

***Appendix D***  
***Summary of Water Management Strategies***



## Appendix D, Table 1 2011 South Central Texas Regional Water Plan Water Management Strategies

	Section	Description	Short-term Unit Cost* (\$/acft/yr)	Long-term Unit Cost* (\$/acft/yr)	Quantity of Water (acft/yr)	First Decade Needed	Notes
<b>Recommended Water Management Strategies</b>	4C.1	Municipal Water Conservation	\$ 648	-	72,570	2010	Unit Cost and Quantity at 2060.
	4C.3	Edwards Transfers	\$ 454	-	51,875	2010	
	4C.22	Local Groundwater Supplies (Carrizo)	\$ 687	\$ 258	33,874	2010	Quantity is cumulative of all Recommended WMS. Unit cost is average unit cost.
	4C.36	TWA Regional Carrizo	\$ 1,490	\$ 489	27,000	2010	
	4C.5	Recycled Water Programs	Varies	Varies	26,756	2010	
	4C.34	Lavaca River Off-Channel Reservoir	\$ 701	\$ 100	26,242	2010	LNRA WMS
	4C.1	Irrigation Water Conservation	\$ 143	-	20,709	2010	Maximum potential for Atascosa, Medina, & Zavala Counties.
	4C.2	Drought Management	Varies	Varies	13,627	2010	
	4C.27	CRWA Wells Ranch Project	\$ 359	\$ 173	11,000	2010	
	4C.30	Medina Lake Firm-Up (ASR)	\$ 1,696	\$ 450	9,933	2010	15 Wells size
	4C.22	Local Groundwater Supplies (Trinity)	\$ 710	\$ 116	4,436	2010	Quantity is cumulative of all Recommended WMS. Unit cost is average unit cost.
	4C.8	Wimberley and Woodcreek Water Supply Project	\$ 2,429	\$ 1,772	4,480	2010	
	4C.9	Storage Above Canyon Reservoir (ASR)	\$ 1,772	\$ 587	3,140	2010	Meets needs Kendall County Rural
	4C.1	Mining Water Conservation	Varies	Varies	2,492	2010	
	4C.6	Facilities Expansions	-	-	-	2010	
	4C.32	Surface Water Rights	-	-	-	2010	Acquisition of existing rights only. Unit costs variable.
	4C.21	GBRA Simsboro Project	\$ 982	\$ 386	50,000	2020	
	4C.10	GBRA-Exelon Project	\$ 641	\$ 224	49,126	2020	River Diversion
	4C.20	Hays/Caldwell PUA Project	\$ 1,245	\$ 439	35,000	2020	CRWA, San Marcos, Kyle, & Buda
	4C.23	Brackish Wilcox Groundwater for SAWS	\$ 1,245	\$ 465	26,400	2020	
	4C.15	GBRA Mid-Basin (Surface Water)	\$ 2,204	\$ 405	25,000	2020	
	4C.4	Edwards Aquifer Recharge – Type 2 Projects	\$ 2,005	\$ 340	21,577	2020	Includes full spectrum of potential projects.
	4C.18	Regional Carrizo for SAWS	\$ 1,343	\$ 324	11,687	2020	
