,554	1,554	1,554	1,554	1,554
	Livestock Existing Supply							
	Groundwater	0	0	0	0	0	0	0
	Surface water	1,554	1,554	1,554	1,554	1,554	1,554	1,554
	Total Livestock Supply	1,554	1,554	1,554	1,554	1,554	1,554	1,554
	Livestock Balance	0	0	0	0	0	0	0
<b>Total</b>	Municipal & Industrial Demand	7,683	15,743	35,855	37,522	39,191	41,373	44,582
	Existing Municipal & Industrial Supply							
	Groundwater	4,950	5,563	5,553	5,548	5,544	5,544	5,544
	Surface water	9,930	16,652	16,653	16,654	16,655	16,656	16,657
	Total Municipal & Industrial Supply	14,880	22,215	22,206	22,202	22,199	22,200	22,201
	Municipal & Industrial Balance	7,197	6,472	(13,649)	(15,320)	(16,992)	(19,173)	(22,381)
	Agriculture Demand	1,795	1,795	1,795	1,795	1,795	1,795	1,795
	Existing Agricultural Supply							
	Groundwater	315	315	315	315	315	315	315
	Surface water	3,233	3,233	3,233	3,232	3,232	3,232	3,232
	Total Agriculture Supply	3,548	3,548	3,548	3,547	3,547	3,547	3,547
	Agriculture Balance	1,753	1,753	1,753	1,752	1,752	1,752	1,752
	Total Demand	9,478	17,538	37,650	39,317	40,986	43,168	46,377
	Total Supply							
	Groundwater	5,265	5,878	5,868	5,863	5,859	5,859	5,859
	Surface water	13,163	19,884	19,885	19,886	19,887	19,888	19,889
	Total Supply	18,428	25,762	25,753	25,749	25,746	25,747	25,748
	Total Balance	8,950	8,224	(11,897)	(13,568)	(15,240)	(17,421)	(20,629)

**Table C-24**  
**Brazos G Regional Water Planning Area**  
**Municipal Water Demand & Supply By City/County**  
**(acft)**

<u>City/County</u>	<u>2000</u>	<u>2010</u>	<u>2020</u>	<u>2030</u>	<u>2040</u>	<u>2050</u>	<u>2060</u>
<i>Grimes County</i>							
NAVASOTA							
Demand	1,384	1,426	1,464	1,494	1,505	1,526	1,555
Supply	2,561	2,561	2,561	2,561	2,561	2,561	2,561
Groundwater	2,561	2,561	2,561	2,561	2,561	2,561	2,561
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	-	-	-	-	-	-	-
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	1,177	1,135	1,097	1,067	1,056	1,035	1,006
WICKSON CREEK SUD							
Demand	303	625	878	1,044	1,175	1,286	1,396
Supply	284	897	887	882	878	878	878
Groundwater	284	897	887	882	878	878	878
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	-	-	-	-	-	-	-
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	(19)	272	9	(162)	(297)	(408)	(518)
COUNTY-OTHER							
Demand	1,236	1,269	1,287	1,317	1,303	1,317	1,351
Supply	1,546	1,546	1,546	1,546	1,546	1,546	1,546
Groundwater	1,546	1,546	1,546	1,546	1,546	1,546	1,546
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	-	-	-	-	-	-	-
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	310	277	259	229	243	229	195

(P) Indicates city is in multiple counties. Projections shown are for this county's portion only.  
Dash represents a value of zero (0)  
NC indicates the supply is "not constrained"

**Table C-29  
Hill County  
Population, Water Supply, and Water Demand Projections**

Population Projection		Year						
		2000	2010	2020	2030	2040	2050	2060
		32,321	33,416	34,947	36,679	38,407	40,252	42,300

Supply and Demand by Type of Use		Year						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
		<b>Municipal</b>	Municipal Demand	4,790	4,901	5,041	5,206	5,372
Contractual Demand	420		420	420	420	420	420	420
Municipal Existing Supply								
Groundwater	2,871		2,871	2,871	2,871	2,871	2,871	2,871
Surface water (Less Contractual Demand) <sup>1</sup>	6,335		6,136	6,118	6,101	5,821	5,425	5,036
Total Existing Municipal Supply	9,206		9,007	8,989	8,972	8,692	8,296	7,907
Municipal Balance	4,416		4,106	3,948	3,766	3,320	2,680	1,971
<b>Industrial</b>	Manufacturing Demand		67	85	97	108	119	129
	Manufacturing Existing Supply							
	Groundwater	142	142	142	142	142	142	142
	Surface water	250	250	250	250	250	250	250
	Total Manufacturing Supply	392	392	392	392	392	392	392
	Manufacturing Balance	325	307	295	284	273	263	252
	Steam-Electric Demand	0	0	0	0	0	0	0
	Steam-Electric Existing Supply							
	Groundwater	0	0	0	0	0	0	0
	Surface water	0	0	0	0	0	0	0
	Total Steam-Electric Supply	0	0	0	0	0	0	0
	Steam-Electric Balance	0	0	0	0	0	0	0
	Mining Demand	118	100	96	94	92	90	89
	Mining Existing Supply							
	Groundwater	148	148	148	148	148	148	148
	Surface water	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Total Mining Supply	1,148	1,148	1,148	1,148	1,148	1,148	1,148	
Mining Balance	1,030	1,048	1,052	1,054	1,056	1,058	1,059	
<b>Agriculture</b>	Irrigation Demand	43	43	42	42	42	42	41
	Irrigation Existing Supply							
	Groundwater	359	359	359	359	359	359	359
	Surface water	2,990	2,991	2,991	2,991	2,992	2,992	2,992
	Total Irrigation Supply	3,349	3,350	3,350	3,350	3,351	3,351	3,351
	Irrigation Balance	3,306	3,307	3,308	3,308	3,309	3,309	3,310
	Livestock Demand	1,401	1,401	1,401	1,401	1,401	1,401	1,401
	Livestock Existing Supply							
	Groundwater	0	0	0	0	0	0	0
	Surface water	1,401	1,401	1,401	1,401	1,401	1,401	1,401
Total Livestock Supply	1,401	1,401	1,401	1,401	1,401	1,401	1,401	
Livestock Balance	0	0	0	0	0	0	0	
<b>Total</b>	Municipal & Industrial Demand	4,975	5,086	5,234	5,408	5,583	5,835	6,165
	Existing Municipal & Industrial Supply							
	Groundwater	3,161	3,161	3,161	3,161	3,161	3,161	3,161
	Surface water	7,585	7,386	7,368	7,351	7,071	6,675	6,286
	Total Municipal & Industrial Supply	10,746	10,547	10,529	10,512	10,232	9,836	9,447
	Municipal & Industrial Balance	5,771	5,461	5,295	5,104	4,649	4,001	3,282
	Agriculture Demand	1,444	1,444	1,443	1,443	1,443	1,443	1,442
	Existing Agricultural Supply							
	Groundwater	359	359	359	359	359	359	359
	Surface water	4,391	4,392	4,392	4,392	4,393	4,393	4,393
	Total Agriculture Supply	4,750	4,751	4,751	4,751	4,752	4,752	4,752
	Agriculture Balance	3,306	3,307	3,308	3,308	3,309	3,309	3,310
	Total Demand	6,419	6,530	6,677	6,851	7,026	7,278	7,607
	Total Supply							
	Groundwater	3,520	3,520	3,520	3,520	3,520	3,520	3,520
	Surface water	11,977	11,778	11,760	11,744	11,464	11,068	10,679
Total Supply	15,497	15,298	15,280	15,264	14,984	14,588	14,199	
Total Balance	9,078	8,768	8,603	8,413	7,958	7,310	6,592	

