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CHAPTER 4.0: COMPARISON OF WATER DEMANDS WITH WATER SUPPLIES TO DETERMINE NEEDS

The comparison of water demands for each water user group (WUG) to the water supplies available to each WUG within the Lower Colorado Regional Water Planning Area (LCRWPA) is a simple mathematical comparison of the estimates developed in Chapters 2 and 3 of this report. This comparison was completed and summarized in three different ways. First, a comparison of water demands and supplies was completed on a county-by-county basis. Second, the comparison has been completed and summarized for each of the six river basins. Finally, a comparison of the water demands and supplies for the two designated major water providers within the LCRWPA was also completed.

Region-wide, the comparison of available water supplies and water demands identified 38 separate WUGs that have projected water supply shortages, or “needs”, by the year 2030, and an additional 4 WUGs with projected water supply shortages before the year 2050. The estimated water need is approximately 391,000 acre-feet per year (ac-ft/yr) in 2030 and 387,000 ac-ft/yr in 2050. This identified shortage is based on availability estimates, which exclude water available from LCRA on an interruptible basis and water available as a result of Austin’s return flows to the Colorado River. Water needs have been identified in five of the six water use categories. Figure 4.1 contains an illustration of the distribution, by use category, of the number of WUGs with identified water needs in the years 2030 and 2050. Figure 4.2 contains an illustration of the magnitude of the identified needs, by use category for the years 2030 and 2050.

Figure 4.1: WUGs With Identified Water Needs in the LCRWPA

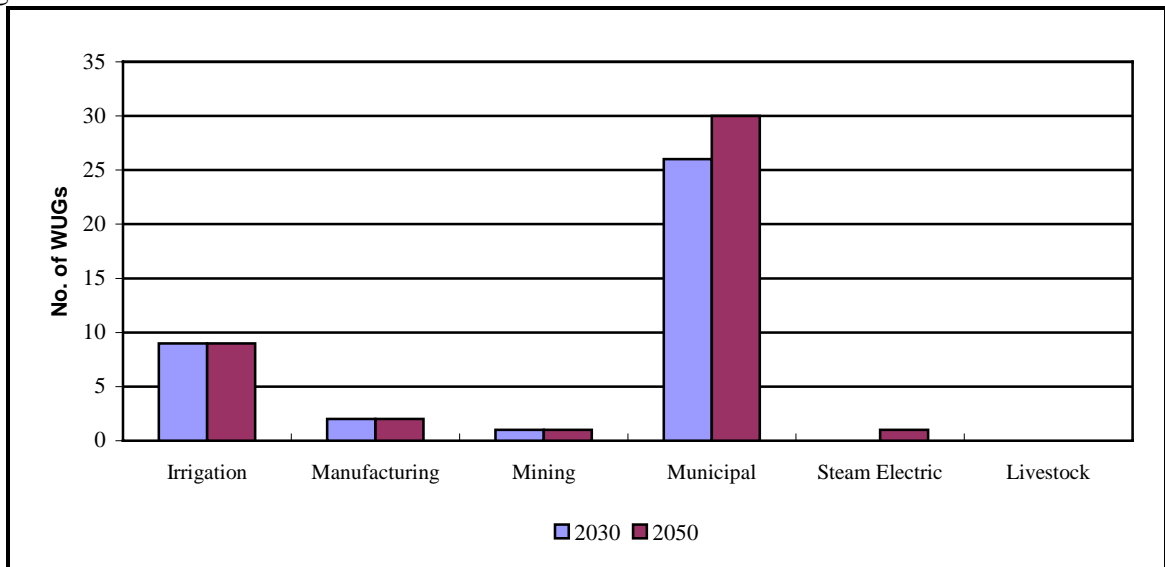
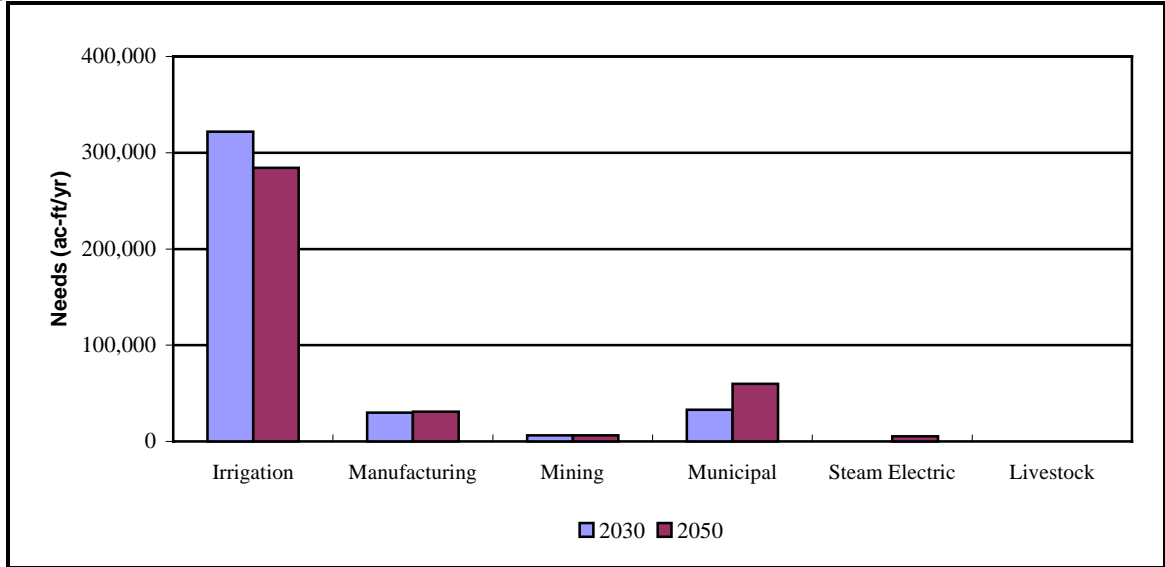


