

Section 4
Identification, Evaluation, and Selection of
Water Management Strategies Based on Needs
[31 TAC §357.7(a)(5-7)]

4.1 Water Needs Projections by Water User Group

For purposes of this regional planning project, and in accordance with TWDB Rules, water supply projections and needs projections are tabulated by river basin, county or part of county located within each river basin, and city and rural areas of each county or part of county for the Llano Estacado Region (Tables 4-1 through 4-22). The water demands by river basin and water user group were brought forward from Section 2, Population and Water Demand Projections, Tables 2-4 through 2-12. The water supplies were brought forward from Section 3, Water Supply Projections for the Planning Region, Tables 3-1 and 3-2.

An illustration of how to read Tables 4-1 through 4-22 is given below. For example, as shown in Table 4-3, a portion of Castro County is located in the Red River Basin, and a portion is located in the Brazos River Basin. The county's projected water supplies are shown by river basin for each decade of the planning period (Table 4-3). The total projected water supplies available to Castro County in 2000 were 517,384 acft, of which 163,740 acft were located in the Red Basin and 353,644 acft were located in the Brazos Basin. Of the total projected water supply of 350,128 acft in 2010 for Castro County, 345,762 acft is projected to be available from the Ogallala Aquifer (Table 4-3). Castro County is not projected to obtain water from any other aquifers during the planning period. However, in addition to the projected groundwater supplies, Castro County is projected to obtain 4,031 acft of reclaimed water and 335 acft of water from local supplies for range and all other livestock use in 2010 (Table 4-3).

That part of Castro County located in the Brazos River Basin contains the cities of Dimmitt and Hart, and rural areas. The projected municipal water demand for Dimmitt is 1,041 acft in 2010 and 1,130 acft in 2060, while the projected municipal water supply for Dimmitt is 1,041 acft in 2010, 1,540 acft in 2020, and 286 acft in 2060 (Table 4-3). Comparing the projected demands with the projected supplies for Dimmitt in Castro County results in a surplus/shortage of zero acft in 2010, a surplus of 437 acft in 2020, a shortage of 744 acft in 2030, a shortage of 805 acft in 2040, a shortage of 832 acft in 2050, and a shortage of 844 in 2060 (Table 4-3). This type of analysis is shown for each water user group for each county

located within the Llano Estacado Region, and is the source of information as to time additional water supply is needed, and the quantity needed by each water user group. In Section 4.5, water plans to meet the projected needs (shortages) are presented.

Total projections for counties and parts of counties of each river basin area located in the Llano Estacado Region are shown at the end of each county's supplies and needs analysis table. In addition, the basin totals are listed in Table 4-22. For example, total water supply in the Red River Basin is projected to be 616,680 acft in 2010, of which 8,045 acft is for municipal purposes, 6,239 acft is for industrial purposes, 550,845 acft is for irrigation purposes, 50 acft is for mining purposes, 17,958 is for beef feedlot livestock purposes, 2,884 acft is for dairies, and 5,419 is for range and all other livestock purposes (Table 4-22). In 2010 the Red River Basin part of the Llano Estacado Region is projected to have an irrigation water shortage of 332,903 acft and in 2060 is projected to have an irrigation shortage of 558,961 acft (Table 4-22).

The reader can readily see the projections for water demand, water supply, and surplus/shortage, by type of demand, for the Canadian, Red, Brazos, and Colorado River Basin areas of the Llano Estacado Region (Table 4-22).

Total estimated water supply in the Llano Estacado Region in 2000 was 4,654,963 acft and in 2060 is 1,441,846 acft (Table 4-22). The projected water supply in 2060 is 90,204 acft for municipal use, 19,919 acft for industrial use, 49,910 acft for steam-electric use, 1,204,352 acft for irrigation use, 258 acft for mining use, 32,621 acft for beef feedlot livestock use, 10,934 acft for dairies, and 12,834 acft for range and other livestock use. In 2010, the Llano Estacado Region is projected to have a municipal water surplus of 7,804 acft and an irrigation water shortage of 1,245,326 acft; in 2060 the region is projected to have a municipal water shortage of 15,736 acft and an irrigation water shortage of 2,269,811 acft (Table 4-22).

Of the 169 water user groups of the region (73 municipalities and rural domestic users, 13 industry groups, 3 steam-electric users, 21 counties with irrigation use, 14 counties with mining water use, 12 counties with beef feed-lot uses, 12 counties with dairy uses, and 21 counties with range and other livestock uses), it has been calculated that 59 will have a shortage sometime during the 50-year projection period. Of the estimated 59 water user groups showing shortages, 29 are municipalities, one (Lake Alan Henry WSD) will serve the area around Lake Alan Henry, 20 are counties in which projected irrigation water demands exceed projected irrigation water supplies, 5 are counties in which 30 beef feedlots are projected to have shortages, and 4 are counties in which 20 dairies are projected to have shortages.

**Table 4-1.
Projected Water Demands, Supplies, and Needs
Bailey County
Llano Estacado Region**

Demand Basin	Updated 6-4-09 and 6/8/2009 Source	Total in 2000 (acft)	Projections						
			2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)	
WATER SUPPLIES									
Brazos Basin									
	Quantity in Storage ¹	Ogallala	4,272,200	3,380,925	2,546,788	1,769,102	1,229,855	1,216,106	1,212,373
	Quantity Pumped ²	Ogallala	186,162	110,276	100,461	95,662	90,331	86,250	83,125
	Supply	(Ogallala) ³	186,162	110,276	100,461	95,662	90,331	86,250	83,125
	Local Surface	Stock Tanks and Windmills	519	541	563	587	612	639	667
	Reclaimed Water ⁴		825	825	825	825	825	825	825
	Total Supply		187,506	111,641	101,849	97,074	91,768	87,714	84,617
	Supply from Ogallala (Bailey County)		174,162	100,276	92,461	89,662	86,331	83,250	80,125
Data LERWPG Oct. 28, 04	Supply from Ogallala (To Lubbock County) ⁵		12,000	10,000	8,000	6,000	4,000	3,000	3,000
	Total Supply from Ogallala		186,162	110,276	100,461	95,662	90,331	86,250	83,125
WATER DEMANDS									
Municipal Demand									
Brazos Basin									
	Muleshoe		979	1,027	1,082	1,109	1,137	1,135	1,114
	Rural		331	342	358	364	371	370	363
	Subtotal		1,310	1,369	1,440	1,473	1,508	1,505	1,477
	Total Municipal Demand		1,310	1,369	1,440	1,473	1,508	1,505	1,477
Municipal Existing Supply									
Brazos Basin									
	Muleshoe	Ogallala	979	1,027	1,082	1,109	1,137	1,135	1,114
	Rural	Ogallala	331	342	358	364	371	370	363
	Subtotal		1,310	1,369	1,440	1,473	1,508	1,505	1,477
	Total Municipal Existing Supply		1,310	1,369	1,440	1,473	1,508	1,505	1,477
Municipal Surplus/Shortage									
Brazos Basin									
	Muleshoe		0	0	0	0	0	0	0
	Rural		0	0	0	0	0	0	0
	Subtotal		0	0	0	0	0	0	0
	Total Municipal Surplus/Shortage		0	0	0	0	0	0	0
Municipal New Supply Need									
Brazos Basin									
	Muleshoe		0	0	0	0	0	0	0
	Rural		0	0	0	0	0	0	0
	Subtotal		0	0	0	0	0	0	0
	Total Municipal New Supply Need		0	0	0	0	0	0	0
Industrial Demand									
Brazos Basin									
	Total Industrial Demand		264	303	316	326	335	343	365
	Total Industrial Demand		264	303	316	326	335	343	365
Industrial Existing Supply									
Brazos Basin									
	Total Industrial Existing Supply	Ogallala	264	303	316	326	335	343	365
	Total Industrial Existing Supply		264	303	316	326	335	343	365
Industrial Surplus/Shortage									
Brazos Basin									
	Total Industrial Surplus/Shortage		0	0	0	0	0	0	0
	Total Industrial Surplus/Shortage		0	0	0	0	0	0	0
Industrial New Supply Need									
Brazos Basin									
	Total Industrial New Supply Need		0	0	0	0	0	0	0
	Total Industrial New Supply Need		0	0	0	0	0	0	0
Steam-Electric Demand									
Brazos Basin									
	Total Steam-Electric Demand		0	0	0	0	0	0	0
	Total Steam-Electric Demand		0	0	0	0	0	0	0
Steam-Electric Existing Supply									
Brazos Basin									
	Total Steam-Electric Existing Supply		0	0	0	0	0	0	0
	Total Steam-Electric Existing Supply		0	0	0	0	0	0	0

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Table 4-1 Continued

Basin	Source	Total in	Projections					
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Steam-Electric Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric Surplus/Shortage		0	0	0	0	0	0	0
Steam-Electric New Supply Need								
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric New Supply Need		0	0	0	0	0	0	0
Irrigation Demand								
Brazos Basin		182,865	178,478	174,197	170,018	165,939	161,958	158,071
Total Irrigation Demand		182,865	178,478	174,197	170,018	165,939	161,958	158,071
Irrigation Supply								
Brazos Basin	Ogallala	171,384	96,092	87,651	84,546	80,885	77,486	74,026
	Reclaimed Water	825	825	825	825	825	825	825
Total Irrigation Supply		172,209	96,917	88,476	85,371	81,710	78,311	74,851
Irrigation Surplus/Shortage								
Brazos Basin		-10,656	-81,561	-85,721	-84,647	-84,229	-83,647	-83,220
Total Irrigation Surplus/Shortage		-10,656	-81,561	-85,721	-84,647	-84,229	-83,647	-83,220
Mining Demand								
Brazos Basin		0	0	0	0	0	0	0
Total Mining Demand		0	0	0	0	0	0	0
Mining Supply								
Brazos Basin	Ogallala	0	0	0	0	0	0	0
Total Mining Supply		0	0	0	0	0	0	0
Mining Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Total Mining Surplus/Shortage		0	0	0	0	0	0	0
Beef Feedlot Livestock Demand								
Brazos Basin		971	1,184	1,327	1,409	1,496	1,588	1,686
Total Beef Feedlot Livestock Demand		971	1,184	1,327	1,409	1,496	1,588	1,686
Beef Feedlot Livestock Supply								
Brazos Basin	Ogallala	971	1,184	1,327	1,409	1,496	1,588	1,686
Total Beef Feedlot Livestock Supply		971	1,184	1,327	1,409	1,496	1,588	1,686
Beef Feedlot Livestock Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Surplus/Shortage		0	0	0	0	0	0	0
Dairies Demand								
Brazos Basin		233	1,328	1,727	1,908	2,107	2,328	2,571
Total Dairies Demand		233	1,328	1,727	1,908	2,107	2,328	2,571
Dairies Supply								
Brazos Basin	Ogallala	233	1,328	1,727	1,908	2,107	2,328	2,571
Total Dairies Supply		233	1,328	1,727	1,908	2,107	2,328	2,571
Dairies Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Total Dairies Surplus/Shortage		0	0	0	0	0	0	0
Range & All Other Livestock Demand								
Brazos Basin		519	541	563	587	612	639	667
Total Range & All Other Livestock Demand		519	541	563	587	612	639	667
Range & All Other Livestock Supply								
Brazos Basin	Local	519	541	563	587	612	639	667
Total Range & All Other Livestock Supply		519	541	563	587	612	639	667
Range & All Other Livestock Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Total Range & All Other Livestock Surplus/Shortage		0	0	0	0	0	0	0
Total Demand								
Municipal		1,310	1,369	1,440	1,473	1,508	1,505	1,477
Industrial		264	303	316	326	335	343	365
Steam-Electric		0	0	0	0	0	0	0
Irrigation		182,865	178,478	174,197	170,018	165,939	161,958	158,071
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		971	1,184	1,327	1,409	1,496	1,588	1,686

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Table 4-1 Concluded

Basin	Source	Total in	Projections					
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Dairies		233	1,328	1,727	1,908	2,107	2,328	2,571
Range & All Other Livestock		519	541	563	587	612	639	667
Total County Demand		186,162	183,203	179,571	175,721	171,997	168,361	164,837
Total Supply								
Municipal		1,310	1,369	1,440	1,473	1,508	1,505	1,477
Industrial		264	303	316	326	335	343	365
Steam-Electric		0	0	0	0	0	0	0
Irrigation		172,209	96,917	88,476	85,371	81,710	78,311	74,851
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		971	1,184	1,327	1,409	1,496	1,588	1,686
Dairies		233	1,328	1,727	1,908	2,107	2,328	2,571
Range & All Other Livestock		519	541	563	587	612	639	667
Total County Supply		175,506	101,641	93,849	91,074	87,768	84,714	81,617
Total Surplus/Shortage								
Municipal		0	0	0	0	0	0	0
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		-10,656	-81,561	-85,721	-84,647	-84,229	-83,647	-83,220
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total County Surplus/Shortage		-10,656	-81,561	-85,721	-84,647	-84,229	-83,647	-83,220
Total Basin Demand								
Brazos								
Municipal		1,310	1,369	1,440	1,473	1,508	1,505	1,477
Industrial		264	303	316	326	335	343	365
Steam-Electric		0	0	0	0	0	0	0
Irrigation		182,865	178,478	174,197	170,018	165,939	161,958	158,071
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		971	1,184	1,327	1,409	1,496	1,588	1,686
Dairies		233	1,328	1,727	1,908	2,107	2,328	2,571
Range & All Other Livestock		519	541	563	587	612	639	667
Total Brazos Basin Demand		186,162	183,203	179,571	175,721	171,997	168,361	164,837
Total Basin Supply								
Brazos								
Municipal		1,310	1,369	1,440	1,473	1,508	1,505	1,477
Industrial		264	303	316	326	335	343	365
Steam-Electric		0	0	0	0	0	0	0
Irrigation		172,209	96,917	88,476	85,371	81,710	78,311	74,851
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		971	1,184	1,327	1,409	1,496	1,588	1,686
Dairies		233	1,328	1,727	1,908	2,107	2,328	2,571
Range & All Other Livestock		519	541	563	587	612	639	667
Total Brazos Basin Supply		175,506	101,641	93,849	91,074	87,768	84,714	81,617
Total Basin Surplus/Shortage								
Brazos								
Municipal		0	0	0	0	0	0	0
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		-10,656	-81,561	-85,721	-84,647	-84,229	-83,647	-83,220
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Brazos Basin Surplus/Shortage		-10,656	-81,561	-85,721	-84,647	-84,229	-83,647	-83,220

¹ Calculated by the TWDB using Southern Ogallala Groundwater Availability Model; February 2003. Entry on Quantity in storage row in 2000 is GAM Run result for 2004.

² Ibid.

³ Supply means quantity of water available from the Ogallala Aquifer in the year projected.

⁴ Value is the sum of reclaimed water from the City of Muleshoe and Minsa Southwest. The quantity of reclaimed water available from municipal sources for reuse was estimated as the lesser of 50 percent of the TWDB municipal water use for the year 2000 or the maximum waste discharge permit quantity of the TCEQ waste discharge permit. This value is held level throughout the projection period. For all other entities, the quantity was calculated as 75 percent of the maximum waste discharge permit.

⁵ The annual use goal is 10,000 acft/yr or less, in order to conserve the source. Modeling analyses show that by 2050 the quantity of water available will decrease to the estimated recharge level of 3,000 acft/yr.

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**Table 4-2.
Projected Water Demands, Supplies, and Needs
Briscoe County
Llano Estacado Region**

Demand Basin	Updated 6-4-09 and 6/8/2009 Source	Total in 2000 (acft)	Projections					
			2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
WATER SUPPLIES								
Red Basin								
Quantity in Storage ¹	Ogallala	2,164,466	2,036,351	1,870,525	1,756,762	1,680,434	1,650,541	1,632,676
Quantity Pumped ²	Ogallala	26,952	22,800	15,867	9,872	7,460	5,388	4,888
Supply (Ogallala) ³		26,952	22,800	15,867	9,872	7,460	5,388	4,888
Dockum Aquifer		100	100	100	100	100	100	100
Seymour Aquifer		4,063	4,063	4,063	1,821	1,821	1,821	1,821
Other Aquifers		115	109	96	94	95	91	91
Local Surface	Stock Tanks and Windmills	284	292	301	310	320	330	341
Other Surface	Lake Mackenzie	85	0	0	0	0	0	0
Total Supply		31,599	27,364	20,427	12,197	9,797	7,731	7,241
Data LERWPG Oct. 28, 04								
WATER DEMANDS								
Municipal Demand								
Red Basin								
Silverton		126	128	128	123	115	111	108
Rural	Includes Quitaque demands	180	183	183	176	165	159	155
Subtotal		306	311	311	299	280	270	263
Total Municipal Demand		306	311	311	299	280	270	263
Municipal Existing Supply								
Red Basin								
Silverton	Ogallala	41	204	183	165	148	134	120
	Lake Mackenzie	85	0	0	0	0	0	0
Silverton Subtotal		126	204	183	165	148	134	120
Rural	Includes Quitaque supply	295	295	295	295	295	295	295
Subtotal		421	499	478	460	443	429	415
Total Municipal Existing Supply		421	499	478	460	443	429	415
Municipal Surplus/Shortage								
Red Basin								
Silverton		0	76	55	42	33	23	12
Rural		115	112	112	119	130	136	140
Subtotal		115	188	167	161	163	159	152
Total Municipal Surplus/Shortage		115	188	167	161	163	159	152
Municipal New Supply Need								
Red Basin	Silverton Replace present supply (Re: WQ)		128	128	123	115	111	108
Silverton	Revise WQ Problem	0	0	0	0	0	0	0
Rural		0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0
Total Municipal New Supply Need		0	0	0	0	0	0	0
Industrial Demand								
Red Basin								
Total Industrial Demand		0	0	0	0	0	0	0
Industrial Existing Supply								
Red Basin								
Total Industrial Existing Supply		0	0	0	0	0	0	0
Industrial Surplus/Shortage								
Red Basin								
Total Industrial Surplus/Shortage		0	0	0	0	0	0	0
Industrial New Supply Need								
Red Basin								
Total Industrial New Supply Need		0	0	0	0	0	0	0

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Table 4-2 Continued

Basin	Source	Total in	Projections					
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Steam-Electric Demand								
Red Basin		0	0	0	0	0	0	0
Total Steam-Electric Demand		0	0	0	0	0	0	0
Steam-Electric Existing Supply								
Red Basin		0	0	0	0	0	0	0
Total Steam-Electric Existing Supply		0	0	0	0	0	0	0
Steam-Electric Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Total Steam-Electric Surplus/Shortage		0	0	0	0	0	0	0
Steam-Electric New Supply Need								
Red Basin		0	0	0	0	0	0	0
Total Steam-Electric New Supply Need		0	0	0	0	0	0	0
Irrigation Demand								
Red Basin		26,329	25,373	24,453	23,566	22,710	21,886	21,091
Total Irrigation Demand		26,329	25,373	24,453	23,566	22,710	21,886	21,091
Irrigation Supply								
Red Basin	Ogallala	26,624	22,539	15,606	9,616	7,212	5,144	4,647
	Dockum	100	100	100	100	100	100	100
	Seymour	4,063	4,063	4,063	1,821	1,821	1,821	1,821
Total Irrigation Supply		30,787	26,702	19,769	11,537	9,133	7,065	6,568
Irrigation Surplus/Shortage								
Red Basin		4,458	1,329	-4,684	-12,029	-13,577	-14,821	-14,523
Total Irrigation Surplus/Shortage		4,458	1,329	-4,684	-12,029	-13,577	-14,821	-14,523
Mining Demand								
Red Basin		0	0	0	0	0	0	0
Total Mining Demand		0	0	0	0	0	0	0
Mining Supply								
Red Basin		0	0	0	0	0	0	0
Total Mining Supply		0	0	0	0	0	0	0
Mining Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Total Mining Surplus/Shortage		0	0	0	0	0	0	0
Beef Feedlot Livestock Demand								
Red Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Demand		0	0	0	0	0	0	0
Beef Feedlot Livestock Supply								
Red Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Supply		0	0	0	0	0	0	0
Beef Feedlot Livestock Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Surplus/Shortage		0	0	0	0	0	0	0
Dairies Demand								
Red Basin		33	33	33	33	33	33	33
Total Dairies Demand		33	33	33	33	33	33	33
Dairies Supply								
Red Basin	Ogallala	33	33	33	33	33	33	33
Total Dairies Supply		33	33	33	33	33	33	33
Dairies Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Total Dairies Surplus/Shortage		0	0	0	0	0	0	0
Range & All Other Livestock Demand								
Red Basin		284	292	301	310	320	330	341
Total Range & All Other Livestock Demand		284	292	301	310	320	330	341
Range & All Other Livestock Supply								
Red Basin	Local	284	292	301	310	320	330	341
Total Range & All Other Livestock Supply		284	292	301	310	320	330	341

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Table 4-2 Concluded

Basin	Source	Projections						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Range & All Other Livestock Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Total Range & All Other Livestock Surplus/Shortage		0	0	0	0	0	0	0
Total Demand								
Municipal		306	311	311	299	280	270	263
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		26,329	25,373	24,453	23,566	22,710	21,886	21,091
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		33	33	33	33	33	33	33
Range & All Other Livestock		284	292	301	310	320	330	341
Total County Demand		26,952	26,009	25,098	24,208	23,343	22,519	21,728
Total Supply								
	Unallocated	115	109	96	94	95	91	91
Municipal		421	499	478	460	443	429	415
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		30,787	26,702	19,769	11,537	9,133	7,065	6,568
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		33	33	33	33	33	33	33
Range & All Other Livestock		284	292	301	310	320	330	341
Total County Supply		31,640	27,635	20,677	12,434	10,024	7,948	7,448
Total Surplus/Shortage								
Municipal		115	188	167	161	163	159	152
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		4,458	1,329	-4,684	-12,029	-13,577	-14,821	-14,523
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total County Surplus/Shortage		4,573	1,517	-4,517	-11,868	-13,414	-14,662	-14,371
Total Basin Demand								
Red								
Municipal		306	311	311	299	280	270	263
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		26,329	25,373	24,453	23,566	22,710	21,886	21,091
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		33	33	33	33	33	33	33
Range & All Other Livestock		284	292	301	310	320	330	341
Total Red Basin Demand		26,952	26,009	25,098	24,208	23,343	22,519	21,728
Total Basin Supply								
	Unallocated	115	109	96	94	95	91	91
Municipal		421	499	478	460	443	429	415
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		30,787	26,702	19,769	11,537	9,133	7,065	6,568
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		33	33	33	33	33	33	33
Range & All Other Livestock		284	292	301	310	320	330	341
Total Red Basin Supply		31,640	27,635	20,677	12,434	10,024	7,948	7,448
Total Basin Surplus/Shortage								
Red								
Municipal		115	188	167	161	163	159	152
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		4,458	1,329	-4,684	-12,029	-13,577	-14,821	-14,523
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Red Basin Surplus/Shortage		4,573	1,517	-4,517	-11,868	-13,414	-14,662	-14,371

¹ Calculated by the TWDB using Southern Ogallala Groundwater Availability Model; February 2003. Entry on Quantity in storage row in 2000 is GAM Run result for 2004.

² Ibid. ³ Supply means quantity of water available from the Ogallala Aquifer in the year projected.

⁴ Silvertown's present supply from existing wells must be replaced due to high arsenic levels. In the water supply accounting, this is an exchange for other sources. <><>

**Table 4-3.
Projected Water Demands, Supplies, and Needs
Castro County
Llano Estacado Region**

Demand Basin	Updated 6-4-09 and 6/8/2009 Source	Total in 2000 (acft)	Projections					
			2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
WATER SUPPLIES								
Red Basin								
Quantity in Storage ¹	Ogallala	2,817,626	2,222,567	1,460,181	991,079	743,569	678,750	633,894
Quantity Pumped ²	Ogallala	163,591	110,256	72,609	45,405	25,992	23,784	20,890
Supply	(Ogallala) ³	163,591	110,256	72,609	45,405	25,992	23,784	20,890
Local Surface	Stock Tanks and Windmills	149	151	176	178	181	185	188
Other Surface		0	0	0	0	0	0	0
Total Supply		163,740	110,406	72,785	45,584	26,174	23,969	21,078
Brazos Basin								
Quantity in Storage ¹	Ogallala	5,984,144	4,673,280	2,778,583	1,263,919	479,975	375,623	263,380
Quantity Pumped ²	Ogallala	349,432	235,507	211,116	147,124	59,674	44,832	38,066
Supply	(Ogallala) ³	349,432	235,507	211,116	147,124	59,674	44,832	38,066
Local Surface	Stock Tanks and Windmills	181	184	214	218	220	223	227
Reclaimed Water ⁴		4,031	4,031	4,031	4,031	4,031	4,031	4,031
Total Supply		353,644	239,722	215,362	151,373	63,926	49,086	42,323
County Total								
Quantity in Storage ¹	Ogallala	8,801,770	6,895,847	4,238,764	2,254,998	1,223,544	1,054,373	897,274
Quantity Pumped ²	Ogallala	513,023	345,762	283,725	192,530	85,667	68,616	58,956
Supply	(Ogallala) ³	513,023	345,762	283,725	192,530	85,667	68,616	58,956
Local Surface	Stock Tanks and Windmills	330	335	390	396	402	408	414
Reclaimed Water ⁴		4,031	4,031	4,031	4,031	4,031	4,031	4,031
Total Supply		517,384	350,128	288,146	196,957	90,099	73,055	63,402
Data LERWPG Oct. 28, 04								
WATER DEMANDS								
Municipal Demand								
Red Basin								
Rural		247	263	278	285	288	286	281
Subtotal		247	263	278	285	288	286	281
Brazos Basin								
Dimmitt		975	1,041	1,103	1,137	1,159	1,150	1,130
Hart		223	238	251	258	262	260	256
Rural		208	222	234	240	243	241	237
Subtotal		1,406	1,501	1,588	1,635	1,664	1,651	1,623
Total Municipal Demand		1,653	1,764	1,866	1,920	1,952	1,937	1,904
Municipal Existing Supply								
Red Basin								
Rural	Ogallala	247	263	278	285	288	286	281
Subtotal		247	263	278	285	288	286	281
Brazos Basin								
Dimmitt	Ogallala	975	1,041	1,540	393	354	318	286
Hart	Ogallala	223	238	251	258	262	193	174
Rural	Ogallala	208	222	234	240	243	241	237
Subtotal		1,406	1,501	2,025	891	859	752	697
Total Municipal Existing Supply		1,653	1,764	2,303	1,176	1,147	1,038	978
Municipal Surplus/Shortage								
Red Basin								
Rural		0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0
Brazos Basin								
Dimmitt		0	0	437	-744	-805	-832	-844
Hart		0	0	0	0	0	-67	-82
Rural		0	0	0	0	0	0	0
Subtotal		0	0	437	-744	-805	-899	-926
Total Municipal Surplus/Shortage		0	0	437	-744	-805	-899	-926
Municipal New Supply Need								
Red Basin								
Rural		0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0

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Table 4-3 Continued

Basin	Source	Total in	Projections					
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Brazos Basin								
Dimmitt		0	0	0	744	805	832	844
Hart		0	0	0	0	0	67	82
Rural		0	0	0	0	0	0	0
Subtotal		0	0	0	744	805	899	926
Total Municipal New Supply Need		0	0	0	744	805	899	926
Industrial Demand								
Red Basin		95	112	121	128	136	142	152
Brazos Basin		1,637	1,923	2,082	2,213	2,337	2,445	2,617
Total Industrial Demand		1,732	2,035	2,203	2,341	2,473	2,587	2,769
Industrial Existing Supply								
Red Basin	Ogallala	95	112	121	128	136	142	152
Brazos Basin	Ogallala	1,637	1,923	2,082	2,213	2,337	2,445	2,617
Total Industrial Existing Supply		1,732	2,035	2,203	2,341	2,473	2,587	2,769
Industrial Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Industrial Surplus/Shortage		0	0	0	0	0	0	0
Industrial New Supply Need								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Industrial New Supply Need		0	0	0	0	0	0	0
Steam-Electric Demand								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric Demand		0	0	0	0	0	0	0
Steam-Electric Existing Supply								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric Existing Supply		0	0	0	0	0	0	0
Steam-Electric Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric Surplus/Shortage		0	0	0	0	0	0	0
Steam-Electric New Supply Need								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric New Supply Need		0	0	0	0	0	0	0
Irrigation Demand								
Red Basin		166,251	159,877	153,748	147,853	142,184	136,733	131,491
Brazos Basin		337,541	324,598	312,154	300,186	288,677	277,609	266,966
Total Irrigation Demand		503,792	484,475	465,902	448,039	430,861	414,342	398,457
Irrigation Supply								
Red Basin	Ogallala	160,038	106,357	68,873	42,660	25,028	23,039	20,113
Brazos Basin	Ogallala	344,084	227,392	201,208	137,499	50,509	35,268	28,147
Brazos Basin	Reclaimed Water	4,031	4,031	4,031	4,031	4,031	4,031	4,031
Brazos Basin Subtotal		348,115	231,423	205,239	141,530	54,540	39,299	32,178
Total Irrigation Supply		508,153	337,780	274,112	184,190	79,568	62,338	52,291
Irrigation Surplus/Shortage								
Red Basin		-6,213	-53,520	-84,875	-105,193	-117,156	-113,694	-111,378
Brazos Basin		10,574	-93,175	-106,915	-158,656	-234,137	-238,310	-234,788
Total Irrigation Surplus/Shortage		4,361	-146,695	-191,790	-263,849	-351,293	-352,004	-346,166
Mining Demand								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Mining Demand		0	0	0	0	0	0	0

Continued on next page

Table 4-3 Continued

Basin	Source	Total in	Projections					
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Mining Supply								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Mining Supply		0	0	0	0	0	0	0
Mining Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Mining Surplus/Shortage		0	0	0	0	0	0	0
Beef Feedlot Livestock Demand								
Red Basin		3,145	3,834	4,299	4,563	4,845	5,143	5,461
Brazos Basin		2,225	2,712	3,040	3,228	3,427	3,638	3,862
Total Beef Feedlot Livestock Demand		5,370	6,546	7,339	7,791	8,272	8,782	9,323
Beef Feedlot Livestock Supply								
Red Basin	Ogallala	3,145	3,834	4,299	4,563	3,993	3,936	4,179
Brazos Basin	Ogallala	2,225	2,712	2,281	1,616	0	0	0
Total Beef Feedlot Livestock Supply		5,370	6,546	6,580	6,179	3,993	3,936	4,179
Beef Feedlot Livestock Surplus/Shortage								
Red Basin		0	0	0	0	-852	-1,207	-1,282
Brazos Basin		0	0	-759	-1,612	-3,427	-3,638	-3,862
Total Beef Feedlot Livestock Surplus/Shortage		0	0	-759	-1,612	-4,279	-4,846	-5,144
Dairies Demand								
Red Basin		66	664	863	954	1,054	1,163	1,285
Brazos Basin		80	812	1,056	1,166	1,289	1,424	1,573
Total Dairies Demand		146	1,476	1,920	2,120	2,343	2,587	2,857
Dairies Supply								
Red Basin	Ogallala	66	664	863	954	1,054	1,163	1,285
Brazos Basin	Ogallala	80	812	1,056	716	540	317	344
Total Dairies Supply		146	1,476	1,920	1,670	1,594	1,480	1,629
Dairies Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	-450	-749	-1,107	-1,229
Total Dairies Surplus/Shortage		0	0	0	-450	-749	-1,107	-1,228
Range & All Other Livestock Demand								
Red Basin		149	151	176	178	181	185	188
Brazos Basin		181	184	214	218	220	223	228
Total Range & All Other Livestock Demand		330	335	390	396	402	408	416
Range & All Other Livestock Supply								
Red Basin	Local	149	151	176	178	181	185	188
Brazos Basin	Local	181	184	214	218	220	223	228
Total Range & All Other Livestock Supply		330	335	390	396	402	408	416
Range & All Other Livestock Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Range & All Other Livestock Surplus/Shortage		0	0	0	0	0	0	0
Total Demand								
Municipal		1,653	1,764	1,866	1,920	1,952	1,937	1,904
Industrial		1,732	2,035	2,203	2,341	2,473	2,587	2,769
Steam-Electric		0	0	0	0	0	0	0
Irrigation		503,792	484,475	465,902	448,039	430,861	414,342	398,457
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		5,370	6,546	7,339	7,791	8,272	8,782	9,323
Dairies		146	1,476	1,920	2,120	2,343	2,587	2,857
Range & All Other Livestock		330	335	390	396	402	408	416
Total County Demand		513,023	496,631	479,620	462,608	446,302	430,643	415,726
Total Supply								
Municipal		1,653	1,957	2,496	1,369	1,340	1,038	978
Industrial		1,732	2,035	2,203	2,341	2,473	2,587	2,769
Steam-Electric		0	0	0	0	0	0	0
Irrigation		508,153	337,780	274,112	184,190	79,568	62,338	52,291
Mining		0	0	0	0	0	0	0

Continued on next page

Table 4-3 Continued

Basin	Source	Total in	Projections					
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Beef Feedlot Livestock		5,370	6,546	6,580	6,179	3,993	3,936	4,179
Dairies		146	1,476	1,920	1,670	1,594	1,480	1,629
Range & All Other Livestock		330	335	390	396	402	408	416
Total County Supply		517,384	350,129	287,701	196,146	89,369	71,787	62,262
Total Surplus/Shortage								
Municipal		0	193	630	-551	-612	-899	-926
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		4,361	-146,695	-191,790	-263,849	-351,293	-352,004	-346,166
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	-759	-1,612	-4,279	-4,846	-5,144
Dairies		0	0	0	-450	-749	-1,107	-1,228
Range & All Other Livestock		0	0	0	0	0	0	0
Total County Surplus/Shortage		4,361	-146,502	-191,919	-266,462	-356,933	-358,856	-353,464
Total Basin Demand								
Red								
Municipal		247	263	278	285	288	286	281
Industrial		95	112	121	128	136	142	152
Steam-Electric		0	0	0	0	0	0	0
Irrigation		166,251	159,877	153,748	147,853	142,184	136,733	131,491
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		3,145	3,834	4,299	4,563	4,845	5,143	5,461
Dairies		66	664	863	954	1,054	1,163	1,285
Range & All Other Livestock		149	151	176	178	181	185	188
Total Red Basin Demand		169,953	164,901	159,485	153,962	148,688	143,652	138,857
Brazos								
Municipal		1,406	1,501	1,588	1,635	1,664	1,651	1,623
Industrial		1,637	1,923	2,082	2,213	2,337	2,445	2,617
Steam-Electric		0	0	0	0	0	0	0
Irrigation		337,541	324,598	312,154	300,186	288,677	277,609	266,966
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		2,225	2,712	3,040	3,228	3,427	3,638	3,862
Dairies		80	812	1,056	1,166	1,289	1,424	1,573
Range & All Other Livestock		181	184	214	218	220	223	228
Total Brazos Basin Demand		343,070	331,730	320,135	308,645	297,614	286,991	276,869
Total Basin Supply								
Red								
Municipal		247	263	278	285	288	286	281
Industrial		95	112	121	128	136	142	152
Steam-Electric		0	0	0	0	0	0	0
Irrigation		160,038	106,357	68,873	42,660	25,028	23,039	20,113
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		3,145	3,834	4,299	4,563	3,993	3,936	4,179
Dairies		66	664	863	954	1,054	1,163	1,285
Range & All Other Livestock		149	151	176	178	181	185	188
Total Red Basin Supply		163,740	111,381	74,610	48,769	30,680	28,751	26,198
Brazos								
Municipal		1,406	1,694	2,218	1,084	1,052	752	697
Industrial		1,637	1,923	2,082	2,213	2,337	2,445	2,617
Steam-Electric		0	0	0	0	0	0	0
Irrigation		348,115	231,423	205,239	141,530	54,540	39,299	32,178
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		2,225	2,712	2,281	1,616	0	0	0
Dairies		80	812	1,056	716	540	317	344
Range & All Other Livestock		181	184	214	218	220	223	228
Total Brazos Basin Supply		353,644	238,748	213,091	147,377	58,689	43,036	36,064
Total Basin Surplus/Shortage								
Red								
Municipal		0	0	0	0	0	0	0
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		-6,213	-53,520	-84,875	-105,193	-117,156	-113,694	-111,378
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	-852	-1,207	-1,282
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Red Basin Surplus/Shortage		-6,213	-53,520	-84,875	-105,193	-118,008	-114,901	-112,659