<sup>1</sup> Contractual demands are subtracted from the supplies available to municipal water user groups in order to not double-count demands and supplies available within a County.



**Table C-30**  
**Brazos G Regional Water Planning Area**  
**Municipal Water Demand & Supply By City/County**  
**(acft)**

<u>City/County</u>	<u>2000</u>	<u>2010</u>	<u>2020</u>	<u>2030</u>	<u>2040</u>	<u>2050</u>	<u>2060</u>
<i>Hill County</i>							
BRANDON-IRENE WSC							
Demand	254	251	253	255	256	263	273
Supply	404	367	365	363	349	329	307
Groundwater	129	129	129	129	129	129	129
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	275	238	236	234	220	200	178
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	150	116	112	108	93	66	34
FILES VALLEY WSC							
Demand	413	413	417	421	424	433	447
Contractual Demand	420	420	420	420	420	420	420
Supply	1,103	960	950	940	882	801	717
Groundwater	-	-	-	-	-	-	-
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	1,103	960	950	940	882	801	717
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	270	127	113	99	38	(52)	(150)
HILLSBORO							
Demand	1,706	1,819	1,862	1,911	1,957	2,030	2,123
Supply	4,119	4,119	4,119	4,119	3,940	3,684	3,428
Groundwater	-	-	-	-	-	-	-
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	4,119	4,119	4,119	4,119	3,940	3,684	3,428
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	2,413	2,300	2,257	2,208	1,983	1,654	1,305
HUBBARD							
Demand	185	194	188	183	177	173	173
Supply	585	594	588	583	577	573	573
Groundwater	400	400	400	400	400	400	400
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	185	194	188	183	177	173	173
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	400	400	400	400	400	400	400
ITASCA							
Demand	214	225	219	212	206	202	201
Supply	244	244	244	244	244	244	244
Groundwater	244	244	244	244	244	244	244
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	-	-	-	-	-	-	-
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	30	19	25	32	38	42	43
JOHNSON COUNTY SUD							
Demand	34	37	41	46	53	59	65
Supply	59	59	59	59	59	59	65
Groundwater	19	19	19	19	19	19	19
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	40	40	40	40	40	40	46
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	25	22	18	13	6	(0)	-

(P) Indicates city is in multiple counties. Projections shown are for this county's portion only.  
Dash represents a value of zero (0)  
NC indicates the supply is "not constrained"

**Table C-30**  
**Brazos G Regional Water Planning Area**  
**Municipal Water Demand & Supply By City/County**  
**(acft)**

<u>City/County</u>	<u>2000</u>	<u>2010</u>	<u>2020</u>	<u>2030</u>	<u>2040</u>	<u>2050</u>	<u>2060</u>
<b>LAKE WHITNEY WATER COMPANY</b>							
Demand	638	623	608	593	578	570	574
Supply	857	857	857	857	853	847	841
Groundwater	765	765	765	765	765	765	765
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	92	92	92	92	88	82	76
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	219	234	249	264	275	277	267
<b>PARKER WSC</b>							
Demand	50	51	53	56	59	64	68
Supply	106	78	78	78	78	78	78
Groundwater	48	48	48	48	48	48	48
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	58	30	30	30	30	30	30
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	56	27	25	22	19	14	10
<b>WHITE BLUFF COMMUNITY WS</b>							
Demand	307	369	456	553	650	757	875
Supply	318	318	318	318	318	318	318
Groundwater	318	318	318	318	318	318	318
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	-	-	-	-	-	-	-
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	11	(51)	(138)	(235)	(332)	(439)	(557)
<b>WHITNEY</b>							
Demand	316	365	370	375	380	391	405
Supply	479	479	479	479	479	479	479
Groundwater	479	479	479	479	479	479	479
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	-	-	-	-	-	-	-
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	163	114	109	104	99	88	74
<b>WOODROW-OSCEOLA WSC</b>							
Demand	296	286	285	284	287	298	319
Supply	203	203	203	203	203	203	203
Groundwater	203	203	203	203	203	203	203
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	-	-	-	-	-	-	-
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	(93)	(83)	(82)	(81)	(84)	(95)	(116)
<b>COUNTY-OTHER</b>							
Demand	377	268	289	317	345	376	413
Supply	1,150	1,150	1,150	1,150	1,130	1,102	1,074
Groundwater	266	266	266	266	266	266	266
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	884	884	884	884	864	836	808
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	773	882	861	833	785	726	661

(P) Indicates city is in multiple counties. Projections shown are for this county's portion only.  
Dash represents a value of zero (0)  
NC indicates the supply is "not constrained"