Figure 4.2: Identified Water Needs in the LCRWPA



The majority of the identified water supply shortages fall into two main categories. The first shortage is associated with rice irrigation demands in the lower three counties of Matagorda, Wharton, and Colorado. It is estimated that irrigators in these three counties would experience a water supply shortage of approximately 391,000 ac-ft/year under the existing demand conditions (year 2000), should a repeat of the driest year during the drought-of-record occur. This shortage is estimated to decrease to 322,000 ac-ft/yr in 2030 (18% decrease); and to 284,000 ac-ft/yr in 2050 (27% decrease) due to projected declining irrigation demands.

These estimated shortfalls are based on the available firm supply determined in Chapter 3. In accordance with Texas Water Development Board (TWDB) rules, the available supply of water for irrigators was estimated based on the available run-of-river water rights and groundwater supplies in the area. The interruptible supply of water provided by the Lower Colorado River Authority (LCRA) and the City of Austin return flows were not considered in these calculations since this supply, by definition, is not firm. As a result, the estimated shortages for rice irrigation in Matagorda, Wharton, and Colorado counties are overstated. The continued use of interruptible water supplies to meet estimated irrigation demands will be considered as one of the water management strategies.

The second category of identified shortages includes WUGs that purchase water from one of the two designated major water providers within the LCRWPA - the City of Austin and the LCRA. In accordance with TWDB rules, water available to WUGs under wholesale contracts is no longer considered available once the contract expires. Since the City of Austin and the LCRA contracts generally extend for less than 50 years, most wholesale customers of these two major water providers will have an identified water shortage. The renewal and expansion of these wholesale water contracts will be considered as a water management strategy in Chapter 5. However, since both the City of Austin and the LCRA anticipate continuing these wholesale contracts in perpetuity, these demands have been considered in evaluating the water supply needs for the City of Austin and the LCRA.

4.1 COUNTY SUMMARIES OF WATER NEEDS

The following sections provide summaries of the needs and surpluses identified for each county within the LCRWPA. The tables presented in these sections provide a listing of individual WUGs with identified water supply needs (negative numbers in the tables indicate a water supply shortage). WUGs with water supply needs resulting from the expiration of a wholesale contract appear shaded and italicized in the following tables. Following the information for the individual WUGs with water supply needs is a summation of the total needs identified within the county. This information is presented in the required TWDB format (Table 7) in Appendix 4A.

4.1.1 Bastrop County

The primary sources of water for Bastrop County are the Carrizo-Wilcox and Queen City aquifers. Surface water supplies are primarily associated with power generation and are supplied from a combination of firm water from the Highland Lakes and Lake Bastrop. Local surface water supplies are available to irrigation and livestock users. Municipal water demands account for over one-half the total demand in Bastrop County. Steam electric generation accounts for an additional one-third of the total demand. A summary of the estimated water shortages identified for Bastrop County is presented in Table 4.1.

Table 4.1: Bastrop County Water Supply Needs (ac-ft/yr)

Water User Group Name	2000 Needs	2010 Needs	2020 Needs	2030 Needs	2040 Needs	2050 Needs
Garfield - CDP*	0	0	0	0	-1	-11
Bastrop Co.Total Needs	0	0	0	0	-1	-11

WUGs with water supply needs resulting from the expiration of a wholesale contract are shaded and italicized
 *CDP – Census Designated Place

4.1.2 Blanco County

Groundwater is available to users in Blanco County from the Ellenburger-San Saba, Trinity, Edwards-Trinity Plateau, and Hickory aquifers. Surface water supplies in the county are available from the City of Blanco’s reservoirs and other local supplies. Municipal water demands account for over one-half of the total water demands in Blanco County. The remainder of the demand is divided between irrigation and livestock needs. A summary of the estimated water shortages identified for Blanco County is presented in Table 4.2.