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Table 4-3 Concluded

Basin	Source	Total in	Projections					
		2000	2010	2020	2030	2040	2050	2060
		(acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Total Basin Surplus/Shortage (cont.)								
Brazos								
Municipal		0	193	630	-551	-612	-899	-926
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		10,574	-93,175	-106,915	-158,656	-234,137	-238,310	-234,788
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	-759	-1,612	-3,427	-3,638	-3,862
Dairies		0	0	0	-450	-749	-1,107	-1,229
Range & All Other Livestock		0	0	0	0	0	0	0
Total Brazos Basin Surplus/Shortage		10,574	-92,982	-107,044	-161,269	-238,925	-243,955	-240,805
¹ Calculated by the TWDB using Southern Ogallala Groundwater Availability Model; February 2003. Entry on Quantity in storage row in 2000 is GAM Run result for 2004. ² Ibid. ³ Supply means quantity of water available from the Ogallala Aquifer in the year projected. ⁴ Value is the sum of reclaimed water from the City of Dimmitt, Nazareth Water & Sewer Supply, City of Hart, and Chester USA Dimmitt, Inc.. The quantity of reclaimed water available from municipal sources for reuse was estimated as the lesser of 50 percent of the TWDB municipal water use for the year 2000 or the maximum waste discharge permit quantity of the TCEQ waste discharge permit. This value is held level throughout the projection period. For all other entities, the quantity was calculated as 75 percent of the maximum waste discharge permit.								
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Table 4-4.
Projected Water Demands, Supplies, and Needs
Cochran County
Llano Estacado Region

Demand Basin	Updated 6-4-09 and 6/8/2009 Source	Total in 2000 (acft)	Projections					
			2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
WATER SUPPLIES								
Brazos Basin								
Quantity in Storage ¹	Ogallala	459,890	309,727	192,301	117,170	46,347	10,920	5,038
Quantity Pumped ²	Ogallala	77,961	44,285	43,420	36,681	33,797	12,126	12,157
Supply	(Ogallala) ³	77,961	44,285	43,420	36,681	33,797	12,126	12,157
Local Surface	Stock Tanks and Windmills	45	46	64	67	69	70	70
Reclaimed Water ⁴		267	267	267	267	267	267	267
Total Supply		78,274	44,599	43,751	37,015	34,132	12,463	12,495
Colorado Basin								
Quantity in Storage ¹	Ogallala	2,118,814	1,524,384	1,116,691	696,573	301,008	70,788	32,667
Quantity Pumped ²	Ogallala	45,154	33,836	31,610	35,447	35,458	11,783	11,752
Supply	(Ogallala) ³	45,154	33,836	31,610	35,447	35,458	11,783	11,752
Local Surface	Stock Tanks and Windmills	87	88	123	123	124	125	128
Reclaimed Water ⁴		27	27	27	27	27	27	27
Total Supply		45,268	33,951	31,760	35,597	35,609	11,936	11,907
County Total								
Quantity in Storage ¹	Ogallala	2,578,704	1,834,111	1,308,992	813,743	347,354	81,708	37,705
Quantity Pumped ²	Ogallala	123,115	78,121	75,030	72,128	69,255	23,909	23,909
Supply	(Ogallala) ³	123,115	78,121	75,030	72,128	69,255	23,909	23,909
Local Surface	Stock Tanks and Windmills	133	135	187	190	193	195	198
Reclaimed Water ⁴		294	294	294	294	294	294	294
Total Supply		123,542	78,550	75,511	72,612	69,742	24,398	24,401
Data LERWPG Oct. 28, 04								
WATER DEMANDS								
Municipal Demand								
Brazos Basin								
Morton		499	535	560	565	547	521	496
Rural		172	183	191	192	185	176	167
Subtotal		671	718	751	757	732	697	663
Colorado Basin								
Rural		92	98	102	103	99	95	90
Subtotal		92	98	102	103	99	95	90
Total Municipal Demand		763	816	853	860	831	792	753
Municipal Existing Supply								
Brazos Basin								
Morton	Ogallala	499	535	0	0	0	0	0
Rural	Ogallala	172	183	191	192	185	176	167
Subtotal		671	718	191	192	185	176	167
Colorado Basin								
Rural	Ogallala	92	98	102	103	99	95	90
Subtotal		92	98	102	103	99	95	90
Total Municipal Existing Supply		763	816	293	295	284	271	257
Municipal Surplus/Shortage								
Brazos Basin								
Morton		0	0	-560	-565	-547	-521	-496
Rural		0	0	0	0	0	0	0
Subtotal		0	0	-560	-565	-547	-521	-496
Colorado Basin								
Rural		0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0
Total Municipal Surplus/Shortage		0	0	-560	-565	-547	-521	-496

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Table 4-4 Continued

Basin	Source	Projections						
		Total in 2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Municipal New Supply Need								
Brazos Basin								
Morton		0	0	560	565	547	521	496
Rural		0	0	0	0	0	0	0
Subtotal		0	0	560	565	547	521	496
Colorado Basin								
Rural		0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0
Total Municipal New Supply Need		0	0	560	565	547	521	496
Industrial Demand								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Industrial Demand		0	0	0	0	0	0	0
Industrial Existing Supply								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Industrial Existing Supply		0	0	0	0	0	0	0
Industrial Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Industrial Surplus/Shortage		0	0	0	0	0	0	0
Industrial New Supply Need								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Industrial New Supply Need		0	0	0	0	0	0	0
Steam-Electric Demand								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Steam-Electric Demand		0	0	0	0	0	0	0
Steam-Electric Existing Supply								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Steam-Electric Existing Supply		0	0	0	0	0	0	0
Steam-Electric Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Steam-Electric Surplus/Shortage		0	0	0	0	0	0	0
Steam-Electric New Supply Need								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Steam-Electric New Supply Need		0	0	0	0	0	0	0
Irrigation Demand								
Brazos Basin		76,790	73,825	70,978	68,239	65,604	63,071	60,636
Colorado Basin		43,195	41,527	39,925	38,384	36,902	35,478	34,108
Total Irrigation Demand		119,985	115,352	110,903	106,623	102,506	98,549	94,744
Irrigation Supply								
Brazos Basin	Ogallala	76,760	42,859	41,527	34,831	31,987	10,348	10,400
	Reclaimed Water	267	267	267	267	267	267	267
Brazos Basin Subtotal		77,027	43,126	41,794	35,098	32,254	10,615	10,667
Colorado Basin	Ogallala	43,358	32,290	30,486	34,492	34,720	11,262	11,406
	Reclaimed Water	27	27	27	27	27	27	27
Colorado Basin Subtotal		43,385	32,317	30,513	34,519	34,747	11,289	11,433
Total Irrigation Supply		120,412	75,443	72,307	69,617	67,001	21,904	22,100
Irrigation Surplus/Shortage								
Brazos Basin		237	-30,699	-29,184	-33,141	-33,350	-52,456	-49,969
Colorado Basin		190	-9,210	-9,412	-3,865	-2,155	-24,189	-22,675
Total Irrigation Surplus/Shortage		427	-39,909	-38,596	-37,006	-35,505	-76,645	-72,644

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Table 4-4 Continued

Basin	Source	Projections						
		Total in 2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Mining Demand								
Brazos Basin		16	14	10	8	6	4	2
Colorado Basin		1,704	1,448	1,022	852	639	426	256
Total Mining Demand		1,720	1,462	1,032	860	645	430	258
Mining Supply								
Brazos Basin	Ogallala	16	14	10	8	6	4	2
Colorado Basin	Ogallala	1,704	1,448	1,022	852	639	426	256
Total Mining Supply		1,720	1,462	1,032	860	645	430	258
Mining Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Mining Surplus/Shortage		0	0	0	0	0	0	0
Beef Feedlot Livestock Demand								
Brazos Basin		514	627	703	746	792	841	893
Colorado Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Demand		514	627	703	746	792	841	893
Beef Feedlot Livestock Supply								
Brazos Basin	Ogallala	514	627	703	746	792	841	893
Colorado Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Supply		514	627	703	746	792	841	893
Beef Feedlot Livestock Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Surplus/Shortage		0	0	0	0	0	0	0
Dairies Demand								
Brazos Basin		0	67	134	134	134	134	134
Colorado Basin		0	0	0	0	0	0	0
Total Dairies Demand		0	67	134	134	134	134	134
Dairies Supply								
Brazos Basin	Ogallala	0	67	134	134	134	134	134
Colorado Basin		0	0	0	0	0	0	0
Total Dairies Supply		0	67	134	134	134	134	134
Dairies Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Dairies Surplus/Shortage		0	0	0	0	0	0	0
Range & All Other Livestock Demand								
Brazos Basin		45	46	64	67	69	70	70
Colorado Basin		87	88	123	123	124	125	128
Total Range & All Other Livestock Demand		133	135	187	190	193	195	198
Range & All Other Livestock Supply								
Brazos Basin	Local	45	46	64	67	69	70	70
Colorado Basin	Local	87	88	123	123	124	125	128
Total Range & All Other Livestock Supply		133	135	187	190	193	195	198
Range & All Other Livestock Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Range & All Other Livestock Surplus/Shortage		0	0	0	0	0	0	0
Total Demand								
Municipal		763	816	853	860	831	792	753
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		119,985	115,352	110,903	106,623	102,506	98,549	94,744
Mining		1,720	1,462	1,032	860	645	430	258
Beef Feedlot Livestock		514	627	703	746	792	841	893
Dairies		0	67	134	134	134	134	134
Range & All Other Livestock		133	135	187	190	193	195	198
Total County Demand		123,115	118,458	113,812	109,413	105,101	100,941	96,980

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Table 4-4 Continued

Basin	Source	Projections						
		Total in 2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Total Supply								
Municipal		763	816	293	295	284	271	257
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		120,412	75,443	72,307	69,617	67,001	21,904	22,100
Mining		1,720	1,462	1,032	860	645	430	258
Beef Feedlot Livestock		514	627	703	746	792	841	893
Dairies		0	67	134	134	134	134	134
Range & All Other Livestock		133	135	187	190	193	195	198
Total County Supply		123,542	78,549	74,656	71,842	69,049	23,776	23,840
Total Surplus/Shortage								
Municipal		0	0	-560	-565	-547	-521	-496
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		427	-39,909	-38,596	-37,006	-35,505	-76,645	-72,644
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total County Surplus/Shortage		427	-39,909	-39,156	-37,571	-36,052	-77,166	-73,140
Total Basin Demand								
Brazos								
Municipal		671	718	751	757	732	697	663
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		76,790	73,825	70,978	68,239	65,604	63,071	60,636
Mining		16	14	10	8	6	4	2
Beef Feedlot Livestock		514	627	703	746	792	841	893
Dairies		0	67	134	134	134	134	134
Range & All Other Livestock		45	46	64	67	69	70	70
Total Brazos Basin Demand		78,037	75,297	72,640	69,951	67,336	64,817	62,398
Colorado								
Municipal		92	98	102	103	99	95	90
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		43,195	41,527	39,925	38,384	36,902	35,478	34,108
Mining		1,704	1,448	1,022	852	639	426	256
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		87	88	123	123	124	125	128
Total Colorado Basin Demand		45,078	43,161	41,172	39,462	37,764	36,124	34,582
Total Basin Supply								
Brazos								
Municipal		671	718	191	192	185	176	167
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		77,027	43,126	41,794	35,098	32,254	10,615	10,667
Mining		16	14	10	8	6	4	2
Beef Feedlot Livestock		514	627	703	746	792	841	893
Dairies		0	67	134	134	134	134	134
Range & All Other Livestock		45	46	64	67	69	70	70
Total Brazos Basin Supply		78,274	44,598	42,896	36,245	33,439	11,840	11,933
Colorado								
Municipal		92	98	102	103	99	95	90
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		43,385	32,317	30,513	34,519	34,747	11,289	11,433
Mining		1,704	1,448	1,022	852	639	426	256
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		87	88	123	123	124	125	128
Total Colorado Basin Supply		45,268	33,951	31,760	35,597	35,609	11,936	11,907
Total Basin Surplus/Shortage								
Brazos								
Municipal		0	0	-560	-565	-547	-521	-496
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		237	-30,699	-29,184	-33,141	-33,350	-52,456	-49,969
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0

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Table 4-4 Concluded

Basin	Source	Total in	Projections					
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Brazos Basin Surplus/Shortage		237	-30,699	-29,744	-33,706	-33,897	-52,977	-50,465
Colorado								
Municipal		0	0	0	0	0	0	0
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		190	-9,210	-9,412	-3,865	-2,155	-24,189	-22,675
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Colorado Basin Surplus/Shortage		190	-9,210	-9,412	-3,865	-2,155	-24,189	-22,675
¹ Calculated by the TWDB using Southern Ogallala Groundwater Availability Model; February 2003. Entry on Quantity in storage row in 2000 is GAM Run result for 2004. ² Ibid. ³ Supply means quantity of water available from the Ogallala Aquifer in the year projected. ⁴ Value is the sum of reclaimed water from the City of Morton, Girls Town USA, and City of Whiteface. The quantity of reclaimed water available from municipal sources for reuse was estimated as the lesser of 50 percent of the TWDB municipal water use for the year 2000 or the maximum waster discharge permit quantity of the TCEQ waste discharge permit. This value is held level throughout the projection period. For all other entities, the quantity was calculated as 75 percent of the maximum waste.								
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**Table 4-5.
Projected Water Demands, Supplies, and Needs
Crosby County
Llano Estacado Region**

Demand Basin	Updated 6-4-09 and 6/8/2009 Source	Total in 2000 (acft)	Projections					
			2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
WATER SUPPLIES								
Red Basin								
Quantity in Storage ¹	Ogallala	88,869	94,099	80,773	76,630	72,995	72,514	72,127
Quantity Pumped ²	Ogallala	1,391	1,307	1,256	1,204	1,158	1,101	1,078
Supply	(Ogallala) ³	1,391	1,307	1,256	1,204	1,158	1,101	1,078
Local Surface	Stock Tanks and Windmills	3	3	3	4	4	4	4
Other Surface		0	0	0	0	0	0	0
Total Supply		1,394	1,310	1,259	1,208	1,161	1,105	1,082
Brazos Basin								
Quantity in Storage ¹	Ogallala	10,860,146	10,518,753	10,004,335	9,903,661	9,079,445	8,965,722	8,874,426
Quantity Pumped ²	Ogallala	112,337	96,710	92,844	89,147	85,593	83,138	79,835
Supply	(Ogallala) ³	112,337	96,710	92,844	89,147	85,593	83,138	79,835
Seymour Aquifer		483	483	483	474	474	474	474
Local Surface	Stock Tanks and Windmills	292	298	303	310	318	325	332
Other Surface	White River Reservoir	707	707	707	707	707	389	8
Reclaimed Water ⁴		583	583	583	583	583	583	583
Total Supply		114,402	98,781	94,921	91,222	87,675	84,909	81,232
County Total								
Quantity in Storage ¹	Ogallala	10,949,015	10,612,852	10,085,108	9,980,291	9,152,440	9,038,236	8,946,553
Quantity Pumped ²	Ogallala	113,728	98,017	94,100	90,352	86,751	84,239	80,913
Supply	(Ogallala) ³	113,728	98,017	94,100	90,352	86,751	84,239	80,913
Seymour Aquifer		483	483	483	474	474	474	474
Local Surface	Stock Tanks and Windmills	295	301	307	314	321	329	336
Other Surface	White River Reservoir	707	707	707	707	707	389	707
Reclaimed Water ⁴		583	583	583	583	583	583	583
Total Supply		115,796	100,091	96,179	92,430	88,836	86,014	82,314
Data LERWPG Oct. 28, 04								
WATER DEMANDS								
Municipal Demand								
Red Basin								
Rural		1	1	1	1	1	1	1
Subtotal		1	1	1	1	1	1	1
Brazos Basin								
Crosbyton		351	369	386	394	402	400	394
Lorenzo		260	275	288	296	302	301	296
Ralls		290	304	315	322	325	323	318
Rural		202	210	217	220	222	220	217
Subtotal		1,103	1,158	1,206	1,232	1,251	1,244	1,225
Total Municipal Demand		1,104	1,159	1,207	1,233	1,252	1,245	1,226
Municipal Existing Supply								
Red Basin								
Rural	Ogallala	1	1	1	1	1	1	1
Subtotal		1	1	1	1	1	1	1
Brazos Basin								
Crosbyton	1998 obtained 464 acft	389	389	389	389	389	389	8
Crosbyton Subtotal		50	50	50	50	50	50	50
Lorenzo		439	439	439	439	439	439	58
Ralls	1994 obtained 352 acft	260	275	288	259	233	209	188
Rural	White River Reservoir	318	318	318	318	318	0	0
Rural	Ogallala	202	210	217	220	222	220	217
Rural	Seymour	100	100	100	100	100	100	100
Rural Subtotal		302	310	317	320	322	320	317
Subtotal		1,269	1,292	1,312	1,286	1,262	918	513
Total Municipal Existing Supply		1,270	1,293	1,313	1,287	1,263	919	514
Municipal Surplus/Shortage								
Red Basin								
Rural		0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0

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Table 4-5 Continued

Basin	Source	Total in						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Municipal Surplus/Shortage (Cont.)								
Brazos Basin								
Crosbyton		88	70	53	45	37	39	-336
Lorenzo		0	0	0	-37	-69	-92	-108
Ralls		28	14	3	-4	-7	-323	-318
Rural		100	100	100	100	100	100	100
Subtotal		216	184	156	104	61	-276	-662
Total Municipal Surplus/Shortage		216	184	156	104	61	-276	-662
Municipal New Supply Need								
Red Basin								
Rural		0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0
Brazos Basin								
Crosbyton		0	0	0	0	0	0	336
Lorenzo		0	0	0	37	69	92	108
Ralls		0	0	0	4	7	323	318
Rural		0	0	0	0	0	0	0
Subtotal		0	0	0	41	76	415	762
Total Municipal New Supply Need		0	0	0	41	76	415	762
Industrial Demand								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		5	6	6	6	6	6	6
Total Industrial Demand		5	6	6	6	6	6	6
Industrial Existing Supply								
Red Basin		0	0	0	0	0	0	0
Brazos Basin	Ogallala	5	6	6	6	6	6	6
Total Industrial Existing Supply		5	6	6	6	6	6	6
Industrial Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Industrial Surplus/Shortage		0	0	0	0	0	0	0
Industrial New Supply Need								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Industrial New Supply Need		0	0	0	0	0	0	0
Steam-Electric Demand								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric Demand		0	0	0	0	0	0	0
Steam-Electric Existing Supply								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric Existing Supply		0	0	0	0	0	0	0
Steam-Electric Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric Shortage/Surplus		0	0	0	0	0	0	0
Steam-Electric New Supply Need								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric New Supply Need		0	0	0	0	0	0	0
Irrigation Demand								
Red Basin		2,243	2,152	2,066	1,982	1,903	1,826	1,752
Brazos Basin		109,892	105,465	101,215	97,138	93,223	89,469	85,866
Total Irrigation Demand		112,135	107,617	103,281	99,120	95,126	91,295	87,618
Irrigation Supply								
Red Basin	Ogallala	1,320	1,265	1,235	1,192	1,152	1,100	1,077
Brazos Basin	Ogallala	111,701	88,356	84,507	80,644	77,147	74,744	71,482
	Seymour	383	383	383	374	374	374	374
	Reclaimed Water	583	583	583	583	583	583	583
Brazos Basin Subtotal		112,667	89,322	85,473	81,601	78,104	75,701	72,439
Total Irrigation Supply		113,987	90,587	86,708	82,793	79,256	76,801	73,516

Continued on next page

Table 4-5 Continued

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000 (acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Irrigation Surplus/Shortage								
Red Basin		-923	-887	-831	-790	-751	-726	-675
Brazos Basin		2,775	-16,143	-15,742	-15,537	-15,119	-13,768	-13,427
Total Irrigation Surplus/Shortage		1,852	-17,030	-16,573	-16,327	-15,870	-14,494	-14,102
Mining Demand								
Red Basin		70	41	20	11	5	0	0
Brazos Basin		119	71	34	20	8	0	0
Total Mining Demand		189	112	54	31	13	0	0
Mining Supply								
Red Basin	Ogallala	70	41	20	11	5	0	0
Brazos Basin	Ogallala	119	71	34	20	8	0	0
Total Mining Supply		189	112	54	31	13	0	0
Mining Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Mining Surplus/Shortage		0	0	0	0	0	0	0
Beef Feedlot Livestock Demand								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Demand		0	0	0	0	0	0	0
Beef Feedlot Livestock Supply								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Supply		0	0	0	0	0	0	0
Beef Feedlot Livestock Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Surplus/Shortage		0	0	0	0	0	0	0
Dairies Demand								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Dairies Demand		0	0	0	0	0	0	0
Dairies Supply								
Red Basin	Ogallala	0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Dairies Supply		0	0	0	0	0	0	0
Dairies Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Dairies Surplus/Shortage		0	0	0	0	0	0	0
Range & All Other Livestock Demand								
Red Basin		3	3	3	4	4	4	4
Brazos Basin		292	298	303	310	318	325	332
Total Range & All Other Livestock Demand		295	301	307	314	321	329	336
Range & All Other Livestock Supply								
Red Basin	Local	3	3	3	4	4	4	4
Brazos Basin	Local	292	298	303	310	318	325	332
Total Range & All Other Livestock Supply		295	301	307	314	321	329	336
Range & All Other Livestock Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Range & All Other Livestock Surplus/Shortage		0	0	0	0	0	0	0
Total Demand								
Municipal		1,104	1,159	1,207	1,233	1,252	1,245	1,226
Industrial		5	6	6	6	6	6	6
Steam-Electric		0	0	0	0	0	0	0
Irrigation		112,135	107,617	103,281	99,120	95,126	91,295	87,618
Mining		189	112	54	31	13	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		295	301	307	314	321	329	336
Total County Demand		113,728	109,195	104,855	100,704	96,718	92,875	89,186

Continued on next page

Table 4-5 Continued

Basin	Source	Total in						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Total Supply								
Municipal		1,270	1,293	1,313	1,287	1,263	919	514
Industrial		5	6	6	6	6	6	6
Steam-Electric		0	0	0	0	0	0	0
Irrigation		113,987	90,587	86,708	82,793	79,256	76,801	73,516
Mining		189	112	54	31	13	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		295	301	307	314	321	329	336
Total County Supply		115,746	92,299	88,387	84,432	80,859	78,055	74,372
Total Surplus/Shortage								
Municipal		166	134	106	54	11	-326	-712
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		1,852	-17,030	-16,573	-16,327	-15,870	-14,494	-14,102
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total County Surplus/Shortage		2,018	-16,896	-16,467	-16,273	-15,859	-14,820	-14,814
Total Basin Demand								
Red								
Municipal		1	1	1	1	1	1	1
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		2,243	2,152	2,066	1,982	1,903	1,826	1,752
Mining		70	41	20	11	5	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		3	3	3	4	4	4	4
Total Red Basin Demand		2,317	2,197	2,090	1,998	1,913	1,831	1,757
Brazos								
Municipal		1,103	1,158	1,206	1,232	1,251	1,244	1,225
Industrial		5	6	6	6	6	6	6
Steam-Electric		0	0	0	0	0	0	0
Irrigation		109,892	105,465	101,215	97,138	93,223	89,469	85,866
Mining		119	71	34	20	8	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		292	298	303	310	318	325	332
Total Brazos Basin Demand		111,411	106,998	102,764	98,706	94,806	91,044	87,429
Total Basin Supply								
Red								
Municipal		1	1	1	1	1	1	1
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		1,320	1,265	1,235	1,192	1,152	1,100	1,077
Mining		70	41	20	11	5	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		3	3	3	4	4	4	4
Total Red Basin Supply		1,394	1,310	1,259	1,208	1,161	1,105	1,082
Brazos								
Municipal		1,269	1,292	1,312	1,286	1,262	918	513
Industrial		5	6	6	6	6	6	6
Steam-Electric		0	0	0	0	0	0	0
Irrigation		112,667	89,322	85,473	81,601	78,104	75,701	72,439
Mining		119	71	34	20	8	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		292	298	303	310	318	325	332
Total Brazos Basin Supply		114,352	90,989	87,128	83,223	79,698	76,950	73,290
Total Basin Surplus/Shortage								
Red								
Municipal		0	0	0	0	0	0	0
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		-923	-887	-831	-790	-751	-726	-675
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Red Basin Surplus/Shortage		-923	-887	-831	-790	-751	-726	-675

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Table 4-5 Concluded

Basin	Source	Total in						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Total Basin Surplus/Shortage (Cont.)								
Brazos								
Municipal		166	134	106	54	11	-326	-712
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		2,775	-16,143	-15,742	-15,537	-15,119	-13,768	-13,427
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Brazos Basin Surplus/Shortage		2,941	-16,009	-15,636	-15,483	-15,108	-14,094	-14,139
¹ Calculated by the TWDB using Southern Ogallala Groundwater Availability Model; February 2003. Entry on Quantity in storage row in 2000 is GAM Run result for 2004. ² Ibid. ³ Supply means quantity of water available from the Ogallala Aquifer in the year projected. ⁴ Value is the sum of reclaimed water from City of Lorenzo, City of Ralls, City of Crosbyton, and the White River MWD. The quantity of reclaimed water available from municipal sources for reuse was estimated as the lesser of 50 percent of the TWDB municipal water use for the year 2000 or the maximum waste discharge permit quantity of the TCEQ waste discharge permit. This value is held level throughout the projection period. For all other entities, the quantity was calculated as 75 percent of the maximum waste discharge permit.								
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Table 4-6.
Projected Water Demands, Supplies, and Needs
Dawson County
Llano Estacado Region

Demand Basin	Updated 6-4-09 and 6/8/2009 Source	Total in 2000 (acft)	Projections					
			2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
WATER SUPPLIES								
Brazos Basin								
Quantity in Storage ¹	Ogallala	160,390	160,390	160,390	160,390	160,390	160,390	160,390
Quantity Pumped ²	Ogallala	19	19	19	19	18	18	17
Supply	(Ogallala) ³	19	19	19	19	18	18	17
Local Surface	Stock Tanks and Windmills	1	1	2	1	2	2	2
Other Surface		0	0	0	0	0	0	0
Total Supply		21	20	21	20	20	20	19
Colorado Basin								
Quantity in Storage ¹	Ogallala	7,106,402	7,041,932	7,041,932	7,041,932	7,041,932	7,041,932	7,041,932
Quantity Pumped ²	Ogallala	152,146	45,194	37,508	34,547	31,266	31,239	31,195
Supply	(Ogallala) ³	152,146	45,194	37,508	34,547	31,266	31,239	31,195
Other Ground	Ogallala (CRMWA - Roberts Co.)	1,676	1,708	1,486	1,486	1,486	1,369	1,369
Local Surface	Stock Tanks and Windmills	150	154	156	161	164	168	172
Other Surface	Lake Meredith (CRMWA)	910	854	1,076	1,076	1,076	992	992
Total Supply		154,882	47,910	40,226	37,270	33,992	33,768	33,728
County Total								
Quantity in Storage ¹	Ogallala	7,266,792	7,202,322	7,202,322	7,202,322	7,202,322	7,202,322	7,202,322
Quantity Pumped ²	Ogallala	152,165	45,213	37,527	34,566	31,284	31,257	31,212
Supply	(Ogallala) ³	152,165	45,213	37,527	34,566	31,284	31,257	31,212
Other Ground	Ogallala (CRMWA - Roberts Co.)	1,676	1,708	1,486	1,486	1,486	1,369	1,369
Local Surface	Stock Tanks and Windmills	152	155	158	162	166	170	174
Other Surface	Lake Meredith (CRMWA)	910	854	1,076	1,076	1,076	992	992
Total Supply		154,903	47,930	40,247	37,290	34,012	33,788	33,747
Data LERWPG Oct. 28, 04								
WATER DEMANDS								
Municipal Demand								
Brazos Basin								
O'Donnell (part)		17	17	17	17	17	17	16
Rural		18	18	18	19	18	18	17
Subtotal		35	35	35	36	35	35	33
Colorado Basin								
Lamesa		2,486	2,540	2,573	2,602	2,603	2,529	2,433
Rural		605	610	612	616	607	587	565
Subtotal		3,091	3,150	3,185	3,218	3,210	3,116	2,998
Total Municipal Demand		3,126	3,185	3,220	3,254	3,245	3,151	3,031
Municipal Existing Supply								
Brazos Basin								
Rural	Ogallala	18	18	18	19	18	18	17
Subtotal		18	18	18	19	18	18	17
Colorado Basin								
Lamesa	Ogallala	628	565	508	457	411	370	333
	Lake Meredith (CRMWA) ⁴	872	843	1,062	1,062	1,062	978	978
	Ogallala (CRMWA - Roberts Co.) ⁴	1,656	1,685	1,466	1,466	1,466	1,350	1,350
Lamesa Subtotal		3,156	3,093	3,036	2,985	2,939	2,698	2,661
O'Donnell (part)	Lake Meredith (CRMWA)	38	11	14	14	14	14	14
	Ogallala (CRMWA - Roberts Co.)	20	23	20	20	20	19	19
O'Donnell (part) Subtotal		58	34	34	34	34	33	33
Rural	Ogallala	605	610	612	616	607	587	565
Subtotal		3,819	3,737	3,682	3,635	3,580	3,318	3,259
Total Municipal Existing Supply		3,837	3,755	3,700	3,654	3,598	3,336	3,276
Municipal Surplus/Shortage								
Brazos Basin								
Rural		0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0
Colorado Basin								
Lamesa		670	553	463	383	336	169	228
O'Donnell (part)		41	17	17	17	17	16	17
Rural		0	0	0	0	0	0	0
Subtotal		711	570	480	400	353	185	245
Total Municipal Surplus/Shortage		711	570	480	400	353	185	245

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Table 4-6 Continued

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000 (acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Municipal New Supply Need								
Brazos Basin								
Rural		0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0
Colorado Basin								
Lamesa		0	0	0	0	0	0	0
O'Donnell (part)		0	0	0	0	0	0	0
Rural		0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0
Total Municipal New Supply Need		0	0	0	0	0	0	0
Industrial Demand								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		101	119	129	137	144	150	162
Total Industrial Demand		101	119	129	137	144	150	162
Industrial Existing Supply								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin	Ogallala	101	119	129	137	144	150	162
Total Industrial Existing Supply		101	119	129	137	144	150	162
Industrial Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Industrial Surplus/Shortage		0	0	0	0	0	0	0
Industrial New Supply Need								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Industrial New Supply Need		0	0	0	0	0	0	0
Steam-Electric Demand								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Steam-Electric Demand		0	0	0	0	0	0	0
Steam-Electric Existing Supply								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Steam-Electric Existing Supply		0	0	0	0	0	0	0
Steam-Electric Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Steam-Electric Surplus/Shortage		0	0	0	0	0	0	0
Steam-Electric New Supply Need								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Steam-Electric New Supply Need		0	0	0	0	0	0	0
Irrigation Demand								
Brazos Basin		1,460	1,378	1,300	1,227	1,158	1,093	1,031
Colorado Basin		144,579	136,425	128,736	121,478	114,628	108,167	102,071
Total Irrigation Demand		146,039	137,803	130,036	122,705	115,786	109,260	103,102
Irrigation Supply								
Brazos Basin	Ogallala	1	423	355	329	299	301	301
Colorado Basin	Ogallala	148,084	41,752	35,024	32,452	29,509	29,730	29,733
Total Irrigation Supply		148,085	42,175	35,379	32,781	29,808	30,031	30,034
Irrigation Surplus/Shortage								
Brazos Basin		-1,459	-955	-945	-898	-859	-792	-730
Colorado Basin		3,505	-94,673	-93,712	-89,026	-85,119	-78,437	-72,338
Total Irrigation Surplus/Shortage		2,046	-95,628	-94,657	-89,924	-85,978	-79,229	-73,068

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Table 4-6 Continued

Basin	Source	Total in						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Mining Demand								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		2,728	1,624	779	455	195	0	0
Total Mining Demand		2,728	1,624	779	455	195	0	0
Mining Supply								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin	Ogallala	2,728	1,624	779	455	195	0	0
Total Mining Supply		2,728	1,624	779	455	195	0	0
Mining Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Mining Surplus/Shortage		0	0	0	0	0	0	0
Beef Feedlot Livestock Demand								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Demand		0	0	0	0	0	0	0
Beef Feedlot Livestock Supply								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Supply		0	0	0	0	0	0	0
Beef Feedlot Livestock Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Surplus/Shortage		0	0	0	0	0	0	0
Dairies Demand								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Dairies Demand		0	0	0	0	0	0	0
Dairies Supply								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Dairies Supply		0	0	0	0	0	0	0
Dairies Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Dairies Surplus/Shortage		0	0	0	0	0	0	0
Range & All Other Livestock Demand								
Brazos Basin		1	1	2	1	2	2	2
Colorado Basin		150	154	156	161	164	168	172
Total Range & All Other Livestock Demand		152	155	158	162	166	170	174
Range & All Other Livestock Supply								
Brazos Basin	Local	1	1	2	1	2	2	2
Colorado Basin	Local	150	154	156	161	164	168	172
Total Range & All Other Livestock Supply		152	155	158	162	166	170	174
Range & All Other Livestock Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Range & All Other Livestock Surplus/Shortage		0	0	0	0	0	0	0
Total Demand								
Municipal		3,126	3,185	3,220	3,254	3,245	3,151	3,031
Industrial		101	119	129	137	144	150	162
Steam-Electric		0	0	0	0	0	0	0
Irrigation		146,039	137,803	130,036	122,705	115,786	109,260	103,102
Mining		2,728	1,624	779	455	195	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		152	155	158	162	166	170	174
Total County Demand		152,146	142,886	134,322	126,713	119,536	112,731	106,469

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Table 4-6 Continued

Basin	Source	Total in						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Total Supply								
Municipal		3,837	3,755	3,700	3,654	3,598	3,336	3,276
Industrial		101	119	129	137	144	150	162
Steam-Electric		0	0	0	0	0	0	0
Irrigation		148,085	42,175	35,379	32,781	29,808	30,031	30,034
Mining		2,728	1,624	779	455	195	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		152	155	158	162	166	170	174
Total County Supply		154,903	47,828	40,145	37,189	33,911	33,687	33,646
Total Surplus/Shortage								
Municipal		711	570	480	400	353	185	245
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		2,046	-95,628	-94,657	-89,924	-85,978	-79,229	-73,068
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total County Surplus/Shortage		2,757	-95,058	-94,177	-89,524	-85,625	-79,044	-72,823
Total Basin Demand								
Brazos								
Municipal		35	35	35	36	35	35	33
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		1,460	1,378	1,300	1,227	1,158	1,093	1,031
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		1	1	2	1	2	2	2
Total Brazos Basin Demand		1,496	1,414	1,337	1,264	1,195	1,130	1,066
Colorado								
Municipal		3,091	3,150	3,185	3,218	3,210	3,116	2,998
Industrial		101	119	129	137	144	150	162
Steam-Electric		0	0	0	0	0	0	0
Irrigation		144,579	136,425	128,736	121,478	114,628	108,167	102,071
Mining		2,728	1,624	779	455	195	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		150	154	156	161	164	168	172
Total Colorado Basin Demand		150,649	141,472	132,985	125,449	118,341	111,601	105,403
Total Basin Supply								
Brazos								
Municipal		18	18	18	19	18	18	17
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		1	423	355	329	299	301	301
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		1	1	2	1	2	2	2
Total Brazos Basin Supply		21	442	375	349	319	321	320
Colorado								
Municipal		3,819	3,737	3,682	3,635	3,580	3,318	3,259
Industrial		101	119	129	137	144	150	162
Steam-Electric		0	0	0	0	0	0	0
Irrigation		148,084	41,752	35,024	32,452	29,509	29,730	29,733
Mining		2,728	1,624	779	455	195	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		150	154	156	161	164	168	172
Total Colorado Basin Supply		154,882	47,386	39,770	36,840	33,592	33,366	33,326

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Table 4-6 Continued

Basin	Source	Total in						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Total Basin Surplus/Shortage								
Brazos								
Municipal		-17	-17	-17	-17	-17	-17	-16
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		-1,459	-955	-945	-898	-859	-792	-730
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Brazos Basin Surplus/Shortage		-1,476	-972	-962	-915	-876	-809	-746
Colorado								
Municipal		728	587	497	417	370	202	261
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		3,505	-94,673	-93,712	-89,026	-85,119	-78,437	-72,338
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Colorado Basin Surplus/Shortage		4,233	-94,086	-93,215	-88,609	-84,749	-78,235	-72,077
¹ Calculated by the TWDB using Southern Ogallala Groundwater Availability Model; February 2003. Entry on Quantity in storage row in 2000 is GAM Run result for 2004. ² Ibid. ³ Supply means quantity of water available from the Ogallala Aquifer in the year projected. ⁴ The city's supply from CRMWA. Since the city's supply from CRMWA exceeds CRMWA's delivery capacity, the city must have terminal storage in order to use its full supply from CRMWA.								