**Table C-45  
Limestone County  
Population, Water Supply, and Water Demand Projections**

Population Projection		Year						
		2000	2010	2020	2030	2040	2050	2060
		22,051	23,322	24,944	25,828	26,505	27,177	28,050
Supply and Demand by Type of Use		Year						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Municipal	Municipal Demand	3,193	3,313	3,468	3,531	3,566	3,638	3,775
	Contractual Demand	5,534	5,534	5,534	5,534	5,534	5,534	5,534
	Municipal Existing Supply							
	Groundwater	3,146	3,151	3,151	3,151	3,151	3,151	3,151
	Surface water (Less Contractual Demand) <sup>1</sup>	891	458	10	(438)	(885)	(1,333)	(1,781)
	Total Existing Municipal Supply	4,037	3,609	3,161	2,713	2,266	1,818	1,370
	Municipal Balance	844	296	(307)	(818)	(1,300)	(1,820)	(2,405)
Industrial	Manufacturing Demand	39	48	53	58	63	67	72
	Manufacturing Existing Supply							
	Groundwater	0	0	0	0	0	0	0
	Surface water	36	30	25	19	14	8	3
	Total Manufacturing Supply	36	30	25	19	14	8	3
	Manufacturing Balance	(3)	(18)	(28)	(39)	(49)	(59)	(69)
	Steam-Electric Demand	22,065	22,332	22,598	26,420	31,079	36,758	43,681
	Steam-Electric Existing Supply							
	Groundwater	1,268	1,268	1,268	1,268	1,268	1,268	1,268
	Surface water	25,675	25,535	25,396	25,256	25,116	24,977	24,837
Total Steam-Electric Supply	26,943	26,803	26,664	26,524	26,384	26,245	26,105	
Steam-Electric Balance	4,878	4,471	4,066	104	(4,695)	(10,513)	(17,576)	
Agriculture	Mining Demand	360	380	387	392	396	400	403
	Mining Existing Supply							
	Groundwater	1,168	1,168	1,168	1,168	1,168	1,168	1,168
	Surface water	0	0	0	0	0	0	0
	Total Mining Supply	1,168	1,168	1,168	1,168	1,168	1,168	1,168
	Mining Balance	808	788	781	776	772	768	765
	Irrigation Demand	0	0	0	0	0	0	0
	Irrigation Existing Supply							
	Groundwater	0	0	0	0	0	0	0
	Surface water	19	19	19	19	19	19	19
Total Irrigation Supply	19	19	19	19	19	19	19	
Irrigation Balance	19	19	19	19	19	19	19	
Agriculture	Livestock Demand	1,487	1,487	1,487	1,487	1,487	1,487	1,487
	Livestock Existing Supply							
	Groundwater	0	0	0	0	0	0	0
	Surface water	1,487	1,487	1,487	1,487	1,487	1,487	1,487
	Total Livestock Supply	1,487	1,487	1,487	1,487	1,487	1,487	1,487
	Livestock Balance	0	0	0	0	0	0	0
Total	Municipal & Industrial Demand	25,657	26,073	26,506	30,401	35,104	40,863	47,931
	Existing Municipal & Industrial Supply							
	Groundwater	5,582	5,587	5,587	5,587	5,587	5,587	5,587
	Surface water	26,601	26,024	25,431	24,838	24,245	23,652	23,059
	Total Municipal & Industrial Supply	32,183	31,611	31,018	30,425	29,832	29,239	28,646
	Municipal & Industrial Balance	6,526	5,538	4,512	24	(5,272)	(11,624)	(19,286)
	Agriculture Demand	1,487	1,487	1,487	1,487	1,487	1,487	1,487
	Existing Agricultural Supply							
	Groundwater	0	0	0	0	0	0	0
	Surface water	1,506	1,506	1,506	1,506	1,506	1,506	1,506
	Total Agriculture Supply	1,506	1,506	1,506	1,506	1,506	1,506	1,506
	Agriculture Balance	19	19	19	19	19	19	19
	Total Demand	27,144	27,560	27,993	31,888	36,591	42,350	49,418
	Total Supply							
	Groundwater	5,582	5,587	5,587	5,587	5,587	5,587	5,587
	Surface water	28,107	27,529	26,936	26,343	25,750	25,157	24,564
	Total Supply	33,689	33,116	32,523	31,930	31,337	30,744	30,151
Total Balance	6,545	5,556	4,530	42	(5,254)	(11,606)	(19,267)	

<sup>1</sup> Contractual demands are subtracted from the supplies available to municipal water user groups in order to not double-count demands and supplies available within a County.

**Table C-46**  
**Brazos G Regional Water Planning Area**  
**Municipal Water Demand & Supply By City/County**  
**(acft)**

<u>City/County</u>	<u>2000</u>	<u>2010</u>	<u>2020</u>	<u>2030</u>	<u>2040</u>	<u>2050</u>	<u>2060</u>
<i>Limestone County</i>							
BISTONE MWSD							
Demand	150	148	146	144	142	141	141
Contractual Demand	5,534	5,534	5,534	5,534	5,534	5,534	5,534
Supply	3,480	3,256	3,032	2,808	2,584	2,360	2,136
Groundwater	1,937	1,937	1,937	1,937	1,937	1,937	1,937
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	1,543	1,319	1,095	871	647	423	199
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	(2,204)	(2,426)	(2,648)	(2,870)	(3,092)	(3,315)	(3,539)
COOLIDGE							
Demand	88	95	103	108	110	114	120
Supply	141	169	160	151	142	133	124
Groundwater	-	-	-	-	-	-	-
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	141	169	160	151	142	133	124
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	53	74	57	43	32	19	4
GROESBECK							
Demand	634	760	923	1,006	1,071	1,135	1,229
Supply	1,142	1,120	1,120	1,120	1,120	1,120	1,120
Groundwater	-	-	-	-	-	-	-
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	1,142	1,142	1,142	1,142	1,142	1,142	1,142
SW Constrained Supply		1,120	1,120	1,120	1,120	1,120	1,120
Balance	508	360	197	114	49	(15)	(109)
KOSSE							
Demand		75	75	74	73	73	74
Supply	-	-	-	-	-	-	-
Groundwater		-	-	-	-	-	-
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water		-	-	-	-	-	-
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	-	(75)	(75)	(74)	(73)	(73)	(74)
MEXIA							
Demand	1,213	1,250	1,289	1,328	1,358	1,408	1,479
Supply	2,817	2,636	2,455	2,273	2,092	1,911	1,730
Groundwater	-	-	-	-	-	-	-
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	2,817	2,636	2,455	2,273	2,092	1,911	1,730
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	1,604	1,386	1,166	945	734	503	251
THORNTON							
Demand	56	54	52	50	49	48	48
Supply	272	272	272	272	272	272	272
Groundwater	272	272	272	272	272	272	272
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	-	-	-	-	-	-	-
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	216	218	220	222	223	224	224