Table 4.2: Blanco County Water Supply Needs (ac-ft/yr)

Water User Group Name	2000 Needs	2010 Needs	2020 Needs	2030 Needs	2040 Needs	2050 Needs
Blanco County-Other	-24	-70	-119	-163	-183	-215
City of Blanco	-52	-40	-23	-15	-5	-5
Blanco Co. Total Needs	-76	-110	-142	-178	-188	-220

WUGs with water supply needs resulting from the expiration of a wholesale contract are shaded and italicized

4.1.3 Burnet County

Groundwater is available to users in Burnet County from the Ellenburger-San Saba, Trinity, Marble Falls, and Hickory aquifers. Surface water supplies in the county are available from the Highland Lakes through contracts with the LCRA and other local supplies. Municipal water demands account for over one-half of the total water demands in Burnet County. The only water shortages identified in Burnet County are municipal shortages. Several of these shortages have been identified due to wholesale contract expirations. A summary of the estimated water shortages identified for Burnet County is presented in Table 4.3.

Table 4.3: Burnet County Water Supply Needs (ac-ft/yr)

Water User Group Name	2000 Needs	2010 Needs	2020 Needs	2030 Needs	2040 Needs	2050 Needs
<i>Cottonwood Shores</i>	-3	-22	-164	-168	-170	-171
<i>Granite Shoals</i>	0	0	0	-456	-471	-493
<i>Marble Falls</i>	0	0	-1,874	-2,105	-2,177	-2,264
<i>County - Other</i>	-880	-1,103	-1,417	-1,652	-1,686	-1,779
Burnet Co. Total Needs	-883	-1,125	-3,455	-4,381	-4,504	-4,707

WUGs with water supply needs resulting from the expiration of a wholesale contract are shaded and italicized

4.1.4 Colorado County

The primary source of groundwater in Colorado County is the Gulf Coast aquifer. Surface water supplies are available through the irrigation district operated by LCRA and its run-of-river water rights, as well as other local supply sources. Irrigation demands in Colorado County represent three-fourths of the water demand in the county and are the primary water supply shortage identified. A summary of the estimated water shortages identified for Colorado County is presented in Table 4.4.

Table 4.4: Colorado County Water Supply Needs (ac-ft/yr)

Water User Group Name	2000 Needs	2010 Needs	2020 Needs	2030 Needs	2040 Needs	2050 Needs
Irrigation	-100,861	-92,935	-85,904	-79,103	-72,519	-66,117
Colorado Co. Total Needs	-100,861	-92,935	-85,904	-79,103	-72,519	-66,117

WUGs with water supply needs resulting from the expiration of a wholesale contract are shaded and italicized

4.1.5 Fayette County

Groundwater supplies in Fayette County are available from the Gulf Coast, Sparta, and Queen City aquifers. Surface water is available for steam electric generation through the LCRA and the City of Austin. Steam electric generation represents three-fourths of the total water demand in the county with the remainder of the demand split primarily between municipal and livestock needs. It is estimated that the water supplies available to users in Fayette County are sufficient to meet the projected demands. No water supply needs were identified for Fayette County.

4.1.6 Gillespie County

Groundwater supplies in Gillespie County are available from the Ellenburger-San Saba, Edwards-Trinity, Trinity, and Hickory aquifers. Surface water is primarily available from local sources. Municipal water demands represent more than one-half of the total water demand in the county. Livestock and irrigation needs make up the majority of the remaining water demand. The only estimated water shortages identified for Gillespie County is associated with County-Other demands, as presented in Table 4.5.

Table 4.5: Gillespie County Water Supply Needs (ac-ft/yr)

Water User Group Name	2000 Needs	2010 Needs	2020 Needs	2030 Needs	2040 Needs	2050 Needs
County - Other	-438	-478	-548	-608	-818	-944
Gillespie Co. Total Needs	-438	-478	-548	-608	-818	-944

WUGs with water supply needs resulting from the expiration of a wholesale contract are shaded and italicized

4.1.7 Hays County

Groundwater supplies in Hays County are available from the Edwards-BFZ and Trinity aquifers. Surface water availability is limited to local sources. Municipal demand represents over 80 percent of the total demand in the county and is the only water supply shortage identified for Hays County, as presented in Table 4.6.