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**Table 4-7.
Projected Water Demands, Supplies, and Needs
Deaf Smith County
Llano Estacado Region**

Demand Basin	Updated 6-4-09 and 6/8/2009 Source	Total in 2000 (acft)	Projections					
			2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
WATER SUPPLIES								
Canadian Basin								
Quantity in Storage ¹	Ogallala	2,599	1,798	894	684	684	684	684
Quantity Pumped ²	Ogallala	171	112	74	1	1	1	1
Supply (Ogallala) ³		171	112	74	1	1	1	1
Local Surface	Stock Tanks and Windmills	220	281	317	326	336	344	353
Other Surface		0	0	0	0	0	0	0
Total Supply		390	393	391	327	337	345	354
Red Basin								
Quantity in Storage ¹	Ogallala	7,849,168	6,645,748	5,230,088	4,162,529	3,383,183	3,152,241	2,999,333
Quantity Pumped ²	Ogallala	388,182	204,702	170,696	128,078	88,180	86,199	81,704
Supply (Ogallala) ³		388,182	204,702	170,696	128,078	88,180	86,199	81,704
Dockum Aquifer		930	720	578	7,502	7,576	7,602	7,602
Local Surface	Stock Tanks and Windmills	2,859	2,931	3,035	3,174	3,319	3,474	3,636
Reclaimed Water ⁴		2,810	2,810	2,810	2,810	2,810	2,810	2,810
Total Supply		394,781	211,163	177,119	141,564	101,885	100,085	95,752
County Total								
Quantity in Storage ¹	Ogallala	7,851,767	6,647,546	5,230,982	4,163,213	3,383,867	3,152,925	3,000,017
Quantity Pumped ²	Ogallala	388,353	204,814	170,770	128,079	88,181	86,200	81,705
Supply (Ogallala) ³		388,353	204,814	170,770	128,079	88,181	86,200	81,705
Dockum Aquifer		930	720	578	7,502	7,576	7,602	7,602
Local Surface	Stock Tanks and Windmills	3,079	3,212	3,352	3,500	3,655	3,818	3,989
Reclaimed Water ⁴		2,810	2,810	2,810	2,810	2,810	2,810	2,810
Total Supply		395,172	211,556	177,511	141,891	102,222	100,430	96,106
Data LERWPG Oct. 28, 04								
WATER DEMANDS								
Municipal Demand								
Canadian Basin								
Rural		0	1	1	1	1	1	1
Subtotal		0	1	1	1	1	1	1
Red Basin								
Hereford		3,564	3,634	3,694	3,751	3,788	3,801	3,813
Rural		572	743	932	1,100	1,243	1,286	1,305
Subtotal		4,136	4,377	4,626	4,851	5,031	5,087	5,118
Total Municipal Demand		4,136	4,378	4,627	4,852	5,032	5,088	5,119
Municipal Existing Supply								
Canadian Basin								
Rural	Ogallala	0	1	1	1	1	1	1
Subtotal		0	1	1	1	1	1	1
Red Basin								
Hereford ⁵	Ogallala	3,099	3,274	3,405	0	0	0	0
	Dockum (Santa Rosa)	930	720	578	7,502	7,576	7,602	7,602
Hereford Subtotal		4,029	3,994	3,983	7,502	7,576	7,602	7,602
Rural	Ogallala	572	743	932	1,100	1,243	1,286	1,305
Subtotal		4,601	4,737	4,915	8,602	8,819	8,888	8,907
Total Municipal Existing Supply		4,601	4,738	4,916	8,603	8,820	8,889	8,908
Municipal Surplus/Shortage								
Canadian Basin								
Rural		0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0
Red Basin								
Hereford		465	360	289	3,751	3,788	3,801	3,789
Rural		0	0	0	0	0	0	0
Subtotal		465	360	289	3,751	3,788	3,801	3,789
Total Municipal Surplus/Shortage		465	360	289	3,751	3,788	3,801	3,789

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Table 4-7 Continued

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Municipal New Supply Need								
Canadian Basin								
Rural		0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0
Red Basin								
Hereford		0	0	0	0	0	0	0
Rural		0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0
Total Municipal New Supply Need		0	0	0	0	0	0	0
Industrial Demand								
Canadian Basin		0	0	0	0	0	0	0
Red Basin		1,234	3,694	3,834	3,950	4,061	4,157	4,295
Total Industrial Demand		1,234	3,694	3,834	3,950	4,061	4,157	4,295
Industrial Existing Supply								
Canadian Basin		0	0	0	0	0	0	0
Red Basin	Ogallala	1,234	3,694	3,834	3,950	4,061	4,157	4,295
Total Industrial Existing Supply		1,234	3,694	3,834	3,950	4,061	4,157	4,295
Industrial Surplus/Shortage								
Canadian Basin		0	0	0	0	0	0	0
Red Basin		0	0	0	0	0	0	0
Total Industrial Surplus/Shortage		0	0	0	0	0	0	0
Industrial New Supply Need								
Canadian Basin		0	0	0	0	0	0	0
Red Basin		0	0	0	0	0	0	0
Total Industrial New Supply Need		0	0	0	0	0	0	0
Steam-Electric Demand								
Canadian Basin		0	0	0	0	0	0	0
Red Basin		0	0	0	0	0	0	0
Total Steam-Electric Demand		0	0	0	0	0	0	0
Steam-Electric Existing Supply								
Canadian Basin		0	0	0	0	0	0	0
Red Basin		0	0	0	0	0	0	0
Total Steam-Electric Existing Supply		0	0	0	0	0	0	0
Steam-Electric Surplus/Shortage								
Canadian Basin		0	0	0	0	0	0	0
Red Basin		0	0	0	0	0	0	0
Total Steam-Electric Surplus/Shortage		0	0	0	0	0	0	0
Steam-Electric New Supply Need								
Canadian Basin		0	0	0	0	0	0	0
Red Basin		0	0	0	0	0	0	0
Total Steam-Electric New Supply Need		0	0	0	0	0	0	0
Irrigation Demand								
Canadian Basin		0	0	0	0	0	0	0
Red Basin		372,827	361,015	349,580	338,504	327,780	317,396	307,341
Total Irrigation Demand		372,827	361,015	349,580	338,504	327,780	317,396	307,341
Irrigation Supply								
Canadian Basin		0	0	0	0	0	0	0
Red Basin	Ogallala	376,200	186,724	150,949	110,693	70,216	67,276	61,726
	Reclaimed Water	2,810	2,810	2,810	2,810	2,810	2,810	2,810
Red Basin Subtotal		379,010	189,534	153,759	113,503	73,026	70,086	64,536
Total Irrigation Supply		379,010	189,534	153,759	113,503	73,026	70,086	64,536
Irrigation Surplus/Shortage								
Canadian Basin		0	0	0	0	0	0	0
Red Basin		6,183	-171,481	-195,821	-225,001	-254,754	-247,310	-242,805
Total Irrigation Surplus/Shortage		6,183	-171,481	-195,821	-225,001	-254,754	-247,310	-242,805

Continued on next page

Table 4-7 Continued

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000 (acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Mining Demand								
Canadian Basin		0	0	0	0	0	0	0
Red Basin		0	0	0	0	0	0	0
Total Mining Demand		0	0	0	0	0	0	0
Mining Supply								
Canadian Basin		0	0	0	0	0	0	0
Red Basin		0	0	0	0	0	0	0
Total Mining Supply		0	0	0	0	0	0	0
Mining Surplus/Shortage								
Canadian Basin		0	0	0	0	0	0	0
Red Basin		0	0	0	0	0	0	0
Total Mining Surplus/Shortage		0	0	0	0	0	0	0
Beef Feedlot Livestock Demand								
Canadian Basin		0	0	0	0	0	0	0
Red Basin		7,041	8,583	9,623	10,216	10,846	11,514	12,224
Total Beef Feedlot Livestock Demand		7,041	8,583	9,623	10,216	10,846	11,514	12,224
Beef Feedlot Livestock Supply								
Canadian Basin		0	0	0	0	0	0	0
Red Basin	Ogallala	7,041	8,583	9,623	10,216	10,329	10,966	11,642
Total Beef Feedlot Livestock Supply		7,041	8,583	9,623	10,216	10,329	10,966	11,642
Beef Feedlot Livestock Surplus/Shortage								
Canadian Basin		0	0	0	0	0	0	0
Red Basin		0	0	0	0	-517	-548	-582
Total Beef Feedlot Livestock Surplus/Shortage		0	0	0	0	-517	-548	-582
Dairies Demand								
Canadian Basin		0	0	0	0	0	0	0
Red Basin		36	1,559	1,828	2,019	2,231	2,464	2,722
Total Dairies Demand		36	1,559	1,828	2,019	2,231	2,464	2,722
Dairies Supply								
Canadian Basin		0	0	0	0	0	0	0
Red Basin	Ogallala	36	1,559	1,828	2,019	2,231	2,464	2,722
Total Dairies Supply		36	1,559	1,828	2,019	2,231	2,464	2,722
Dairies Surplus/Shortage								
Canadian Basin		0	0	0	0	0	0	0
Red Basin		0	0	0	0	0	0	0
Total Dairies Surplus/Shortage		0	0	0	0	0	0	0
Range & All Other Livestock Demand								
Canadian Basin		73	89	99	100	102	103	108
Red Basin		3,006	3,124	3,253	3,399	3,552	3,715	3,881
Total Range & All Other Livestock Demand		3,079	3,213	3,352	3,499	3,654	3,818	3,989
Range & All Other Livestock Supply								
Canadian Basin	Local	73	89	99	100	102	103	108
Red Basin	Local	3,006	3,124	3,253	3,399	3,552	3,715	3,881
Total Range & All Other Livestock Supply		3,079	3,213	3,352	3,499	3,654	3,818	3,989
Range & All Other Livestock Surplus/Shortage								
Canadian Basin		0	0	0	0	0	0	0
Red Basin		0	0	0	0	0	0	0
Total Range & All Other Livestock Surplus/Shortage		0	0	0	0	0	0	0
Total Demand								
Municipal		4,136	4,378	4,627	4,852	5,032	5,088	5,119
Industrial		1,234	3,694	3,834	3,950	4,061	4,157	4,295
Steam-Electric		0	0	0	0	0	0	0
Irrigation		372,827	361,015	349,580	338,504	327,780	317,396	307,341
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		7,041	8,583	9,623	10,216	10,846	11,514	12,224
Dairies		36	1,559	1,828	2,019	2,231	2,464	2,722
Range & All Other Livestock		3,079	3,213	3,352	3,499	3,654	3,818	3,989
Total County Demand		388,353	382,442	372,844	363,040	353,604	344,437	335,690

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Table 4-7 Continued

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000	2010	2020	2030	2040	2050	2060
		(acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Total Supply								
Municipal		4,601	4,738	4,916	8,603	8,820	8,889	8,908
Industrial		1,234	3,694	3,834	3,950	4,061	4,157	4,295
Steam-Electric		0	0	0	0	0	0	0
Irrigation		379,010	189,534	153,759	113,503	73,026	70,086	64,536
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		7,041	8,583	9,623	10,216	10,329	10,966	11,642
Dairies		36	1,559	1,828	2,019	2,231	2,464	2,722
Range & All Other Livestock		3,079	3,213	3,352	3,499	3,654	3,818	3,989
Total County Supply		395,001	211,321	177,312	141,790	102,121	100,380	96,092
Total Surplus/Shortage								
Municipal		465	360	289	3,751	3,788	3,801	3,789
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		6,183	-171,481	-195,821	-225,001	-254,754	-247,310	-242,805
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	-517	-548	-582
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total County Surplus/Shortage		6,648	-171,121	-195,532	-221,250	-251,483	-244,057	-239,598
Total Basin Demand								
Canadian								
Municipal		0	1	1	1	1	1	1
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		0	0	0	0	0	0	0
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		73	89	99	100	102	103	108
Total Canadian Basin Demand		73	90	100	101	103	104	109
Red								
Municipal		4,136	4,377	4,626	4,851	5,031	5,087	5,118
Industrial		1,234	3,694	3,834	3,950	4,061	4,157	4,295
Steam-Electric		0	0	0	0	0	0	0
Irrigation		372,827	361,015	349,580	338,504	327,780	317,396	307,341
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		7,041	8,583	9,623	10,216	10,846	11,514	12,224
Dairies		36	1,559	1,828	2,019	2,231	2,464	2,722
Range & All Other Livestock		3,006	3,124	3,253	3,399	3,552	3,715	3,881
Total Red Basin Demand		388,280	382,352	372,744	362,939	353,501	344,333	335,581
Total Basin Supply								
Canadian								
Municipal		0	1	1	1	1	1	1
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		0	0	0	0	0	0	0
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		73	89	99	100	102	103	108
Total Canadian Basin Supply		73	90	100	101	103	104	109
Red								
Municipal		4,601	4,737	4,915	8,602	8,819	8,888	8,907
Industrial		1,234	3,694	3,834	3,950	4,061	4,157	4,295
Steam-Electric		0	0	0	0	0	0	0
Irrigation		379,010	189,534	153,759	113,503	73,026	70,086	64,536
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		7,041	8,583	9,623	10,216	10,329	10,966	11,642
Dairies		36	1,559	1,828	2,019	2,231	2,464	2,722
Range & All Other Livestock		3,006	3,124	3,253	3,399	3,552	3,715	3,881
Total Red Basin Supply		394,928	211,231	177,212	141,689	102,018	100,276	95,983

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Table 4-7 Concluded

Basin	Source	Total in	Projections					
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Total Basin Surplus/Shortage								
Canadian								
Municipal		0	0	0	0	0	0	0
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		0	0	0	0	0	0	0
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Canadian Basin Surplus/Shortage		0	0	0	0	0	0	0
Red								
Municipal		465	360	289	3,751	3,788	3,801	3,789
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		6,183	-171,481	-195,821	-225,001	-254,754	-247,310	-242,805
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	-517	-548	-582
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Red Basin Surplus/Shortage		6,648	-171,121	-195,532	-221,250	-251,483	-244,057	-239,598
¹ Calculated by the TWDB using Southern Ogallala Groundwater Availability Model; February 2003. Entry on Quantity in storage row in 2000 is GAM Run result for 2004. ² Ibid. ³ Supply means quantity of water available from the Ogallala Aquifer in the year projected. ⁴ Value is the sum of reclaimed water from T.J. Powers & Co., Nutra-Feeds, Caviness Meat Packing Co., Hereford Grain Corp., Dick Barrett Produce, City of Hereford, M.W. Carrot Inc., M. Bradford Cattle Truck Washing, and Hereford Bi-Products. The quantity of reclaimed water available from municipal sources for reuse was estimated as the lesser of 50 percent of the TWDB municipal water use for the year 2000 or the maximum waste discharge permit quantity of the TCEQ waste discharge permit. This value is held constant throughout the projection period. For all other entities, the quantity was calculated as 75 percent of the maximum waste discharge permit. ⁵ Hereford is obtaining a part of its municipal water from the Santa Rosa Formation. The information available indicates that the aquifer can supply the quantities shown here from the projection period.								
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Table 4-8.
Projected Water Demands, Supplies, and Needs
Dickens County
Llano Estacado Region

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
WATER SUPPLIES								
Red Basin								
Quantity in Storage ¹	Ogallala	531,570	491,678	491,839	492,810	413,130	385,091	382,820
Quantity Pumped ²	Ogallala	4,626	2,662	2,575	2,503	2,217	2,159	2,108
Supply	(Ogallala) ³	4,626	2,662	2,575	2,503	2,217	2,159	2,108
Seymour Aquifer		7,937	7,937	7,937	5,217	5,217	5,217	5,217
Local Surface	Stock Tanks and Windmills	230	233	239	246	251	258	264
Other Surface		0	0	0	0	0	0	0
Total Supply		12,792	10,832	10,751	7,966	7,685	7,634	7,589
Brazos Basin								
Quantity in Storage ¹	Ogallala	587,623	545,618	540,569	534,888	449,122	432,755	430,768
Quantity Pumped ²	Ogallala	6,199	3,585	3,468	3,366	3,481	3,390	3,312
Supply	(Ogallala) ³	6,199	3,585	3,468	3,366	3,481	3,390	3,312
Seymour Aquifer		4,348	4,348	4,348	2,858	2,858	2,858	2,858
Local Surface	Stock Tanks and Windmills	391	401	408	417	427	437	449
Other Surface	White River Reservoir	275	271	267	263	260	106	0
Total Supply		11,213	8,605	8,491	6,903	7,026	6,791	6,619
County Total								
Quantity in Storage ¹	Ogallala	1,119,192	1,037,297	1,032,409	1,027,698	862,252	817,846	813,589
Quantity Pumped ²	Ogallala	10,825	6,247	6,043	5,869	5,698	5,549	5,420
Supply	(Ogallala) ³	10,825	6,247	6,043	5,869	5,698	5,549	5,420
Seymour Aquifer		12,285	12,285	12,285	8,075	8,075	8,075	8,075
Local Surface	Stock Tanks and Windmills	620	634	648	662	678	695	712
Other Surface	White River Reservoir	275	271	267	263	260	106	257
Total Supply		24,005	19,437	19,243	14,869	14,711	14,425	14,207
Data LERWPG Oct. 28, 04								
WATER DEMANDS								
Municipal Demand								
Red Basin								
Rural		45	43	41	38	33	30	28
Subtotal		45	43	41	38	33	30	28
Brazos Basin								
Dickens	Decision -- delete.							
Spur		275	271	267	263	260	257	257
Rural	Includes Dickens.	234	224	212	194	169	158	147
Subtotal		509	495	479	457	429	415	404
Total Municipal Demand		554	538	520	495	462	445	432
Municipal Existing Supply								
Red Basin								
Rural	Ogallala	45	43	41	38	33	30	28
Subtotal		45	43	41	38	33	30	28
Brazos Basin								
Dickens	Seymour							
Spur	1998 obtained 434 acft White River Reservoir	275	271	267	263	260	106	0
Rural	Includes Dickens. Ogallala + Seymour	325	310	293	274	247	234	221
Subtotal		600	581	560	537	507	340	221
Total Municipal Existing Supply		645	624	601	575	540	370	249
Municipal Surplus/Shortage								
Red Basin								
Rural		0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0
Brazos Basin								
Dickens								
Spur		0	0	0	0	0	-151	-257
Rural		91	86	81	80	78	76	74
Subtotal		91	86	81	80	78	-75	-183
Total Municipal Surplus/Shortage		91	86	81	80	78	-75	-183

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Table 4-8 Continued

Basin	Source	Total in						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Municipal New Supply Need								
Red Basin								
Rural		0	0	0	0	0	0	0
	Subtotal	0	0	0	0	0	0	0
Brazos Basin								
Dickens		0	0	0	0	0	0	0
Spur		0	0	0	0	0	151	257
Rural		0	0	0	0	0	0	0
	Subtotal	0	0	0	0	0	151	257
Total Municipal New Supply Need		0	0	0	0	0	151	257
Industrial Demand								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Industrial Demand		0	0	0	0	0	0	0
Industrial Existing Supply								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Industrial Existing Supply		0	0	0	0	0	0	0
Industrial Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Industrial Surplus/Shortage		0	0	0	0	0	0	0
Industrial New Supply Need								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Industrial New Supply Need		0	0	0	0	0	0	0
Steam-Electric Demand								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric Demand		0	0	0	0	0	0	0
Steam-Electric Existing Supply								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric Existing Supply		0	0	0	0	0	0	0
Steam-Electric Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric Surplus/Shortage		0	0	0	0	0	0	0
Steam-Electric New Supply Need								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric New Supply Need		0	0	0	0	0	0	0
Irrigation Demand								
Red Basin		4,079	3,957	3,839	3,725	3,614	3,506	3,400
Brazos Basin		5,407	5,246	5,089	4,938	4,791	4,647	4,508
Total Irrigation Demand		9,486	9,203	8,928	8,663	8,405	8,153	7,908
Irrigation Supply								
Red Basin	Ogallala	4,581	2,619	2,534	2,465	2,184	2,129	2,080
Brazos Basin	Ogallala	5,709	3,263	3,209	3,145	3,300	3,232	3,165
Total Irrigation Supply		10,290	5,882	5,743	5,610	5,484	5,361	5,245
Irrigation Surplus/Shortage								
Red Basin		502	-1,338	-1,305	-1,260	-1,430	-1,377	-1,320
Brazos Basin		302	-1,983	-1,880	-1,793	-1,491	-1,415	-1,343
Total Irrigation Surplus/Shortage		804	-3,321	-3,185	-3,053	-2,921	-2,792	-2,663
Mining Demand								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		165	98	47	27	12	0	0
Total Mining Demand		165	98	47	27	12	0	0

Continued on next page

Table 4-8 Continued

Basin	Source	Total in						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Mining Supply								
Red Basin		0	0	0	0	0	0	0
Brazos Basin	Ogallala	165	98	47	27	12	0	0
Total Mining Supply		165	98	47	27	12	0	0
Mining Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Mining Surplus/Shortage		0	0	0	0	0	0	0
Beef Feedlot Livestock Demand								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Demand		0	0	0	0	0	0	0
Beef Feedlot Livestock Supply								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Supply		0	0	0	0	0	0	0
Beef Feedlot Livestock Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Surplus/Shortage		0	0	0	0	0	0	0
Dairies Demand								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Dairies Demand		0	0	0	0	0	0	0
Dairies Supply								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Dairies Supply		0	0	0	0	0	0	0
Dairies Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Dairies Surplus/Shortage		0	0	0	0	0	0	0
Range & All Other Livestock Demand								
Red Basin		230	233	239	246	251	258	264
Brazos Basin		391	401	408	417	427	437	449
Total Range & All Other Livestock Demand		620	634	648	662	678	695	712
Range & All Other Livestock Supply								
Red Basin	Local	230	233	239	246	251	258	264
Brazos Basin	Local	391	401	408	417	427	437	449
Total Range & All Other Livestock Supply		620	634	648	662	678	695	712
Range & All Other Livestock Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Range & All Other Livestock Surplus/Shortage		0	0	0	0	0	0	0
Total Demand								
Municipal	Dickens included in Co other	554	538	520	495	462	445	432
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		9,486	9,203	8,928	8,663	8,405	8,153	7,908
Mining		165	98	47	27	12	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		620	634	648	662	678	695	712
Total County Demand		10,825	10,473	10,143	9,847	9,557	9,293	9,052
Total Supply								
Municipal	Unallocated	12,285	12,285	12,285	8,075	8,075	8,075	8,075
Industrial		645	624	601	575	540	370	249
Steam-Electric		0	0	0	0	0	0	0
Irrigation		10,290	5,882	5,743	5,610	5,484	5,361	5,245
Mining		165	98	47	27	12	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		620	634	648	662	678	695	712
Total County Supply		24,005	19,522	19,324	14,949	14,789	14,501	14,281

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Table 4-8 Continued

Basin	Source	Total in						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Total Surplus/Shortage								
Municipal		91	86	81	80	78	-75	-183
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		804	-3,321	-3,185	-3,053	-2,921	-2,792	-2,663
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total County Surplus/Shortage		895	-3,235	-3,104	-2,973	-2,843	-2,867	-2,846
Total Basin Demand								
Red								
Municipal		45	43	41	38	33	30	28
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		4,079	3,957	3,839	3,725	3,614	3,506	3,400
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		230	233	239	246	251	258	264
Total Red Basin Demand		4,354	4,233	4,119	4,009	3,898	3,794	3,692
Brazos								
Municipal		509	495	479	457	429	415	404
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		5,407	5,246	5,089	4,938	4,791	4,647	4,508
Mining		165	98	47	27	12	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		391	401	408	417	427	437	449
Total Brazos Basin Demand		6,472	6,240	6,023	5,839	5,659	5,499	5,361
Total Basin Supply								
Red								
Unallocated		7,478	7,631	7,631	4,909	4,911	4,913	4,909
Municipal		45	43	41	38	33	30	28
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		4,581	2,619	2,534	2,465	2,184	2,129	2,080
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		230	233	239	246	251	258	264
Total Red Basin Supply		12,333	10,525	10,445	7,658	7,380	7,330	7,281
Brazos								
Unallocated		4,807	4,654	4,654	3,166	3,164	3,162	3,166
Municipal		600	581	560	537	507	340	221
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		5,709	3,263	3,209	3,145	3,300	3,232	3,165
Mining		165	98	47	27	12	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		391	401	408	417	427	437	449
Total Brazos Basin Supply		11,672	8,997	8,878	7,291	7,409	7,171	7,000
Total Basin Surplus/Shortage								
Red								
Municipal		0	0	0	0	0	0	0
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		502	-1,338	-1,305	-1,260	-1,430	-1,377	-1,320
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Red Basin Surplus/Shortage		502	-1,338	-1,305	-1,260	-1,430	-1,377	-1,320

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Table 4-8 Concluded)

Basin	Source	Total in	Projections					
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Total Basin Surplus/Shortage (Cont.)								
Brazos								
Municipal		91	86	81	80	78	-75	-183
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		302	-1,983	-1,880	-1,793	-1,491	-1,415	-1,343
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Brazos Basin Surplus/Shortage		393	-1,897	-1,799	-1,713	-1,413	-1,490	-1,526
¹ Calculated by the TWDB using Southern Ogallala Groundwater Availability Model; February 2003. Entry on Quantity in storage row in 2000 is GAM Run result for 2004. ² Ibid. ³ Supply means quantity of water available from the Ogallala Aquifer in the year projected.								
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Table 4-9.
Projected Water Demands, Supplies, and Needs
Floyd County
Llano Estacado Region

Demand Basin	Updated 6-4-09 and 6/8/2009 Source	Total in 2000 (acft)	Projections					
			2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
WATER SUPPLIES								
Red Basin								
Quantity in Storage ¹	Ogallala	5,491,376	5,163,180	4,909,263	4,577,147	4,384,446	4,345,782	4,267,211
Quantity Pumped ²	Ogallala	101,292	52,505	32,434	25,205	21,096	20,270	19,510
Supply (Ogallala) ³		101,292	52,505	32,434	25,205	21,096	20,270	19,510
Local Surface	Stock Tanks and Windmills	253	259	266	271	279	288	296
Other Surface		0	0	0	0	0	0	0
Total Supply		101,545	52,764	32,700	25,476	21,375	20,558	19,806
Brazos Basin								
Quantity in Storage ¹	Ogallala	7,520,632	6,668,927	6,488,195	5,912,120	5,379,850	5,241,354	5,142,280
Quantity Pumped ²	Ogallala	138,280	86,288	81,860	78,044	73,821	70,449	68,588
Supply (Ogallala) ³		138,280	86,288	81,860	78,044	73,821	70,449	68,588
Local Surface	Stock Tanks and Windmills	199	205	210	218	223	229	236
Other Surface	Lake Mackenzie	362	0	0	0	0	0	0
Reclaimed Water ⁴		449	449	449	449	449	449	449
Total Supply		139,290	86,942	82,519	78,711	74,493	71,127	69,273
County Total								
Quantity in Storage ¹	Ogallala	13,012,008	11,832,107	11,397,458	10,489,267	9,764,296	9,587,136	9,409,491
Quantity Pumped ²	Ogallala	239,572	138,793	114,294	103,249	94,917	90,719	88,098
Supply (Ogallala) ³		239,572	138,793	114,294	103,249	94,917	90,719	88,098
Local Surface	Stock Tanks and Windmills	452	464	476	489	502	517	532
Other Surface	Lake Mackenzie	362	0	0	0	0	0	0
Reclaimed Water ⁴		449	449	449	449	449	449	449
Total Supply		240,835	139,706	115,219	104,187	95,868	91,685	89,079
Data LERWPG Oct. 28, 04								
WATER DEMANDS								
Municipal Demand								
Red Basin								
Rural		103	106	107	106	104	100	95
Subtotal		103	106	107	106	104	100	95
Brazos Basin								
Floydada		663	680	696	693	685	657	623
Lockney		237	242	244	240	234	224	212
Rural		178	183	185	183	180	172	163
Subtotal		1,078	1,105	1,125	1,116	1,099	1,053	998
Total Municipal Demand		1,181	1,211	1,232	1,222	1,203	1,153	1,093
Municipal Existing Supply								
Red Basin								
Rural	Ogallala	103	106	107	106	104	100	95
Subtotal		103	106	107	106	104	100	95
Brazos Basin								
Floydada	Ogallala	663	680	696	693	685	657	623
	Lake Mackenzie	212	0	0	0	0	0	0
Floydada Subtotal		875	680	696	693	685	657	623
Lockney	Ogallala	237	242	244	0	0	0	0
	Lake Mackenzie	150	0	0	0	0	0	0
Lockney Subtotal		387	242	244	0	0	0	0
Rural	Ogallala	178	183	185	183	180	172	163
Subtotal		1,440	1,105	1,125	876	865	829	786
Total Municipal Existing Supply		1,543	1,211	1,232	982	969	929	881
Municipal Surplus/Shortage								
Red Basin								
Rural		0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0
Brazos Basin								
Floydada		212	0	0	0	0	0	0
Lockney		150	0	0	-240	-234	-224	-212
Rural		0	0	0	0	0	0	0
Subtotal		362	0	0	-240	-234	-224	-212
Total Municipal Surplus/Shortage		362	0	0	-240	-234	-224	-212

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Table 4-9 Continued

Basin	Source	Total in						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Municipal New Supply Need								
Red Basin								
Rural		0	0	0	0	0	0	0
	Subtotal	0	0	0	0	0	0	0
Brazos Basin								
Floydada		0	0	0	0	0	0	0
Lockney		0	0	0	240	234	224	212
Rural		0	0	0	0	0	0	0
	Subtotal	0	0	0	240	234	224	212
Total Municipal New Supply Need		0	0	0	240	234	224	212
Industrial Demand								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Industrial Demand		0	0	0	0	0	0	0
Industrial Existing Supply								
Red Basin		0	0	0	0	0	0	0
Brazos Basin	Ogallala	0	0	0	0	0	0	0
Total Industrial Existing Supply		0	0	0	0	0	0	0
Industrial Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Industrial Surplus/Shortage		0	0	0	0	0	0	0
Industrial New Supply Need								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Industrial New Supply Need		0	0	0	0	0	0	0
Steam-Electric Demand								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric Demand		0	0	0	0	0	0	0
Steam-Electric Existing Supply								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric Existing Supply		0	0	0	0	0	0	0
Steam-Electric Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric Surplus/Shortage		0	0	0	0	0	0	0
Steam-Electric New Supply Need								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric New Supply Need		0	0	0	0	0	0	0
Irrigation Demand								
Red Basin		106,659	102,411	98,332	94,415	90,654	87,044	83,577
Brazos Basin		130,361	125,168	120,184	115,397	110,800	106,387	102,150
Total Irrigation Demand		237,020	227,579	218,516	209,812	201,454	193,431	185,727
Irrigation Supply								
Red Basin	Ogallala	101,173	52,347	32,239	25,011	20,904	20,082	19,327
Brazos Basin	Ogallala	136,300	84,052	79,437	75,385	71,135	67,752	65,878
	Reclaimed Water	449	449	449	449	449	449	449
Brazos Basin Subtotal		136,749	84,501	79,886	75,834	71,584	68,201	66,327
Total Irrigation Supply		237,922	136,848	112,125	100,845	92,488	88,283	85,654
Irrigation Surplus/Shortage								
Red Basin		-5,486	-50,064	-66,093	-69,404	-69,750	-66,962	-64,250
Brazos Basin		6,388	-40,667	-40,298	-39,563	-39,216	-38,186	-35,823
Total Irrigation Surplus/Shortage		902	-90,731	-106,391	-108,967	-108,966	-105,148	-100,073

Continued on next page

Table 4-9 Continued

Basin	Source	Total in						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Mining Demand								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Mining Demand		0	0	0	0	0	0	0
Mining Supply								
Red Basin	Ogallala	0	0	0	0	0	0	0
Brazos Basin	Ogallala	0	0	0	0	0	0	0
Total Mining Supply		0	0	0	0	0	0	0
Mining Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Mining Surplus/Shortage		0	0	0	0	0	0	0
Beef Feedlot Livestock Demand								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		885	1,079	1,210	1,285	1,364	1,448	1,537
Total Beef Feedlot Livestock Demand		885	1,079	1,210	1,285	1,364	1,448	1,537
Beef Feedlot Livestock Supply								
Red Basin		0	0	0	0	0	0	0
Brazos Basin	Ogallala	885	1,079	1,210	1,285	1,364	1,448	1,537
Total Beef Feedlot Livestock Supply		885	1,079	1,210	1,285	1,364	1,448	1,537
Beef Feedlot Livestock Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Surplus/Shortage		0	0	0	0	0	0	0
Dairies Demand								
Red Basin		16	52	88	88	88	88	88
Brazos Basin		16	52	88	88	88	88	88
Total Dairies Demand		33	104	175	175	175	175	175
Dairies Supply								
Red Basin	Ogallala	16	52	88	88	88	88	88
Brazos Basin	Ogallala	16	52	88	88	88	88	88
Total Dairies Supply		33	104	175	175	175	175	175
Dairies Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Dairies Surplus/Shortage		0	0	0	0	0	0	0
Range & All Other Livestock Demand								
Red Basin		253	259	266	271	279	288	296
Brazos Basin		199	205	210	218	223	229	236
Total Range & All Other Livestock Demand		452	464	476	489	502	517	532
Range & All Other Livestock Supply								
Red Basin	Local	253	259	266	271	279	288	296
Brazos Basin	Local	199	205	210	218	223	229	236
Total Range & All Other Livestock Supply		452	464	476	489	502	517	532
Range & All Other Livestock Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Range & All Other Livestock Surplus/Shortage		0	0	0	0	0	0	0
Total Demand								
Municipal		1,181	1,211	1,232	1,222	1,203	1,153	1,093
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		237,020	227,579	218,516	209,812	201,454	193,431	185,727
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		885	1,079	1,210	1,285	1,364	1,448	1,537
Dairies		33	104	175	175	175	175	175
Range & All Other Livestock		452	464	476	489	502	517	532
Total County Demand		239,572	230,437	221,609	212,983	204,699	196,724	189,064