(P) Indicates city is in multiple counties. Projections shown are for this county's portion only.  
Dash represents a value of zero (0)  
NC indicates the supply is "not constrained"

**Table C-46**  
**Brazos G Regional Water Planning Area**  
**Municipal Water Demand & Supply By City/County**  
**(acft)**

<u>City/County</u>	<u>2000</u>	<u>2010</u>	<u>2020</u>	<u>2030</u>	<u>2040</u>	<u>2050</u>	<u>2060</u>
TRI-COUNTY SUD							
Demand	95	103	115	118	121	125	133
Supply	133	138	138	138	138	138	138
Groundwater	133	138	138	138	138	138	138
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	-	-	-	-	-	-	-
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	38	35	23	20	17	13	5
COUNTY-OTHER							
Demand	957	828	765	703	642	594	551
Supply	1,585	1,552	1,518	1,485	1,451	1,418	1,384
Groundwater	804	804	804	804	804	804	804
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	781	748	714	681	647	614	580
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	628	724	753	782	809	824	833

(P) Indicates city is in multiple counties. Projections shown are for this county's portion only.  
 Dash represents a value of zero (0)  
 NC indicates the supply is "not constrained"

**Table C-51**  
**Nolan County**  
**Population, Water Supply, and Water Demand Projections**

Population Projection		Year						
		2000	2010	2020	2030	2040	2050	2060
		15,802	16,550	17,177	17,464	17,412	16,747	15,954
Supply and Demand by Type of Use		Year						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Municipal	Municipal Demand	3,419	3,523	3,581	3,582	3,512	3,359	3,200
	Contractual Demand	2,354	2,354	2,354	2,354	2,354	2,354	2,354
	Municipal Existing Supply							
	Surface water (Less Contractual Demand) <sup>1</sup>	(44)	(44)	(44)	(44)	(44)	(44)	(44)
	Surface water	454	454	454	454	454	454	454
	Total Existing Municipal Supply	410	410	410	410	410	410	410
	Municipal Balance	(3,009)	(3,113)	(3,171)	(3,172)	(3,102)	(2,949)	(2,790)
Industrial	Manufacturing Demand	643	779	915	1,038	1,159	1,266	1,372
	Manufacturing Existing Supply							
	Groundwater	841	841	841	841	841	841	841
	Surface water	467	467	467	467	467	467	467
	Total Manufacturing Supply	1,308	1,308	1,308	1,308	1,308	1,308	1,308
	Manufacturing Balance	665	529	393	270	149	42	(64)
	Steam-Electric Demand	1,093	807	11,311	20,000	20,000	20,000	20,000
	Steam-Electric Existing Supply							
	Groundwater	0	0	0	0	0	0	0
	Surface water	0	0	0	0	0	0	0
	Total Steam-Electric Supply	0	0	0	0	0	0	0
	Steam-Electric Balance	(1,093)	(807)	(11,311)	(20,000)	(20,000)	(20,000)	(20,000)
	Mining Demand	277	278	278	278	278	278	278
	Mining Existing Supply							
	Groundwater	170	170	170	170	170	170	170
Surface water	0	0	0	0	0	0	0	
Total Mining Supply	170	170	170	170	170	170	170	
Mining Balance	(107)	(108)	(108)	(108)	(108)	(108)	(108)	
Agriculture	Irrigation Demand	5,276	5,138	5,003	4,871	4,741	4,618	4,497
	Irrigation Existing Supply							
	Groundwater	3,286	3,286	3,286	3,286	3,286	3,286	3,286
	Surface water	120	120	120	120	120	120	120
	Total Irrigation Supply	3,406	3,406	3,406	3,406	3,406	3,406	3,406
	Irrigation Balance	(1,870)	(1,732)	(1,597)	(1,465)	(1,335)	(1,212)	(1,091)
	Livestock Demand	464	464	464	464	464	464	464
	Livestock Existing Supply							
	Groundwater	0	0	0	0	0	0	0
	Surface water	464	464	464	464	464	464	464
Total Livestock Supply	464	464	464	464	464	464	464	
Livestock Balance	0	0	0	0	0	0	0	
Total	Municipal & Industrial Demand	5,432	5,387	16,085	24,898	24,949	24,903	24,850
	Existing Municipal & Industrial Supply							
	Groundwater	967	967	967	967	967	967	967
	Surface water	921	921	921	921	921	921	921
	Total Municipal & Industrial Supply	1,888	1,888	1,888	1,888	1,888	1,888	1,888
	Municipal & Industrial Balance	(3,544)	(3,499)	(14,197)	(23,010)	(23,061)	(23,015)	(22,962)
	Agriculture Demand	5,740	5,602	5,467	5,335	5,205	5,082	4,981
	Existing Agricultural Supply							
	Groundwater	3,286	3,286	3,286	3,286	3,286	3,286	3,286
	Surface water	584	584	584	584	584	584	584
	Total Agriculture Supply	3,870	3,870	3,870	3,870	3,870	3,870	3,870
	Agriculture Balance	(1,870)	(1,732)	(1,597)	(1,465)	(1,335)	(1,212)	(1,091)
	Total Demand	11,172	10,989	21,552	30,233	30,154	29,985	29,811
	Total Supply							
	Groundwater	4,253	4,253	4,253	4,253	4,253	4,253	4,253
Surface water	1,505	1,505	1,505	1,505	1,505	1,505	1,505	
Total Supply	5,758	5,758	5,758	5,758	5,758	5,758	5,758	
Total Balance	(5,414)	(5,231)	(15,794)	(24,475)	(24,396)	(24,227)	(24,053)	

<sup>1</sup> Contractual demands are subtracted from the supplies available to municipal water user groups in order to not double-count demands and supplies available within a County.