Table 4.6: Hays County Water Supply Needs (ac-ft/yr)

Water User Group Name	2000 Needs	2010 Needs	2020 Needs	2030 Needs	2040 Needs	2050 Needs
City of Dripping Springs	0	0	0	-22	-135	-364
County - Other	-990	-1795	-2558	-3525	-4643	-5227
Hays Co. Total Needs	-990	-1795	-2558	-3547	-4778	-5591

WUGs with water supply needs resulting from the expiration of a wholesale contract are shaded and italicized

4.1.8 Llano County

Groundwater supplies in Llano County are available from the Hickory and Ellenburger-San Saba aquifers. Surface water is available from the City of Llano reservoir and other local sources. Municipal demands represent one-half of the total demand in the county and all of the identified water supply shortage. Two of the shortages identified are the result of wholesale contract expirations. The remainder of the demand is primarily irrigation, steam electric generation, and livestock demands. A summary of the estimated water shortages identified for Llano County is presented in Table 4.7.

Table 4.7: Llano County Water Supply Needs (ac-ft/yr)

Water User Group Name	2000 Needs	2010 Needs	2020 Needs	2030 Needs	2040 Needs	2050 Needs
<i>County - Other</i>	0	0	0	-1334	-1449	-1653
<i>Kingsland CDP</i>	-25	-5	-472	-463	-472	-493
City of Llano	-660	-633	-603	-555	-574	-602
Llano Co. Total Needs	-685	-638	-1075	-2352	-2495	-2748

WUGs with water supply needs resulting from the expiration of a wholesale contract are shaded and italicized

4.1.9 Matagorda County

The primary source of groundwater in Matagorda County is the Gulf Coast aquifer. Surface water supplies are available through the irrigation district operated by LCRA and its run-of-river water rights, as well as other local supply sources. Irrigation demands in Matagorda County represent three-fourths of the water demand in the county with steam electric generation being the second largest demand. Significant water supply shortages have been identified for irrigation, manufacturing, steam electric generation, and mining. All of these shortages, except the irrigation shortage, are associated with contract expirations. A summary of the estimated water shortages identified for Matagorda County is presented in Table 4.8.

Table 4.8: Matagorda County Water Supply Needs (ac-ft/yr)

Water User Group Name	2000 Needs	2010 Needs	2020 Needs	2030 Needs	2040 Needs	2050 Needs
<i>Manufacturing</i>	-1,709	-29,751	-29,927	-30,035	-30,539	-31,019
<i>Steam Electric</i>	0	0	0	0	-5,237	-5,237
<i>Mining</i>	-4,475	-6,129	-6,168	-6,249	-6,278	-6,285
Irrigation	-171,508	-159,382	-152,847	-146,822	-140,521	-134,718
Matagorda Co. Total Needs	-177,692	-195,262	-188,942	-183,106	-182,575	-177,259

WUGs with water supply needs resulting from the expiration of a wholesale contract are shaded and italicized

4.1.10 Mills County

The primary source of groundwater in Mills County is the Trinity aquifer. Surface water supplies are available through the City of Goldthwaite Reservoir and other local supply sources. Irrigation demands in Mills County represent one-half of the water demand in the county with the remainder of the demand being livestock and municipal demand. A summary of the estimated water shortages identified for Mills County is presented in Table 4.9.

Table 4.9: Mills County Water Supply Needs (ac-ft/yr)

Water User Group Name	2000 Needs	2010 Needs	2020 Needs	2030 Needs	2040 Needs	2050 Needs
City of Goldthwaite	-117	-101	-88	-89	-85	-88
Mills Co. Total Needs	-117	-101	-88	-89	-85	-88

WUGs with water supply needs resulting from the expiration of a wholesale contract are shaded and italicized

In addition to the shortage identified for the City of Goldthwaite, isolated portions of Mills County are projected to have shortages for the County-Other category due to the inconsistency of the aquifers in the county. The shortage has not been quantified because of the isolated nature of the shortages.

4.1.11 San Saba County

Groundwater supplies in San Saba County are available from the Ellenburger-San Saba, Marble Falls, and Hickory aquifers. Surface water availability is limited to local sources. Irrigation demand represents two-thirds of the total demand in the county with the remaining demand being livestock and municipal demands. It is estimated that the water supplies available to users in San Saba County are sufficient to meet the projected demands. No water supply needs were identified for San Saba County.

4.1.12 Travis County

Groundwater supplies in Travis County are available from the Edwards-BFZ and Trinity aquifers. Surface water is available through the LCRA and City of Austin run-of-river water rights. Municipal water demands represent more than 80 percent of the total demand in the county. Manufacturing and steam electric generation account for most of the remaining demands. All of the identified water shortages are for municipal demands, with the majority of these shortages being associated with wholesale contract expirations. A summary of the estimated water shortages identified for Travis County is presented in Table 4.10.