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Table 4-9 Continued

Basin	Source	Total in						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Total Supply								
Municipal		1,543	1,211	1,232	982	969	929	881
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		237,922	136,848	112,125	100,845	92,488	88,283	85,654
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		885	1,079	1,210	1,285	1,364	1,448	1,537
Dairies		33	104	175	175	175	175	175
Range & All Other Livestock		452	464	476	489	502	517	532
Total County Supply		240,835	139,706	115,218	103,776	95,499	91,352	88,779
Total Surplus/Shortage								
Municipal		362	0	0	-240	-234	-224	-212
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		902	-90,731	-106,391	-108,967	-108,966	-105,148	-100,073
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total County Surplus/Shortage		1,264	-90,731	-106,391	-109,207	-109,200	-105,372	-100,285
Total Basin Demand								
Red								
Municipal		103	106	107	106	104	100	95
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		106,659	102,411	98,332	94,415	90,654	87,044	83,577
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		16	52	88	88	88	88	88
Range & All Other Livestock		253	259	266	271	279	288	296
Total Red Basin Demand		107,032	102,828	98,792	94,880	91,125	87,520	84,055
Brazos								
Municipal		1,078	1,105	1,125	1,116	1,099	1,053	998
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		130,361	125,168	120,184	115,397	110,800	106,387	102,150
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		885	1,079	1,210	1,285	1,364	1,448	1,537
Dairies		16	52	88	88	88	88	88
Range & All Other Livestock		199	205	210	218	223	229	236
Total Brazos Basin Demand		132,540	127,610	122,817	118,103	113,574	109,204	105,009
Total Basin Supply								
Red								
Municipal		103	106	107	106	104	100	95
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		101,173	52,347	32,239	25,011	20,904	20,082	19,327
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		16	52	88	88	88	88	88
Range & All Other Livestock		253	259	266	271	279	288	296
Total Red Basin Supply		101,545	52,764	32,699	25,476	21,375	20,558	19,805
Brazos								
Municipal		1,440	1,105	1,125	876	865	829	786
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		136,749	84,501	79,886	75,834	71,584	68,201	66,327
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		885	1,079	1,210	1,285	1,364	1,448	1,537
Dairies		16	52	88	88	88	88	88
Range & All Other Livestock		199	205	210	218	223	229	236
Total Brazos Basin Supply		139,290	86,943	82,519	78,300	74,124	70,794	68,974

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Table 4-9 Concluded

Basin	Source	Total in	Projections					
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Total Basin Surplus/Shortage								
Red								
Municipal		0	0	0	0	0	0	0
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		-5,486	-50,064	-66,093	-69,404	-69,750	-66,962	-64,250
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Red Basin Surplus/Shortage		-5,486	-50,064	-66,093	-69,404	-69,750	-66,962	-64,250
Brazos								
Municipal		362	0	0	-240	-234	-224	-212
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		6,388	-40,667	-40,298	-39,563	-39,216	-38,186	-35,823
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Brazos Basin Surplus/Shortage		6,750	-40,667	-40,298	-39,803	-39,450	-38,410	-36,035
¹ Calculated by the TWDB using Southern Ogallala Groundwater Availability Model; February 2003. Entry on Quantity in storage row in 2000 is GAM Run result for 2004. ² Ibid. ³ Supply means quantity of water available from the Ogallala Aquifer in the year projected. ⁴ Value is the sum of reclaimed water from the City of Lockney and the City of Floydada. The quantity of reclaimed water available from municipal sources for reuse was estimated as the lesser of 50 percent of the TWDB municipal water use for the year 2000 or the maximum waste discharge permit quantity of the TCEQ waste discharge permit. This value is held level throughout the projection period. For all other entities, the quantity was calculated as 75 percent of the maximum waste discharge permit.								
<<<<<<>>								

Table 4-10.
Projected Water Demands, Supplies, and Needs
Gaines County
Llano Estacado Region

Demand Basin	Updated 6-4-09 and 6/8/2009 Source	Total in 2000 (acft)	Projections					
			2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
WATER SUPPLIES								
Colorado Basin								
Quantity in Storage ¹	Ogallala	12,495,883	10,232,860	7,998,429	6,120,700	4,493,051	3,708,105	3,651,389
Quantity Pumped ²	Ogallala	424,778	335,917	275,995	241,173	213,273	188,235	165,735
Supply (Ogallala) ³		424,778	335,917	275,995	241,173	213,273	188,235	165,735
Local Surface	Stock Tanks and Windmills	296	304	312	320	329	338	348
Other Surface		0	0	0	0	0	0	0
Total Supply		425,074	336,221	276,307	241,493	213,602	188,573	166,083
Data LERWPG Oct. 28, 04								
WATER DEMANDS								
Municipal Demand								
Colorado Basin								
Seagraves		416	449	482	502	513	506	499
Seminole		2,019	2,214	2,401	2,525	2,605	2,579	2,544
Rural		704	754	800	823	839	824	813
Subtotal		3,139	3,417	3,683	3,850	3,957	3,909	3,856
Total Municipal Demand		3,139	3,417	3,683	3,850	3,957	3,909	3,856
Municipal Existing Supply								
Colorado Basin								
Seagraves	Ogallala	416	645	790	711	640	576	519
Seminole	Ogallala	2,019	2,214	2,401	2,525	2,605	2,579	2,544
Rural	Ogallala	704	754	800	823	839	824	813
Subtotal		3,139	3,613	3,991	4,059	4,084	3,979	3,876
Total Municipal Existing Supply		3,139	3,613	3,991	4,059	4,084	3,979	3,876
Municipal Surplus/Shortage								
Colorado Basin								
Seagraves		0	196	308	209	127	70	20
Seminole		0	0	0	0	0	0	0
Rural		0	0	0	0	0	0	0
Subtotal		0	196	308	209	127	70	20
Total Municipal Surplus/Shortage		0	196	308	209	127	70	20
Municipal New Supply Need								
Colorado Basin								
Seagraves		0	0	0	0	0	0	0
Seminole		0	0	0	0	0	0	0
Rural		0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0
Total Municipal New Supply Need		0	0	0	0	0	0	0
Industrial Demand								
Colorado Basin								
Total Industrial Demand		0	0	0	0	0	0	0
Industrial Existing Supply								
Colorado Basin								
Total Industrial Existing Supply	Ogallala	0	0	0	0	0	0	0
Industrial Surplus/Shortage								
Colorado Basin								
Total Industrial Surplus/Shortage		0	0	0	0	0	0	0
Industrial New Supply Need								
Colorado Basin								
Total Industrial New Supply Need		0	0	0	0	0	0	0
Steam-Electric Demand								
Colorado Basin								
Total Steam-Electric Demand		0	0	0	0	0	0	0

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Table 4-10 Continued

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000 (acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Steam-Electric Existing Supply								
Colorado Basin		0	0	0	0	0	0	0
Total Steam-Electric Existing Supply		0	0	0	0	0	0	0
Steam-Electric Surplus/Shortage								
Colorado Basin		0	0	0	0	0	0	0
Total Steam-Electric Surplus/Shortage		0	0	0	0	0	0	0
Steam-Electric New Supply Need								
Colorado Basin		0	0	0	0	0	0	0
Total Steam-Electric New Supply Need		0	0	0	0	0	0	0
Irrigation Demand								
Colorado Basin		414,772	393,170	372,693	353,283	334,884	317,442	300,908
Total Irrigation Demand		414,772	393,170	372,693	353,283	334,884	317,442	300,908
Irrigation Supply								
Colorado Basin	Ogallala	415,068	325,885	267,246	233,832	207,271	183,157	160,927
Total Irrigation Supply		415,068	325,885	267,246	233,832	207,271	183,157	160,927
Irrigation Surplus/Shortage								
Colorado Basin		296	-67,285	-105,447	-119,451	-127,613	-134,285	-139,981
Total Irrigation Surplus/Shortage		296	-67,285	-105,447	-119,451	-127,613	-134,285	-139,981
Mining Demand								
Colorado Basin		6,071	5,746	4,011	2,493	1,084	217	0
Total Mining Demand		6,071	5,746	4,011	2,493	1,084	217	0
Mining Supply								
Colorado Basin	Ogallala	6,071	5,746	4,011	2,493	1,084	217	0
Total Mining Supply		6,071	5,746	4,011	2,493	1,084	217	0
Mining Surplus/Shortage								
Colorado Basin		0	0	0	0	0	0	0
Total Mining Surplus/Shortage		0	0	0	0	0	0	0
Beef Feedlot Livestock Demand								
Colorado Basin		500	609	683	725	770	817	868
Total Beef Feedlot Livestock Demand		500	609	683	725	770	817	868
Beef Feedlot Livestock Supply								
Colorado Basin	Ogallala	500	609	683	725	770	817	868
Total Beef Feedlot Livestock Supply		500	609	683	725	770	817	868
Beef Feedlot Livestock Surplus/Shortage								
Colorado Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Surplus/Shortage		0	0	0	0	0	0	0
Dairies Demand								
Colorado Basin		0	0	0	0	0	0	0
Total Dairies Demand		0	0	0	0	0	0	0
Dairies Supply								
Colorado Basin		0	0	0	0	0	0	0
Total Dairies Supply		0	0	0	0	0	0	0
Dairies Surplus/Shortage								
Colorado Basin		0	0	0	0	0	0	0
Total Dairies Surplus/Shortage		0	0	0	0	0	0	0
Range & All Other Livestock Demand								
Colorado Basin		296	304	312	320	329	338	348
Total Range & All Other Livestock Demand		296	304	312	320	329	338	348
Range & All Other Livestock Supply								
Colorado Basin	Local	296	304	312	320	329	338	348
Total Range & All Other Livestock Supply		296	304	312	320	329	338	348
Range & All Other Livestock Surplus/Shortage								
Colorado Basin		0	0	0	0	0	0	0
Total Range & All Other Livestock Surplus/Shortage		0	0	0	0	0	0	0

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Table 4-10 Concluded

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Total Demand								
Municipal		3,139	3,417	3,683	3,850	3,957	3,909	3,856
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		414,772	393,170	372,693	353,283	334,884	317,442	300,908
Mining		6,071	5,746	4,011	2,493	1,084	217	0
Beef Feedlot Livestock		500	609	683	725	770	817	868
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		296	304	312	320	329	338	348
Total County Demand		424,778	403,246	381,382	360,671	341,024	322,724	305,980
Total Supply								
Municipal		3,139	3,613	3,991	4,059	4,084	3,979	3,876
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		415,068	325,885	267,246	233,832	207,271	183,157	160,927
Mining		6,071	5,746	4,011	2,493	1,084	217	0
Beef Feedlot Livestock		500	609	683	725	770	817	868
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		296	304	312	320	329	338	348
Total County Supply		425,074	336,157	276,243	241,429	213,538	188,509	166,019
Total Surplus/Shortage								
Municipal		0	196	308	209	127	70	20
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		296	-67,285	-105,447	-119,451	-127,613	-134,285	-139,981
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total County Surplus/Shortage		296	-67,089	-105,139	-119,242	-127,486	-134,215	-139,961
Total Basin Demand								
Colorado								
Municipal		3,139	3,417	3,683	3,850	3,957	3,909	3,856
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		414,772	393,170	372,693	353,283	334,884	317,442	300,908
Mining		6,071	5,746	4,011	2,493	1,084	217	0
Beef Feedlot Livestock		500	609	683	725	770	817	868
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		296	304	312	320	329	338	348
Total Colorado Basin Demand		424,778	403,246	381,382	360,671	341,024	322,724	305,980
Total Basin Supply								
Colorado								
Municipal		3,139	3,613	3,991	4,059	4,084	3,979	3,876
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		415,068	325,885	267,246	233,832	207,271	183,157	160,927
Mining		6,071	5,746	4,011	2,493	1,084	217	0
Beef Feedlot Livestock		500	609	683	725	770	817	868
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		296	304	312	320	329	338	348
Total Colorado Basin Supply		425,074	336,157	276,243	241,429	213,538	188,509	166,019
Total Basin Surplus/Shortage								
Colorado								
Municipal		0	196	308	209	127	70	20
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		296	-67,285	-105,447	-119,451	-127,613	-134,285	-139,981
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Colorado Basin Surplus/Shortage		296	-67,089	-105,139	-119,242	-127,486	-134,215	-139,961

¹ Calculated by the TWDB using Southern Ogallala Groundwater Availability Model; February 2003. Entry on Quantity in storage row in 2000 is GAM Run result for 2004.

² Ibid.

³ Supply means quantity of water available from the Ogallala Aquifer in the year projected.

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Table 4-11.
Projected Water Demands, Supplies, and Needs
Garza County
Llano Estacado Region

Demand Basin	Updated 6-4-09 and 6/8/2009 and 8/13/2009 Source	Total in 2000 (acft)	Projections					
			2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
WATER SUPPLIES								
Brazos Basin								
Quantity in Storage ¹	Ogallala	662,851	643,700	643,700	643,700	643,700	643,700	643,700
Quantity Pumped ²	Ogallala	14,563	7,527	6,879	6,394	5,946	5,554	5,262
Supply (Ogallala) ³		14,563	7,527	6,879	6,394	5,946	5,554	5,262
Dockum Aquifer		136	136	136	136	136	136	136
Local Surface	Stock Tanks and Windmills	355	363	423	432	442	453	465
Other Surface	White River Reservoir	1,021	1,021	973	493	12	0	0
Other Surface	Lake Alan Henry (WSD Contract)	0	540	540	540	540	540	540
Slaton Contract	Part of Slaton CRMWA Supply	0	306	306	306	306	306	306
Total Supply		16,075	9,893	9,257	8,301	7,382	6,989	6,709
Colorado Basin								
Quantity in Storage ¹	Ogallala	0	0	0	0	0	0	0
Quantity Pumped ²	Ogallala	0	0	0	0	0	0	0
Supply (Ogallala) ³		0	0	0	0	0	0	0
Local Surface	Stock Tanks and Windmills	0	0	0	0	0	0	0
Other Surface		0	0	0	0	0	0	0
Total Supply		0	0	0	0	0	0	0
County Total								
Quantity in Storage ¹	Ogallala	662,851	643,700	643,700	643,700	643,700	643,700	643,700
Quantity Pumped ²	Ogallala	14,563	7,527	6,879	6,394	5,946	5,554	5,262
Supply (Ogallala) ³		14,563	7,527	6,879	6,394	5,946	5,554	5,262
Dockum Aquifer		136	136	136	136	136	136	136
Local Surface	Stock Tanks and Windmills	355	363	423	432	442	453	465
Other Surface	White River Reservoir	1,021	1,021	973	493	12	0	0
Other Surface	Lake Alan Henry (WSD Contract)	0	540	540	540	540	540	540
Slaton Contract	Part of Slaton CRMWA Supply	0	306	306	306	306	306	306
Total Supply		16,075	9,893	9,257	8,301	7,382	6,989	6,709
Data LERWPG Oct. 28, 04								
WATER DEMANDS								
Municipal Demand								
Brazos Basin								
Post		623	631	642	616	579	549	512
Lake Alan Henry WSD	Shift from Rural	0	22	22	22	22	22	22
Rural		154	134	134	128	119	110	101
Subtotal		777	787	798	766	720	681	635
Colorado Basin								
Rural		0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0
Total Municipal Demand		777	787	798	766	720	681	635
Municipal Existing Supply								
Brazos Basin								
Post	1989 obtained 674 acft	White River Reservoir	1,021	1,021	973	493	12	0
Post		Slaton (CRMWA Source)	0	306	306	306	306	306
Post Subtotal			1,021	1,327	1,279	799	318	306
Lake Alan WSD		Lubbock (Lake Alan Henry)	0	0	0	0	0	0
Rural		Ogallala	154	134	134	128	119	110
		Dockum	36	36	36	36	36	36
Rural Subtotal			190	170	170	164	155	146
Subtotal			1,211	1,497	1,449	963	473	443
Colorado Basin								
Rural		Ogallala	0	0	0	0	0	0
Subtotal			0	0	0	0	0	0
Total Municipal Existing Supply			1,211	1,497	1,449	963	473	443

Continued on next page

Table 4-11 Continued

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Municipal Surplus/Shortage								
Brazos Basin								
Post		398	696	637	183	-261	-243	-206
Lake Alan Henry WSD		0	-22	-22	-22	-22	-22	-22
Rural		36	36	36	36	36	36	36
	Subtotal	434	710	651	197	-247	-229	-192
Colorado Basin								
Rural		0	0	0	0	0	0	0
	Subtotal	0	0	0	0	0	0	0
Total Municipal Surplus/Shortage		434	710	651	197	-247	-229	-192
Municipal New Supply Need								
Brazos Basin								
Post		0	0	0	0	261	243	206
Lake Alan Henry WSD		0	22	22	22	22	22	22
Rural		0	0	0	0	0	0	0
	Subtotal	0	22	22	22	283	265	228
Colorado Basin								
Rural		0	0	0	0	0	0	0
	Subtotal	0	0	0	0	0	0	0
Total Municipal New Supply Need		0	22	22	22	283	265	228
Industrial Demand								
Brazos Basin								
		2	2	2	2	2	2	2
Colorado Basin								
		0	0	0	0	0	0	0
Total Industrial Demand		2	2	2	2	2	2	2
Industrial Existing Supply								
Brazos Basin								
	Ogallala	2	2	2	2	2	2	2
Colorado Basin								
		0	0	0	0	0	0	0
Total Industrial Existing Supply		2	2	2	2	2	2	2
Industrial Surplus/Shortage								
Brazos Basin								
		0	0	0	0	0	0	0
Colorado Basin								
		0	0	0	0	0	0	0
Total Industrial Surplus/Shortage		0	0	0	0	0	0	0
Industrial New Supply Need								
Brazos Basin								
		0	0	0	0	0	0	0
Colorado Basin								
		0	0	0	0	0	0	0
Total Industrial New Supply Need		0	0	0	0	0	0	0
Steam-Electric Demand								
Brazos Basin								
		0	0	0	0	0	0	0
Colorado Basin								
		0	0	0	0	0	0	0
Total Steam-Electric Demand		0	0	0	0	0	0	0
Steam-Electric Existing Supply								
Brazos Basin								
		0	0	0	0	0	0	0
Colorado Basin								
		0	0	0	0	0	0	0
Total Steam-Electric Existing Supply		0	0	0	0	0	0	0
Steam-Electric Surplus/Shortage								
Brazos Basin								
		0	0	0	0	0	0	0
Colorado Basin								
		0	0	0	0	0	0	0
Total Steam-Electric Surplus/Shortage		0	0	0	0	0	0	0
Steam-Electric New Supply Need								
Brazos Basin								
		0	0	0	0	0	0	0
Colorado Basin								
		0	0	0	0	0	0	0
Total Steam-Electric New Supply Need		0	0	0	0	0	0	0
Irrigation Demand								
Brazos Basin								
		12,165	11,451	10,783	10,148	9,556	8,997	8,471
Colorado Basin								
		0	0	0	0	0	0	0
Total Irrigation Demand		12,165	11,451	10,783	10,148	9,556	8,997	8,471
Irrigation Supply								
Brazos Basin								
	Ogallala	13,143	6,639	6,382	6,053	5,735	5,442	5,159
	Dockum	100	100	100	100	100	100	100
Brazos Basin Subtotal		13,243	6,739	6,482	6,153	5,835	5,542	5,259
Colorado Basin								
		0	0	0	0	0	0	0
Total Irrigation Supply		13,243	6,739	6,482	6,153	5,835	5,542	5,259
Irrigation Surplus/Shortage								
Brazos Basin								
		1,078	-4,712	-4,301	-3,995	-3,721	-3,455	-3,212
Colorado Basin								
		0	0	0	0	0	0	0
Total Irrigation Surplus/Shortage		1,078	-4,712	-4,301	-3,995	-3,721	-3,455	-3,212

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Table 4-11 Continued

Basin	Source	Total in						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Mining Demand								
Brazos Basin		1,264	752	361	211	90	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Mining Demand		1,264	752	361	211	90	0	0
Mining Supply								
Brazos Basin	Ogallala	1,264	752	361	211	90	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Mining Supply		1,264	752	361	211	90	0	0
Mining Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Mining Surplus/Shortage		0	0	0	0	0	0	0
Beef Feedlot Livestock Demand								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Demand		0	0	0	0	0	0	0
Beef Feedlot Livestock Supply								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Supply		0	0	0	0	0	0	0
Beef Feedlot Livestock Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Surplus/Shortage		0	0	0	0	0	0	0
Dairies Demand								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Dairies Demand		0	0	0	0	0	0	0
Dairies Supply								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Dairies Supply		0	0	0	0	0	0	0
Dairies Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Dairies Surplus/Shortage		0	0	0	0	0	0	0
Range & All Other Livestock Demand								
Brazos Basin		355	363	423	432	442	453	465
Colorado Basin		0	0	0	0	0	0	0
Total Range & All Other Livestock Demand		355	363	423	432	442	453	465
Range & All Other Livestock Supply								
Brazos Basin	Local	355	363	423	432	442	453	465
Colorado Basin	Local	0	0	0	0	0	0	0
Total Range & All Other Livestock Supply		355	363	423	432	442	453	465
Range & All Other Livestock Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Range & All Other Livestock Surplus/Shortage		0	0	0	0	0	0	0
Total Demand								
Municipal		777	787	798	766	720	681	635
Industrial		2	2	2	2	2	2	2
Steam-Electric		0	0	0	0	0	0	0
Irrigation		12,165	11,451	10,783	10,148	9,556	8,997	8,471
Mining		1,264	752	361	211	90	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		355	363	423	432	442	453	465
Total County Demand		14,563	13,355	12,367	11,559	10,810	10,133	9,573

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Table 4-11 Continued

Basin	Source	Total in						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Total Supply								
Municipal		1,211	1,497	1,449	963	473	452	443
Industrial		2	2	2	2	2	2	2
Steam-Electric		0	0	0	0	0	0	0
Irrigation		13,243	6,739	6,482	6,153	5,835	5,542	5,259
Mining		1,264	752	361	211	90	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		355	363	423	432	442	453	465
Total County Supply		16,075	9,353	8,717	7,761	6,842	6,449	6,169
Total Surplus/Shortage								
Municipal		434	710	651	197	-247	-229	-192
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		1,078	-4,712	-4,301	-3,995	-3,721	-3,455	-3,212
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total County Surplus/Shortage		1,512	-4,002	-3,650	-3,798	-3,968	-3,684	-3,404
Total Basin Demand								
Brazos								
Municipal		777	787	798	766	720	681	635
Industrial		2	2	2	2	2	2	2
Steam-Electric		0	0	0	0	0	0	0
Irrigation		12,165	11,451	10,783	10,148	9,556	8,997	8,471
Mining		1,264	752	361	211	90	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		355	363	423	432	442	453	465
Total Brazos Basin Demand		14,563	13,355	12,367	11,559	10,810	10,133	9,573
Colorado								
Municipal		0	0	0	0	0	0	0
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		0	0	0	0	0	0	0
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Colorado Basin Demand		0	0	0	0	0	0	0
Total Basin Supply								
Brazos								
Municipal		1,211	1,497	1,449	963	473	452	443
Industrial		2	2	2	2	2	2	2
Steam-Electric		0	0	0	0	0	0	0
Irrigation		13,243	6,739	6,482	6,153	5,835	5,542	5,259
Mining		1,264	752	361	211	90	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		355	363	423	432	442	453	465
Total Brazos Basin Supply		16,075	9,353	8,717	7,761	6,842	6,449	6,169
Colorado								
Municipal		0	0	0	0	0	0	0
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		0	0	0	0	0	0	0
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Colorado Basin Supply		0	0	0	0	0	0	0

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Table 4-11 Concluded

Basin	Source	Total in						
		2000	2010	2020	2030	2040	2050	2060
		(acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Total Basin Surplus/Shortage								
Brazos								
Municipal		434	710	651	197	-247	-229	-192
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		1,078	-4,712	-4,301	-3,995	-3,721	-3,455	-3,212
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Brazos Basin Surplus/Shortage		1,512	-4,002	-3,650	-3,798	-3,968	-3,684	-3,404
Colorado								
Municipal		0	0	0	0	0	0	0
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		0	0	0	0	0	0	0
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Colorado Basin Surplus/Shortage		0	0	0	0	0	0	0
¹ Calculated by the TWDB using Southern Ogallala Groundwater Availability Model; February 2003. Entry on Quantity in storage row in 2000 is GAM Run result for 2004. ² Ibid. ³ Supply means quantity of water available from the Ogallala Aquifer in the year projected.								
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Table 4-12.
Projected Water Demands, Supplies, and Needs
Hale County
Llano Estacado Region

Demand Basin	Updated 6-4-09 and 6/8/2009 Source	Total in 2000 (acft)	Projections					
			2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Abermethy supply updated 10/20/2009								
WATER SUPPLIES								
Red Basin								
Quantity in Storage ¹	Ogallala	29,446	18,450	16,419	6,085	5,484	5,410	5,342
Quantity Pumped ²	Ogallala	3,499	829	0	0	0	0	0
Supply	(Ogallala) ³	3,499	829	0	0	0	0	0
Local Surface	Stock Tanks and Windmills	1	1	1	1	1	1	1
Other Surface		0	0	0	0	0	0	0
Total Supply		3,500	830	1	1	1	1	1
Brazos Basin								
Quantity in Storage ¹	Ogallala	9,837,572	8,174,441	5,575,536	3,645,123	2,458,242	2,158,654	1,881,355
Quantity Pumped ²	Ogallala	374,974	348,301	302,704	206,807	127,551	98,721	89,136
Supply	(Ogallala) ³	374,974	348,301	302,704	206,807	127,551	98,721	89,136
Other Ground	Ogallala (CRMWA - Roberts Co.)	1,476	2,482	2,482	2,482	2,482	2,250	2,250
Local Surface	Stock Tanks and Windmills	324	331	340	349	358	368	379
Other Surface	Lake Meredith (CRMWA)	2,805	1,427	1,799	1,799	1,799	1,631	1,631
Reclaimed Water ⁴		5,477	5,477	5,477	5,477	5,477	5,477	5,477
Total Supply		385,056	358,019	312,802	216,914	137,667	108,447	98,873
County Total								
Quantity in Storage ¹	Ogallala	9,867,018	8,192,891	5,591,955	3,651,208	2,463,726	2,164,064	1,886,697
Quantity Pumped ²	Ogallala	378,473	349,130	302,704	206,807	127,551	98,721	89,136
Supply	(Ogallala) ³	378,473	349,130	302,704	206,807	127,551	98,721	89,136
Other Ground	Ogallala (CRMWA - Roberts Co.)	1,476	2,482	2,482	2,482	2,482	2,250	1,476
Local Surface	Stock Tanks and Windmills	325	333	341	350	359	369	380
Other Surface	Lake Meredith (CRMWA)	2,805	1,427	1,799	1,799	1,799	1,631	1,631
Reclaimed Water ⁴		5,477	5,477	5,477	5,477	5,477	5,477	5,477
Total Supply		388,556	358,849	312,803	216,915	137,668	108,448	98,874
Data LERWPG Oct. 28, 04								
WATER DEMANDS								
Municipal Demand								
Red Basin								
Rural		0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0
Brazos Basin								
Abermethy (part)		461	486	508	526	531	525	514
Hale Center		446	470	493	509	513	507	498
Petersburg		276	289	304	313	316	312	306
Plainview		4,078	4,288	4,490	4,605	4,635	4,577	4,488
Rural		1,109	1,144	1,187	1,207	1,203	1,184	1,161
Subtotal		6,370	6,677	6,982	7,160	7,198	7,105	6,967
Total Municipal Demand		6,370	6,677	6,982	7,160	7,198	7,105	6,967
Municipal Existing Supply								
Red Basin								
Rural	Ogallala	0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0
Brazos Basin								
Abermethy (part)	Ogallala	461	486	386	348	314	282	254
Hale Center	Ogallala	446	470	493	607	740	666	599
Petersburg	Ogallala	276	289	304	313	316	0	0
Plainview	Ogallala	11,855	11,721	10,596	9,579	8,659	8,128	7,076
	Lake Meredith (CRMWA)	2,805	1,427	1,799	1,799	1,799	1,631	1,631
	Ogallala (CRMWA - Roberts Co.)	1,476	2,482	2,482	2,482	2,482	2,250	2,250
Plainview Subtotal		16,136	15,630	14,877	13,860	12,940	12,009	10,957
Rural	Ogallala	1,109	1,144	1,187	1,207	1,203	1,184	1,161
Subtotal		18,428	18,019	17,247	16,335	15,513	14,141	12,971
Total Municipal Existing Supply		18,428	18,019	17,247	16,335	15,513	14,141	12,971

Continued on next page

Table 4-12 Continued

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000 (acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Municipal Surplus/Shortage								
Red Basin								
Rural		0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0
Brazos Basin								
Abermathy (part)		0	0	-122	-178	-217	-243	-260
Hale Center		0	0	0	98	227	159	101
Petersburg		0	0	0	0	0	-312	-306
Plainview		12,058	11,342	10,387	9,255	8,305	7,432	6,469
Rural		0	0	0	0	0	0	0
Subtotal		12,058	11,342	10,265	9,175	8,315	7,036	6,004
Total Municipal Surplus/Shortage		12,058	11,342	10,265	9,175	8,315	7,036	6,004
Municipal New Supply Need								
Red Basin								
Rural		0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0
Brazos Basin								
Abermathy (part)		0	0	122	178	217	243	260
Hale Center		0	0	0	0	0	0	0
Petersburg		0	0	0	0	0	312	306
Plainview		0	0	0	0	0	0	0
Rural		0	0	0	0	0	0	0
Subtotal		0	0	122	178	217	555	566
Total Municipal New Supply Need		0	0	122	178	217	555	566
Industrial Demand								
Red Basin								
Rural		0	0	0	0	0	0	0
Brazos Basin								
Total Industrial Demand		2,605	3,553	3,748	3,899	4,042	4,164	4,400
Industrial Existing Supply								
Red Basin								
Rural		0	0	0	0	0	0	0
Brazos Basin								
Total Industrial Existing Supply	Ogallala	2,605	3,553	3,748	3,899	4,042	4,164	4,400
Industrial Surplus/Shortage								
Red Basin								
Rural		0	0	0	0	0	0	0
Brazos Basin								
Total Industrial Surplus/Shortage		0	0	0	0	0	0	0
Industrial New Supply Need								
Red Basin								
Rural		0	0	0	0	0	0	0
Brazos Basin								
Total Industrial New Supply Need		0	0	0	0	0	0	0
Steam-Electric Demand								
Red Basin								
Rural		0	0	0	0	0	0	0
Brazos Basin								
Total Steam-Electric Demand		0	0	0	0	0	0	0
Steam-Electric Existing Supply								
Red Basin								
Rural		0	0	0	0	0	0	0
Brazos Basin								
Total Steam-Electric Existing Supply		0	0	0	0	0	0	0
Steam-Electric Surplus/Shortage								
Red Basin								
Rural		0	0	0	0	0	0	0
Brazos Basin								
Total Steam-Electric Surplus/Shortage		0	0	0	0	0	0	0
Steam-Electric New Supply Need								
Red Basin								
Rural		0	0	0	0	0	0	0
Brazos Basin								
Total Steam-Electric New Supply Need		0	0	0	0	0	0	0
Irrigation Demand								
Red Basin								
Rural		3,677	3,555	3,437	3,323	3,213	3,107	3,004
Brazos Basin								
Total Irrigation Demand		364,023	351,961	340,300	329,026	318,124	307,583	297,392
		367,700	355,516	343,737	332,349	321,337	310,690	300,396

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Table 4-12 Continued

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000 (acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Irrigation Supply								
Red Basin	Ogallala	3,499	3,282	2,834	1,886	1,101	832	747
Brazos Basin	Ogallala	356,750	324,540	280,114	170,857	94,335	68,793	61,677
	Reclaimed Water	5,477	5,477	5,477	5,477	5,477	5,477	5,477
Brazos Basin Subtotal		362,227	330,017	285,591	176,334	99,812	74,270	67,154
Total Irrigation Supply		365,726	333,299	288,425	178,220	100,913	75,102	67,901
Irrigation Surplus/Shortage								
Red Basin		-178	-273	-603	-1,437	-2,112	-2,275	-2,257
Brazos Basin		-1,796	-21,944	-54,709	-152,692	-218,312	-233,313	-230,238
Total Irrigation Surplus/Shortage		-1,974	-22,217	-55,312	-154,129	-220,424	-235,588	-232,495
Mining Demand								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		258	88	34	19	0	0	0
Total Mining Demand		258	88	34	19	0	0	0
Mining Supply								
Red Basin		0	0	0	0	0	0	0
Brazos Basin	Ogallala	258	88	34	19	0	0	0
Total Mining Supply		258	88	34	19	0	0	0
Mining Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Mining Surplus/Shortage		0	0	0	0	0	0	0
Beef Feedlot Livestock Demand								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		1,185	1,445	1,620	1,720	1,826	1,939	2,058
Total Beef Feedlot Livestock Demand		1,185	1,445	1,620	1,720	1,826	1,939	2,058
Beef Feedlot Livestock Supply								
Red Basin		0	0	0	0	0	0	0
Brazos Basin	Ogallala	1,185	1,445	1,620	1,147	1,217	0	0
Total Beef Feedlot Livestock Supply		1,185	1,445	1,620	1,147	1,217	0	0
Beef Feedlot Livestock Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	-573	-609	-1,939	-2,058
Total Beef Feedlot Livestock Surplus/Shortage		0	0	0	-573	-609	-1,939	-2,058
Dairies Demand								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		29	855	960	1,060	1,171	1,294	1,429
Total Dairies Demand		29	855	960	1,060	1,171	1,294	1,429
Dairies Supply								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		29	855	960	1,060	984	1,086	969
Total Dairies Supply		29	855	960	1,060	984	1,086	969
Dairies Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	-187	-208	-460
Total Dairies Surplus/Shortage		0	0	0	0	-187	-208	-460
Range & All Other Livestock Demand								
Red Basin		1	1	1	1	1	1	1
Brazos Basin		324	331	340	349	358	368	379
Total Range & All Other Livestock Demand		325	333	341	350	359	369	380
Range & All Other Livestock Supply								
Red Basin	Local	1	1	1	1	1	1	1
Brazos Basin	Local	324	331	340	349	358	368	379
Total Range & All Other Livestock Supply		325	333	341	350	359	369	380
Range & All Other Livestock Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Range & All Other Livestock Surplus/Shortage		0	0	0	0	0	0	0