**Table C-52**  
**Brazos G Regional Water Planning Area**  
**Municipal Water Demand & Supply By City/County**  
**(acft)**

<u>City/County</u>	<u>2000</u>	<u>2010</u>	<u>2020</u>	<u>2030</u>	<u>2040</u>	<u>2050</u>	<u>2060</u>
<i>Nolan County</i>							
BITTER CREEK WSC							
Demand	122	122	122	120	115	109	104
Supply	254	254	254	254	254	254	254
Groundwater	58	58	58	58	58	58	58
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	196	196	196	196	196	196	196
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	132	132	132	134	139	145	150
ROSCOE							
Demand	187	189	190	188	182	173	165
Supply	252	252	252	252	252	252	252
Groundwater	252	252	252	252	252	252	252
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	-	-	-	-	-	-	-
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	65	63	62	64	70	79	87
SWEETWATER							
Demand	2,915	3,013	3,072	3,081	3,029	2,900	2,763
Contractual Demand	2,354	2,354	2,354	2,354	2,354	2,354	2,354
Supply	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Groundwater	2,000	2,000	2,000	2,000	2,000	2,000	2,000
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	-	-	-	-	-	-	-
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	(3,269)	(3,367)	(3,426)	(3,435)	(3,383)	(3,254)	(3,117)
COUNTY-OTHER							
Demand	195	199	197	193	186	177	168
Supply	257	257	257	257	257	257	257
Groundwater	-	-	-	-	-	-	-
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	257	257	257	257	257	257	257
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	62	58	60	64	71	80	89

(P) Indicates city is in multiple counties. Projections shown are for this county's portion only.  
Dash represents a value of zero (0)  
NC indicates the supply is "not constrained"

**Table C-55**  
**Robertson County**  
**Population, Water Supply, and Water Demand Projections**

Population Projection		Year						
		2000	2010	2020	2030	2040	2050	2060
		16,000	17,164	18,704	19,674	20,335	20,419	20,353

Supply and Demand by Type of Use		Year						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Municipal	Municipal Demand	2,812	2,874	2,979	3,026	3,044	3,021	3,015
	Contractual Demand	0	0	0	0	0	0	0
	Municipal Existing Supply							
	Groundwater	5,778	5,680	5,690	5,695	5,699	5,699	5,699
	Surface water	0	0	0	0	0	0	0
	Total Existing Municipal Supply	5,778	5,680	5,690	5,695	5,699	5,699	5,699
Municipal Balance	2,966	2,806	2,711	2,669	2,655	2,678	2,684	
Industrial	Manufacturing Demand	65	85	101	117	134	150	163
	Manufacturing Existing Supply							
	Groundwater	165	165	165	165	165	165	165
	Surface water	0	0	0	0	0	0	0
	Total Manufacturing Supply	165	165	165	165	165	165	165
	Manufacturing Balance	100	80	64	48	31	15	2
	Steam-Electric Demand	15,000	15,789	17,882	31,113	36,369	48,118	50,319
	Steam-Electric Existing Supply							
	Groundwater	5,983	5,983	5,983	5,983	5,983	5,983	5,983
	Surface water	27,901	27,893	27,884	27,876	27,868	27,859	27,851
	Total Steam-Electric Supply	33,884	33,876	33,867	33,859	33,851	33,842	33,834
	Steam-Electric Balance	18,884	18,087	15,985	2,746	(2,518)	(14,276)	(16,485)
	Mining Demand	7,500	10,300	10,300	10,300	78	77	76
	Mining Existing Supply							
	Groundwater	7,500	10,300	10,300	10,300	78	77	76
Surface water	9	9	9	9	9	9	9	
Total Mining Supply	7,509	10,309	10,309	10,309	87	86	85	
Mining Balance	9	9	9	9	9	9	9	
Agriculture	Irrigation Demand	16,572	16,175	16,019	15,561	15,115	14,682	14,261
	Irrigation Existing Supply							
	Groundwater	12,429	12,429	12,429	12,429	12,429	12,429	12,429
	Surface water	9,080	9,080	9,080	9,080	9,080	9,081	9,081
	Total Irrigation Supply	21,509	21,509	21,509	21,509	21,509	21,510	21,510
	Irrigation Balance	4,937	5,334	5,490	5,948	6,394	6,828	7,249
	Livestock Demand	1,508	1,508	1,508	1,508	1,508	1,508	1,508
	Livestock Existing Supply							
	Groundwater	0	0	0	0	0	0	0
	Surface water	1,508	1,508	1,508	1,508	1,508	1,508	1,508
Total Livestock Supply	1,508	1,508	1,508	1,508	1,508	1,508	1,508	
Livestock Balance	0	0	0	0	0	0	0	
Total	Municipal & Industrial Demand	25,377	29,048	31,262	44,556	39,625	51,366	53,573
	Existing Municipal & Industrial Supply							
	Groundwater	19,426	22,128	22,138	22,143	11,925	11,924	11,923
	Surface water	27,910	27,902	27,893	27,885	27,877	27,868	27,860
	Total Municipal & Industrial Supply	47,336	50,030	50,031	50,028	39,802	39,792	39,783
	Municipal & Industrial Balance	21,959	20,982	18,769	5,472	177	(11,574)	(13,790)
	Agriculture Demand	18,080	17,683	17,527	17,069	16,623	16,190	15,769
	Existing Agricultural Supply							
	Groundwater	12,429	12,429	12,429	12,429	12,429	12,429	12,429
	Surface water	10,588	10,588	10,588	10,588	10,588	10,589	10,589
	Total Agriculture Supply	23,017	23,017	23,017	23,017	23,017	23,018	23,018
	Agriculture Balance	4,937	5,334	5,490	5,948	6,394	6,828	7,249
	Total Demand	43,457	46,731	48,789	61,625	56,248	67,556	69,342
	Total Supply							
Groundwater	31,855	34,557	34,567	34,572	24,354	24,353	24,352	
Surface water	38,498	38,490	38,481	38,473	38,465	38,457	38,449	
Total Supply	70,353	73,047	73,048	73,045	62,819	62,810	62,801	
Total Balance	26,896	26,316	24,259	11,420	6,571	(4,746)	(6,541)	



**Table C-56**  
**Brazos G Regional Water Planning Area**  
**Municipal Water Demand & Supply By City/County**  
**(acft)**