Table 4.10: Travis County Water Supply Needs (ac-ft/yr)

Water User Group Name	2000 Needs	2010 Needs	2020 Needs	2030 Needs	2040 Needs	2050 Needs
<i>Anderson Mill (CDP)</i>	0	-34	-34	-33	-32	-34
Austin	0	0	0	0	0	-20,517
Garfield CDP	0	0	0	0	-46	-117
<i>Jonestown</i>	0	0	0	-40	-438	-485
<i>Lago Vista</i>	0	0	0	-2,995	-3,291	-3,630
<i>Lakeway</i>	0	-180	-2,240	-2,693	-2,964	-3,287
<i>Pflugerville</i>	-291	-793	-1,476	-2,323	-2,825	-3,378
<i>Rollingwood</i>	0	0	0	-675	-726	-793
<i>Wells Branch CDP</i>	0	0	0	-1,013	-1,025	-1,064
<i>West Lake Hills</i>	0	0	0	-2,956	-3,294	-3,682
<i>County-Other</i>	-60	-66	-80	-7,438	-7,954	-8,797
Travis Co. Total Needs	-351	-1,073	-3,830	-20,166	-22,595	-45,784

WUGs with water supply needs resulting from the expiration of a wholesale contract are shaded and italicized

4.1.13 Wharton County

The primary source of groundwater in Wharton County is the Gulf Coast aquifer. Surface water supplies are available through the irrigation districts operated by the LCRA and the Pierce Ranch Irrigation District; and the associated run-of-river water rights. In addition, surface water is available from other local supply sources. Irrigation demands in Wharton County represent 95 percent of the water demand in the county with municipal demands being the second largest demand. A summary of the estimated water shortages identified for Wharton County is presented in Table 4.11.

Table 4.11: Wharton County Water Supply Needs (ac-ft/yr)

Water User Group Name	2000 Needs	2010 Needs	2020 Needs	2030 Needs	2040 Needs	2050 Needs
Irrigation	-118,974	-110,078	-103,026	-96,224	-89,667	-83,346
Wharton Co. Total Needs	-118,974	-110,078	-103,026	-96,224	-89,667	-83,346

WUGs with water supply needs resulting from the expiration of a wholesale contract are shaded and italicized

4.1.14 Williamson County

Groundwater supplies in Williamson County are available from the Edwards-BFZ aquifer. Surface water is available through the City of Austin. Municipal water demands represent 99 percent of the demand in the County. The majority of the water supply shortages identified for Williamson County is associated with municipal demands and wholesale contract expirations. A summary of the water shortages identified for Williamson County is presented in Table 4.12.

Table 4.12: Williamson County Water Supply Needs (ac-ft/yr)

Water User Group Name	2000 Needs	2010 Needs	2020 Needs	2030 Needs	2040 Needs	2050 Needs
<i>Anderson Mill CDP*</i>	<i>0</i>	<i>-1,975</i>	<i>-1,943</i>	<i>-1,986</i>	<i>-2,031</i>	<i>-2,106</i>
Austin	0	0	0	0	0	-391
<i>County-Other</i>	<i>-72</i>	<i>-103</i>	<i>-144</i>	<i>-178</i>	<i>-200</i>	<i>-215</i>
Williamson Co. Total Needs	-72	-2,078	-2,087	-2,164	-2,231	-2,712

WUGs with water supply needs resulting from the expiration of a wholesale contract are shaded and italicized

* CDP – Census Designated Place

4.1.15 County-Wide Surpluses

The TWDB guidelines for SB 1 regional water planning require that areas with water supply surpluses be identified as well as areas with water supply needs. This analysis was conducted by comparing the countywide estimated water supplies with the countywide estimated water demands. It is important to note that although a particular county may have a countywide water supply surplus, individual WUGs within that county may have water supply needs because they do not have access to the surplus water. Table 4.13 contains a summary of the water supply condition within each county. It is also important to

note that the regional totals shown in Table 4.13 are less than the water supply needs identified in Figure 4.2 due to surpluses in some counties. The fact that the regional totals show water supply needs despite considering the surpluses in some counties indicates that additional water must be developed to meet all of the needs in the LCRWPA. Simply moving surplus water from one area to another will not be sufficient to meet the needs of all WUGs in the LCRWPA.