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Table 4-12 Continued

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Total Demand								
Municipal		6,370	6,677	6,982	7,160	7,198	7,105	6,967
Industrial		2,605	3,553	3,748	3,899	4,042	4,164	4,400
Steam-Electric		0	0	0	0	0	0	0
Irrigation		367,700	355,516	343,737	332,349	321,337	310,690	300,396
Mining		258	88	34	19	0	0	0
Beef Feedlot Livestock		1,185	1,445	1,620	1,720	1,826	1,939	2,058
Dairies		29	855	960	1,060	1,171	1,294	1,429
Range & All Other Livestock		325	333	341	350	359	369	380
Total County Demand		378,472	368,467	357,422	346,557	335,933	325,561	315,630
Total Supply								
Municipal		18,428	18,019	17,247	16,335	15,513	14,141	12,971
Industrial		2,605	3,553	3,748	3,899	4,042	4,164	4,400
Steam-Electric		0	0	0	0	0	0	0
Irrigation		365,726	333,299	288,425	178,220	100,913	75,102	67,901
Mining		258	88	34	19	0	0	0
Beef Feedlot Livestock		1,185	1,445	1,620	1,147	1,217	0	0
Dairies		29	855	960	1,060	984	1,086	969
Range & All Other Livestock		325	333	341	350	359	369	380
Total County Supply		388,556	357,592	312,375	201,030	123,029	94,862	86,621
Total Surplus/Shortage								
Municipal		12,058	11,342	10,265	9,175	8,315	7,036	6,004
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		-1,974	-22,217	-55,312	-154,129	-220,424	-235,588	-232,495
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	-573	-609	-1,939	-2,058
Dairies		0	0	0	0	-187	-208	-460
Range & All Other Livestock		0	0	0	0	0	0	0
Total County Surplus/Shortage		10,084	-10,875	-45,047	-145,527	-212,905	-230,698	-229,009
Total Basin Demand								
Red								
Municipal		0	0	0	0	0	0	0
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		3,677	3,555	3,437	3,323	3,213	3,107	3,004
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		1	1	1	1	1	1	1
Total Red Basin Demand		3,678	3,556	3,438	3,324	3,214	3,108	3,005
Brazos								
Municipal		6,370	6,677	6,982	7,160	7,198	7,105	6,967
Industrial		2,605	3,553	3,748	3,899	4,042	4,164	4,400
Steam-Electric		0	0	0	0	0	0	0
Irrigation		364,023	351,961	340,300	329,026	318,124	307,583	297,392
Mining		258	88	34	19	0	0	0
Beef Feedlot Livestock		1,185	1,445	1,620	1,720	1,826	1,939	2,058
Dairies		29	855	960	1,060	1,171	1,294	1,429
Range & All Other Livestock		324	331	340	349	358	368	379
Total Brazos Basin Demand		374,794	364,910	353,984	343,233	332,719	322,453	312,625
Total Basin Supply								
Red								
Municipal		0	0	0	0	0	0	0
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		3,499	3,282	2,834	1,886	1,101	832	747
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		1	1	1	1	1	1	1
Total Red Basin Supply		3,500	3,283	2,835	1,887	1,102	833	748
Brazos								
Municipal		18,428	18,019	17,247	16,335	15,513	14,141	12,971
Industrial		2,605	3,553	3,748	3,899	4,042	4,164	4,400
Steam-Electric		0	0	0	0	0	0	0
Irrigation		362,227	330,017	285,591	176,334	99,812	74,270	67,154
Mining		258	88	34	19	0	0	0
Beef Feedlot Livestock		1,185	1,445	1,620	1,147	1,217	0	0
Dairies		29	855	960	1,060	984	1,086	969
Range & All Other Livestock		324	331	340	349	358	368	379
Total Brazos Basin Supply		385,056	354,308	309,540	199,142	121,926	94,029	85,873

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Table 4-12 Concluded

Basin	Source	Total in	Projections					
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Total Basin Surplus/Shortage								
Red								
Municipal		0	0	0	0	0	0	0
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		-178	-273	-603	-1,437	-2,112	-2,275	-2,257
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Red Basin Surplus/Shortage		-178	-273	-603	-1,437	-2,112	-2,275	-2,257
Brazos								
Municipal		12,058	11,342	10,265	9,175	8,315	7,036	6,004
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		-1,796	-21,944	-54,709	-152,692	-218,312	-233,313	-230,238
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	-573	-609	-1,939	-2,058
Dairies		0	0	0	0	-187	-208	-460
Range & All Other Livestock		0	0	0	0	0	0	0
Total Brazos Basin Surplus/Shortage		10,262	-10,602	-44,444	-144,090	-210,793	-228,423	-226,752
¹ Calculated by the TWDB using Southern Ogallala Groundwater Availability Model; February 2003. Entry on Quantity in storage row in 2000 is GAM Run result for 2004. ² Ibid. ³ Supply means quantity of water available from the Ogallala Aquifer in the year projected. ⁴ The value is the sum of reclaimed water from the City of Petersburg, City of Abemathy, City of Hale Center, City of Plainview, City of Edmonson, Excel Corp., John's Washout, Azteca Milling Co., Southern Cotton Oil Mill, Panhandle Processing Co., and Walker Brothers Produce. The quantity of reclaimed water available from municipal sources for reuse was estimated as the lesser of 50 percent of the TWDB municipal water use for the year 2000 or the maximum waste discharge permit quantity of the TCEQ waste discharge permit. This value is held level throughout the projection period. For all other entities, the quantity was calculated at 75 percent of the maximum waste discharge permit.								
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Table 4-13.
Projected Water Demands, Supplies, and Needs
Hockley County
Llano Estacado Region

Demand Basin	Updated 6-4-09 and 6/8/2009 Source	Total in 2000 (acft)	Projections					
			2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
WATER SUPPLIES								
Brazos Basin								
Quantity in Storage ¹	Ogallala	4,445,678	4,012,574	3,520,944	3,122,056	2,822,881	2,814,561	2,768,066
Quantity Pumped ²	Ogallala	163,639	96,889	79,415	67,208	55,876	53,945	50,540
Supply	(Ogallala) ³	163,639	96,889	79,415	67,208	55,876	53,945	50,540
Other Ground	Ogallala (CRMWA - Roberts Co.)	1,116	2,157	1,876	1,876	1,876	1,628	1,628
Local Surface	Stock Tanks and Windmills	221	226	273	280	286	292	299
Other Surface	Lake Meredith (CRMWA)	2,120	1,079	1,360	1,360	1,360	1,180	1,180
Reclaimed Water ⁵		1,359	1,359	1,359	1,359	1,359	1,359	1,359
Total Supply		168,455	101,711	84,283	72,083	60,756	58,405	55,006
Colorado Basin								
Quantity in Storage ¹	Ogallala	1,034,833	980,634	911,792	843,370	792,366	776,547	765,041
Quantity Pumped ²	Ogallala	20,274	12,761	10,678	8,807	8,186	7,686	7,689
Supply	(Ogallala) ³	20,274	12,761	10,678	8,807	8,186	7,686	7,689
Local Surface	Stock Tanks and Windmills	44	45	55	55	56	57	59
Reclaimed Water ⁵		162	162	162	162	162	162	162
Total Supply		20,480	12,968	10,895	9,024	8,404	7,904	7,909
County Total								
Quantity in Storage ¹	Ogallala	5,480,511	4,993,208	4,432,736	3,965,426	3,615,247	3,591,108	3,533,107
Quantity Pumped ²	Ogallala	183,913	109,650	90,093	76,015	64,062	61,631	58,229
Supply	(Ogallala) ³	183,913	109,650	90,093	76,015	64,062	61,631	58,229
Other Ground	Ogallala (CRMWA - Roberts Co.)	1,116	2,157	1,876	1,876	1,876	1,628	1,628
Local Surface	Stock Tanks and Windmills	265	271	328	335	342	349	357
Other Surface	Lake Meredith (CRMWA)	2,120	1,079	1,360	1,360	1,360	1,180	2,120
Reclaimed Water ⁵		1,521	1,521	1,521	1,521	1,521	1,521	1,521
Total Supply		188,935	114,679	95,178	81,107	69,160	66,309	62,915
Data LERWPG Oct. 28, 04								
WATER DEMANDS								
Municipal Demand								
Brazos Basin								
Anton		250	263	270	272	268	256	243
Levelland		2,219	2,310	2,362	2,369	2,322	2,216	2,107
Ropesville		85	89	91	91	89	85	81
Smyer		67	69	70	70	68	65	62
Rural		814	840	855	853	831	791	753
Subtotal		3,435	3,571	3,648	3,655	3,578	3,413	3,246
Colorado Basin								
Sundown		325	341	350	353	347	332	316
Rural		40	41	42	42	41	39	37
Subtotal		365	382	392	395	388	371	353
Total Municipal Demand		3,800	3,953	4,040	4,050	3,966	3,784	3,599
Municipal Existing Supply								
Brazos Basin								
Anton	Ogallala	250	0	0	0	0	0	0
Levelland	Ogallala	0	0	0	0	0	0	0
	Lake Meredith (CRMWA) ⁴	2,120	1,079	1,360	1,360	1,360	1,180	1,180
	Ogallala (CRMWA - Roberts Co.) ⁴	1,116	2,157	1,876	1,876	1,876	1,628	1,628
Levelland Subtotal		3,236	3,236	3,236	3,236	3,236	2,808	2,808
Ropesville	Ogallala	85	89	91	0	0	0	0
Smyer	Ogallala	67	69	70	70	68	65	0
Rural	Ogallala	814	840	855	853	831	791	753
Subtotal		4,452	4,234	4,252	4,159	4,135	3,664	3,561
Colorado Basin								
Sundown	Ogallala	325	341	0	0	0	0	0
Rural	Ogallala	40	41	42	42	41	39	37
Subtotal		365	382	42	42	41	39	37
Total Municipal Existing Supply		4,817	4,616	4,294	4,201	4,176	3,703	3,598

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Table 4-13 Continued

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Municipal Surplus/Shortage								
Brazos Basin								
Anton		0	-263	-270	-272	-268	-256	-243
Levelland		1,017	926	874	867	914	592	701
Ropesville		0	0	0	-91	-89	-85	-81
Smyer		0	0	0	0	0	0	-62
Rural		0	0	0	0	0	0	0
	Subtotal	1,017	663	604	504	557	251	315
Colorado Basin								
Sundown		0	0	-350	-353	-347	-332	-316
Rural		0	0	0	0	0	0	0
	Subtotal	0	0	-350	-353	-347	-332	-316
Total Municipal Surplus/Shortage		1,017	663	254	151	210	-81	-1
Municipal New Supply Need								
Brazos Basin								
Anton		0	263	270	272	268	256	243
Levelland		0	0	0	0	0	0	0
Ropesville		0	0	0	91	89	85	81
Smyer		0	0	0	0	0	0	62
Rural		0	0	0	0	0	0	0
	Subtotal	0	263	270	363	357	341	386
Colorado Basin								
Sundown		0	0	350	353	347	332	316
Rural		0	0	0	0	0	0	0
	Subtotal	0	0	350	353	347	332	316
Total Municipal New Supply Need		0	263	620	716	704	673	702
Industrial Demand								
Brazos Basin		53	1,181	1,185	1,188	1,191	1,193	1,198
Colorado Basin		0	0	0	0	0	0	0
Total Industrial Demand		53	1,181	1,185	1,188	1,191	1,193	1,198
Industrial Existing Supply								
Brazos Basin	Ogallala	53	1,181	1,185	1,188	1,191	1,193	1,198
Colorado Basin		0	0	0	0	0	0	0
Total Industrial Existing Supply		53	1,181	1,185	1,188	1,191	1,193	1,198
Industrial Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Industrial Surplus/Shortage		0	0	0	0	0	0	0
Industrial New Supply Need								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Industrial New Supply Need		0	0	0	0	0	0	0
Steam-Electric Demand								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Steam-Electric Demand		0	0	0	0	0	0	0
Steam-Electric Existing Supply								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Steam-Electric Existing Supply		0	0	0	0	0	0	0
Steam-Electric Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Steam-Electric Surplus/Shortage		0	0	0	0	0	0	0
Steam-Electric New Supply Need								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Steam-Electric New Supply Need		0	0	0	0	0	0	0
Irrigation Demand								
Brazos Basin		157,496	151,336	145,420	139,735	134,269	129,019	123,974
Colorado Basin		17,500	16,815	16,158	15,526	14,919	14,335	13,775
Total Irrigation Demand		174,996	168,151	161,578	155,261	149,188	143,354	137,749

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Table 4-13 Continued

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000 (acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Irrigation Supply								
Brazos Basin	Ogallala	158,725	91,365	74,667	63,016	52,330	50,816	47,347
	Reclaimed Water	1,359	1,359	1,359	1,359	1,359	1,359	1,359
Brazos Basin Subtotal		160,084	92,724	76,026	64,375	53,689	52,175	48,706
Colorado Basin	Ogallala	18,795	11,583	9,715	7,865	7,506	7,180	7,237
	Reclaimed Water	162	162	162	162	162	162	162
Colorado Basin Subtotal		18,957	11,745	9,877	8,027	7,668	7,342	7,399
Total Irrigation Supply		179,041	104,469	85,903	72,402	61,357	59,517	56,105
Irrigation Surplus/Shortage								
Brazos Basin		2,588	-58,612	-69,394	-75,360	-80,580	-76,844	-75,268
Colorado Basin		1,457	-5,070	-6,281	-7,499	-7,251	-6,993	-6,376
Total Irrigation Surplus/Shortage		4,045	-63,682	-75,675	-82,859	-87,831	-83,837	-81,644
Mining Demand								
Brazos Basin		3,302	2,358	1,510	981	378	19	0
Colorado Basin		1,114	796	509	331	127	6	0
Total Mining Demand		4,416	3,154	2,019	1,312	505	25	0
Mining Supply								
Brazos Basin	Ogallala	3,302	2,358	1,510	981	378	19	0
Colorado Basin	Ogallala	1,114	796	509	331	127	6	0
Total Mining Supply		4,416	3,154	2,019	1,312	505	25	0
Mining Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Mining Surplus/Shortage		0	0	0	0	0	0	0
Beef Feedlot Livestock Demand								
Brazos Basin		343	418	468	497	528	561	595
Colorado Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Demand		343	418	468	497	528	561	595
Beef Feedlot Livestock Supply								
Brazos Basin	Ogallala	343	418	468	497	528	561	595
Colorado Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Supply		343	418	468	497	528	561	595
Beef Feedlot Livestock Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Surplus/Shortage		0	0	0	0	0	0	0
Dairies Demand								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Dairies Demand		0	0	0	0	0	0	0
Dairies Supply								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Dairies Supply		0	0	0	0	0	0	0
Dairies Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Dairies Surplus/Shortage		0	0	0	0	0	0	0
Range & All Other Livestock Demand								
Brazos Basin		221	226	273	280	286	292	299
Colorado Basin		44	45	55	55	56	57	59
Total Range & All Other Livestock Demand		265	271	328	335	342	349	357
Range & All Other Livestock Supply								
Brazos Basin	Local	221	226	273	280	286	292	299
Colorado Basin	Local	44	45	55	55	56	57	59
Total Range & All Other Livestock Supply		265	271	328	335	342	349	357
Range & All Other Livestock Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Range & All Other Livestock Surplus/Shortage		0	0	0	0	0	0	0

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Table 4-13 Continued

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000 (acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Total Demand								
Municipal		3,800	3,953	4,040	4,050	3,966	3,784	3,599
Industrial		53	1,181	1,185	1,188	1,191	1,193	1,198
Steam-Electric		0	0	0	0	0	0	0
Irrigation		174,996	168,151	161,578	155,261	149,188	143,354	137,749
Mining		4,416	3,154	2,019	1,312	505	25	0
Beef Feedlot Livestock		343	418	468	497	528	561	595
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		265	271	328	335	342	349	357
Total County Demand		183,873	177,128	169,618	162,643	155,720	149,266	143,498
Total Supply								
Municipal		4,817	4,616	4,294	4,201	4,176	3,703	3,598
Industrial		53	1,181	1,185	1,188	1,191	1,193	1,198
Steam-Electric		0	0	0	0	0	0	0
Irrigation		179,041	104,469	85,903	72,402	61,357	59,517	56,105
Mining		4,416	3,154	2,019	1,312	505	25	0
Beef Feedlot Livestock		343	418	468	497	528	561	595
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		265	271	328	335	342	349	357
Total County Supply		188,935	114,109	94,197	79,935	68,099	65,348	61,853
Total Surplus/Shortage								
Municipal		1,017	663	254	151	210	-81	-1
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		4,045	-63,682	-75,675	-82,859	-87,831	-83,837	-81,644
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total County Surplus/Shortage		5,062	-63,019	-75,421	-82,708	-87,621	-83,918	-81,645
Total Basin Demand								
Brazos								
Municipal		3,435	3,571	3,648	3,655	3,578	3,413	3,246
Industrial		53	1,181	1,185	1,188	1,191	1,193	1,198
Steam-Electric		0	0	0	0	0	0	0
Irrigation		157,496	151,336	145,420	139,735	134,269	129,019	123,974
Mining		3,302	2,358	1,510	981	378	19	0
Beef Feedlot Livestock		343	418	468	497	528	561	595
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		221	226	273	280	286	292	299
Total Brazos Basin Demand		164,850	159,090	152,505	146,336	140,230	134,497	129,312
Colorado								
Municipal		365	382	392	395	388	371	353
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		17,500	16,815	16,158	15,526	14,919	14,335	13,775
Mining		1,114	796	509	331	127	6	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		44	45	55	55	56	57	59
Total Colorado Basin Demand		19,023	18,038	17,114	16,307	15,490	14,769	14,187
Total Basin Supply								
Brazos								
Municipal		4,452	4,234	4,252	4,159	4,135	3,664	3,561
Industrial		53	1,181	1,185	1,188	1,191	1,193	1,198
Steam-Electric		0	0	0	0	0	0	0
Irrigation		160,084	92,724	76,026	64,375	53,689	52,175	48,706
Mining		3,302	2,358	1,510	981	378	19	0
Beef Feedlot Livestock		343	418	468	497	528	561	595
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		221	226	273	280	286	292	299
Total Brazos Basin Supply		168,455	101,141	83,715	71,480	60,207	57,904	54,359
Colorado								
Municipal		365	382	42	42	41	39	37
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		18,957	11,745	9,877	8,027	7,668	7,342	7,399
Mining		1,114	796	509	331	127	6	0

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Table 4-13 Concluded

Basin	Source	Total in	Projections					
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		44	45	55	55	56	57	59
Total Colorado Basin Supply		20,480	12,968	10,483	8,455	7,892	7,444	7,495
Total Basin Surplus/Shortage								
Brazos								
Municipal		1,017	663	604	504	557	251	315
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		2,588	-58,612	-69,394	-75,360	-80,580	-76,844	-75,268
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Brazos Basin Surplus/Shortage		3,605	-57,949	-68,790	-74,856	-80,023	-76,593	-74,953
Colorado								
Municipal		0	0	-350	-353	-347	-332	-316
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		1,457	-5,070	-6,281	-7,499	-7,251	-6,993	-6,376
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Colorado Basin Surplus/Shortage		1,457	-5,070	-6,631	-7,852	-7,598	-7,325	-6,692
¹ Calculated by the TWDB using Southern Ogallala Groundwater Availability Model; February 2003. Entry on Quantity in storage row in 2000 is GAM Run result for 2004. ² Ibid. ³ Supply means quantity of water available from the Ogallala Aquifer in the year projected. ⁴ The city's supply from CRMWA. Since the city's supply from CRMWA exceeds CRMWA's delivery capacity, the city must have terminal storage in order to use its full supply from CRMWA. ⁵ Value is the sum of reclaimed water from the City of Anton, City of Levelland, Bowman Enterprises, City of Snyer, City of Ropesville, City of Sundown, and United Cotton Growers Coop & Whitharrel Water Supply Corp. The quantity of reclaimed water available from municipal sources for reuse was estimated as the lesser of 50 percent of the TWDB municipal water use for the year 2000 or the maximum waste discharge permit quantity of the TCEQ waste discharge permit. This value is held level throughout the projection period. For all other entities, the quantity was calculated as 75 percent of the maximum waste discharge permit.								
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Table 4-14.
Projected Water Demands, Supplies, and Needs
Lamb County
Llano Estacado Region

Demand Basin	Updated 6-4-09 and 6/8/2009 Source	Total in 2000 (acft)	Projections					
			2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
WATER SUPPLIES								
Brazos Basin								
Quantity in Storage ¹	Ogallala	8,246,693	6,944,619	5,155,582	3,861,385	2,953,511	2,743,521	2,533,373
Quantity Pumped ²	Ogallala	402,158	267,764	210,668	156,745	109,741	91,026	81,651
Supply	(Ogallala) ³	402,158	267,764	210,668	156,745	109,741	91,026	81,651
Local Surface	Stock Tanks and Windmills	472	491	510	531	552	575	599
Reclaimed Water ⁴		7,199	7,199	7,199	7,199	7,199	7,199	7,199
Total Supply		409,829	275,454	218,377	164,475	117,492	98,801	89,449
Data LERWPG Oct. 28, 04								
WATER DEMANDS								
Municipal Demand								
Brazos Basin								
Amherst		163	168	176	182	185	183	181
Earth		248	257	268	277	283	280	276
Littlefield		1,480	1,530	1,602	1,660	1,694	1,676	1,655
Olton		474	492	512	532	542	536	529
Sudan		218	226	236	244	249	246	243
Rural		766	794	830	861	880	872	861
Subtotal		3,349	3,467	3,624	3,756	3,833	3,793	3,745
Total Municipal Demand		3,349	3,467	3,624	3,756	3,833	3,793	3,745
Municipal Existing Supply								
Brazos Basin								
Amherst	Ogallala	163	168	391	352	317	285	257
Earth	Ogallala	248	257	268	277	0	0	0
Littlefield	Ogallala	1,480	2,430	2,412	2,389	2,350	2,266	2,186
Olton	Ogallala	474	1,329	1,265	1,210	1,352	1,088	1,028
Sudan	Ogallala	218	226	432	389	350	315	283
Rural	Ogallala	766	794	830	861	880	872	861
Subtotal		3,349	5,204	5,598	5,478	5,249	4,826	4,615
Total Municipal Existing Supply		3,349	5,204	5,598	5,478	5,249	4,826	4,615
Municipal Surplus/Shortage								
Brazos Basin								
Amherst		0	0	215	170	132	102	76
Earth		0	0	0	0	-283	-280	-276
Littlefield		0	900	810	729	656	590	531
Olton		0	837	753	678	810	552	499
Sudan		0	0	196	145	101	69	40
Rural		0	0	0	0	0	0	0
Subtotal		0	1,737	1,974	1,722	1,416	1,033	870
Total Municipal Surplus/Shortage		0	1,737	1,974	1,722	1,416	1,033	870
Municipal New Supply Need								
Brazos Basin								
Amherst		0	0	0	0	0	0	0
Earth		0	0	0	0	283	280	276
Littlefield		0	0	0	0	0	0	0
Olton		0	0	0	0	0	0	0
Sudan		0	0	0	0	0	0	0
Rural		0	0	0	0	0	0	0
Subtotal		0	0	0	0	283	280	276
Total Municipal New Supply Need		0	0	0	0	283	280	276
Industrial Demand								
Brazos Basin								
Total Industrial Demand		426	490	519	541	562	580	618
Industrial Existing Supply		426	490	519	541	562	580	618
Brazos Basin								
Total Industrial Existing Supply	Ogallala	426	490	519	541	562	580	618

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Table 4-14 Continued

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000 (acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Industrial Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Total Industrial Surplus/Shortage		0	0	0	0	0	0	0
Industrial New Supply Need								
Brazos Basin		0	0	0	0	0	0	0
Total Industrial New Supply Need		0	0	0	0	0	0	0
Steam-Electric Demand								
Brazos Basin		17,990	17,827	17,663	20,651	24,292	28,731	34,142
Total Steam-Electric Demand		17,990	17,827	17,663	20,651	24,292	28,731	34,142
Steam-Electric Existing Supply								
Brazos Basin	Ogallala	17,990	17,827	17,663	20,651	24,292	28,731	34,142
Total Steam-Electric Existing Supply		17,990	17,827	17,663	20,651	24,292	28,731	34,142
Steam-Electric Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric Surplus/Shortage		0	0	0	0	0	0	0
Steam-Electric New Supply Need								
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric New Supply Need		0	0	0	0	0	0	0
Irrigation Demand								
Brazos Basin		377,893	363,313	349,294	335,816	322,858	310,401	298,425
Total Irrigation Demand		377,893	363,313	349,294	335,816	322,858	310,401	298,425
Irrigation Supply								
Brazos Basin	Ogallala	378,365	241,282	183,650	126,964	77,105	54,827	40,581
	Reclaimed Water	7,199	7,199	7,199	7,199	7,199	7,199	7,199
Total Irrigation Supply		385,564	248,481	190,849	134,163	84,304	62,026	47,780
Irrigation Surplus/Shortage								
Brazos Basin		7,671	-114,832	-158,445	-201,653	-238,554	-248,375	-250,645
Total Irrigation Surplus/Shortage		7,671	-114,832	-158,445	-201,653	-238,554	-248,375	-250,645
Mining Demand								
Brazos Basin		88	52	25	15	6	0	0
Total Mining Demand		88	52	25	15	6	0	0
Mining Supply								
Brazos Basin	Ogallala	88	52	25	15	6	0	0
Total Mining Supply		88	52	25	15	6	0	0
Mining Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Total Mining Surplus/Shortage		0	0	0	0	0	0	0
Beef Feedlot Livestock Demand								
Brazos Basin		1,328	1,619	1,815	1,927	2,046	2,172	2,306
Total Beef Feedlot Livestock Demand		1,328	1,619	1,815	1,927	2,046	2,172	2,306
Beef Feedlot Livestock Supply								
Brazos Basin	Ogallala	1,328	1,619	1,815	1,686	1,023	814	576
Total Beef Feedlot Livestock Supply		1,328	1,619	1,815	1,686	1,023	814	576
Beef Feedlot Livestock Surplus/Shortage								
Brazos Basin		0	0	0	-241	-1,023	-1,358	-1,730
Total Beef Feedlot Livestock Surplus/Shortage		0	0	0	-241	-1,023	-1,358	-1,730
Dairies Demand								
Brazos Basin		612	1,290	1,398	1,544	1,706	1,884	2,081
Total Dairies Demand		612	1,290	1,398	1,544	1,706	1,884	2,081
Dairies Supply								
Brazos Basin	Ogallala	612	1,290	1,398	1,410	1,111	894	801
Total Dairies Supply		612	1,290	1,398	1,410	1,111	894	801
Dairies Surplus/Shortage								
Brazos Basin		0	0	0	-134	-595	-990	-1,280
Total Dairies Surplus/Shortage		0	0	0	-134	-595	-990	-1,280

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Table 4-14 Continued

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000 (acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Range & All Other Livestock Demand								
Brazos Basin		472	491	511	531	552	576	600
Total Range & All Other Livestock Demand		472	491	511	531	552	576	600
Range & All Other Livestock Supply								
Brazos Basin	Local	472	491	511	531	552	576	600
Total Range & All Other Livestock Supply		472	491	511	531	552	576	600
Range & All Other Livestock Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Total Range & All Other Livestock Surplus/Shortage		0	0	0	0	0	0	0
Total Demand								
Municipal		3,349	3,467	3,624	3,756	3,833	3,793	3,745
Industrial		426	490	519	541	562	580	618
Steam-Electric		17,990	17,827	17,663	20,651	24,292	28,731	34,142
Irrigation		377,893	363,313	349,294	335,816	322,858	310,401	298,425
Mining		88	52	25	15	6	0	0
Beef Feedlot Livestock		1,328	1,619	1,815	1,927	2,046	2,172	2,306
Dairies		612	1,290	1,398	1,544	1,706	1,884	2,081
Range & All Other Livestock		472	491	511	531	552	576	600
Total County Demand		402,158	388,549	374,849	364,781	355,855	348,137	341,917
Total Supply								
Municipal		3,349	5,204	5,598	5,478	5,249	4,826	4,615
Industrial		426	490	519	541	562	580	618
Steam-Electric		17,990	17,827	17,663	20,651	24,292	28,731	34,142
Irrigation		385,564	248,481	190,849	134,163	84,304	62,026	47,780
Mining		88	52	25	15	6	0	0
Beef Feedlot Livestock		1,328	1,619	1,815	1,686	1,023	814	576
Dairies		612	1,290	1,398	1,410	1,111	894	801
Range & All Other Livestock		472	491	511	531	552	576	600
Total County Supply		409,829	275,454	218,378	164,475	117,099	98,447	89,132
Total Surplus/Shortage								
Municipal		0	1,737	1,974	1,722	1,416	1,033	870
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		7,671	-114,832	-158,445	-201,653	-238,554	-248,375	-250,645
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	-241	-1,023	-1,358	-1,730
Dairies		0	0	0	-134	-595	-990	-1,280
Range & All Other Livestock		0	0	0	0	0	0	0
Total County Surplus/Shortage		7,671	-113,095	-156,471	-200,306	-238,756	-249,690	-252,785
Total Basin Demand								
Brazos								
Municipal		3,349	3,467	3,624	3,756	3,833	3,793	3,745
Industrial		426	490	519	541	562	580	618
Steam-Electric		17,990	17,827	17,663	20,651	24,292	28,731	34,142
Irrigation		377,893	363,313	349,294	335,816	322,858	310,401	298,425
Mining		88	52	25	15	6	0	0
Beef Feedlot Livestock		1,328	1,619	1,815	1,927	2,046	2,172	2,306
Dairies		612	1,290	1,398	1,544	1,706	1,884	2,081
Range & All Other Livestock		472	491	511	531	552	576	600
Total Brazos Basin Demand		402,158	388,549	374,849	364,781	355,855	348,137	341,917
Total Basin Supply								
Brazos								
Municipal		3,349	5,204	5,598	5,478	5,249	4,826	4,615
Industrial		426	490	519	541	562	580	618
Steam-Electric		17,990	17,827	17,663	20,651	24,292	28,731	34,142
Irrigation		385,564	248,481	190,849	134,163	84,304	62,026	47,780
Mining		88	52	25	15	6	0	0
Beef Feedlot Livestock		1,328	1,619	1,815	1,686	1,023	814	576
Dairies		612	1,290	1,398	1,410	1,111	894	801
Range & All Other Livestock		472	491	511	531	552	576	600
Total Brazos Basin Supply		409,829	275,454	218,378	164,475	117,099	98,447	89,132

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Table 4-14 Concluded

Basin	Source	Total in	Projections					
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Total Basin Surplus/Shortage								
Brazos								
Municipal		0	1,737	1,974	1,722	1,416	1,033	870
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		7,671	-114,832	-158,445	-201,653	-238,554	-248,375	-250,645
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	-241	-1,023	-1,358	-1,730
Dairies		0	0	0	-134	-595	-990	-1,280
Range & All Other Livestock		0	0	0	0	0	0	0
Total Brazos Basin Surplus/Shortage		7,671	-113,095	-156,471	-200,306	-238,756	-249,690	-252,785
¹ Calculated by the TWDB using Southern Ogallala Groundwater Availability Model; February 2003. Entry on Quantity in storage row in 2000 is GAM Run result for 2004. ² Ibid. ³ Supply means quantity of water available from the Ogallala Aquifer in the year projected. ⁴ Value is the sum of reclaimed water from Southwestern Public Service Tolk, City of Littlefield, Plains Cotton Growers, City of Earth, Springlake-Earth ISD, City of Sudan, City of Olton, Southwestern Public Service Plant X, City of Springlake, and City of Amherst. The quantity of reclaimed water available from municipal sources for reuse was estimated as the lesser of 50 percent of the TWDB municipal water use for the year 2000 or the maximum waste discharge permit quantity of the TCEQ waste discharge permit. This value is held level throughout the projection period. For all other entities, the quantity was calculated as 75 percent of the maximum waste discharge permit.								
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Table 4-15.
Projected Water Demands, Supplies, and Needs
Lubbock County
Llano Estacado Region

Demand Basin	Updated 6-4-09 and 6/8/2009 and 8/13/2009 Source	Total in 2000 (acft)	Projections					
			2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
WATER SUPPLIES								
Brazos Basin								
Quantity in Storage ¹	Ogallala	7,439,809	6,632,577	5,611,743	4,952,167	4,159,806	4,141,607	4,114,001
Quantity Pumped ²	Ogallala	298,052	163,283	131,367	110,204	88,545	85,490	80,557
Supply (Ogallala) ³		298,052	163,283	131,367	110,204	88,545	85,490	80,557
Other Ground	Ogallala (CRMWA - Roberts Co.)	15,453	21,466	19,599	19,470	19,343	18,056	18,005
Bailey County	Ogallala	12,000	10,000	8,000	6,000	4,000	3,000	3,000
Local Surface	Stock Tanks and Windmills	258	265	272	280	289	298	308
Other Surface	Lake Meredith (CRMWA)	28,451	11,123	14,861	14,861	14,861	14,020	14,020
Other Surface	Lake Alan Henry (21,960 in Plan)	0	0	0	0	0	0	0
Reclaimed Water (Lubbock-Electric Power) ⁴		5,776	5,221	4,440	5,191	6,106	7,222	8,582
Reclaimed Water (Lubbock-Irrigation) ⁴		7,958	9,166	0	0	0	0	0
Reclaimed Water ⁷		4,209	4,209	4,209	4,209	4,209	4,209	4,209
Total Supply		372,157	224,733	182,748	160,215	137,352	132,295	128,681
Data LERWPG Oct. 28, 04								
WATER DEMANDS								
Municipal Demand								
Brazos Basin								
Abernathy (part)		153	171	182	188	186	190	186
Idalou		288	289	288	281	274	273	272
Lubbock	Includes Reese Center (Seven acre-feet per year)	40,460	49,824	51,588	52,417	52,602	53,041	54,306
New Deal		126	149	165	173	173	173	173
Ransom Canyon		310	440	569	698	825	953	1,004
Shallowater		311	344	367	377	371	379	371
Slaton		931	907	889	870	849	837	836
Wolforth		412	1,468	1,758	1,822	1,884	1,962	2,006
Rural		3,417	3,006	3,051	3,053	2,909	2,907	2,744
Subtotal		46,408	56,598	58,857	59,879	60,073	60,715	61,898
Total Municipal Demand		46,408	56,598	58,857	59,879	60,073	60,715	61,898
Municipal Existing Supply								
Brazos Basin								
Abernathy (part)	Ogallala	153	171	0	0	0	0	0
Idalou	Ogallala	288	289	288	281	0	0	0
Lubbock	Lake Meredith (CRMWA) ⁵	27,712	10,667	14,286	14,286	14,286	13,445	13,445
	Ogallala (CRMWA - Roberts Co.) ⁵	14,823	20,553	18,805	18,676	18,549	17,262	17,211
	Lake Alan Henry (21,960 in Plan)	0	0	0	0	0	0	0
	Ogallala (Bailey County) ⁶	12,000	10,000	8,000	6,000	4,000	3,000	3,000
Lubbock Subtotal	Includes Reese Center	54,535	41,220	41,091	38,962	36,835	33,707	33,656
New Deal	Lubbock (CRMWA--Roberts Co.)	126	153	153	153	153	153	153
Ransom Canyon	Lubbock (CRMWA--Roberts Co.)	310	440	569	698	825	953	1,004
Shallowater	Lubbock (CRMWA--Roberts Co.)	187	187	187	187	187	187	187
Shallowater Subtotal	Ogallala	311	0	0	0	0	0	0
		498	187	187	187	187	187	187
Slaton	(CRMWA--Lake Meredith) ⁵	739	456	575	575	575	575	575
	(CRMWA--Ogallala--Roberts Co.) ⁵	630	913	794	794	794	794	794
Slaton Subtotal	To Post	1,369	1,063	1,063	1,063	1,063	1,063	1,063
Wolforth	Ogallala	412	1,535	2,466	2,219	1,997	1,797	1,618
Rural	Ogallala	3,417	3,006	3,051	3,053	2,909	2,907	2,744
Subtotal		61,108	48,064	48,868	46,616	43,969	40,767	40,425
Total Municipal Existing Supply		61,108	48,064	48,868	46,616	43,969	40,767	40,425
Municipal Surplus/Shortage								
Brazos Basin								
Abernathy (part)		0	0	-182	-188	-186	-190	-186
Idalou		0	0	0	0	-274	-273	-272
Lubbock		14,075	-8,604	-10,497	-13,455	-15,767	-19,334	-20,650
New Deal		0	4	-12	-20	-20	-20	-20
Ransom Canyon		0	0	0	0	0	0	0
Shallowater		187	-157	-180	-190	-184	-192	-184
Slaton	To Post	438	156	174	193	214	226	227
Wolforth		0	67	708	397	113	-165	-388
Rural		0	0	0	0	0	0	0
Subtotal		14,700	-8,534	-9,989	-13,263	-16,104	-19,948	-21,473
Total Municipal Surplus/Shortage		14,700	-8,534	-9,989	-13,263	-16,104	-19,948	-21,473