	4C.24	Brackish Wilcox Groundwater for Regional Water Alliance	\$ 1,264	\$ 538	11,200	2020	10 MGD Capacity
	4C.19	Regional Carrizo for SSLGC Project Expansion	\$ 608	\$ 293	10,364	2020	
	4C.29	LCRA-SAWS Water Project	\$ 2,394	\$ 555	90,000	2030	
	4C.13	GBRA Lower Basin Storage (100 acre site)	\$ 104	\$ 15	28,369	2030	
	4C.14	GBRA New Appropriation (Lower Basin)	\$ 1,953	\$ 239	11,300	2030	100,000 acft Off-Channel Storage Size
	4C.28	CRWA Siesta Project	\$ 1,421	\$ 497	5,042	2030	
	4C.25	Brackish Wilcox Groundwater for SSWSC	\$ 1,883	\$ 766	1,120	2040	
	4C.22	Local Groundwater Supplies (Gulf Coast)	\$ 1,823	\$ 637	161	2040	City of Kenedy
4C.31	Seawater Desalination	\$ 2,284	\$ 941	84,012	2060	San Antonio Bay source.	
<b>Alternative Water Management Strategies</b>	4C.12	LGWSP for Upstream GBRA Needs	\$ 1,506	\$ 536	60,000		
	4C.13	GBRA Lower Basin Storage (500 acre site)	\$ 109	\$ 14	59,569		
	4C.11	LGWSP for Upstream GBRA Needs at Reduced Capacity	\$ 2,565	\$ 726	35,000		
	4C.16	GBRA Mid-Basin Project (Conjunctive Use)	\$ 1,779	\$ 425	25,000		
	4C.17	Regional Carrizo for Guadalupe Basin (GBRA)	\$ 1,280	\$ 454	25,000		
	4C.35	Palmetto Bend - Stage II	\$ 887	\$ 84	22,964		LNRA WMS
	4C.30	Medina Lake Firm-Up (OCR)	\$ 1,197	\$ 199	9,078		Site 3
	4C.22	Local Groundwater Supplies (Barton Springs Edwards)	\$ 203	\$ 47	1,358		Goforth WSC
	4C.26	Calhoun County Brackish Groundwater Project	\$ 2,679	\$ 1,064	1,344		
	4C.22	Local Groundwater Supplies (Carrizo) (Yancy WSC)	\$ 517	\$ 99	1,210		Yancy WSC
<b>Water Management Strategies Requiring Further Study &amp; Funding</b>	4C.33	Balancing Storage (ASR and/or Surface)					
	4C.7	Brush Management (Above Canyon Reservoir)	\$ 897	\$ 244	5,500		25% Participation
	4C.9	Storage Above Canyon Reservoir (Off-Channel)					
		CRWA Dunlap Project					
		Edwards Recharge and Recirculation Systems					
		Mesa Water Supply Project (SAWS)					
		Rainwater Harvesting					
		Regional Carrizo for BMWD					
		Regional Carrizo for SSLGC Project Expansion - Wilson County Option					
		SAWS Other Water Supplies (Planned RFP)					
	Seawater Desalination for Guadalupe River Basin						
	Weather Modification						