Table 4.13: County and Regional Water Supply Condition Summary (+Surplus / -Deficit, ac-ft/yr)

County ¹	2000	2010	2020	2030	2040	2050
Bastrop	23,759	18,816	16,483	14,814	13,871	12,659
Blanco	12,487	12,387	12,281	12,181	12,166	11,883
Burnet	15,331	14,540	11,552	9,917	5,600	5,306
Colorado	-93,026	-84,526	-77,605	-70,968	-64,542	-58,372
Fayette	38,891	33,631	28,349	12,991	12,570	6,992
Gillespie	6,820	6,474	6,211	5,990	5,342	4,788
Hays	2,828	1,535	586	-693	-2,177	-3,311
Llano	35,371	34,463	32,797	31,319	31,197	30,958
Matagorda	-154,228	-182,603	-176,527	-170,899	-171,642	-167,171
Mills	2,685	2,772	2,847	2,720	2,788	2,598
San Saba	31,112	31,391	31,628	31,825	32,018	32,172
Travis	214,167	186,804	133,389	57,302	32,426	776
Wharton	-108,634	-99,944	-93,105	-86,602	-80,372	-74,539
Williamson	6,013	2,741	1,016	-398	-1,277	-2,332
Regional Totals ²	33,575	-21,520	-70,098	-150,500	-172,031	-197,593

¹ Overall County Surplus/Deficit = Countywide Water Supply – Countywide Water Demand;

² Overall Regional Surplus/Deficit = Summation of County Surplus/Deficit.

4.2 BASIN SUMMARIES OF WATER NEEDS

The following sections contain summaries of the water shortages identified in each of the six basins within the Lower Colorado Regional Planning Area.

4.2.1 Brazos River Basin

The only shortage identified in the Brazos River Basin is in Williamson County and is due to the expiration of a wholesale water contract. Table 4.14 contains the detailed information.

Table 4.14: Brazos River Basin Water Supply Needs (ac-ft/yr)

Water User Group Name	2000 Needs	2010 Needs	2020 Needs	2030 Needs	2040 Needs	2050 Needs
<i>Anderson Mill CDP</i>	<i>0</i>	<i>-1975</i>	<i>-1943</i>	<i>-1986</i>	<i>-2031</i>	<i>-2106</i>
<i>Travis County-Other</i>	<i>-48</i>	<i>-51</i>	<i>-58</i>	<i>-66</i>	<i>-70</i>	<i>-76</i>
Brazos Basin Total Needs	-48	-2026	-2001	-2052	-2101	-2182

WUGs with water supply needs resulting from the expiration of a wholesale contract are shaded and italicized

4.2.2 Brazos-Colorado Coastal Basin

Water supply shortages in the Brazos-Colorado Coastal Basin were identified for irrigation in Colorado, Matagorda, and Wharton counties. In addition, a manufacturing shortage was identified for Matagorda County due to the expiration of a wholesale water contract. Table 4.15 contains the detailed information.

Table 4.15: Brazos-Colorado Coastal Basin Water Supply Needs (ac-ft/yr)

Water User Group Name	2000 Needs	2010 Needs	2020 Needs	2030 Needs	2040 Needs	2050 Needs
Irrigation (Colorado Co.)	-30,494	-28,335	26,431	-24,592	-22,811	-21,082
<i>Manufacturing (Matagorda Co.)</i>	<i>-1,709</i>	<i>-7,000</i>	<i>-7,051</i>	<i>-7,077</i>	<i>-7,217</i>	<i>-7,345</i>
Irrigation (Matagorda Co.)	-82,262	-76,587	-73,529	84	-67,763	-65,038
Irrigation (Wharton Co.)	-74,714	-69,911	-66,108	-62,441	-58,905	-55,495
Braz.-Col. Basin Total Needs	-189,179	-181,833	-120,257	-94,026	-156,696	-148,960

WUGs with water supply needs resulting from the expiration of a wholesale contract are shaded and italicized

4.2.3 Colorado River Basin

Water supply shortages were identified throughout the Colorado River Basin. Many of these shortages are associated with the expiration of wholesale water contracts. Table 4.16 contains the detailed information.

Table 4.16: Colorado River Basin Water Supply Needs (ac-ft/yr)