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Table 4-15 Continued

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000	2010	2020	2030	2040	2050	2060
		(acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Municipal New Supply Need								
Brazos Basin								
Abemathy (part)		0	0	182	188	186	190	186
Idalou		0	0	0	0	274	273	272
Lubbock		0	8,604	10,497	13,455	15,767	19,334	20,650
New Deal		0	0	12	20	20	20	20
Ransom Canyon		0	0	0	0	0	0	0
Shallowater		0	157	180	190	184	192	184
Slaton		0	0	0	0	0	0	0
Wolforth		0	0	0	0	0	165	388
Rural		0	0	0	0	0	0	0
Subtotal		0	8,761	10,871	13,853	16,431	20,174	21,700
Total Municipal New Supply Need		0	8,761	10,871	13,853	16,431	20,174	21,700
Industrial Demand								
Brazos Basin		1,566	1,881	2,103	2,291	2,472	2,625	2,836
Total Industrial Demand		1,566	1,881	2,103	2,291	2,472	2,625	2,836
Industrial Existing Supply								
Brazos Basin	Ogallala	1,566	1,881	2,103	2,291	2,472	2,625	2,836
Total Industrial Existing Supply		1,566	1,881	2,103	2,291	2,472	2,625	2,836
Industrial Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Total Industrial Surplus/Shortage		0	0	0	0	0	0	0
Industrial New Supply Need								
Brazos Basin		0	0	0	0	0	0	0
Total Industrial New Supply Need		0	0	0	0	0	0	0
Steam-Electric Demand								
Brazos Basin		5,776	5,221	4,440	5,191	6,106	7,222	8,582
Total Steam-Electric Demand		5,776	5,221	4,440	5,191	6,106	7,222	8,582
Steam-Electric Existing Supply								
Brazos Basin	Reclaimed Water (From Lubbock)	5,776	5,221	4,440	5,191	6,106	7,222	8,582
Total Steam-Electric Existing Supply		5,776	5,221	4,440	5,191	6,106	7,222	8,582
Steam-Electric Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric Surplus/Shortage		0	0	0	0	0	0	0
Steam-Electric New Supply Need								
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric New Supply Need		0	0	0	0	0	0	0
Irrigation Demand								
Brazos Basin		242,978	229,267	216,397	204,248	192,782	181,961	171,747
Total Irrigation Demand		242,978	229,267	216,397	204,248	192,782	181,961	171,747
Irrigation Supply								
Brazos Basin	Ogallala	291,150	154,847	121,535	100,464	78,870	75,459	70,692
	Reclaimed Water (Lubbock) ⁴	7,958	9,166	0	0	0	0	0
	Reclaimed Water ⁷	4,209	4,209	4,209	4,209	4,209	4,209	4,209
Total Irrigation Supply		303,317	168,222	125,744	104,673	83,079	79,668	74,901
Irrigation Surplus/Shortage								
Brazos Basin		60,339	-61,046	-90,653	-99,575	-109,703	-102,293	-96,846
Total Irrigation Surplus/Shortage		60,339	-61,046	-90,653	-99,575	-109,703	-102,293	-96,846
Mining Demand								
Brazos Basin		352	209	101	59	25	0	0
Total Mining Demand		352	209	101	59	25	0	0
Mining Supply								
Brazos Basin	Ogallala	352	209	101	59	25	0	0
Total Mining Supply		352	209	101	59	25	0	0
Mining Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Total Mining Surplus/Shortage		0	0	0	0	0	0	0

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Table 4-15 Continued

Basin	Source	Total in						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Beef Feedlot Livestock Demand								
Brazos Basin		714	870	976	1,036	1,100	1,168	1,240
Total Beef Feedlot Livestock Demand		714	870	976	1,036	1,100	1,168	1,240
Beef Feedlot Livestock Supply								
Brazos Basin	Ogallala	714	870	976	1,036	1,100	1,168	1,240
Total Beef Feedlot Livestock Supply		714	870	976	1,036	1,100	1,168	1,240
Beef Feedlot Livestock Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Surplus/Shortage		0	0	0	0	0	0	0
Dairies Demand								
Brazos Basin		0	86	112	124	137	151	167
Total Dairies Demand		0	86	112	124	137	151	167
Dairies Supply								
Brazos Basin	Ogallala	0	86	112	124	137	151	167
Total Dairies Supply		0	86	112	124	137	151	167
Dairies Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Total Dairies Surplus/Shortage		0	0	0	0	0	0	0
Range & All Other Livestock Demand								
Brazos Basin		258	265	272	280	289	298	308
Total Range & All Other Livestock Demand		258	265	272	280	289	298	308
Range & All Other Livestock Supply								
Brazos Basin	Local	258	265	272	280	289	298	308
Total Range & All Other Livestock Supply		258	265	272	280	289	298	308
Range & All Other Livestock Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Total Range & All Other Livestock Surplus/Shortage		0	0	0	0	0	0	0
Total Demand								
Municipal		46,408	56,598	58,857	59,879	60,073	60,715	61,898
Industrial		1,566	1,881	2,103	2,291	2,472	2,625	2,836
Steam-Electric		5,776	5,221	4,440	5,191	6,106	7,222	8,582
Irrigation		242,978	229,267	216,397	204,248	192,782	181,961	171,747
Mining		352	209	101	59	25	0	0
Beef Feedlot Livestock		714	870	976	1,036	1,100	1,168	1,240
Dairies		0	86	112	124	137	151	167
Range & All Other Livestock		258	265	272	280	289	298	308
Total County Demand		298,052	294,398	283,258	273,108	262,984	254,140	246,778
Total Supply								
Municipal		61,108	48,064	48,868	46,616	43,969	40,767	40,425
Industrial		1,566	1,881	2,103	2,291	2,472	2,625	2,836
Steam-Electric		5,776	5,221	4,440	5,191	6,106	7,222	8,582
Irrigation		303,317	168,222	125,744	104,673	83,079	79,668	74,901
Mining		352	209	101	59	25	0	0
Beef Feedlot Livestock		714	870	976	1,036	1,100	1,168	1,240
Dairies		0	86	112	124	137	151	167
Range & All Other Livestock		258	265	272	280	289	298	308
Total County Supply		373,091	224,818	182,616	160,270	137,177	131,899	128,459
Total Surplus/Shortage								
Municipal		14,700	-8,534	-9,989	-13,263	-16,104	-19,948	-21,473
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		60,339	-61,046	-90,653	-99,575	-109,703	-102,293	-96,846
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total County Surplus/Shortage		75,039	-69,580	-100,642	-112,838	-125,807	-122,241	-118,319
Total Basin Demand								
Brazos								
Municipal		46,408	56,598	58,857	59,879	60,073	60,715	61,898
Industrial		1,566	1,881	2,103	2,291	2,472	2,625	2,836
Steam-Electric		5,776	5,221	4,440	5,191	6,106	7,222	8,582
Irrigation		242,978	229,267	216,397	204,248	192,782	181,961	171,747
Mining		352	209	101	59	25	0	0
Beef Feedlot Livestock		714	870	976	1,036	1,100	1,168	1,240
Dairies		0	86	112	124	137	151	167
Range & All Other Livestock		258	265	272	280	289	298	308
Total Brazos Basin Demand		298,052	294,398	283,258	273,108	262,984	254,140	246,778

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Table 4-15 Concluded

Basin	Source	Total in	Projections					
		2000	2010	2020	2030	2040	2050	2060
		(acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Total Basin Supply								
Brazos								
Municipal		61,108	48,064	48,868	46,616	43,969	40,767	40,425
Industrial		1,566	1,881	2,103	2,291	2,472	2,625	2,836
Steam-Electric		5,776	5,221	4,440	5,191	6,106	7,222	8,582
Irrigation		303,317	168,222	125,744	104,673	83,079	79,668	74,901
Mining		352	209	101	59	25	0	0
Beef Feedlot Livestock		714	870	976	1,036	1,100	1,168	1,240
Dairies		0	86	112	124	137	151	167
Range & All Other Livestock		258	265	272	280	289	298	308
Total Brazos Basin Supply		373,091	224,818	182,616	160,270	137,177	131,899	128,459
Total Basin Surplus/Shortage								
Brazos								
Municipal		14,700	-8,534	-9,989	-13,263	-16,104	-19,948	-21,473
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		60,339	-61,046	-90,653	-99,575	-109,703	-102,293	-96,846
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Brazos Basin Surplus/Shortage		75,039	-69,580	-100,642	-112,838	-125,807	-122,241	-118,319
¹ Calculated by the TWDB using Southern Ogallala Groundwater Availability Model; February 2003. Entry on Quantity in storage row in 2000 is GAM Run result for 2004. ² Ibid. ³ Supply means quantity of water available from the Ogallala Aquifer in the year projected. ⁴ Total supply of reclaimed water is estimated at 50 percent of Lubbock's projected municipal water use shown as Lubbock municipal water demand. Reclaimed water is used for steam-electric power generation, with the remainder used to irrigate hay and forage crops in Lubbock and Lynn Counties. Of the total, 6,496 acft/yr is shown as being transferred to Lynn County. See Table 4-16. Plans are to discontinue use of reclaimed water for irrigation by 2020. ⁵ The city's supply from CRMWA. Since the city's supply from CRMWA exceeds CRMWA's delivery capacity, the city must have terminal storage in order to use its full supply from CRMWA. Quantity reduced by quantities to New Deal, Ransom Canyon, and Shallowater. ⁶ The City of Lubbock's policy is to reduce annual supply from Bailey County from an estimated 12,000 acft/yr in 2000 to an estimated 3,000 acft/yr in 2060. ⁷ Value is the sum of reclaimed water from the City of Idalou, City of Wolforth, City of New Deal, City of Slaton, City of Shallowater, SPS, Environmental Protection Services of Lubbock, Acid Delinting Inc., Texas Winery Inc., Town & Country Mobile Home Park, Paymaster Oil Mill, Lubbock, Cooper ISD, Ransom Canyon, Plains Coop Oil Mill, and Gifford Hill American. The quantity of reclaimed water from municipal sources for reuse was estimated as the lesser of 50 percent of the TWDB municipal water use for the year 2000 or the maximum waste discharge permit quantity of the TCEQ waste discharge permit. This value is held constant throughout the projection period. For all other entities, the quantity was calculated as 75 percent of the maximum waste discharge permit.								

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Table 4-16.
Projected Water Demands, Supplies, and Needs
Lynn County
Llano Estacado Region

Demand Basin	Updated 6-4-09 and 6/8/2009 and 8/13/2009 Source	Total in 2000 (acft)	Projections					
			2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
WATER SUPPLIES								
Brazos Basin								
Quantity in Storage ¹	Ogallala	3,528,278	3,372,428	3,382,679	3,377,853	3,375,361	3,384,834	3,393,991
Quantity Pumped ²	Ogallala	120,425	120,425	120,425	120,425	120,425	120,425	120,425
Supply	(Ogallala) ³	120,425	120,425	120,425	120,425	120,425	120,425	120,425
Edwards-Trinity (High Plains) Aquifer		4,944	4,160	3,580	2,802	2,335	2,065	2,065
Other Ground	Ogallala (CRMWA - Roberts Co.)	275	548	477	477	477	417	417
Local Surface	Stock Tanks and Windmills	128	132	136	139	144	149	153
Other Surface	Lake Meredith (CRMWA)	523	274	345	345	345	302	302
Reclaimed Water (Lubbock-Irrigation) ⁵		6,496	6,496	0	0	0	0	0
Reclaimed Water ⁶		346	346	346	346	346	346	346
Total Supply		133,137	132,381	125,309	124,534	124,072	123,703	123,708
Colorado Basin								
Quantity in Storage ¹	Ogallala	258,301	273,551	272,424	277,251	279,742	270,270	261,112
Quantity Pumped ²	Ogallala	1,141	491	473	462	467	422	381
Supply	(Ogallala) ³	1,141	491	473	462	467	422	381
Other Ground	Ogallala (CRMWA - Roberts Co.)	0	0	0	0	0	0	0
Local Surface	Stock Tanks and Windmills	11	11	11	12	12	13	14
Other Surface	Lake Meredith (CRMWA)	0	0	0	0	0	0	0
Total Supply		1,153	503	484	474	480	435	394
County Total								
Quantity in Storage ¹	Ogallala	3,786,579	3,645,979	3,655,103	3,655,103	3,655,103	3,655,103	3,655,103
Quantity Pumped ²	Ogallala	121,566	120,916	120,897	120,886	120,892	120,847	120,805
Supply	(Ogallala) ³	121,566	120,916	120,897	120,886	120,892	120,847	120,805
Edwards-Trinity (High Plains) Aquifer		4,944	4,160	3,580	2,802	2,335	2,065	2,065
Other Ground	Ogallala (CRMWA - Roberts Co.)	275	548	477	477	477	417	417
Local Surface	Stock Tanks and Windmills	140	143	147	152	156	161	166
Other Surface	Lake Meredith (CRMWA)	523	274	345	345	345	302	302
Reclaimed Water (Lubbock-Irrigation)		6,496	6,496	0	0	0	0	0
Reclaimed Water ⁶		346	346	346	346	346	346	346
Total Supply		134,290	132,884	125,793	125,008	124,551	124,138	124,102
Data LERWPG Oct. 28, 04								
WATER DEMANDS								
Municipal Demand								
Brazos Basin								
O'Donnell (part)		139	144	146	142	138	130	121
Tahoka		473	492	504	490	478	453	421
Wilson		65	67	68	65	63	60	55
Rural		290	299	301	292	282	267	249
Subtotal		967	1,002	1,019	989	961	910	846
Colorado Basin								
Rural		6	7	7	6	6	6	6
Subtotal		6	7	7	6	6	6	6
Total Municipal Demand		973	1,009	1,026	995	967	916	852
Municipal Existing Supply								
Brazos Basin								
O'Donnell (part)	Lake Meredith (CRMWA)	173	96	121	121	121	109	109
	Ogallala (CRMWA - Roberts Co.)	91	192	167	167	167	150	150
O'Donnell (part) Subtotal		264	288	288	288	288	259	259
Tahoka	Ogallala	0	0	0	0	0	0	0
	Lake Meredith (CRMWA) ⁴	350	178	224	224	224	193	193
	Ogallala (CRMWA - Roberts Co.) ⁴	184	356	310	310	310	267	267
Tahoka Subtotal		534	534	534	534	534	460	460
Wilson	Ogallala	65	67	0	0	0	0	0
Rural	Ogallala	290	299	301	292	282	267	249
	Edwards-Trinity (High Plains)	100	100	100	100	100	100	100
Rural Subtotal		390	399	401	392	382	367	349
Subtotal		1,253	1,288	1,223	1,214	1,204	1,086	1,068
Colorado Basin								
Rural	Ogallala	6	7	7	6	6	6	6
Subtotal		6	7	7	6	6	6	6
Total Municipal Existing Supply		1,259	1,295	1,230	1,220	1,210	1,092	1,074

Continued on next page

Table 4-16 Continued

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000 (acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Municipal Surplus/Shortage								
Brazos Basin								
	Tahoka	61	42	30	44	56	7	39
	Wilson	0	0	-68	-65	-63	-60	-55
	Rural	100	100	100	100	100	100	100
	O'Donnell (part)	125	144	142	146	150	129	138
	Subtotal	286	286	204	225	243	176	222
Colorado Basin								
	Rural	0	0	0	0	0	0	0
	Subtotal	0	0	0	0	0	0	0
	Total Municipal Surplus/Shortage	286	286	204	225	243	176	222
Municipal New Supply Need								
Brazos Basin								
	Tahoka	0	0	0	0	0	0	0
	Wilson	0	0	68	65	63	60	55
	Rural	0	0	0	0	0	0	0
	O'Donnell (part)	0	0	0	0	0	0	0
	Subtotal	0	0	68	65	63	60	55
Colorado Basin								
	Rural	0	0	0	0	0	0	0
	Subtotal	0	0	0	0	0	0	0
	Total Municipal New Supply Need	0	0	68	65	63	60	55
Industrial Demand								
Brazos Basin								
		0	0	0	0	0	0	0
Colorado Basin								
		0	0	0	0	0	0	0
	Total Industrial Demand	0	0	0	0	0	0	0
Industrial Existing Supply								
Brazos Basin								
		0	0	0	0	0	0	0
Colorado Basin								
		0	0	0	0	0	0	0
	Total Industrial Existing Supply	0	0	0	0	0	0	0
Industrial Surplus/Shortage								
Brazos Basin								
		0	0	0	0	0	0	0
Colorado Basin								
		0	0	0	0	0	0	0
	Total Industrial Surplus/Shortage	0	0	0	0	0	0	0
Industrial New Supply Need								
Brazos Basin								
		0	0	0	0	0	0	0
Colorado Basin								
		0	0	0	0	0	0	0
	Total Industrial New Supply Need	0	0	0	0	0	0	0
Steam-Electric Demand								
Brazos Basin								
		0	0	0	0	0	0	0
Colorado Basin								
		0	0	0	0	0	0	0
	Total Steam-Electric Demand	0	0	0	0	0	0	0
Steam-Electric Existing Supply								
Brazos Basin								
		0	0	0	0	0	0	0
Colorado Basin								
		0	0	0	0	0	0	0
	Total Steam-Electric Existing Supply	0	0	0	0	0	0	0
Steam-Electric Surplus/Shortage								
Brazos Basin								
		0	0	0	0	0	0	0
Colorado Basin								
		0	0	0	0	0	0	0
	Total Steam-Electric Surplus/Shortage	0	0	0	0	0	0	0
Steam-Electric New Supply Need								
Brazos Basin								
		0	0	0	0	0	0	0
Colorado Basin								
		0	0	0	0	0	0	0
	Total Steam-Electric New Supply Need	0	0	0	0	0	0	0
Irrigation Demand								
Brazos Basin								
		119,289	112,870	106,796	101,054	95,614	90,473	85,610
Colorado Basin								
		1,083	1,025	970	918	868	822	777
	Total Irrigation Demand	120,372	113,895	107,766	101,972	96,482	91,295	86,387
Irrigation Supply								
Brazos Basin								
	Ogallala	120,004	120,020	119,912	119,948	119,981	120,017	120,049
	Edwards-Trinity (High Plains)	4,844	4,060	3,480	2,702	2,235	1,965	1,965
	Reclaimed Water (Lubbock) ⁵	6,496	6,496	0	0	0	0	0
	Reclaimed Water ⁶	346	346	346	346	346	346	346
	Brazos Basin Subtotal	131,690	130,922	123,738	122,996	122,562	122,328	122,360
Colorado Basin								
	Ogallala	1,120	475	462	454	460	416	375
	Total Irrigation Supply	132,810	131,397	124,200	123,450	123,022	122,744	122,735

Continued on next page

Table 4-16 Continued

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000 (acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Irrigation Surplus/Shortage								
Brazos Basin		12,401	18,052	16,942	21,942	26,948	31,855	36,750
Colorado Basin		37	-550	-508	-464	-408	-406	-402
Total Irrigation Surplus/Shortage		12,438	17,502	16,434	21,478	26,540	31,449	36,348
Mining Demand								
Brazos Basin		66	39	19	11	5	0	0
Colorado Basin		15	9	4	2	1	0	0
Total Mining Demand		81	48	23	13	6	0	0
Mining Supply								
Brazos Basin	Ogallala	66	39	19	11	5	0	0
Colorado Basin	Ogallala	15	9	4	2	1	0	0
Total Mining Supply		81	48	23	13	6	0	0
Mining Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Mining Surplus/Shortage		0	0	0	0	0	0	0
Beef Feedlot Livestock Demand								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Demand		0	0	0	0	0	0	0
Beef Feedlot Livestock Supply								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Supply		0	0	0	0	0	0	0
Beef Feedlot Livestock Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Surplus/Shortage		0	0	0	0	0	0	0
Dairies Demand								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Dairies Demand		0	0	0	0	0	0	0
Dairies Supply								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Dairies Supply		0	0	0	0	0	0	0
Dairies Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Dairies Surplus/Shortage		0	0	0	0	0	0	0
Range & All Other Livestock Demand								
Brazos Basin		128	132	136	139	144	149	153
Colorado Basin		11	11	11	12	12	13	14
Total Range & All Other Livestock Demand		140	143	147	152	156	161	166
Range & All Other Livestock Supply								
Brazos Basin	Local	128	132	136	139	144	149	153
Colorado Basin	Local	11	11	11	12	12	13	14
Total Range & All Other Livestock Supply		140	143	147	152	156	161	166
Range & All Other Livestock Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Range & All Other Livestock Surplus/Shortage		0	0	0	0	0	0	0
Total Demand								
Municipal		973	1,009	1,026	995	967	916	852
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		120,372	113,895	107,766	101,972	96,482	91,295	86,387
Mining		81	48	23	13	6	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		140	143	147	152	156	161	166
Total County Demand		121,566	115,095	108,962	103,132	97,611	92,372	87,405

Continued on next page

Table 4-16 Continued

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000 (acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Total Supply								
Municipal		1,259	1,295	1,230	1,220	1,210	1,092	1,074
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		132,810	131,397	124,200	123,450	123,022	122,744	122,735
Mining		81	48	23	13	6	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		140	143	147	152	156	161	166
Total County Supply		134,290	132,884	125,600	124,834	124,395	123,997	123,975
Total Surplus/Shortage								
Municipal		286	286	204	225	243	176	222
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		12,438	17,502	16,434	21,478	26,540	31,449	36,348
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total County Surplus/Shortage		12,724	17,788	16,638	21,703	26,783	31,625	36,570
Total Basin Demand								
Brazos								
Municipal		967	1,002	1,019	989	961	910	846
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		119,289	112,870	106,796	101,054	95,614	90,473	85,610
Mining		66	39	19	11	5	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		128	132	136	139	144	149	153
Total Brazos Basin Demand		120,450	114,043	107,970	102,193	96,724	91,532	86,609
Colorado								
Municipal		6	7	7	6	6	6	6
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		1,083	1,025	970	918	868	822	777
Mining		15	9	4	2	1	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		11	11	11	12	12	13	14
Total Colorado Basin Demand		1,115	1,052	992	938	887	841	797
Total Basin Supply								
Brazos								
Municipal		1,253	1,288	1,223	1,214	1,204	1,086	1,068
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		131,690	130,922	123,738	122,996	122,562	122,328	122,360
Mining		66	39	19	11	5	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		128	132	136	139	144	149	153
Total Brazos Basin Supply		133,137	132,381	125,116	124,360	123,915	123,563	123,581
Colorado								
Municipal		6	7	7	6	6	6	6
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		1,120	475	462	454	460	416	375
Mining		15	9	4	2	1	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		11	11	11	12	12	13	14
Total Colorado Basin Supply		1,153	503	484	474	480	435	394
Total Basin Surplus/Shortage								
Brazos								
Municipal		286	286	204	225	243	176	222
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		12,401	18,052	16,942	21,942	26,948	31,855	36,750
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Brazos Basin Surplus/Shortage		12,687	18,338	17,146	22,167	27,191	32,031	36,972

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Table 4-16 Concluded

Basin	Source	Total in	Projections					
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Total Basin Surplus/Shortage (Cont.)								
Colorado								
Municipal		0	0	0	0	0	0	0
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		37	-550	-508	-464	-408	-406	-402
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Colorado Basin Surplus/Shortage		37	-550	-508	-464	-408	-406	-402
¹ Calculated by the TWDB using Southern Ogallala Groundwater Availability Model; February 2003. Entry on Quantity in storage row in 2000 is GAM Run result for 2004. ² Ibid. ³ Supply means quantity of water available from the Ogallala Aquifer in the year projected. ⁴ The city's supply from CRMWA. Since the city's supply from CRMWA exceeds CRMWA's delivery capacity, the city must have terminal storage in order to use its full supply from CRMWA. ⁵ The quantity is that experienced in 2003, and is 96 percent of the permitted value for the project, with plans to discontinue use of reclaimed water for irrigation by 2020. ⁶ Value is the sum of reclaimed water from the City of Wilson, City of Tahoka, and City of O'Donnell. The quantity of reclaimed water available from municipal sources for reuse was estimated as the lesser of 50 percent of the TWDB municipal water use for the year 2000 or the maximum waste discharge permit quantity of the TCEQ waste discharge permit. This value is held level throughout the projection period. For all other entities, the quantity was calculated as 75 percent of the maximum waste discharge permit.								
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Table 4-17.
Projected Water Demands, Supplies, and Needs
Motley County
Llano Estacado Region

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000 (acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
WATER SUPPLIES								
Red Basin								
Quantity in Storage ¹	Ogallala	355,295	282,644	231,003	180,893	132,340	85,257	39,482
Quantity Pumped ²	Ogallala	10,200	5,717	5,565	5,411	5,254	5,115	4,991
Supply	(Ogallala) ³	10,200	5,717	5,565	5,411	5,254	5,115	4,991
Seymour Aquifer		18,817	18,817	18,817	13,507	13,507	13,507	13,507
Other Aquifer		239	234	224	207	187	174	166
Local Surface	Stock Tanks and Windmills	625	636	647	659	671	684	698
Other Surface		0	0	0	0	0	0	0
Total Supply		29,881	25,404	25,253	19,784	19,619	19,480	19,362
Data LERWPG Oct. 28, 04								
WATER DEMANDS								
Municipal Demand								
Red Basin								
Matador		239	234	224	207	187	174	166
Rural		148	143	136	123	108	98	93
Subtotal		387	377	360	330	295	272	259
Total Municipal Demand		387	377	360	330	295	272	259
Municipal Existing Supply								
Red Basin								
Matador	Other Aquifer	239	234	224	207	187	174	166
Rural	Ogallala	148	143	136	123	108	98	93
Subtotal		387	377	360	330	295	272	259
Total Municipal Existing Supply		387	377	360	330	295	272	259
Municipal Surplus/Shortage								
Red Basin								
Matador		0	0	0	0	0	0	0
Rural		0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0
Total Municipal Surplus/Shortage		0	0	0	0	0	0	0
Municipal New Supply Need								
Red Basin								
Matador		0	0	0	0	0	0	0
Rural		0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0
Total Municipal New Supply Need		0	0	0	0	0	0	0
Industrial Demand								
Red Basin								
Total Industrial Demand		5	6	6	6	6	6	6
Industrial Existing Supply								
Red Basin								
Total Industrial Existing Supply	Ogallala	5	6	6	6	6	6	6
Industrial Surplus/Shortage								
Red Basin								
Total Industrial Surplus/Shortage		0	0	0	0	0	0	0
Industrial New Supply Need								
Red Basin								
Total Industrial New Supply Need		0	0	0	0	0	0	0
Steam-Electric Demand								
Red Basin								
Total Steam-Electric Demand		0	0	0	0	0	0	0
Steam-Electric Existing Supply								
Red Basin								
Total Steam-Electric Existing Supply		0	0	0	0	0	0	0

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Table 4-17 Continued

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000 (acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Steam-Electric Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Total Steam-Electric Surplus/Shortage		0	0	0	0	0	0	0
Steam-Electric New Supply Need								
Red Basin		0	0	0	0	0	0	0
Total Steam-Electric New Supply Need		0	0	0	0	0	0	0
Irrigation Demand								
Red Basin		9,168	8,894	8,628	8,372	8,121	7,877	7,641
Total Irrigation Demand		9,168	8,894	8,628	8,372	8,121	7,877	7,641
Irrigation Supply								
Red Basin	Ogallala	10,032	5,559	5,419	5,279	5,139	5,011	4,892
	Seymour		2,003	1,943	1,885	1,828	1,774	1,724
Total Irrigation Supply		12,097	7,562	7,362	7,164	6,967	6,785	6,616
Irrigation Surplus/Shortage								
Red Basin		2,929	-1,332	-1,266	-1,208	-1,154	-1,092	-1,025
Total Irrigation Surplus/Shortage		2,929	-1,332	-1,266	-1,208	-1,154	-1,092	-1,025
Mining Demand								
Red Basin		15	9	4	3	1	0	0
Total Mining Demand		15	9	4	3	1	0	0
Mining Supply								
Red Basin	Ogallala	15	9	4	3	1	0	0
Total Mining Supply		15	9	4	3	1	0	0
Mining Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Total Mining Surplus/Shortage		0	0	0	0	0	0	0
Beef Feedlot Livestock Demand								
Red Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Demand		0	0	0	0	0	0	0
Beef Feedlot Livestock Supply								
Red Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Supply		0	0	0	0	0	0	0
Beef Feedlot Livestock Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Surplus/Shortage		0	0	0	0	0	0	0
Dairies Demand								
Red Basin		0	0	0	0	0	0	0
Total Dairies Demand		0	0	0	0	0	0	0
Dairies Supply								
Red Basin		0	0	0	0	0	0	0
Total Dairies Supply		0	0	0	0	0	0	0
Dairies Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Total Dairies Surplus/Shortage		0	0	0	0	0	0	0
Range & All Other Livestock Demand								
Red Basin		625	636	647	659	671	684	698
Total Range & All Other Livestock Demand		625	636	647	659	671	684	698
Range & All Other Livestock Supply								
Red Basin	Local	625	636	647	659	671	684	698
Total Range & All Other Livestock Supply		625	636	647	659	671	684	698
Range & All Other Livestock Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Total Range & All Other Livestock Surplus/Shortage		0	0	0	0	0	0	0

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Table 4-17 Concluded

Basin	Source	Total in						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Total Demand								
Municipal		387	377	360	330	295	272	259
Industrial		5	6	6	6	6	6	6
Steam-Electric		0	0	0	0	0	0	0
Irrigation		9,168	8,894	8,628	8,372	8,121	7,877	7,641
Mining		15	9	4	3	1	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		625	636	647	659	671	684	698
Total County Demand		10,200	9,922	9,645	9,370	9,094	8,839	8,604
Total Supply								
	Unallocated	16,752	16,814	16,874	11,622	11,679	11,733	11,783
Municipal		387	377	360	330	295	272	259
Industrial		5	6	6	6	6	6	6
Steam-Electric		0	0	0	0	0	0	0
Irrigation		12,097	7,562	7,362	7,164	6,967	6,785	6,616
Mining		15	9	4	3	1	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		625	636	647	659	671	684	698
Total County Supply		29,881	25,404	25,253	19,784	19,619	19,480	19,362
Total Surplus/Shortage								
Municipal		0	0	0	0	0	0	0
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		2,929	-1,332	-1,266	-1,208	-1,154	-1,092	-1,025
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total County Surplus/Shortage		2,929	-1,332	-1,266	-1,208	-1,154	-1,092	-1,025
Total Basin Demand								
Red								
Municipal		387	377	360	330	295	272	259
Industrial		5	6	6	6	6	6	6
Steam-Electric		0	0	0	0	0	0	0
Irrigation		9,168	8,894	8,628	8,372	8,121	7,877	7,641
Mining		15	9	4	3	1	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		625	636	647	659	671	684	698
Total Red Basin Demand		10,200	9,922	9,645	9,370	9,094	8,839	8,604
Total Basin Supply								
	Unallocated	16,752	16,814	16,874	11,622	11,679	11,733	11,783
Municipal		387	377	360	330	295	272	259
Industrial		5	6	6	6	6	6	6
Steam-Electric		0	0	0	0	0	0	0
Irrigation		12,097	7,562	7,362	7,164	6,967	6,785	6,616
Mining		15	9	4	3	1	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		625	636	647	659	671	684	698
Total Red Basin Supply		13,129	8,590	8,379	8,162	7,940	7,747	7,579
Total Basin Surplus/Shortage								
Red								
Municipal		0	0	0	0	0	0	0
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		2,929	-1,332	-1,266	-1,208	-1,154	-1,092	-1,025
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Red Basin Surplus/Shortage		2,929	-1,332	-1,266	-1,208	-1,154	-1,092	-1,025

¹ Calculated by the TWDB using Southern Ogallala Groundwater Availability Model; February 2003. Entry on Quantity in storage row in 2000 is GAM Run result for 2004.

² Ibid.

³ Supply means quantity of water available from the Ogallala Aquifer in the year projected.