<u>City/County</u>	<u>2000</u>	<u>2010</u>	<u>2020</u>	<u>2030</u>	<u>2040</u>	<u>2050</u>	<u>2060</u>
<i>Robertson County</i>							
BREMOND							
Demand	160	157	154	151	148	146	146
Supply	391	391	391	391	391	391	391
Groundwater	391	391	391	391	391	391	391
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	-	-	-	-	-	-	-
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	231	234	237	240	243	245	245
CALVERT							
Demand	332	327	323	318	313	310	310
Supply	513	513	513	513	513	513	513
Groundwater	513	513	513	513	513	513	513
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	-	-	-	-	-	-	-
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	181	186	190	195	200	203	203
FRANKLIN							
Demand	324	344	373	389	397	396	395
Supply	628	628	628	628	628	628	628
Groundwater	628	628	628	628	628	628	628
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	-	-	-	-	-	-	-
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	304	284	255	239	231	232	233
HEARNE							
Demand	1,145	1,124	1,108	1,093	1,077	1,066	1,066
Supply	2,931	2,931	2,931	2,931	2,931	2,931	2,931
Groundwater	2,931	2,931	2,931	2,931	2,931	2,931	2,931
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	-	-	-	-	-	-	-
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	1,786	1,807	1,823	1,838	1,854	1,865	1,865
ROBERTSON COUNTY WSC							
Demand	218	258	315	348	370	368	365
Supply	417	417	417	417	417	417	417
Groundwater	417	417	417	417	417	417	417
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	-	-	-	-	-	-	-
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	199	159	102	69	47	49	52
TRI-COUNTY SUD							
Demand	75	77	82	83	84	83	83
Supply	120	95	95	95	95	95	95
Groundwater	120	95	95	95	95	95	95
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	-	-	-	-	-	-	-
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	45	18	13	12	11	12	12

(P) Indicates city is in multiple counties. Projections shown are for this county's portion only.

Dash represents a value of zero (0)

NC indicates the supply is "not constrained"

**Table C-56**  
**Brazos G Regional Water Planning Area**  
**Municipal Water Demand & Supply By City/County**  
**(acft)**

<u>City/County</u>	<u>2000</u>	<u>2010</u>	<u>2020</u>	<u>2030</u>	<u>2040</u>	<u>2050</u>	<u>2060</u>
<b>WICKSON CREEK SUD</b>							
Demand	10	20	30	35	39	39	39
Supply	93	20	30	35	39	39	39
Groundwater	93	20	30	35	39	39	39
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	-	-	-	-	-	-	-
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	83	-	-	-	-	-	-
<b>COUNTY-OTHER</b>							
Demand	548	567	594	609	616	613	611
Supply	685	685	685	685	685	685	685
Groundwater	685	685	685	685	685	685	685
GW Constrained Supply		NC	NC	NC	NC	NC	NC
Surface water	-	-	-	-	-	-	-
SW Constrained Supply		NC	NC	NC	NC	NC	NC
Balance	137	118	91	76	69	72	74

(P) Indicates city is in multiple counties. Projections shown are for this county's portion only.  
Dash represents a value of zero (0)  
NC indicates the supply is "not constrained"

**Table C-75  
Region Total  
Population, Water Supply, and Water Demand Projections**

Population Projection		Year						
		2000	2010	2020	2030	2040	2050	2060
		1,621,961	1,957,767	2,278,243	2,576,783	2,873,382	3,164,777	3,448,879
Supply and Demand by Type of Use		Year						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Municipal	Municipal Demand	316,798	361,419	417,462	466,106	515,151	565,027	615,483
	Municipal Existing Supply							
	Groundwater	148,267	156,145	156,030	155,930	155,888	155,151	154,956
	Surface water	459,528	326,740	321,968	327,364	329,595	331,040	331,874
	Total Existing Municipal Supply	607,795	482,885	477,998	483,294	485,483	486,191	486,830
	Municipal Surplus (Shortage)	290,997	121,466	60,536	17,188	(29,668)	(78,836)	(128,653)
Industrial	Manufacturing Demand	16,939	19,787	23,201	25,077	26,962	30,191	31,942
	Manufacturing Existing Supply							
	Groundwater	13,855	16,616	16,616	16,616	16,709	16,709	16,709
	Surface water	35,185	35,876	36,364	36,816	37,273	37,676	38,239
	Total Manufacturing Supply	49,040	52,492	52,980	53,432	53,982	54,385	54,948
	Manufacturing Surplus (Shortage)	32,101	32,705	29,779	28,355	27,020	24,194	23,006
	Steam-Electric Demand	103,330	168,193	221,696	254,803	271,271	300,859	319,884
	Steam-Electric Existing Supply							
	Groundwater	9,585	9,119	9,119	9,119	9,119	9,119	9,119
	Surface water	235,701	257,070	258,396	257,804	257,232	256,650	256,069
	Total Steam-Electric Supply	245,286	266,189	267,515	266,923	266,351	265,769	265,188
	Steam-Electric Surplus (Shortage)	141,956	97,996	45,819	12,120	(4,920)	(35,090)	(54,696)
Mining	Mining Demand	72,854	36,664	37,591	38,037	27,251	20,744	21,243
	Mining Existing Supply							
	Groundwater	49,283	28,655	28,723	28,751	17,626	10,715	10,753
	Surface water	4,269	4,272	4,275	4,278	4,282	4,285	4,288
	Total Mining Supply	53,552	32,927	32,998	33,029	21,908	15,000	15,041
	Mining Surplus (Shortage)	(19,302)	(3,737)	(4,593)	(5,008)	(5,343)	(5,744)	(6,202)
Agriculture	Irrigation Demand	233,686	232,541	227,697	222,691	217,859	213,055	208,386
	Irrigation Existing Supply							
	Groundwater	143,019	143,299	143,299	143,299	143,308	143,308	143,308
	Surface water	138,217	138,222	138,227	138,232	138,238	138,243	138,248
	Total Irrigation Supply	281,236	281,521	281,526	281,531	281,546	281,551	281,556
	Irrigation Surplus (Shortage)	47,550	48,980	53,829	58,840	63,687	68,496	73,170
	Livestock Demand	51,576	51,576	51,576	51,576	51,576	51,576	51,576
	Livestock Existing Supply							
	Groundwater	0	0	0	0	0	0	0
	Surface water	51,576	51,576	51,576	51,576	51,576	51,576	51,576
Total Livestock Supply	51,576	51,576	51,576	51,576	51,576	51,576	51,576	
Livestock Surplus (Shortage)	0	0	0	0	0	0	0	
Total	Municipal & Industrial Demand	509,921	586,063	699,950	784,023	840,635	916,821	988,552
	Existing Municipal & Industrial Supply							
	Groundwater	220,990	210,535	210,488	210,416	199,342	191,694	191,537
	Surface water	734,683	623,958	621,003	626,262	628,381	629,652	630,470
	Total Municipal & Industrial Supply	955,673	834,493	831,491	836,677	827,723	821,345	822,007
	Municipal & Industrial Surplus (Shortage)	445,752	248,430	131,541	52,654	(12,912)	(95,476)	(166,545)
	Agriculture Demand	285,262	284,117	279,273	274,267	269,435	264,631	259,962
	Existing Agricultural Supply							
	Groundwater	143,019	143,299	143,299	143,299	143,308	143,308	143,308
	Surface water	189,793	189,798	189,803	189,808	189,814	189,819	189,824
	Total Agriculture Supply	332,812	333,097	333,102	333,107	333,122	333,127	333,132
	Agriculture Surplus (Shortage)	47,550	48,980	53,829	58,840	63,687	68,496	73,170
	Total Demand	795,183	870,180	979,223	1,058,290	1,110,070	1,181,452	1,248,514
	Total Supply							
	Groundwater	364,009	353,834	353,787	353,715	342,650	335,002	334,845
	Surface water	924,475	813,756	810,806	816,070	818,195	819,471	820,294
Total Supply	1,288,484	1,167,590	1,164,593	1,169,785	1,160,845	1,154,472	1,155,139	
Total Surplus (Shortage)	493,301	297,410	185,370	111,495	50,775	(26,980)	(93,375)	