\*Cost in September 2008 dollars

**Recommended Water Management Strategy Total for Municipal, Industrial, Steam-Electric, and Mining Uses Only =**

**~734,000 acft/yr**



## Appendix D, Table 2

# 2011 South Central Texas Regional Water Plan Recommended Water Management Strategies

Region	Section	Description	Total Capital Costs	First Decade Estimated Annual Average Unit Cost (\$/acft/yr)	Water Supply Volume (acre-feet per year)						Year 2060 Estimated Annual Average Unit Cost (\$/acft/yr)
					2010	2020	2030	2040	2050	2060	
L	4C.1	Municipal Water Conservation	\$47,025,360	\$ 648	13,231	22,742	31,616	40,528	53,925	72,570	-
L	4C.1	Irrigation Water Conservation	\$2,961,387	\$ 143	20,709	20,709	20,709	20,709	20,709	20,709	-
L	4C.1	Mining Water Conservation	-	Varies	521	726	1,771	1,991	2,292	2,492	Varies
L	4C.2	Drought Management	-	Varies	13,627	0	0	0	0	0	Varies
L	4C.3	Edwards Transfers	\$23,551,250	\$ 454	45,896	47,479	48,931	49,870	50,855	51,875	-
L	4C.4	Edwards Aquifer Recharge – Type 2 Projects	\$527,643,000	\$ 2,005		13,451	13,451	13,451	13,451	21,577	\$ 340
L	4C.5	Recycled Water Programs	\$465,339,000	Varies	6,699	11,081	15,180	19,203	22,728	26,756	Varies
L	4C.6	Facilities Expansions	-	-	0	0	0	0	0	0	-
L	4C.8	Wimberley and Woodcreek Water Supply Project	\$33,771,000	\$ 2,429	1,120	4,480	4,480	4,480	4,480	4,480	\$ 1,772
L	4C.9	Storage Above Canyon Reservoir (ASR)	\$37,326,000	\$ 1,772		3,140	3,140	3,140	3,140	3,140	\$ 587
L	4C.10	GBRA-Exelon Project	\$280,598,000	\$ 641		49,126	49,126	49,126	49,126	49,126	\$ 224
L	4C.13	GBRA Lower Basin Storage (100 acre site)	\$33,800,000	\$ 104	0	0	28,369	28,369	28,369	28,369	\$ 15
L	4C.14	GBRA New Appropriation (Lower Basin)	\$246,849,000	\$ 1,953	0	0	11,300	11,300	11,300	11,300	\$ 239
L	4C.15	GBRA Mid-Basin (Surface Water)	\$546,941,000	\$ 2,204	0	25,000	25,000	25,000	25,000	25,000	\$ 405
L	4C.18	Regional Carrizo for SAWS	\$136,550,000	\$ 1,343	0	11,687	11,687	11,687	11,687	11,687	\$ 324
L	4C.19	Regional Carrizo for SSLGC Project Expansion	\$28,189,000	\$ 608		10,364	10,364	10,364	10,364	10,364	\$ 293
L	4C.20	Hays/Caldwell PUA Project	\$323,296,000	\$ 1,245	0	12,000	12,000	35,000	35,000	35,000	\$ 439
L	4C.21	GBRA Simsboro Project	\$330,782,000	\$ 982		30,000	30,000	30,000	50,000	50,000	\$ 386
L	4C.22	Local Groundwater Supplies (Carrizo)	\$166,718,000	\$ 687	6,773	11,610	15,440	17,255	23,947	33,874	\$ 258
L	4C.22	Local Groundwater Supplies (Gulf Coast)	\$2,194,000	\$ 1,823	0	0	0	161	161	161	\$ 637
L	4C.22	Local Groundwater Supplies (Trinity)	\$30,224,000	\$ 710	2,016	3,146	3,468	3,630	3,952	4,436	\$ 116
L	4C.23	Brackish Wilcox Groundwater for SAWS	\$236,220,000	\$ 1,245	0	12,000	21,000	26,400	26,400	26,400	\$ 465
L	4C.24	Brackish Wilcox Groundwater for RWA	\$93,243,000	\$ 1,264		5,600	5,600	5,600	11,200	11,200	\$ 538
L	4C.25	Brackish Wilcox Groundwater for SSWSC	\$14,357,000	\$ 1,883	0	0	0	1,120	1,120	1,120	\$ 766
L	4C.27	CRWA Wells Ranch Project	\$12,375,000	\$ 359	11,000	11,000	11,000	11,000	11,000	11,000	\$ 173
L	4C.28	CRWA Siesta Project	\$53,481,000	\$ 1,421			1,000	5,042	5,042	5,042	\$ 497
L	4C.29	LCRA-SAWS Water Project	\$1,986,684,000	\$ 2,394			90,000	90,000	90,000	90,000	\$ 555
L	4C.30	Medina Lake Firm-Up (ASR)	\$146,237,000	\$ 1,696	9,933	9,933	9,933	9,933	9,933	9,933	\$ 450
L	4C.31	Seawater Desalination	\$1,293,827,000	\$ 2,284						84,012	\$ 941
L	4C.32	Surface Water Rights	-	-	0	0	0	0	0	0	-
L	4C.34	Lavaca River Off-Channel Reservoir	\$224,183,000	\$ 701	26,242	26,242	26,242	26,242	26,242	26,242	\$ 100
L	4C.36	TWA Regional Carrizo	\$314,148,000	\$ 1,490	27,000	27,000	27,000	27,000	27,000	27,000	\$ 489