Table 4-18.
Projected Water Demands, Supplies, and Needs
Parmer County
Llano Estacado Region

Demand Basin	Updated 6-4-09 and 6/8/2009 Source	Total in 2000 (acft)	Projections					
			2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
WATER SUPPLIES								
Red Basin								
Quantity in Storage ¹	Ogallala	655,566	490,328	370,958	328,543	297,091	281,282	268,726
Quantity Pumped ²	Ogallala	135,705	76,545	26,066	19,901	36,235	37,658	35,109
Supply (Ogallala) ³		135,705	76,545	26,066	19,901	36,235	37,658	35,109
Local Surface	Stock Tanks and Windmills	273	286	298	309	324	341	356
Reclaimed Water ⁴		2,486	2,486	2,486	2,486	2,486	2,486	2,486
Total Supply		138,464	79,316	28,850	22,697	39,045	40,485	37,951
Brazos Basin								
Quantity in Storage ¹	Ogallala	1,120,024	738,596	361,646	184,032	139,200	135,555	132,695
Quantity Pumped ²	Ogallala	289,384	182,317	60,373	31,879	15,545	14,122	16,671
Supply (Ogallala) ³		289,384	182,317	60,373	31,879	15,545	14,122	16,671
Local Surface	Stock Tanks and Windmills	530	551	575	601	626	651	680
Reclaimed Water ⁴		401	401	401	401	401	401	401
Total Supply		290,315	183,269	61,349	32,881	16,572	15,174	17,752
County Total								
Quantity in Storage ¹	Ogallala	1,775,591	1,228,925	732,604	512,575	436,291	416,838	401,421
Quantity Pumped ²	Ogallala	425,089	258,862	86,439	51,780	51,780	51,780	51,780
Supply (Ogallala) ³		425,089	258,862	86,439	51,780	51,780	51,780	51,780
Local Surface	Stock Tanks and Windmills	803	837	873	910	950	992	1,036
Reclaimed Water ⁴		2,887	2,887	2,887	2,887	2,887	2,887	2,887
Total Supply		428,779	262,586	90,199	55,577	55,617	55,659	55,703
Data LERWPG Oct. 28, 04								
WATER DEMANDS								
Municipal Demand								
Red Basin								
Friona		803	835	872	879	870	838	791
Rural		106	110	113	112	110	106	100
Subtotal		909	945	985	991	980	944	891
Brazos Basin								
Bovina		309	321	334	335	330	317	300
Farwell		370	388	405	410	408	393	371
Rural		287	297	305	304	298	286	270
Subtotal		966	1,006	1,044	1,049	1,036	996	941
Total Municipal Demand		1,875	1,951	2,029	2,040	2,016	1,940	1,832
Municipal Existing Supply								
Red Basin								
Friona	Ogallala	803	956	1,421	495	445	401	360
Rural	Ogallala	106	110	113	112	110	106	100
Subtotal		909	1,066	1,534	607	555	507	460
Brazos Basin								
Bovina	Ogallala	309	321	334	335	330	317	300
Farwell	Ogallala	370	388	404	364	328	294	265
Rural	Ogallala	287	297	305	304	298	286	270
Subtotal		966	1,006	1,043	1,003	956	897	835
Total Municipal Existing Supply		1,875	2,072	2,577	1,610	1,511	1,404	1,295
Municipal Surplus/Shortage								
Red Basin								
Friona		0	121	549	-384	-425	-437	-431
Rural		0	0	0	0	0	0	0
Subtotal		0	121	549	-384	-425	-437	-431
Brazos Basin								
Bovina		0	0	0	0	0	0	0
Farwell		0	0	-1	-46	-80	-99	-106
Rural		0	0	0	0	0	0	0
Subtotal		0	0	-1	-46	-80	-99	-106
Total Municipal Surplus/Shortage		0	121	548	-430	-505	-536	-537

Continued on next page

Table 4-18 Continued

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000 (acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Municipal New Supply Need								
Red Basin								
Friona		0	0	0	384	425	437	431
Rural		0	0	0	0	0	0	0
Subtotal		0	0	0	384	425	437	431
Brazos Basin								
Bovina		0	0	0	0	0	0	0
Farwell		0	0	1	46	80	99	106
Rural		0	0	0	0	0	0	0
Subtotal		0	0	1	46	80	99	106
Total Municipal New Supply Need		0	0	1	430	505	536	537
Industrial Demand								
Red Basin		2,070	2,427	2,617	2,772	2,921	3,051	3,261
Brazos Basin		0	0	0	0	0	0	0
Total Industrial Demand		2,070	2,427	2,617	2,772	2,921	3,051	3,261
Industrial Existing Supply								
Red Basin	Ogallala	2,070	2,427	2,617	2,772	2,921	3,051	3,261
Brazos Basin		0	0	0	0	0	0	0
Total Industrial Existing Supply		2,070	2,427	2,617	2,772	2,921	3,051	3,261
Industrial Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Industrial Surplus/Shortage		0	0	0	0	0	0	0
Industrial New Supply Need								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Industrial New Supply Need		0	0	0	0	0	0	0
Steam-Electric Demand								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric Demand		0	0	0	0	0	0	0
Steam-Electric Existing Supply								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric Existing Supply		0	0	0	0	0	0	0
Steam-Electric Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric Surplus/Shortage		0	0	0	0	0	0	0
Steam-Electric New Supply Need								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric New Supply Need		0	0	0	0	0	0	0
Irrigation Demand								
Red Basin		120,480	119,201	117,935	116,683	115,444	114,219	113,006
Brazos Basin		294,969	291,836	288,738	285,673	282,640	279,639	276,670
Total Irrigation Demand		415,449	411,037	406,673	402,356	398,084	393,858	389,676
Irrigation Supply								
Red Basin	Ogallala	130,669	69,993	18,426	12,367	28,007	29,144	26,195
	Reclaimed Water	2,486	2,486	2,486	2,486	2,486	2,486	2,486
Red Basin Subtotal		133,155	72,479	20,912	14,853	30,493	31,630	28,681
Brazos Basin	Ogallala	285,582	176,775	54,130	25,479	10,150	10,362	13,894
	Reclaimed Water	401	401	401	401	401	401	401
Brazos Basin Subtotal		285,983	177,176	54,531	25,880	10,551	10,763	14,295
Total Irrigation Supply		419,138	249,655	75,443	40,733	41,044	42,393	42,976
Irrigation Surplus/Shortage								
Red Basin		12,675	-46,722	-97,023	-101,830	-84,951	-82,589	-84,325
Brazos Basin		-8,986	-114,660	-234,207	-259,793	-272,089	-268,876	-262,375
Total Irrigation Surplus/Shortage		3,689	-161,382	-331,230	-361,623	-357,040	-351,465	-346,700

Continued on next page

Table 4-18 Continued

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000 (acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Mining Demand								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Mining Demand		0	0	0	0	0	0	0
Mining Supply								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Mining Supply		0	0	0	0	0	0	0
Mining Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Mining Surplus/Shortage		0	0	0	0	0	0	0
Beef Feedlot Livestock Demand								
Red Basin		2,046	2,494	2,797	2,968	3,153	3,347	3,553
Brazos Basin		2,817	3,434	3,849	4,087	4,338	4,606	4,890
Total Beef Feedlot Livestock Demand		4,863	5,928	6,646	7,056	7,491	7,953	8,443
Beef Feedlot Livestock Supply								
Red Basin	Ogallala	2,046	2,494	2,797	2,968	3,153	3,347	3,553
Brazos Basin	Ogallala	2,817	3,434	3,849	4,087	3,589	2,220	1,513
Total Beef Feedlot Livestock Supply		4,863	5,928	6,646	7,056	6,742	5,567	5,066
Beef Feedlot Livestock Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	-749	-2,386	-3,377
Total Beef Feedlot Livestock Surplus/Shortage		0	0	0	0	-749	-2,386	-3,377
Dairies Demand								
Red Basin		10	566	694	768	847	933	1,031
Brazos Basin		20	1,101	1,349	1,489	1,646	1,821	2,011
Total Dairies Demand		30	1,667	2,043	2,257	2,493	2,754	3,042
Dairies Supply								
Red Basin	Ogallala	10	566	694	768	847	933	1,031
Brazos Basin	Ogallala	20	1,101	1,349	1,309	849	495	296
Total Dairies Supply		30	1,667	2,043	2,077	1,696	1,428	1,327
Dairies Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	-180	-797	-1,326	-1,715
Total Dairies Surplus/Shortage		0	0	0	-180	-797	-1,326	-1,715
Range & All Other Livestock Demand								
Red Basin		273	285	296	308	324	340	356
Brazos Basin		530	550	573	600	626	649	678
Total Range & All Other Livestock Demand		803	835	869	908	950	989	1,034
Range & All Other Livestock Supply								
Red Basin	Local	273	285	296	308	324	340	356
Brazos Basin	Local	530	550	573	600	626	649	678
Total Range & All Other Livestock Supply		803	835	869	908	950	989	1,034
Range & All Other Livestock Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Range & All Other Livestock Surplus/Shortage		0	0	0	0	0	0	0
Total Demand								
Municipal		1,875	1,951	2,029	2,040	2,016	1,940	1,832
Industrial		2,070	2,427	2,617	2,772	2,921	3,051	3,261
Steam-Electric		0	0	0	0	0	0	0
Irrigation		415,449	411,037	406,673	402,356	398,084	393,858	389,676
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		4,863	5,928	6,646	7,056	7,491	7,953	8,443
Dairies		30	1,667	2,043	2,257	2,493	2,754	3,042
Range & All Other Livestock		803	835	869	908	950	989	1,034
Total County Demand		425,090	423,845	420,877	417,389	413,954	410,544	407,287

Continued on next page

Table 4-18 Continued

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000 (acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Total Supply								
Municipal		1,875	2,072	2,577	1,610	1,511	1,404	1,295
Industrial		2,070	2,427	2,617	2,772	2,921	3,051	3,261
Steam-Electric		0	0	0	0	0	0	0
Irrigation		419,138	249,655	75,443	40,733	41,044	42,393	42,976
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		4,863	5,928	6,646	7,056	6,742	5,567	5,066
Dairies		30	1,667	2,043	2,077	1,696	1,428	1,327
Range & All Other Livestock		803	835	869	908	950	989	1,034
Total County Supply		428,779	262,584	90,195	55,156	54,863	54,831	54,958
Total Surplus/Shortage								
Municipal		0	121	548	-430	-505	-536	-537
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		3,689	-161,382	-331,230	-361,623	-357,040	-351,465	-346,700
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	-749	-2,386	-3,377
Dairies		0	0	0	-180	-797	-1,326	-1,715
Range & All Other Livestock		0	0	0	0	0	0	0
Total County Surplus/Shortage		3,689	-161,261	-330,682	-362,233	-359,091	-355,713	-352,329
Total Basin Demand								
Red								
Municipal		909	945	985	991	980	944	891
Industrial		2,070	2,427	2,617	2,772	2,921	3,051	3,261
Steam-Electric		0	0	0	0	0	0	0
Irrigation		120,480	119,201	117,935	116,683	115,444	114,219	113,006
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		2,046	2,494	2,797	2,968	3,153	3,347	3,553
Dairies		10	566	694	768	847	933	1,031
Range & All Other Livestock		273	285	296	308	324	340	356
Total Red Basin Demand		125,788	125,918	125,324	124,490	123,668	122,833	122,097
Brazos								
Municipal		966	1,006	1,044	1,049	1,036	996	941
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		294,969	291,836	288,738	285,673	282,640	279,639	276,670
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		2,817	3,434	3,849	4,087	4,338	4,606	4,890
Dairies		20	1,101	1,349	1,489	1,646	1,821	2,011
Range & All Other Livestock		530	550	573	600	626	649	678
Total Brazos Basin Demand		299,302	297,927	295,553	292,898	290,286	287,711	285,190
Total Basin Supply								
Red								
Municipal	Unallocated	459	6	306	308	306	304	308
Municipal		909	1,066	1,534	607	555	507	460
Industrial		2,070	2,427	2,617	2,772	2,921	3,051	3,261
Steam-Electric		0	0	0	0	0	0	0
Irrigation		133,155	72,479	20,912	14,853	30,493	31,630	28,681
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		2,046	2,494	2,797	2,968	3,153	3,347	3,553
Dairies		10	566	694	768	847	933	1,031
Range & All Other Livestock		273	285	296	308	324	340	356
Total Red Basin Supply		138,464	79,317	28,850	22,276	38,292	39,807	37,341
Brazos								
Municipal		966	1,006	1,043	1,003	956	897	835
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		285,983	177,176	54,531	25,880	10,551	10,763	14,295
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		2,817	3,434	3,849	4,087	3,589	2,220	1,513
Dairies		20	1,101	1,349	1,309	849	495	296
Range & All Other Livestock		530	550	573	600	626	649	678
Total Brazos Basin Supply		290,315	183,267	61,345	32,879	16,571	15,024	17,617

Concluded on next page

Table 4-18 Concluded

Basin	Source	Total in	Projections					
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Total Basin Surplus/Shortage								
Red								
Municipal		0	121	549	-384	-425	-437	-431
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		12,675	-46,722	-97,023	-101,830	-84,951	-82,589	-84,325
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Red Basin Surplus/Shortage		12,675	-46,601	-96,474	-102,214	-85,376	-83,026	-84,756
Brazos								
Municipal		0	0	-1	-46	-80	-99	-106
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		-8,986	-114,660	-234,207	-259,793	-272,089	-268,876	-262,375
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	-749	-2,386	-3,377
Dairies		0	0	0	-180	-797	-1,326	-1,715
Range & All Other Livestock		0	0	0	0	0	0	0
Total Brazos Basin Surplus/Shortage		-8,986	-114,660	-234,208	-260,019	-273,715	-272,687	-267,573
¹ Calculated by the TWDB using Southern Ogallala Groundwater Availability Model; February 2003. Entry on Quantity in storage row in 2000 is GAM Run result for 2004. ² Ibid. ³ Supply means quantity of water available from the Ogallala Aquifer in the year projected. ⁴ Value is the sum of reclaimed water from Excel Corp., City of Friona, City of Farwell, City of Bovina, and Lazabuddie Utility & Water Supply. The quantity of reclaimed water available from municipal sources for reuse was estimated as the lesser of 50 percent of the TWDB municipal water use for the year 2000 or the maximum waste discharge permit quantity of the TCEQ waste discharge permit. This value was held level throughout the projection period. For all other entities, the quantity was calculated as 75 percent of the maximum waste discharge permit.								
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Table 4-19.
Projected Water Demands, Supplies, and Needs
Swisher County
Llano Estacado Region

Basin	Source	Total in 2000 (acft)	Projections					2060 (acft)
			2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	
WATER SUPPLIES								
Red Basin								
Quantity in Storage ¹	Ogallala	6,819,588	6,377,657	5,725,090	5,127,016	4,605,948	4,378,512	4,174,484
Quantity Pumped ²	Ogallala	109,814	93,170	84,809	75,784	66,827	64,355	63,614
Supply	(Ogallala) ³	109,814	93,170	84,809	75,784	66,827	64,355	63,614
Dockum Aquifer (Santa Rosa Formation)		846	846	846	846	846	846	846
Local Surface	Stock Tanks and Windmills	421	435	475	493	512	531	551
Other Surface	Lake Mackenzie	417	0	0	0	0	0	0
Total Supply		111,498	94,451	86,131	77,123	68,184	65,732	65,011
Brazos Basin								
Quantity in Storage ¹	Ogallala	749,269	438,658	111,975	29,204	16,981	13,621	9,933
Quantity Pumped ²	Ogallala	66,489	59,724	23,582	2,488	1,098	533	531
Supply	(Ogallala) ³	66,489	59,724	23,582	2,488	1,098	533	531
Local Surface	Stock Tanks and Windmills	168	167	141	139	136	133	132
Other Surface		0	0	0	0	0	0	0
Total Supply		66,657	59,891	23,723	2,626	1,234	666	662
County Total								
Quantity in Storage ¹	Ogallala	7,568,857	6,816,315	5,837,065	5,156,220	4,622,929	4,392,133	4,184,417
Quantity Pumped ²	Ogallala	176,303	152,893	108,391	78,271	67,924	64,888	64,145
Supply	(Ogallala) ³	176,303	152,893	108,391	78,271	67,924	64,888	64,145
Dockum Aquifer (Santa Rosa Formation)		846	846	846	846	846	846	846
Local Surface	Stock Tanks and Windmills	589	603	617	632	648	664	682
Other Surface	Lake Mackenzie	417	0	0	0	0	0	0
Total Supply		178,155	154,342	109,854	79,749	69,418	66,398	65,673
Data LERWPG Oct. 28, 04								
WATER DEMANDS								
Municipal Demand								
Red Basin	HAPPY in Region A	6	11	17	22	27	33	38
Happy		107	109	110	111	110	108	103
Kress (Part)		80	82	82	83	81	79	76
Tulia		1,020	1,050	1,065	1,072	1,064	1,038	993
Rural		207	211	211	211	207	202	193
Subtotal		1,414	1,452	1,468	1,477	1,462	1,427	1,365
Brazos Basin								
Kress (Part)	New listing	21	22	22	22	22	21	20
Rural		41	41	42	41	41	40	38
Subtotal		62	63	64	63	63	61	58
Total Municipal Demand		1,476	1,515	1,532	1,540	1,525	1,488	1,423
Municipal Existing Supply								
Red Basin	HAPPY in Region A	6	11	17	22	27	33	38
Happy	Ogallala	107	109	110	111	110	108	103
Kress (Part)	Ogallala	80	0	0	0	0	0	0
Tulia ⁴	Ogallala	302	317	324	328	324	311	288
	Dockum (Santa Rosa Formation)	302	316	324	328	324	311	288
	Lake Mackenzie	417	0	0	0	0	0	0
Tulia Subtotal		1,020	633	648	655	647	621	576
Rural	Ogallala	207	211	211	211	207	202	193
Subtotal		1,414	953	969	977	964	931	872
Brazos Basin								
Kress (Part)	New listing	21	204	184	165	149	134	120
Rural	Ogallala	41	41	42	41	41	40	38
Subtotal		62	245	226	206	190	174	158
Total Municipal Existing Supply		1,476	1,198	1,195	1,183	1,154	1,105	1,030

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Table 4-19 Continued

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000 (acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Municipal Surplus/Shortage								
Red Basin								
Happy		0	0	0	0	0	0	0
Kress		0	-82	-82	-83	-81	-79	-76
Tulia		0	-417	-417	-417	-417	-417	-417
Rural		0	0	0	0	0	0	0
	Subtotal	0	-499	-499	-500	-498	-496	-493
Brazos Basin								
Kress (Part)	New listing	0	182	162	143	127	113	100
Rural		0	0	0	0	0	0	0
	Subtotal	0	182	162	143	127	113	100
Total Municipal Surplus/Shortage		0	-317	-337	-357	-371	-383	-393
Municipal New Supply Need								
Red Basin								
Happy		0	0	0	0	0	0	0
Kress		0	0	0	0	0	0	0
Tulia		0	417	417	417	417	417	417
Rural		0	0	0	0	0	0	0
	Subtotal	0	417	417	417	417	417	417
Brazos Basin								
Kress (Part)	New listing	0	0	0	0	0	0	0
Rural		0	0	0	0	0	0	0
	Subtotal	0	0	0	0	0	0	0
Total Municipal New Supply Need		0	417	417	417	417	417	417
Industrial Demand								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Industrial Demand		0	0	0	0	0	0	0
Industrial Existing Supply								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Industrial Existing Supply		0	0	0	0	0	0	0
Industrial Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Industrial Surplus/Shortage		0	0	0	0	0	0	0
Industrial New Supply Need								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Industrial New Supply Need		0	0	0	0	0	0	0
Steam-Electric Demand								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric Demand		0	0	0	0	0	0	0
Steam-Electric Existing Supply								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric Existing Supply		0	0	0	0	0	0	0
Steam-Electric Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric Surplus/Shortage		0	0	0	0	0	0	0
Steam-Electric New Supply Need								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Steam-Electric New Supply Need		0	0	0	0	0	0	0

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Table 4-19 Continued

Basin	Source	Total in	2010	2020	2030	2040	2050	2060
		2000 (acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Irrigation Demand								
Red Basin		97,872	97,313	93,233	96,205	95,655	95,108	94,565
Brazos Basin		73,834	73,412	70,333	72,575	72,161	71,749	71,338
Total Irrigation Demand		171,706	170,725	163,566	168,780	167,816	166,857	165,903
Irrigation Supply								
Red Basin	Ogallala	106,610	88,698	79,952	70,789	61,688	59,061	58,162
Brazos Basin	Ogallala	66,397	59,381	23,191	2,116	743	194	208
Total Irrigation Supply		173,007	148,079	103,143	72,905	62,431	59,255	58,370
Irrigation Surplus/Shortage								
Red Basin		8,738	-8,615	-13,281	-25,416	-33,967	-36,047	-36,403
Brazos Basin		-7,437	-14,031	-47,142	-70,459	-71,418	-71,555	-71,130
Total Irrigation Surplus/Shortage		1,301	-22,646	-60,423	-95,875	-105,385	-107,602	-107,533
Mining Demand								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Mining Demand		0	0	0	0	0	0	0
Mining Supply								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Mining Supply		0	0	0	0	0	0	0
Mining Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Mining Surplus/Shortage		0	0	0	0	0	0	0
Beef Feedlot Livestock Demand								
Red Basin		2,499	3,047	3,416	3,626	3,850	4,087	4,339
Brazos Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Demand		2,499	3,047	3,416	3,626	3,850	4,087	4,339
Beef Feedlot Livestock Supply								
Red Basin	Ogallala	2,499	3,047	3,416	3,626	3,850	4,087	4,339
Brazos Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Supply		2,499	3,047	3,416	3,626	3,850	4,087	4,339
Beef Feedlot Livestock Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Surplus/Shortage		0	0	0	0	0	0	0
Dairies Demand								
Red Basin		3	11	18	18	18	18	18
Brazos Basin		29	97	165	165	165	165	165
Total Dairies Demand		33	108	183	183	183	183	183
Dairies Supply								
Red Basin	Ogallala	3	11	18	18	18	18	18
Brazos Basin	Ogallala	29	97	165	165	165	165	165
Total Dairies Supply		33	108	183	183	183	183	183
Dairies Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Dairies Surplus/Shortage		0	0	0	0	0	0	0
Range & All Other Livestock Demand								
Red Basin		421	435	475	493	512	531	551
Brazos Basin		168	167	141	139	136	133	132
Total Range & All Other Livestock Demand		589	603	617	632	648	664	682
Range & All Other Livestock Supply								
Red Basin	Local	421	435	475	493	512	531	551
Brazos Basin	Local	168	167	141	139	136	133	132
Total Range & All Other Livestock Supply		589	603	617	632	648	664	682
Range & All Other Livestock Surplus/Shortage								
Red Basin		0	0	0	0	0	0	0
Brazos Basin		0	0	0	0	0	0	0
Total Range & All Other Livestock Surplus/Shortage		0	0	0	0	0	0	0

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Table 4-19 Continued

Basin	Source	Total in						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Total Demand								
Municipal		1,476	1,515	1,532	1,540	1,525	1,488	1,423
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		171,706	170,725	163,566	168,780	167,816	166,857	165,903
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		2,499	3,047	3,416	3,626	3,850	4,087	4,339
Dairies		33	108	183	183	183	183	183
Range & All Other Livestock		589	603	617	632	648	664	682
Total County Demand		176,303	175,997	169,314	174,762	174,022	173,280	172,531
Total Supply								
	Unallocated	545	680	522	518	523	536	558
Municipal		1,476	1,198	1,195	1,183	1,154	1,105	1,030
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		173,007	148,079	103,143	72,905	62,431	59,255	58,370
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		2,499	3,047	3,416	3,626	3,850	4,087	4,339
Dairies		33	108	183	183	183	183	183
Range & All Other Livestock		589	603	617	632	648	664	682
Total County Supply		178,149	153,714	109,076	79,048	68,788	65,830	65,162
Total Surplus/Shortage								
Municipal		0	-317	-337	-357	-371	-383	-393
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		1,301	-22,646	-60,423	-95,875	-105,385	-107,602	-107,533
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total County Surplus/Shortage		1,301	-22,963	-60,760	-96,232	-105,756	-107,985	-107,926
Total Basin Demand								
Red								
Municipal		1,414	1,452	1,468	1,477	1,462	1,427	1,365
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		97,872	97,313	93,233	96,205	95,655	95,108	94,565
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		2,499	3,047	3,416	3,626	3,850	4,087	4,339
Dairies		3	11	18	18	18	18	18
Range & All Other Livestock		421	435	475	493	512	531	551
Total Red Basin Demand		102,209	102,258	98,610	101,820	101,497	101,172	100,838
Brazos								
Municipal		62	63	64	63	63	61	58
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		73,834	73,412	70,333	72,575	72,161	71,749	71,338
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		29	97	165	165	165	165	165
Range & All Other Livestock		168	167	141	139	136	133	132
Total Brazos Basin Demand		74,094	73,740	70,704	72,942	72,525	72,109	71,693
Total Basin Supply								
	Unallocated	545	680	522	518	523	536	558
Municipal		1,414	953	969	977	964	931	872
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		106,610	88,698	79,952	70,789	61,688	59,061	58,162
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		2,499	3,047	3,416	3,626	3,850	4,087	4,339
Dairies		3	11	18	18	18	18	18
Range & All Other Livestock		421	435	475	493	512	531	551
Total Red Basin Supply		111,492	93,823	85,352	76,422	67,554	65,164	64,500
Brazos								
Municipal		62	245	226	206	190	174	158
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		66,397	59,381	23,191	2,116	743	194	208
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		29	97	165	165	165	165	165
Range & All Other Livestock		168	167	141	139	136	133	132
Total Brazos Basin Supply		66,657	59,891	23,723	2,626	1,233	666	662

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Table 4-19 Concluded

Basin	Source	Total in 2000 (acft)	Projections					
			2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Total Basin Surplus/Shortage								
Red								
Municipal		0	-499	-499	-500	-498	-496	-493
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		8,738	-8,615	-13,281	-25,416	-33,967	-36,047	-36,403
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Red Basin Surplus/Shortage		8,738	-9,114	-13,780	-25,916	-34,465	-36,543	-36,896
Brazos								
Municipal		0	182	162	143	127	113	100
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		-7,437	-14,031	-47,142	-70,459	-71,418	-71,555	-71,130
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Brazos Basin Surplus/Shortage		-7,437	-13,849	-46,981	-70,316	-71,292	-71,443	-71,031
¹ Calculated by the TWDB using Southern Ogallala Groundwater Availability Model; February 2003. Entry on Quantity in storage row in 2000 is GAM Run result for 2004.								
² Ibid.								
³ Supply means quantity of water available from the Ogallala Aquifer in the year projected.								
⁴ Tulia is obtaining a part of its municipal water from the Santa Rosa formation. The information available indicates that the aquifer can supply the quantities shown here for the projection period.								
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Table 4-20.
Projected Water Demands, Supplies, and Needs
Terry County
Llano Estacado Region

Demand Basin	Updated 6-4-09 and 6/8/2009 Source	Total in 2000 (acft)	Projections					
			2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
WATER SUPPLIES								
Brazos Basin								
Quantity in Storage ¹	Ogallala	447,345	424,035	403,426	383,304	435,139	400,547	374,030
Quantity Pumped ²	Ogallala	8,237	6,069	5,756	5,461	4,704	4,713	4,719
Supply	(Ogallala) ³	8,237	6,069	5,756	5,461	4,704	4,713	4,719
Local Surface	Stock Tanks and Windmills	4	7	10	8	12	10	7
Other Surface		0	0	0	0	0	0	0
Total Supply	Ogallala	8,241	6,075	5,766	5,469	4,717	4,723	4,725
Colorado Basin								
Quantity in Storage ¹	Ogallala	4,129,436	3,737,389	3,397,878	3,179,834	2,993,744	3,120,368	3,245,025
Quantity Pumped ²	Ogallala	158,282	113,165	86,251	67,983	54,595	54,570	54,553
Supply	(Ogallala) ³	158,282	113,165	86,251	67,983	54,595	54,570	54,553
Other Ground	Ogallala (CRMWA - Roberts Co.)	879	1,699	1,478	1,478	1,478	1,478	1,478
Local Surface	Stock Tanks and Windmills	115	115	114	119	118	124	130
Other Surface	Lake Meredith (CRMWA)	1,670	850	1,071	1,071	1,071	1,071	1,071
Total Supply		160,946	115,829	88,915	70,652	57,262	57,243	57,232
County Total								
Quantity in Storage ¹	Ogallala	4,576,781	4,161,424	3,801,304	3,563,138	3,428,883	3,520,915	3,619,055
Quantity Pumped ²	Ogallala	166,519	119,234	92,007	73,445	59,299	59,283	59,271
Supply	(Ogallala) ³	166,519	119,234	92,007	73,445	59,299	59,283	59,271
Other Ground	Ogallala (CRMWA - Roberts Co.)	879	1,699	1,478	1,478	1,478	1,478	1,478
Local Surface	Stock Tanks and Windmills	119	121	124	127	130	134	137
Other Surface	Lake Meredith (CRMWA)	1,670	850	1,071	1,071	1,071	1,071	1,071
Total Supply		169,187	121,904	94,681	76,121	61,979	61,966	61,958
Data LERWPG Oct. 28, 04	Ogallala							
WATER DEMANDS								
Municipal Demand								
Brazos Basin								
Rural		13	14	14	15	16	15	15
Subtotal		13	14	14	15	16	15	15
Colorado Basin								
Brownfield		2,593	2,747	2,905	3,047	3,181	3,185	3,167
Meadow		70	73	75	78	80	79	79
Rural		362	376	393	407	419	418	415
Subtotal		3,025	3,196	3,373	3,532	3,680	3,682	3,661
Total Municipal		3,038	3,210	3,387	3,547	3,696	3,697	3,676
Municipal Existing Supply								
Brazos Basin								
Rural	Ogallala	13	14	14	15	16	15	15
Subtotal		13	14	14	15	16	15	15
Colorado Basin								
Brownfield	Ogallala	295	267	241	218	197	178	161
	Lake Meredith (CRMWA) ⁴	1,670	850	1,071	1,071	1,071	1,071	1,071
	Ogallala (CRMWA - Roberts Co.) ⁴	879	1,699	1,478	1,478	1,478	1,478	1,478
Brownfield Subtotal		2,844	2,816	2,790	2,767	2,746	2,727	2,710
Meadow	Ogallala	70	73	75	78	80	79	79
Rural	Ogallala	362	376	393	407	419	418	415
Subtotal		3,276	3,265	3,258	3,252	3,245	3,224	3,204
Total Municipal Existing Supply		3,289	3,279	3,272	3,267	3,261	3,239	3,219
Municipal Surplus/Shortage								
Brazos Basin								
Rural		0	0	0	0	0	0	0
Subtotal		0	0	0	0	0	0	0
Colorado Basin								
Brownfield		251	69	-115	-280	-435	-458	-457
Meadow		0	0	0	0	0	0	0
Rural		0	0	0	0	0	0	0
Subtotal		251	69	-115	-280	-435	-458	-457
Total Municipal Surplus/Shortage		251	69	-115	-280	-435	-458	-457

Continued on next page
Table 4-20 Continued

Basin	Source	Total in 2000 (acft)	2010	2020	2030	2040	2050	2060
			(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Municipal New Supply Need								
Brazos Basin								
Rural		0	0	0	0	0	0	0
	Subtotal	0	0	0	0	0	0	0
Colorado Basin								
Brownfield		0	0	115	280	435	458	457
Meadow		0	0	0	0	0	0	0
Rural		0	0	0	0	0	0	0
	Subtotal	0	0	115	280	435	458	457
	Total Municipal New Supply Need	0	0	115	280	435	458	457
Industrial Demand								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		1	1	1	1	1	1	1
	Total Industrial Demand	1	1	1	1	1	1	1
Industrial Existing Supply								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin	Ogallala	1	1	1	1	1	1	1
	Total Industrial Existing Supply	1	1	1	1	1	1	1
Industrial Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
	Total Industrial Surplus/Shortage	0	0	0	0	0	0	0
Industrial New Supply Need								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
	Total Industrial New Supply Need	0	0	0	0	0	0	0
Steam-Electric Demand								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
	Total Steam-Electric Demand	0	0	0	0	0	0	0
Steam-Electric Existing Supply								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
	Total Steam-Electric Existing Supply	0	0	0	0	0	0	0
Steam-Electric Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
	Total Steam-Electric Surplus/Shortage	0	0	0	0	0	0	0
Steam-Electric New Supply Need								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
	Total Steam-Electric New Supply Need	0	0	0	0	0	0	0
Irrigation Demand								
Brazos Basin		10,157	9,636	9,142	8,674	8,229	7,807	7,407
Colorado Basin		192,984	183,089	173,702	164,797	156,348	148,332	140,726
	Total Irrigation Demand	203,141	192,725	182,844	173,471	164,577	156,139	148,133
Irrigation Supply								
Brazos Basin	Ogallala	8,224	6,055	5,742	5,446	4,688	4,698	4,704
Colorado Basin	Ogallala	156,624	111,782	85,125	66,958	53,649	53,692	53,674
	Total Irrigation Supply	164,848	117,837	90,867	72,404	58,337	58,390	58,378
Irrigation Surplus/Shortage								
Brazos Basin		-1,933	-3,581	-3,400	-3,228	-3,541	-3,109	-2,703
Colorado Basin		-36,360	-71,307	-88,577	-97,839	-102,699	-94,640	-87,052
	Total Irrigation Surplus/Shortage	-38,293	-74,888	-91,977	-101,067	-106,240	-97,749	-89,755

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Table 4-20 Continued

Basin	Source	Total in						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Mining Demand								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		930	554	266	155	66	0	0
Total Mining	Demand	930	554	266	155	66	0	0
Mining Supply								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin	Ogallala	930	554	266	155	66	0	0
Total Mining	Supply	930	554	266	155	66	0	0
Mining Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Mining	Surplus/Shortage	0	0	0	0	0	0	0
Beef Feedlot Livestock Demand								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Beef Feedlot	Livestock Demand	0	0	0	0	0	0	0
Beef Feedlot Livestock Supply								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Beef Feedlot	Livestock Supply	0	0	0	0	0	0	0
Beef Feedlot Livestock Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Beef Feedlot	Surplus/Shortage	0	0	0	0	0	0	0
Dairies Demand								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	112	150	166	183	202	223
Total Dairies	Demand	0	112	150	166	183	202	223
Dairies Supply								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin	Ogallala	0	112	150	166	183	202	223
Total Dairies	Supply	0	112	150	166	183	202	223
Dairies Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Dairies	Surplus/Shortage	0	0	0	0	0	0	0
Range & All Other Livestock Demand								
Brazos Basin		4	7	10	8	12	10	7
Colorado Basin		115	115	114	118	118	125	130
Total Range & All	Other Livestock Demand	119	121	124	126	130	135	137
Range & All Other Livestock Supply								
Brazos Basin	Local	4	7	10	8	12	10	7
Colorado Basin	Local	115	115	114	118	118	125	130
Total Range & All	Other Livestock Supply	119	121	124	126	130	135	137
Range & All Other Livestock Surplus/Shortage								
Brazos Basin		0	0	0	0	0	0	0
Colorado Basin		0	0	0	0	0	0	0
Total Range & All	Other Livestock Surplus/Shortage	0	0	0	0	0	0	0
Total Demand								
Municipal		3,038	3,210	3,387	3,547	3,696	3,697	3,676
Industrial		1	1	1	1	1	1	1
Steam-Electric		0	0	0	0	0	0	0
Irrigation		203,141	192,725	182,844	173,471	164,577	156,139	148,133
Mining		930	554	266	155	66	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	112	150	166	183	202	223
Range & All Other Livestock		119	121	124	126	130	135	137
Total County Demand		207,229	196,724	186,772	177,466	168,653	160,173	152,170

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Table 4-20 Continued

Basin	Source	Total in						
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Total Supply								
Municipal		3,289	3,279	3,272	3,267	3,261	3,239	3,219
Industrial		1	1	1	1	1	1	1
Steam-Electric		0	0	0	0	0	0	0
Irrigation		164,848	117,837	90,867	72,404	58,337	58,390	58,378
Mining		930	554	266	155	66	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	112	150	166	183	202	223
Range & All Other Livestock		119	121	124	126	130	135	137
Total County Supply		169,187	121,904	94,681	76,119	61,979	61,967	61,958
Total Surplus/Shortage								
Municipal		251	69	-115	-280	-435	-458	-457
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		-38,293	-74,888	-91,977	-101,067	-106,240	-97,749	-89,755
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total County Surplus/Shortage		-38,042	-74,820	-92,092	-101,346	-106,675	-98,206	-90,212
Total Basin Demand								
Brazos								
Municipal		13	14	14	15	16	15	15
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		10,157	9,636	9,142	8,674	8,229	7,807	7,407
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		4	7	10	8	12	10	7
Total Brazos Basin Demand		10,174	9,657	9,166	8,697	8,257	7,832	7,429
Colorado								
Municipal		3,025	3,196	3,373	3,532	3,680	3,682	3,661
Industrial		1	1	1	1	1	1	1
Steam-Electric		0	0	0	0	0	0	0
Irrigation		192,984	183,089	173,702	164,797	156,348	148,332	140,726
Mining		930	554	266	155	66	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	112	150	166	183	202	223
Range & All Other Livestock		115	115	114	118	118	125	130
Total Colorado Basin Demand		197,055	187,067	177,606	168,769	160,396	152,342	144,741
Total Basin Supply								
Brazos								
Municipal		13	14	14	15	16	15	15
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		8,224	6,055	5,742	5,446	4,688	4,698	4,704
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		4	7	10	8	12	10	7
Total Brazos Basin Supply		8,241	6,075	5,766	5,469	4,717	4,723	4,725
Colorado								
Municipal		3,276	3,265	3,258	3,252	3,245	3,224	3,204
Industrial		1	1	1	1	1	1	1
Steam-Electric		0	0	0	0	0	0	0
Irrigation		156,624	111,782	85,125	66,958	53,649	53,692	53,674
Mining		930	554	266	155	66	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	112	150	166	183	202	223
Range & All Other Livestock		115	115	114	118	118	125	130
Total Colorado Basin Supply		160,946	115,829	88,915	70,650	57,262	57,244	57,233

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Table 4-20 Concluded

Basin	Source	Total in	Projections					
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Total Basin Surplus/Shortage								
Brazos								
Municipal		0	0	0	0	0	0	0
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		-1,933	-3,581	-3,400	-3,228	-3,541	-3,109	-2,703
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Brazos Basin Surplus/Shortage		-1,933	-3,581	-3,400	-3,228	-3,541	-3,109	-2,703
Colorado								
Municipal		251	69	-115	-280	-435	-458	-457
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		-36,360	-71,307	-88,577	-97,839	-102,699	-94,640	-87,052
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Colorado Basin Surplus/Shortage		-36,109	-71,238	-88,692	-98,119	-103,134	-95,098	-87,509
¹ Calculated by the TWDB using Southern Ogallala Groundwater Availability Model; February 2003. Entry on Quantity in storage row in 2000 is GAM Run result for 2004. ² Ibid. ³ Supply means quantity of water available from the Ogallala Aquifer in the year projected. ⁴ The city's supply from CRMWA. Since the city's supply from CRMWA exceeds CRMWA's delivery capacity, the city must have terminal storage in order to use its full supply from CRMWA.								