Water User Group Name	2000 Needs	2010 Needs	2020 Needs	2030 Needs	2040 Needs	2050 Needs
Garfield CDP (Bastrop)	0	0	0	0	-1	-11
<i>Cottonwood Shores</i>	-3	-22	-164	-168	-170	-171
<i>Granite Shoals</i>	0	0	0	-456	-471	-493
<i>Marble Falls</i>	0	0	-1,874	-2,105	-2,177	-2,264
Irrigation (Colorado)	-5,943	-4,824	-3,799	-2,803	-1,833	-882
<i>Burnet County-Other</i>	-6,222	-5,103	-4,078	-3,082	-2,112	-1,161
Gillespie County-Other	-438	-478	-548	-608	-818	-944
Dripping Springs	0	0	0	-22	-135	-364
Hays County-Other	-990	-1,795	-2,558	-3,525	-4,643	-5,227
<i>Kingsland CDP</i>	-25	-5	-472	-463	-472	-493
Llano	-660	-633	-603	-555	-574	-602
<i>Llano County-Other</i>	0	0	0	-1,334	-1,449	-1,653
<i>Manufacturing (Matagorda)</i>	0	-22,751	-22,876	-22,958	-23,322	-23,674
<i>Steam Elect. (Matagorda)</i>	0	0	0	0	-5,237	-5,237
Irrigation (Matagorda)	-9,758	-8,995	-8,581	-8,183	-7,799	-7,429
Goldthwaite	-117	-101	-88	-89	-85	-88
<i>Anderson Mill CDP (Travis)</i>	0	-34	-34	-33	-32	-34
Austin (Travis)	0	0	0	0	0	-20,517
Garfield CDP (Travis)	0	0	0	0	-49	-120
<i>Jonestown</i>	0	0	0	-40	-438	-485
<i>Lago Vista</i>	0	0	0	-2,995	-3,291	-3,630
<i>Lakeway</i>	0	-180	-2,240	-2,693	-2,964	-3,287
<i>Pflugerville</i>	-291	-793	-1,476	-2,323	-2,825	-3,378
<i>Rollingwood</i>	0	0	0	-675	-726	-793
<i>Wells Branch CDP</i>	0	0	0	-1,013	-1,025	-1,064
<i>West Lake Hills</i>	0	0	0	-2,956	-3,294	-3,682
<i>Travis County-Other</i>	0	0	0	-7,342	-7,851	-8,682
Irrigation (Wharton)	-15,752	-13,160	-11,096	-9,106	-7,189	-5,344
Austin (Williamson)	0	0	0	0	0	-391
<i>Williamson County-Other</i>	-72	-103	-144	-178	-200	-215
Colorado Basin Total Needs	-40,270	-58,976	-60,630	-75,704	-81,181	-102,314

WUGs with water supply needs resulting from the expiration of a wholesale contract are shaded and italicized
WUGs have been sorted by County

4.2.4 Colorado-Lavaca Coastal Basin

The only water supply shortage identified in the Colorado-Lavaca Coastal Basin was for irrigation demands in Matagorda County. Table 4.17 contains the detailed information.

Table 4.17: Colorado-Lavaca Coastal Basin Water Supply Needs (ac-ft/yr)

Water User Group Name	2000 Needs	2010 Needs	2020 Needs	2030 Needs	2040 Needs	2050 Needs
Mining (Matagorda Co.)	-4,475	-6,129	-6,168	-6,249	-6,278	-6,285
Irrigation (Matagorda Co.)	-79,488	-73,800	-70,737	-67,785	-64,959	-62,251
Irrigation (Wharton Co.)	-28,508	-27,007	-25,822	-24,677	-23,573	-22,507
Col.-Lav. Basin Total Needs	-112,472	-106,937	-102,728	-98,712	-94,811	-91,044

WUGs with water supply needs resulting from the expiration of a wholesale contract are shaded and italicized

4.2.5 Lavaca River Basin

The only water supply shortages identified in the Lavaca River Basin were in Colorado County. The shortages were identified for irrigation and mining. Table 4.18 contains the detailed information.

Table 4.18: Lavaca River Basin Water Supply Needs (ac-ft/yr)

Water User Group Name	2000 Needs	2010 Needs	2020 Needs	2030 Needs	2040 Needs	2050 Needs
Irrigation (Colorado Co.)	-64,424	-59,776	-55,674	-51,708	-47,875	-44,153
Lavaca Basin Total Needs	-64,424	-59,776	-55,674	-51,708	-47,875	-44,153

WUGs with water supply needs resulting from the expiration of a wholesale contract are shaded and italicized

4.2.6 Guadalupe River Basin

Water supply shortages in the Guadalupe River Basin were identified for Bastrop, Blanco, and Travis counties. Table 4.19 contains the detailed information.

Table 4.19: Guadalupe River Basin Water Supply Needs (ac-ft/yr)

Water User Group Name	2000 Needs	2010 Needs	2020 Needs	2030 Needs	2040 Needs	2050 Needs
City of Blanco	-52	-40	-23	-15	-5	-5
Blanco County-Other	-24	-70	-119	-163	-183	-215
Travis County-Other	-12	-15	-22	-30	-33	-39
Guadalupe Basin Total Needs	-88	-125	-164	-208	-221	-260

WUGs with water supply needs resulting from the expiration of a wholesale contract are shaded and italicized

4.3 DESIGNATED MAJOR WATER PROVIDERS

As previously discussed, the LCRA and City of Austin have been identified as major providers of water within the Lower Colorado Regional Planning Area. The following sections present a comparison of the water supplies for these two entities and their water supply commitments.