**Appendix D, Table 3.  
Regional Water Supply Plan Summary**

County/Water User Group	Demand		Need (Shortage)		Recommended Management Strategies to Meet Needs (Shortages)	Amount from WMS	
	2010 (acft)	2060 (acft)	2010 (acft)	2060 (acft)		2010 (acft)	2060 (acft)
<b>Atascosa County</b>	<b>Table 2-12</b>		<b>Table 4A-1</b>		<b>Section 4B.2.1</b>		
Benton City WSC	1,189	2,569	0	885	Municipal Water Conservation		153
					Local Carrizo Aquifer		1,613
					Purchase from WWP (BMWD)		
Charlotte	296	350	0	0	Municipal Water Conservation	20	43
					Drought Management	15	
					Purchase from WWP (BMWD)		
					Local Carrizo Aquifer		
					Facilities Expansions		
Jourdanton	801	1,026	112	338	Municipal Water Conservation	60	222
					Drought Management	40	
					Local Carrizo Aquifer	403	403
Lytle	479	526	141	188	Municipal Water Conservation	38	108
					Edwards Transfers	141	188
					Drought Management	24	
McCoy WSC	1,106	2,328	0	812	Municipal Water Conservation		129
					Local Carrizo Aquifer		1,613
Pleasanton	1,906	2,151	0	0	Municipal Water Conservation	156	615
					Local Carrizo Aquifer		
					Facilities Expansions		
Poteet	735	752	0	0	Municipal Water Conservation	60	213
	449	97	0	0	Municipal Water Conservation	11	
					Drought Management <sup>1</sup>		
Rural					Purchase from WWP (BMWD)		
					Edwards Transfers		
					Facilities Expansions		
Industrial	6	6	0	0			
Steam-Electric	7,000	7,672	263	942	Local Carrizo Aquifer	807	1613
Mining	1,298	1,509	0	0			
Irrigation	40,885	34,502	6,095	291	Irrigation Water Conservation	5369	291
Livestock	1,745	1,745	0	0			
<b>Bexar County</b>	<b>Table 4A-1</b>		<b>Table 4A-1</b>		<b>Section 4B.2.2</b>		
Alamo Heights	2,071	2,170	592	691	Municipal Water Conservation	175	865
					Edwards Transfers	592	691
					Drought Management	104	
Atascosa Rural WSC	941	1,613	546	1,218	Municipal Water Conservation		22
					Edwards Transfers	546	1,218
					Drought Management	47	
					Purchase from WWP (BMWD)	120	120
Balcones Heights	514	670	0	0	Municipal Water Conservation	4	37
Bexar Metropolitan Water District	9,888	12,405	3,944	7,038	Municipal Water Conservation		293
					Purchase from WWP (BMWD)	3,944	7,038
Castle Hills	820	771	96	47	Municipal Water Conservation	61	166
					Drought Management	41	
					Purchase from WWP (BMWD)	96	47
China Grove	376	695	0	0	Municipal Water Conservation	28	217
Converse	1,907	3,564	0	969	Municipal Water Conservation		110
					Purchase from WWP (BMWD)	0	969
East Central SUD	1,523	2,793	0	942	Municipal Water Conservation		104
					Purchase from WWP (CRWA)	0	942
Elmendorf	112	156	0	0	Municipal Water Conservation		6
Fair Oaks Ranch	1,434	1,479	0	0	Municipal Water Conservation	125	509
Helotes	1,537	4,047	0	0	Municipal Water Conservation	115	993
	838	826	730	718	Municipal Water Conservation	77	365
Hill Country Village					Purchase from WWP (BMWD)	730	718
					Drought Management	42	
Hollywood Park	2,314	2,616	1,969	2,271	Municipal Water Conservation	212	1,154
					Purchase from WWP (BMWD)	1,969	2,271
					Drought Management	116	
Kirby	1,005	1,034	335	364	Edwards Transfers	335	364
					Drought Management	50	
Lackland AFB (CDP)	3,104	3,016	0	0	Municipal Water Conservation	268	1300
Leon Valley	1,091	1,036	0	0	Municipal Water Conservation		12
Live Oak	1,145	1,284	0	0	Municipal Water Conservation		
Olmos Park	403	484	0	0	Municipal Water Conservation	9	33
San Antonio	216,945	317,727	81,464	197,909	Municipal Water Conservation	5,752	23,711
					Purchase from WWP (SAWS)	68,760	169,752
					Purchase from WWP (BMWD)	12,704	28,157
					Drought Management (SAWS)	9,883	
					Drought Management (BMWD)	1,233	