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Table 4-21.
Projected Water Demands, Supplies, and Needs
Yoakum County
Llano Estacado Region

Demand Basin	Updated 6-4-09 and 6/8/2009 Source	Total in 2000 (acft)	Projections					
			2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
WATER SUPPLIES								
Colorado Basin								
Quantity in Storage ¹	Ogallala	4,381,613	3,620,371	3,017,014	2,457,580	1,939,772	1,457,384	1,005,116
Quantity Pumped ²	Ogallala	133,881	103,958	99,734	95,204	91,342	88,062	85,269
Supply	(Ogallala) ³	133,881	103,958	99,734	95,204	91,342	88,062	85,269
Local Surface	Stock Tanks and Windmills	214	218	273	278	282	288	293
Other Surface		0	0	0	0	0	0	0
Total Supply		134,095	104,176	100,007	95,482	91,624	88,350	85,562
Data LERWPG Oct. 28, 04								
WATER DEMANDS								
Municipal Demand								
Colorado Basin								
Denver City		955	1,043	1,126	1,172	1,220	1,181	1,141
Plains		378	416	448	468	488	473	457
Rural		264	286	305	314	323	312	302
Subtotal		1,597	1,745	1,879	1,954	2,031	1,966	1,900
Total Municipal Demand		1,597	1,745	1,879	1,954	2,031	1,966	1,900
Municipal Existing Supply								
Colorado Basin								
Denver City	Ogallala	955	1,043	1,126	193	174	157	141
Plains	Ogallala	378	416	0	0	0	0	0
Rural	Ogallala	264	286	305	314	323	312	302
Subtotal		1,597	1,745	1,431	507	497	469	443
Total Municipal Existing Supply		1,597	1,745	1,431	507	497	469	443
Municipal Surplus/Shortage								
Colorado Basin								
Denver City		0	0	0	-979	-1,046	-1,024	-1,000
Plains		0	0	-448	-468	-488	-473	-457
Rural		0	0	0	0	0	0	0
Subtotal		0	0	-448	-1,447	-1,534	-1,497	-1,457
Total Municipal Surplus/Shortage		0	0	-448	-1,447	-1,534	-1,497	-1,457
Municipal New Supply Need								
Colorado Basin								
Denver City		0	0	0	979	1,046	1,024	1,000
Plains		0	0	448	468	488	473	457
Rural		0	0	0	0	0	0	0
Subtotal		0	0	448	1,447	1,534	1,497	1,457
Total Municipal New Supply Need		0	0	448	1,447	1,534	1,497	1,457
Industrial Demand								
Colorado Basin								
Total Industrial Demand		0	0	0	0	0	0	0
Industrial Existing Supply								
Colorado Basin								
Total Industrial Existing Supply		0	0	0	0	0	0	0
Industrial Surplus/Shortage								
Colorado Basin								
Total Industrial Surplus/Shortage		0	0	0	0	0	0	0
Industrial New Supply Need								
Colorado Basin								
Total Industrial New Supply Need		0	0	0	0	0	0	0
Steam-Electric Demand								
Colorado Basin								
Total Steam-Electric Demand		1,852	2,597	3,718	4,346	5,113	6,047	7,186

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Table 4-21 Continued

Basin	Source	Total in	Projections					
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Steam-Electric Existing Supply								
Colorado Basin	Ogallala	1,852	2,597	3,718	4,346	5,113	6,047	7,186
Total Steam-Electric Existing Supply		1,852	2,597	3,718	4,346	5,113	6,047	7,186
Steam-Electric Surplus/Shortage								
Colorado Basin		0	0	0	0	0	0	0
Total Steam-Electric Surplus/Shortage		0	0	0	0	0	0	0
Steam-Electric New Supply Need								
Colorado Basin		0	0	0	0	0	0	0
Total Steam-Electric New Supply Need		0	0	0	0	0	0	0
Irrigation Demand								
Colorado Basin		127,059	120,979	115,187	109,674	104,426	99,427	94,668
Total Irrigation Demand		127,059	120,979	115,187	109,674	104,426	99,427	94,668
Irrigation Supply								
Colorado Basin	Ogallala	127,273	97,200	92,443	87,806	83,873	79,851	76,166
Total Irrigation Supply		127,273	97,200	92,443	87,806	83,873	79,851	76,166
Irrigation Surplus/Shortage								
Colorado Basin		214	-23,779	-22,744	-21,868	-20,553	-19,576	-18,502
Total Irrigation Surplus/Shortage		214	-23,779	-22,744	-21,868	-20,553	-19,576	-18,502
Mining Demand								
Colorado Basin		3,159	2,416	1,524	706	204	56	0
Total Mining Demand		3,159	2,416	1,524	706	204	56	0
Mining Supply								
Colorado Basin	Ogallala	3,159	2,416	1,524	706	204	56	0
Total Mining Supply		3,159	2,416	1,524	706	204	56	0
Mining Surplus/Shortage								
Colorado Basin		0	0	0	0	0	0	0
Total Mining Surplus/Shortage		0	0	0	0	0	0	0
Beef Feedlot Livestock Demand								
Colorado Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Demand		0	0	0	0	0	0	0
Beef Feedlot Livestock Supply								
Colorado Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Supply		0	0	0	0	0	0	0
Beef Feedlot Livestock Surplus/Shortage								
Colorado Basin		0	0	0	0	0	0	0
Total Beef Feedlot Livestock Surplus/Shortage		0	0	0	0	0	0	0
Dairies Demand								
Colorado Basin		0	0	0	0	0	0	0
Total Dairies Demand		0	0	0	0	0	0	0
Dairies Supply								
Colorado Basin		0	0	0	0	0	0	0
Total Dairies Supply		0	0	0	0	0	0	0
Dairies Surplus/Shortage								
Colorado Basin		0	0	0	0	0	0	0
Total Dairies Surplus/Shortage		0	0	0	0	0	0	0
Range & All Other Livestock Demand								
Colorado Basin		214	218	273	278	282	288	293
Total Range & All Other Livestock Demand		214	218	273	278	282	288	293
Range & All Other Livestock Supply								
Colorado Basin	Local	214	218	273	278	282	288	293
Total Range & All Other Livestock Supply		214	218	273	278	282	288	293
Range & All Other Livestock Surplus/Shortage								
Colorado Basin		0	0	0	0	0	0	0
Total Range & All Other Livestock Surplus/Shortage		0	0	0	0	0	0	0

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Table 4-21 Concluded

Basin	Source	Total in	Projections					
		2000 (acft)	2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Total Demand								
Municipal		1,597	1,745	1,879	1,954	2,031	1,966	1,900
Industrial		0	0	0	0	0	0	0
Steam-Electric		1,852	2,597	3,718	4,346	5,113	6,047	7,186
Irrigation		127,059	120,979	115,187	109,674	104,426	99,427	94,668
Mining		3,159	2,416	1,524	706	204	56	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		214	218	273	278	282	288	293
Total County Demand		133,881	127,955	122,581	116,958	112,056	107,784	104,047
Total Supply								
Municipal		1,597	1,745	1,431	507	497	469	443
Industrial		0	0	0	0	0	0	0
Steam-Electric		1,852	2,597	3,718	4,346	5,113	6,047	7,186
Irrigation		127,273	97,200	92,443	87,806	83,873	79,851	76,166
Mining		3,159	2,416	1,524	706	204	56	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		214	218	273	278	282	288	293
Total County Supply		134,095	104,176	99,389	93,643	89,969	86,711	84,088
Total Surplus/Shortage								
Municipal		0	0	-448	-1,447	-1,534	-1,497	-1,457
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		214	-23,779	-22,744	-21,868	-20,553	-19,576	-18,502
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total County Surplus/Shortage		214	-23,779	-23,192	-23,315	-22,087	-21,073	-19,959
Total Basin Demand								
Colorado								
Municipal		1,597	1,745	1,879	1,954	2,031	1,966	1,900
Industrial		0	0	0	0	0	0	0
Steam-Electric		1,852	2,597	3,718	4,346	5,113	6,047	7,186
Irrigation		127,059	120,979	115,187	109,674	104,426	99,427	94,668
Mining		3,159	2,416	1,524	706	204	56	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		214	218	273	278	282	288	293
Total Colorado Basin Demand		133,881	127,955	122,581	116,958	112,056	107,784	104,047
Total Basin Supply								
Colorado								
Municipal		1,597	1,745	1,431	507	497	469	443
Industrial		0	0	0	0	0	0	0
Steam-Electric		1,852	2,597	3,718	4,346	5,113	6,047	7,186
Irrigation		127,273	97,200	92,443	87,806	83,873	79,851	76,166
Mining		3,159	2,416	1,524	706	204	56	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		214	218	273	278	282	288	293
Total Colorado Basin Supply		134,095	104,176	99,389	93,643	89,969	86,711	84,088
Total Basin Surplus/Shortage								
Colorado								
Municipal		0	0	-448	-1,447	-1,534	-1,497	-1,457
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		214	-23,779	-22,744	-21,868	-20,553	-19,576	-18,502
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
Range & All Other Livestock		0	0	0	0	0	0	0
Total Colorado Basin Surplus/Shortage		214	-23,779	-23,192	-23,315	-22,087	-21,073	-19,959
¹ Calculated by the TWDB using Southern Ogallala Groundwater Availability Model; February 2003. Entry on Quantity in storage row in 2000 is GAM Run result for 2004. ² Ibid. ³ Supply means quantity of water available from the Ogallala Aquifer in the year projected.								

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Table 4-22.
Projected Water Demands, Supplies, and Needs
River Basin and Llano Estacado Region Summaries
Llano Estacado Region

Updated 8/13/2009 Basin	and 12/31/2009	Total in 1990 (acft)	Total in 2000 (acft)	Projections					
				2010 (acft)	2020 (acft)	2030 (acft)	2040 (acft)	2050 (acft)	2060 (acft)
Canadian Basin Demand									
Municipal			0	1	1	1	1	1	1
Industrial			0	0	0	0	0	0	0
Steam-Electric			0	0	0	0	0	0	0
Irrigation			0	0	0	0	0	0	0
Mining			0	0	0	0	0	0	0
Beef Feedlot Livestock			0	0	0	0	0	0	0
Dairies			0	0	0	0	0	0	0
All Other Livestock			73	89	99	100	102	103	108
Total Canadian Basin Demand			73	90	100	101	103	104	109
Canadian Basin Supply									
Municipal			0	1	1	1	1	1	1
Industrial			0	0	0	0	0	0	0
Steam-Electric			0	0	0	0	0	0	0
Irrigation			0	0	0	0	0	0	0
Mining			0	0	0	0	0	0	0
Beef Feedlot Livestock			0	0	0	0	0	0	0
Dairies			0	0	0	0	0	0	0
All Other Livestock			73	89	99	100	102	103	108
Total Canadian Basin Supply			73	90	100	101	103	104	109
Canadian Basin Surplus/Shortage ¹									
Municipal			0	0	0	0	0	0	0
Industrial			0	0	0	0	0	0	0
Steam-Electric			0	0	0	0	0	0	0
Irrigation			0	0	0	0	0	0	0
Mining			0	0	0	0	0	0	0
Beef Feedlot Livestock			0	0	0	0	0	0	0
Dairies			0	0	0	0	0	0	0
All Other Livestock			0	0	0	0	0	0	0
Total Canadian Basin Surplus/Shortage ¹			0	0	0	0	0	0	0
Red Basin Demand									
Municipal			7,548	7,875	8,177	8,378	8,474	8,417	8,301
Industrial			3,404	6,239	6,578	6,856	7,124	7,356	7,714
Steam-Electric			0	0	0	0	0	0	0
Irrigation			909,585	883,748	855,251	834,628	811,278	788,702	766,868
Mining			85	50	24	14	6	0	0
Beef Feedlot Livestock			14,731	17,958	20,134	21,374	22,693	24,091	25,576
Dairies			164	2,884	3,524	3,880	4,270	4,698	5,176
All Other Livestock			5,246	5,419	5,658	5,869	6,096	6,336	6,580
Total Red Basin Demand			940,764	924,174	899,346	880,999	859,940	839,600	820,215
Red Basin Supply									
Unallocated			25,349	25,240	25,429	17,452	17,514	17,577	17,649
Municipal			8,128	8,045	8,683	11,406	11,502	11,444	11,318
Industrial			3,404	6,239	6,578	6,856	7,124	7,356	7,714
Steam-Electric			0	0	0	0	0	0	0
Irrigation			932,270	550,845	389,469	291,061	231,676	221,809	207,907
Mining			85	50	24	14	6	0	0
Beef Feedlot Livestock			14,731	17,958	20,134	21,374	21,324	22,336	23,713
Dairies			164	2,884	3,524	3,880	4,270	4,698	5,176
All Other Livestock			5,246	5,419	5,658	5,869	6,096	6,336	6,580
Total Red Basin Supply			989,377	616,680	459,499	357,911	299,511	291,556	280,056

Continued on next page

Table 4-22 Continued

Basin	Total in	Total in	Projections					
	1990	2000	2010	2020	2030	2040	2050	2060
	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Red Basin Surplus/Shortage ¹								
Municipal		580	170	506	3,028	3,028	3,027	3,017
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		22,685	-332,903	-465,782	-543,567	-579,602	-566,893	-558,961
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	-1,369	-1,755	-1,864
Dairies		0	0	0	0	0	0	0
All Other Livestock		0	0	0	0	0	0	0
Total Red Basin Surplus/Shortage ¹		23,265	-332,733	-465,276	-540,539	-577,943	-565,621	-557,808
Brazos Basin Demand								
Municipal		68,459	79,566	82,674	84,038	84,196	84,289	84,774
Industrial		6,558	9,339	9,961	10,466	10,947	11,358	12,042
Steam-Electric		23,766	23,048	22,103	25,842	30,398	35,953	42,724
Irrigation		2,497,120	2,409,240	2,322,320	2,244,092	2,166,425	2,091,863	2,020,262
Mining		5,630	3,681	2,141	1,351	530	23	2
Beef Feedlot Livestock		10,983	13,388	15,009	15,936	16,917	17,960	19,067
Dairies		1,020	5,688	6,989	7,678	8,443	9,289	10,218
All Other Livestock		4,088	4,208	4,445	4,576	4,717	4,852	5,003
Total Brazos Basin Demand		2,617,625	2,548,159	2,465,643	2,393,978	2,322,572	2,255,588	2,194,093
Brazos Basin Supply								
Municipal	Unallocated	4,807	4,654	4,654	3,166	3,164	3,162	3,166
Municipal		97,556	86,348	86,784	81,456	77,102	70,560	67,969
Industrial		6,558	9,339	9,961	10,466	10,947	11,358	12,042
Steam-Electric		23,766	23,048	22,103	25,842	30,398	35,953	42,724
Irrigation		2,569,206	1,768,692	1,396,325	1,065,044	787,054	687,324	645,294
Mining		5,630	3,681	2,141	1,351	530	23	2
Beef Feedlot Livestock		10,983	13,388	14,250	13,510	11,109	8,639	8,040
Dairies		1,019	5,688	6,989	6,914	6,115	5,658	5,535
All Other Livestock		4,088	4,208	4,445	4,576	4,717	4,852	5,003
Total Brazos Basin Supply		2,723,614	1,919,046	1,547,652	1,212,324	931,135	827,529	789,774
Brazos Basin Surplus/Shortage ¹								
Municipal		29,097	6,782	4,110	-2,582	-7,094	-13,729	-16,805
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		72,086	-640,548	-925,995	-1,179,048	-1,379,371	-1,404,539	-1,374,968
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	-759	-2,426	-5,808	-9,321	-11,027
Dairies		0	0	0	-764	-2,328	-3,631	-4,684
All Other Livestock		0	0	0	0	0	0	0
Total Brazos Basin Surplus/Shortage ¹		101,182	-633,767	-922,644	-1,184,820	-1,394,601	-1,431,221	-1,407,484
Colorado Basin Demand								
Municipal		11,315	11,995	12,621	13,058	13,371	13,145	12,864
Industrial		102	120	130	138	145	151	163
Steam-Electric		1,852	2,597	3,718	4,346	5,113	6,047	7,186
Irrigation		941,172	893,030	847,371	804,060	762,975	724,003	687,033
Mining		15,721	12,593	8,115	4,994	2,316	705	256
Beef Feedlot Livestock		500	609	683	725	770	817	868
Dairies		0	112	150	166	183	202	223
All Other Livestock		918	936	1,045	1,067	1,086	1,114	1,144
Total Colorado Basin Demand		971,580	921,992	873,833	828,553	785,959	746,184	709,737
Colorado Basin Supply								
Municipal		12,294	12,847	12,513	11,604	11,552	11,130	10,915
Industrial		102	120	130	138	145	151	163
Steam-Electric		1,852	2,597	3,718	4,346	5,113	6,047	7,186
Irrigation		910,511	621,156	520,689	464,048	417,178	365,478	339,707
Mining		15,721	12,593	8,115	4,994	2,316	705	256
Beef Feedlot Livestock		500	609	683	725	770	817	868
Dairies		0	112	150	166	183	202	223
All Other Livestock		918	936	1,045	1,067	1,086	1,114	1,144
Total Colorado Basin Supply		941,899	650,970	547,044	487,087	438,343	385,644	360,462

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Table 4-22 Continued

Basin	Total in	Total in	Projections					
	1990	2000	2010	2020	2030	2040	2050	2060
	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Colorado Basin Surplus/Shortage ¹								
Municipal		979	852	-108	-1,454	-1,819	-2,015	-1,949
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		-30,661	-271,874	-326,682	-340,012	-345,797	-358,525	-347,326
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	0	0	0	0	0
Dairies		0	0	0	0	0	0	0
All Other Livestock		0	0	0	0	0	0	0
Total Colorado Basin Surplus/Shortage ¹		-29,682	-271,022	-326,789	-341,466	-347,616	-360,540	-349,275
Llano Estacado Region Demand								
Municipal		87,322	99,437	103,473	105,475	106,042	105,852	105,940
Industrial		10,064	15,698	16,669	17,460	18,216	18,865	19,919
Steam-Electric		25,618	25,645	25,821	30,188	35,511	42,000	49,910
Irrigation		4,347,877	4,186,018	4,024,942	3,882,780	3,740,678	3,604,568	3,474,163
Mining		21,436	16,324	10,280	6,359	2,852	728	258
Beef Feedlot Livestock		26,215	31,955	35,826	38,035	40,380	42,869	45,512
Dairies		1,184	8,685	10,663	11,723	12,896	14,188	15,617
All Other Livestock		10,326	10,652	11,247	11,612	12,000	12,405	12,834
Total Llano Estacado Region Demand		4,530,042	4,394,415	4,238,922	4,103,632	3,968,574	3,841,476	3,724,153
Llano Estacado Region Supply								
Unallocated		30,156	29,894	30,083	20,617	20,677	20,739	20,815
Municipal		117,978	107,241	107,981	104,467	100,158	93,135	90,204
Industrial		10,064	15,698	16,669	17,460	18,216	18,865	19,919
Steam-Electric		25,618	25,645	25,821	30,188	35,511	42,000	49,910
Irrigation		4,411,987	2,940,692	2,306,484	1,820,153	1,435,907	1,274,610	1,192,907
Mining		21,436	16,324	10,280	6,359	2,852	728	258
Beef Feedlot Livestock		26,214	31,955	35,067	35,609	33,203	31,793	32,621
Dairies		1,184	8,685	10,663	10,959	10,568	10,557	10,934
All Other Livestock		10,326	10,652	11,247	11,612	12,000	12,405	12,834
Total Llano Estacado Region Supply		4,654,963	3,186,786	2,554,295	2,057,424	1,669,091	1,504,833	1,430,401
Llano Estacado Region Surplus/Shortage ¹								
Municipal		30,656	7,804	4,508	-1,008	-5,884	-12,717	-15,736
Industrial		0	0	0	0	0	0	0
Steam-Electric		0	0	0	0	0	0	0
Irrigation		64,110	-1,245,326	-1,718,458	-2,062,627	-2,304,771	-2,329,958	-2,281,256
Mining		0	0	0	0	0	0	0
Beef Feedlot Livestock		0	0	-759	-2,426	-7,177	-11,076	-12,891
Dairies		0	0	0	-764	-2,328	-3,631	-4,683
All Other Livestock		0	0	0	0	0	0	0
Total Llano Estacado Region Surplus/Shortage		94,766	-1,237,522	-1,714,710	-2,066,826	-2,320,160	-2,357,382	-2,314,567

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Table 4-22 Concluded.

Basin	Total in	Total in	Projections					
	1990	2000	2010	2020	2030	2040	2050	2060
	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
November 8, 2010								
Llano Estacado Region Demand								
No Changes								
Llano Estacado Region Supply								
Unallocated								
Municipal			107,241	107,981	119,967	114,288	105,853	101,648
Industrial			15,698	16,669	17,460	18,216	18,865	19,919
Steam-Electric			25,645	25,821	30,188	35,511	42,000	49,910
Irrigation			2,939,872	2,305,715	1,819,221	1,434,803	1,273,354	1,191,593
Mining			16,324	10,280	6,359	2,852	728	258
Beef Feedlot Livestock			31,955	35,067	35,609	33,203	31,793	32,621
Dairies			8,685	10,663	10,959	10,568	10,557	10,934
All Other Livestock			10,652	11,247	11,612	12,000	12,405	12,834
Total Llano Estacado Region Supply			3,156,072	2,523,443	2,051,375	1,661,440	1,495,555	1,419,717
Llano Estacado Region Shortages Only								
Municipal			10,349	14,247	20,116	23,771	28,489	30,458
Industrial			0	0	0	0	0	0
Steam-Electric			0	0	0	0	0	0
Irrigation			1,264,707	1,735,399	2,084,569	2,331,719	2,361,813	2,318,004
Mining			0	0	0	0	0	0
Beef Feedlot Livestock			1	763	2,426	7,177	11,076	12,891
Dairies					764	2,328	3,631	4,683
All Other Livestock			0	0	0	0	0	0
Total Llano Estacado Region Shortage			1,275,057	1,750,409	2,107,875	2,364,995	2,405,009	2,366,036
Notes:								
¹ The values listed in this section of the table are not necessarily additive due to the fact that demands and supplies are not necessarily located in close proximity to each other.								

It is important to note that the computations of supply and demand have been based upon county level data, and therefore show the county balance of shortage or surplus. This method of analysis may show a county or a user group within the county as having a surplus of water when individuals of user groups have shortages (i.e., the surplus water is neither in a location nor an ownership such that it can be obtained by users who need it). This condition most likely applies to each user group of each county, and cannot be addressed unless plans are developed for each individual water user.

A review of results of comparisons of projected demands, supplies, and quantities or water remaining in storage, as shown in Tables 4-1 through 4-21, results in questions regarding calculated water shortages for certain water user groups, particularly irrigation. For example, the results for 10 of the counties of the region (Bailey, Castro, Cochran, Deaf Smith, Gaines, Hale, Lamb, Motley, Parmer, and Yoakum) show that greater than 60 percent of estimated quantities of water in storage in year 2000 are projected to have been used by 2060. The results for 7 counties (Briscoe, Crosby, Dickens, Floyd, Hockley, Lubbock, Swisher, and Terry) show that

between 18 percent and about 44 percent of estimated quantities of water in storage in year 2000 are projected to have been used by 2060. The results for these 17 counties appear to be consistent with expectations of supplies, demands and shortages in view of the nature of declining supplies from the Ogallala aquifer. However, the results for 4 counties (Dawson, Garza, and Lynn) show that less than 5 percent of estimated quantities of water in storage in year 2000 are projected to have been used by 2060, and in the case of Dawson County, the quantity of water projected to be available for use is 45,213 acft/yr in 2010 declining to 31,212 acft/yr in 2060, however quantity of water in storage remains constant at 7,202,322 acft, while projected shortages for irrigation decrease from 95,526 acft/yr in 2010 to 72,967 acft/yr in 2060 (Table 4-6). A similar result is shown for Garza County, with projected quantity of water in storage remaining constant at 643,700 acft, while shortages are projected for irrigation in the 3,000 to 4,700 acft/yr range (Table 4-11), and in the case of Lynn County, projected quantities of water in storage remain in the range of 3,645,979 acft/yr to 3,655,103 acft/yr, quantity of water available is shown at 120,916 acft/yr for 2010 declining to 120,805 acft/yr in 2060, and irrigation surpluses are shown at 17,502 acft/yr in 2010 increasing to 36,474 acft/yr in 2060 (Table 4-16). It appears that the calculations of quantities of water available and quantity remaining in storage for Dawson, Garza, and Lynn Counties, as provided by the Southern Ogallala GAM model may result from a poor matching of the location of irrigated acreages in relation to the locations of land having water in storage, and should be checked before the model is used in the future for developing water supply information for regional water planning purposes.

4.2 Water Needs Projections for Wholesale Water Providers

For purposes of this regional planning project, and in accordance with TWDB Rules, water supply projections and needs projections are tabulated for each Wholesale Water Provider of the Llano Estacado Water Planning (Table 4-23 and Appendix F). For each Wholesale Water Provider the water demands were brought forward from Section 2, Population and Water Demand Projections (Table 2-22), and water supplies were brought forward from Section 3, Water Supply Projections for the Planning Region. Of the four Wholesale Water Providers of the region, all four are projected to have a water shortage during the planning period (Table 4-23). More detailed information on projected demands, supplies, and needs for each WWP is provided in Appendix G.

Table 4-23.
Projected Water Demands, Supplies and Needs for
Wholesale Water Providers
Llano Estacado Water Planning Region

Lubbock updated 7/10/2009; CRMWA updated 12/28/09	Total in	Projections					
		2000	2010	2020	2030	2040	2050
Wholesale Providers	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)	(acft)
Canadian River Municipal Water Authority							
CRMWA Customer Demands		103,855	104,269	104,434	104,391	103,924	103,388
Supplies to Region O		43,685	59,722	59,722	59,722	59,722	59,722
Supplies to Region A		43,163	50,260	50,169	50,045	49,858	49,676
Surplus/Shortages (Needs)		-17,007	5,713	5,457	5,376	5,656	6,010
City of Lubbock							
CRMWA Supply (Lubbock and CRMWA data)	42,535	32,000	34,000	34,000	34,000	32,000	32,000
Bailey County Supply	12,000	10,000	8,000	6,000	4,000	3,000	3,000
Lake Alan Henry Supply	0	0	0	0	0	0	0
Total Supply	54,535	42,000	42,000	40,000	38,000	35,000	35,000
Projected Demands (Lubbock and Customers)	41,917	51,442	53,359	54,327	54,632	55,208	56,516
Surplus/Shortages (Needs)	12,618	-9,442	-11,359	-14,327	-16,632	-20,208	-21,516
Mackenzie Municipal Water Authority (MMWA)							
Lake Mackenzie supply	864	0	0	0	0	0	0
Projected Demands	2,046	2,100	2,133	2,128	2,098	2,030	1,936
Surplus/Shortages (Needs)	-1,182	-2,100	-2,133	-2,128	-2,098	-2,030	-1,936
White River Municipal Water District (WRMWD)							
White River Lake Supply	2,003	1,999	1,947	1,463	979	495	8
Groundwater Supply							
Total Supply	2,003	1,999	1,947	1,463	979	495	8
Projected Municipal Demands	3,164	2,545	2,080	1,872	1,689	1,537	1,489
Projected Mining and Industrial Demands	1,625	970	470	277	123	8	8
Total Demands	4,789	3,515	2,550	2,149	1,812	1,545	1,497
Surplus/Shortages (Needs)	-2,786	-1,516	-603	-686	-833	-1,050	-1,489
CRMWA Supplies to REGION A							
		Information from Region A Technical Consultant					
SOUTHWESTERN PUBLIC SERVICE		683	0	0	0	0	0
AMARILLO	42,964	36,215	42,987	42,987	42,987	42,987	42,987
BORGER	700	3,433	4,000	4,000	4,000	4,000	4,000
PAMPA	3,499	2,832	3,273	3,182	3,058	2,871	2,689
REGION A CRMWA Supply TOTALS	47,163	43,163	50,260	50,169	50,045	49,858	49,676
CRMWA Supplies to REGION O							
		Information from CRMWA					
BROWNFIELD	1,571	1,758	2,616	2,616	2,616	2,616	2,616
LAMESA	1,744	2,594	2,594	2,594	2,594	2,594	2,594
LEVELLAND	2,232	3,320	3,320	3,320	3,320	3,320	3,320
LUBBOCK	37,182	29,646	44,099	44,099	44,099	44,099	44,099
O'DONNELL DAWSON & LYNN Cos	20	166	278	278	278	278	278
O'DONNELL LYNN CO	145						
PLAINVIEW	2,953	4,393	4,393	4,393	4,393	4,393	4,393
SLATON	914	1,261	1,875	1,875	1,875	1,875	1,875
TAHOKA	368	547	547	547	547	547	547
REGION O CRMWA SUPPLY TOTALS	47,129	43,685	59,722	59,722	59,722	59,722	59,722
Meredith Estimated Quantity Available	69,750	50,000	50,000	50,000	50,000	50,000	50,000
Groundwater	40,000	69,000	69,000	69,000	69,000	69,000	69,000
CRMWA Total (Determined by CRMWA)	109,750	119,000	119,000	119,000	119,000	119,000	119,000

4.3 Socioeconomic Impacts of Not Meeting Projected Water Needs

Section 357.7(a)(4) of the rules for the development of regional water plans requires that the social and economic impacts of not meeting regional water supply needs be evaluated by the Regional Water Planning Groups (RWPGs). The TWDB is required to provide technical assistance, upon request, to complete the evaluations. The LERWPG requested technical assistance of the TWDB to perform the required analyses. TWDB conducted the required analysis of the impacts of the identified needs for the Llano Estacado Region using the same methodology that was used for all other regions. The results of this analysis are presented for information purposes. These results give an indication of the significance of having an adequate water supply, and should be viewed by individuals and public policymakers in that light. The results of the social and economic impact analyses have not been used in any other way in the development of this water plan, since the TWDB Regional Water Planning Rules specified that the RWPG was to develop a water plan to meet the projected needs (shortages) of each water user group unless it was determined that it was not feasible to meet one or more of the projected needs.

The projected total water demands for the Llano Estacado Region decrease from 4.39 million acft in 2010 to 4.10 million acft in 2030, and 3.72 million acft in 2060 (Table 2-19). Under historic drought of record water supply conditions, and with no water management strategies in place, water needs (shortages) are projected to be 1.26 million acft/yr in 2010, increasing to 2.08 million acft/yr in 2030 and to 2.34 million acft/yr by 2060 (Table 4-24).

The projected water needs (shortages) of the region amount to about 28 percent of the projected demand in 2010, increasing to 50 percent of demand in 2030, and 62.7 percent in and 2060 (Table 4-24). This means that by 2030 the region would be able to supply only about 50 percent of the projected water demands unless supply development or other water management strategies are implemented.

The LERWPG identified 59 individual water user groups which showed an unmet need during drought-of-record supply conditions for each decade from 2010 to 2060 (Table 4-24). Of the 21 counties of the Llano Estacado Region, 20 have irrigation water user groups with projected water needs (shortages), there are 30 municipal WUGs (29 cities and one water supply district) with projected needs (shortages), and five counties with projected confined animal

**Table 4-24.
Projected Water Needs (Shortages) and
Socioeconomic Impacts of Failing to Meet Projected Water Needs (Shortages)
Llano Estacado Water Panning Region (Region O)**

County/WUG	Basin	Use	Projections					
			2010 (acft/yr)	2020 (acft/yr)	2030 (acft/yr)	2040 (acft/yr)	2050 (acft/yr)	2060 (acft/yr)
Region Total Water Shortages								
		Mun	9,461	13,243	18,997	22,532	27,124	29,047
		Irrig	1,253,776	1,722,690	2,053,846	2,301,752	2,332,340	2,290,511
		Beef Fdlt	0	759	2,426	7,177	11,076	12,891
		Dairies	0	0	764	2,328	3,631	12,891
		Total Shortage	1,263,237	1,736,692	2,076,033	2,333,789	2,374,171	2,345,340
Region	Units		Years					
			2010	2020	2030	2040	2050	2060
Socioeconomic Impacts of Shortages								
Irrigated Agriculture								
Lost Income (GSP)	\$ million	per year	353.29	687.56	895.63	1,085.94	1,124.63	1,101.93
Lost Taxes (State & Local)	\$ million	per year	17.26	35.80	47.81	57.75	59.92	59.03
Lost Jobs	Number		5,465	10,158	1,314	15,631	16,114	15,824
Beef Feedlots & Dairies								
Lost Income (GSP)	\$ million	per year	0.00	3.68	15.46	78.30	236.21	274.40
Lost Taxes (State & Local)	\$ million	per year	0.00	0.27	1.13	7.34	17.30	20.10
Lost Jobs	Number		0	92	386	2,303	5,892	6,117
Municipal WUGS								
Lost Utility Revenues	\$ million	per year	16.63	23.28	34.13	40.61	48.98	52.19
Lost Income (Bus & Com)	\$ million	per year	2.81	22.91	37.94	49.98	53.81	60.51
Lost Taxes (State & Local)	\$ million	per year	0.32	2.03	4.36	5.69	6.26	7.18
Lost Jobs	Number		81	593	1,240	1,598	1,755	2,052
Region Totals								
Lost Income (GSP)	\$ million	per year	356.10	714.15	949.03	1,214.22	1,414.65	1,436.84
Lost Taxes (State & Local)	\$ million	per year	17.58	38.10	53.30	70.78	83.48	86.31
Lost Jobs	Number		5,546	10,843	2,940	19,532	23,761	23,993
Social Impacts								
Population Losses	Number		7,160	13,910	18,670	24,590	29,830	30,030
School Enrollment Declines	Number		1,380	3,270	4,380	5,770	7,000	7,040
								◇◇◇◇

feeding (beef feedlots and dairies) WUGS with projected needs (shortages)(Table 4-24). The projected needs (shortages) for each county are summarized in Appendix C: Table C-01. For example, the projected municipal needs for cities of Castro County are 744 acft/yr in 2030, 805 acft/yr in 2040, 832 acft/yr in 2050, and 844 acft/yr in 2060 (Appendix C: Table C-01). The projected needs for irrigation in Bailey County are 81,561 acft/yr in 2010, 84,647 acft/yr in 2030, and 83,220 acft/yr in 2060 (Appendix C: Table C-01).

The results of the social and economic analyses of not meeting the projected water needs (shortages) are summarized in Table 4-24, and are shown in detail in Appendix C. Estimates are presented for effects upon regional income, taxes, jobs lost, and population and school enrollment effects of not meeting projected water needs. It is estimated that due to projected water shortages, regional income losses in irrigated agriculture, business and commercial establishments, are \$356.10 million/yr in 2010, \$949.03 million/yr in 2030, and \$1,436.84 million/yr in 2060 (Table 4-24). Losses in tax payments to local and state governments are estimated at \$17.58 million/yr in 2010, \$53.30 million/yr in 2030, and \$86.31 million in 2060 (Table 4-24). (Note: the socioeconomic impact analyses were calculated for projected unmet needs (quantities of projected shortages) for municipal, irrigation, and beef feedlot and dairies without taking into account the effects of voluntary transfers of quantities of irrigation sufficient to meet the projected needs of municipal water user groups. Therefore the shortages shown in Table 4-24 are different from the projected shortages shown elsewhere in the plan that take into account the quantities of irrigation water that will need to be transferred to the municipal water user group to meet municipal projected needs.)

The estimated effects of unmet water shortages upon the population of the region are 7,160 in 2010, 18,670 in 2030, and 30,030 in 2060 (Table 4-24). School enrollment is projected to be 1,680 less in 2010, 4,380 less in 2030, and 7,040 less in 2060 (Table 4-24).

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