Appendix N-1: Summary of Recommended Water Management Strategies in the 2011 Brazos G Regional Water Plan

Region	Recommended Strategy	Capital Cost	First Decade of Water Strategy	First Decade Water Supply Volume (acre-feet/year)	First Decade Estimated Annual Average Unit Cost (\$/acre-foot/year)	Year 2060 Water Supply Volume (acre-feet/year)	Year 2060 Estimated Annual Average Unit Cost (\$/acre-foot/year)
G	ADDITIONAL CARRIZO AQUIFER DEVELOPMENT (INCLUDES OVERDRAFTING)	\$23,676,071.00	2010	1,481	\$584.74	6,963	\$182.11
G	ADDITIONAL EDWARDS-TRINITY (PLATEAU) AQUIFER DEVELOPMENT (INCLUDES OVERDRAFTING)	\$679,000.00	2010	114	\$587.72	114	\$70.18
G	ADDITIONAL GULF COAST AQUIFER DEVELOPMENT	\$31,630,000.00	2040	5,600	\$638.21	5,600	\$145.71
G	ADDITIONAL TRINITY AQUIFER DEVELOPMENT (INCLUDES OVERDRAFTING)	\$19,278,000.00	2010	723	\$264.18	2,025	\$552.94
G	AQUIFER STORAGE & RECOVERY (BRAZOS RIVER TO SETMOUR AQUIFER)	\$38,625,000.00	2010	6,208	\$701.00	6,208	\$158.51
G	BELTON TO STILLHOUSE PIPELINE	\$36,038,000.00	2020	30,000	\$132.63	30,000	\$45.37
G	BOSQUE COUNTY REGIONAL PROJECT	\$5,150,000.00	2030	190	\$2,894.74	190	\$531.58
G	BRA SUPPLY THROUGH THE EWCWTS	\$44,706,000.00	2010	4,601	\$1,679.77	6,958	\$429.52
G	BRA SWATS EXPANSION	\$39,971,000.00	2010	375	\$2,933.33	3,545	\$572.92
G	BRA SYSTEM OPERATIONS PERMIT	\$204,281,000.00	2010	750	\$2,808.00	84,899	\$314.08
G	BRUSHY CREEK RESERVOIR	\$18,553,000.00	2010	2,090	\$484.21	2,090	\$66.99
G	CEDAR RIDGE RESERVOIR	\$285,214,000.00	2020	23,380	\$1,167.54	23,380	\$241.49
G	CITY OF GROESBECK OFF-CHANNEL RESERVOIR	\$10,412,000.00	2050	1,755	\$564.67	1,755	\$564.67
G	CONJUNCTIVE MANAGEMENT OF CHAMPION WELL FIELD AND OAK CREEK RESERVOIR WITH SUBORDINATION AGREEMENT	\$0.00	2010	688	\$0.00	963	\$0.00
G	CORVELL COUNTY RESERVOIR (BRA SYSTEM)	\$37,489,000.00	2020	3,365	\$1,007.13	3,365	\$193.46
G	EXPANSION OF CHAMPION WELL FIELD	\$15,015,000.00	2010	1,000	\$1,643.00	1,000	\$334.00
G	FUTURE PHASES OF LAKE WHITNEY WATER SUPPLY PROJECT	\$110,843,000.00	2020	7,572	\$926.04	7,572	\$926.04
G	GROUNDWATER/SURFACE WATER CONJUNCTIVE USE (LAKE GRANGER AUGMENTATION)	\$643,928,000.00	2010	26,505	\$838.29	70,246	\$1,153.63
G	INCREASE TREATMENT CAPACITY	\$195,654,000.00	2010	15,176	\$546.31	58,435	\$293.81
G	INTERCONNECTION OF CITY OF WACO SYSTEM WITH NEIGHBORING COMMUNITIES	\$14,652,000.00	2010	837	\$3,387.10	1,814	\$1,136.36
G	IRRIGATION WATER CONSERVATION	\$0.00	2010	3,390	\$235.42	7,041	\$227.71
G	LIMESTONE COUNTY CARRIZO-WILCOX AQUIFER DEVELOPMENT	\$18,458,000.00	2010	2,500	\$562.00	3,600	\$115.00
G	MANUFACTURING WATER CONSERVATION	\$0.00	2010	140	\$0.00	594	\$0.00
G	MIDWAY PIPELINE PROJECT (WEST CENTRAL BRAZOS DISTRIBUTION SYSTEM)	\$13,524,731.00	2010	843	\$2,046.14	843	\$647.92
G	MILLERS CREEK AUGMENTATION	\$46,948,000.00	2010	17,582	\$216.76	17,582	\$216.76
G	MINING WATER CONSERVATION	\$0.00	2010	340	\$0.00	973	\$0.00
G	MUNICIPAL WATER CONSERVATION	\$0.00	2010	4,873	\$475.00	21,347	\$474.99
G	NEW WATER TREATMENT PLANT	\$3,522,000.00	2010	224	\$2,178.57	224	\$808.04
G	NEW WEST LOOP REUSE LINE	\$5,495,500.00	2010	680	\$591.00	680	\$120.00
G	OAK CREEK RESERVOIR WITH SUBORDINATION AGREEMENT	\$0.00	2010	1,679	\$0.00	1,154	\$0.00
G	PHASE I LAKE WHITNEY WATER SUPPLY PROJECT	\$41,453,000.00	2010	2,128	\$2,851.50	2,128	\$1,153.20
G	PURCHASE WATER FROM CITY OF BRYAN	\$1,201,000.00	2010	1,500	\$262.00	1,500	\$192.00
G	RAISE LEVEL OF GIBBONS CREEK RESERVOIR	\$12,140,600.00	2020	3,870	\$237.47	3,870	\$28.94
G	REALLOCATION OF SOURCE	\$0.00	2010	35,928	\$0.00	52,628	\$0.00
G	REGIONAL SURFACE WATER SUPPLY TO WILLIAMSON COUNTY FROM LAKE TRAVIS	\$391,533,000.00	2010	34,148	\$1,308.40	44,459	\$938.46
G	REHABILITATE EXISTING WELLS	\$350,000.00	2020	1,100	\$30.00	1,100	\$30.00
G	RESTRUCTURE CONTRACT	\$0.00	2010	502	\$0.00	341	\$0.00
G	RUN-OF-RIVER WATER RIGHT FOR UNAPPROPRIATED FLOWS	\$0.00	2010	0	\$0.00	0	\$0.00
G	SOMERVELL COUNTY WATER SUPPLY PROJECT (PHASES 1-4)	\$29,923,000.00	2010	840	\$2,841.00	840	\$508.00
G	SOMERVELL COUNTY WATER SUPPLY PROJECT (PHASES 5-13)	\$74,228,000.00	2030	960	\$1,147.00	960	\$174.00
G	STEAM-ELECTRIC CONSERVATION	\$0.00	2010	2,114	\$0.00	11,803	\$0.00
G	STONEWALL, KENT, AND GARZA CHLORIDE CONTROL PROJECT	\$163,226,000.00	2020	0	\$0.00	0	\$0.00
G	STORAGE REALLOCATION OF FEDERAL RESERVOIRS - LAKE AQUILLA	\$11,447,000.00	2040	2,050	\$405.85	2,050	\$405.85
G	TURKEY PEAK RESERVOIR	\$50,227,000.00	2020	7,600	\$923.55	7,600	\$440.53
G	VOLUNTARY REDISTRIBUTION	\$6,391,000.00	2010	11,251	\$312.24	16,558	\$468.98
G	WASTEWATER REUSE	\$115,432,500.00	2010	17,043	\$340.14	70,087	\$316.79
G	CORVELL COUNTY RESERVOIR (BRA SYSTEM)*	\$14,399,000.00	2030	3,365	\$2,866.57	3,365	\$1,522.44