**Appendix D, Table 3 (Continued)**

County/Water User Group	Demand		Need (Shortage)		Recommended Management Strategies to Meet Needs (Shortages)	Amount from WMS	
	2010 (acft)	2060 (acft)	2010 (acft)	2060 (acft)		2010 (acft)	2060 (acft)
Selma	1,667	2,605	0	749	Municipal Water Conservation	135	1,122
					Purchase from WWP (SSLGC)	0	749
Shavano Park	819	880	320	381	Municipal Water Conservation	73	382
					Drought Management	41	
					Purchase from WWP (SAWS)	320	381
Somerset	405	709	0	0	Municipal Water Conservation	29	177
St. Hedwig	310	501	0	0	Municipal Water Conservation		14
Terrell Hills	863	1,057	0	0	Municipal Water Conservation	14	65
Universal City	2,608	3,101	113	606	Municipal Water Conservation		148
					Edwards Transfers	113	606
					Drought Management	130	
Water Service Inc. (Apex Water Ser.)	951	2,058	911	2,018	Municipal Water Conservation		105
					Edwards Transfers	587	1,116
					Purchase from WWP (TWA)		1,000
					Purchase from WWP (SSLGC)	324	324
Windcrest	1,204	1,182	235	214	Municipal Water Conservation	99	385
					Edwards Transfer	235	235
Rural	6,624	7,496	0	655	Municipal Water Conservation	49	505
					Purchase from WWP (SAWS)	0	655
Industrial	25,951	42,112	1,340	17,588	Purchase from WWP (SAWS)	12,000	30,000
					Recycled Water	1,340	17,588
Steam-Electric	20,395	39,614	0	0			
Mining	3,582	4,766	0	1,216	Recycled Water		1,216
Irrigation	15,273	12,306	0	0			
Livestock	1,319	1,319	0	0			
<b>Caldwell County</b>	<b>Table 2-12</b>		<b>Table 4A-1</b>		<b>Section 4B.2.3</b>		
Aqua WSC	267	580	49	362	Municipal Water Conservation		19
					Local Carrizo Aquifer	403	403
					Drought Management	13	
Creedmoor-Maha WSC	244	583	108	447	Municipal Water Conservation		11
					Purchase from WWP (GBRA)	108	447
Lockhart	2,451	5,285	0	2,512	Municipal Water Conservation		333
					Local Carrizo Aquifer		2823
					Purchase from WWP (GBRA)		1,120
					Drought Management	123	
Luling	1,067	1,594	0	506	Municipal Water Conservation	70	192
					Local Carrizo Aquifer		807
					Purchase from WWP (GBRA)		1,680
					Drought Management	53	
Martindale	125	158	0	0	Purchase from WWP (CRWA)	0	0
					Drought Management	6	
Martindale WSC	189	329	42	182	Purchase from WWP (CRWA)	396	896
					Drought Management	9	
Maxwell WSC	660	1,733	0	689	Municipal Water Conservation		55
					Purchase from WWP (CRWA)	0	2,000
Mustang Ridge	135	329	19	213	Municipal Water Conservation	10	116
					Purchase from WWP (GBRA)	19	213
					Drought Management	6	
Polonia WSC	668	1,656	0	265	Local Wilcox		323
Rural	237	143	0	0	Municipal Water Conservation	21	29
Industrial	15	29	0	0			
Steam-Electric	0	0	0	0			
Mining	14	18	0	0			
Irrigation	1,044	578	0	0			
Livestock	918	918	0	0			
<b>Calhoun County</b>	<b>Table 2-12</b>		<b>Table 4A-1</b>		<b>Section 4B.2.4</b>		
Calhoun County WSC	436	632	0	0			
	224	667	46	489	Municipal Water Conservation	18	98
Point Comfort					Purchase from WWP (LNRA)	46	489
					Drought Management	11	
Port Lavaca	1,769	2,345	0	0	Municipal Water Conservation		89
Seadrift	252	258	0	0	Municipal Water Conservation	20	41
Rural (Port O'Conner MUD)	267	269	0	0	Municipal Water Conservation		11
Industrial	49,784	72,238	0	209	Purchase from WWP (LNRA)	10,000	10,000
Steam-Electric	0	0	0	0			
Mining	32	38	0	0			
Irrigation	15,568	9,581	0	0			
Livestock	342	342	0	0			
<b>Comal County</b>	<b>Table 2-12</b>		<b>Table 4A-1</b>		<b>Section 4B.2.5</b>		
Bulverde City	1,053	4,995	653	4,595	Municipal Water Conservation		430
					Purchase from WWP (GBRA)	653	4,595
					Drought Management	53	