4.3.1 Lower Colorado River Authority

The LCRA has two major sources for its water. These sources include the Highland Lakes System and run-of-river water rights in the lower portion of the basin. The LCRA has commitments to provide water to individual users and cities throughout the basin. In addition, the LCRA uses water at its electric generating facilities. Table 4.20 contains a comparison of LCRA's water supplies to its water commitments.

Table 4.20: LCRA Water Supply/Commitment Comparison (ac-ft/yr)

LCRA Water Supply	Year 2000	Year 2010	Year 2020	Year 2030	Year 2040	Year 2050
Firm Water Supply	498,166	498,166	498,166	498,166	498,166	498,166
Firm Water Commitments	432,647	432,647	432,647	432,647	432,647	432,647
Interruptible Water Needs	379,642	353,710	334,899	318,249	301,059	284,384
Water Surplus/Deficit	-314,123	-288,191	-269,380	-252,730	-235,540	-218,865

Note: The water supply is detailed in Table 3.20.

The water commitments are detailed in Table 3.21. The sum presented in Table 4.20 represents all commitments, regardless of expiration since the LCRA plans to continue providing these services. The total water commitment includes all rice irrigation demands. Commitments also include the out-of-basin 25,000 ac-ft/yr demand from Region G in Williamson Co.

This table indicates that the LCRA does not have enough water to meet all of its water commitments, although it does have enough water to meet its firm water commitments through the year 2050. It is also important to recognize that this analysis does not include interruptible water supplies available through the implementation of the Water Management Plan or City of Austin return flows. These supplies are discussed in Chapter 5 as water management strategies.

4.3.2 City of Austin

The City of Austin (COA) has two major sources for its water. These sources include the run-of-river water rights and a contract with LCRA to receive water from the Highland Lakes during drought conditions. These rights are separated by the use of the water. The City of Austin has separate rights for municipal uses and steam electric generation. Tables 4.21 and 4.22 contain comparisons of the City of Austin's water supplies to its water commitments in these two areas.

Table 4.21: COA Municipal & Manufacturing Water Supply/Commitment Comparison (ac-ft/yr)

COA Water Supply	Year 2000	Year 2010	Year 2020	Year 2030	Year 2040	Year 2050
Municipal Water Supply	325,000	325,000	325,000	325,000	325,000	325,000
Municipal Water Commitment	198,073	225,580	263,470	301,447	326,341	355,714
Water Surplus / Need	126,927	99,420	61,530	23,553	-1,341	-30,714

Note: The water supply is detailed in Table 3.22.
 The water commitments are detailed in Table 2.16. The sum presented in Table 4.21 represents all commitments, regardless of expiration since the City of Austin plans to continue providing these services. This includes the 6,161 ac-ft/yr for the City of Round Rock.

This table indicates that the City of Austin has sufficient water to meet its municipal and manufacturing needs through the year 2030. By the year 2050, it is anticipated that the City of Austin will have a deficit of approximately 31,000 ac-ft/yr, or approximately 9 percent of its demands.

Table 4.22: COA Steam Electric Water Supply/Commitment Comparison (ac-ft/yr)

COA Water Supply	Year 2000	Year 2010	Year 2020	Year 2030	Year 2040	Year 2050
Stm. Elec. Water Supply	46,856	46,856	46,856	46,856	46,856	46,856
Stm. Elec. Water Commitment	21,500	21,500	21,500	21,500	21,500	24,500
Water Surplus	25,356	25,356	25,356	25,356	25,356	22,356

Note: The water supply is detailed in Table 3.22.
 The water commitments are detailed in Table 2.16. The sum presented in Table 4.22 represents all steam electric generating needs for Travis County plus 8,000 ac-ft/yr at the Fayette Power Project.

This table indicates that the City of Austin has a surplus of water for its steam electric generating needs as a whole.

The comparison of water demands to water supplies available to each WUG within the Lower Colorado Regional Water Planning Area (LCRWPA) has identified 38 separate water user groups that are projected to have water supply shortages by the year 2030, and an additional 4 WUGs that are projected to have a deficit by 2050. The estimated water need is approximately 390,000 acre-feet per year (ac-ft/yr) in 2030 and 2050. This identified shortage excludes water available from LCRA on an interruptible basis and water available as a result of Austin’s return flows to the Colorado River. The water management strategies detailed in Chapter 5.0 have been designed to alleviate these projected water supply shortages.

LCRWPG ADOPTED PLAN

APPENDIX 4A

***TWDB-REQUIRED TABLES FOR COMPARISON OF WATER DEMANDS
AND WATER SUPPLIES
(EXHIBIT B DATA TABLES 7 & 8)***

LOCATED IN VOLUME II OF THE LCRWPG REGIONAL WATER PLAN - APPENDICES