Appendix N-1: Summary of Recommended Water Management Strategies in the 2011 Brazos G Regional Water Plan (concluded)

Region	Recommended Strategy	Capital Cost	First Decade of Water Strategy	First Decade Water Supply Volume (acre-feet/year)	First Decade Estimated Annual Average Unit Cost (\$/acre-foot/year)	Year 2060 Water Supply Volume (acre-feet/year)	Year 2060 Estimated Annual Average Unit Cost (\$/acre-foot/year)
G	GROUNDWATER/SURFACE WATER CONJUNCTIVE USE (LAKE GRANGER AUGMENTATION)*	\$229,822,000.00	2040	33,814	\$865.00	39,710	\$863.96
G	INCREASE CURRENT CONTRACT*	\$0.00	2010	43	\$401.00	2,143	\$831.19
G	INCREASE TREATMENT CAPACITY*	\$13,951,000.00	2020	2,800	\$647.86	2,800	\$213.46
G	LIMESTONE COUNTY CARRIZO-WILCOX AQUIFER DEVELOPMENT*	\$0.00	2010	148	\$562.00	141	\$115.00
G	NEW WATER TREATMENT PLANT*	\$35,822,000.00	2020	8,400	\$627.14	8,400	\$255.00
G	STORAGE REALLOCATION OF FEDERAL RESERVOIRS - LAKE AQUIILLA*	\$0.00	2040	375	\$0.00	999	\$0.00
G	TURKEY PEAK RESERVOIR*	\$0.00	2020	7,600	\$923.55	7,600	\$440.66
G	VOLUNTARY REDISTRIBUTION*	\$91,940,000.00	2010	3,529	\$860.18	30,757	\$471.93
G	WASTEWATER REUSE*	\$39,128,901.00	2010	9,232	\$436.09	11,760	\$106.89

\* DENOTES STRATEGIES WITH SUPPLY VALUES INCLUDED IN OTHER STRATEGIES

Appendix N-2: Summary of Alternative Water Management Strategies in the 2011 Brazos G Regional Water Plan

Region	ALTERNATIVE Strategy	Capital Cost	First Decade of Water Strategy	First Decade Water Supply Volume (acre-feet/year)	First Decade Estimated Annual Average Unit Cost (\$/acre-foot/year)	Year 2060 Water Supply Volume (acre-feet/year)	Year 2060 Estimated Annual Average Unit Cost (\$/acre-foot/year)
G	ADDITIONAL CARRIZO AQUIFER DEVELOPMENT (INCLUDES OVERDRAFTING)	\$212,042,000.00	2020	35,000	\$842.14	35,000	\$313.94
G	BRA SYSTEM OPERATIONS PERMIT	\$14,086,000.00	2020	1,530	\$943.14	1,530	\$139.87
G	INTERCONNECTION FROM ABILENE TO SWEETWATER	\$46,964,000.00	2010	4,000	\$2,365.25	4,000	\$1,342.00
G	LAKE AQUILLA AUGMENTATION	\$64,749,000.00	2020	5,000	\$552.00	5,000	\$232.00
G	LAKE PALO PINTO OFF-CHANNEL RESERVOIR	\$25,399,000.00	2020	3,110	\$804.41	3,110	\$91.96
G	SEDIMENT REDUCTION PROGRAM**	\$0.00	2010	0	\$0.00	0	\$0.00
G	POSSUM KINGDOM SUPPLY*	\$189,947,000.00	2020	12,400	\$2,076.77	12,400	\$741.37

\* DENOTES STRATEGIES WITH SUPPLY VALUES INCLUDED IN OTHER STRATEGIES.

\*\* COSTS AND SUPPLY DEVELOPED HAVE NOT BEEN DETERMINED FOR THIS STRATEGY.