**Appendix D, Table 3 (Continued)**

County/Water User Group	Demand		Need (Shortage)		Recommended Management Strategies to Meet Needs (Shortages)	Amount from WMS	
	2010 (acft)	2060 (acft)	2010 (acft)	2060 (acft)		2010 (acft)	2060 (acft)
Canyon Lake WSC	2,928	13,331	0	6,769	Municipal Water Conservation		1,414
					Purchase from WWP (GBRA)		6,769
					Drought Management <sup>1</sup>		
Garden Ridge	565	1,360	257	1,052	Purchase from WWP (TWA)		12,000
					Municipal Water Conservation	42	460
					Purchase from WWP (SSLGC)	257	1052
New Braunfels	10,509	26,226	0	13,920	Drought Management	28	
					Municipal Water Conservation	815	8,152
					Drought Management	525	
Rural	2,721	3,998	1,782	2,960	Purchase from WWP (GBRA)		13,920
					Municipal Water Conservation		85
					Purchase from WWP (GBRA)	891	1,480
					Purchase from NBU (term)	891	
Industrial	7,729	11,553	5,199	9,022	Purchase from WWP (TWA)		1,480
Steam-Electric	0	0	0	0	Recycled Water	5,199	9,022
Mining	2,678	3,401	439	1,173			
Irrigation	204	119	0	0			
Livestock	298	298	0	0			
<b>DeWitt County</b>	<b>Table 2-12</b>		<b>Table 4A-1</b>		<b>Section 4B.2.6</b>		
Cuero	1,249	1,177	0	0	Municipal Water Conservation	99	218
Yoakum	352	328	0	0	Municipal Water Conservation	14	27
Yorktown	343	318	0	0	Municipal Water Conservation		13
Rural	1,013	912	0	0	Municipal Water Conservation		6
Industrial	184	254	0	0			
Steam-Electric	0	0	0	0			
Mining	64	71	0	0			
Irrigation	159	54	0	0			
Livestock	1,689	1,689	0	0			
<b>Dimmit County</b>	<b>Table 2-12</b>		<b>Table 4A-1</b>		<b>Section 4B.2.7</b>		
Asherton	286	279	0	0	Municipal Water Conservation	20	64
Big Wells	149	145	0	0	Municipal Water Conservation	11	33
Carrizo Springs	1,842	1,836	0	0	Municipal Water Conservation	152	777
Rural	284	263	0	0			
Industrial	0	0	0	0			
Steam-Electric	0	0	0	0			
Mining	1,003	1,095	0	0			
Irrigation	10,611	8,987	0	0			
Livestock	552	552	0	0			
<b>Frio County</b>	<b>Table 2-12</b>		<b>Table 4A-1</b>		<b>Section 4B.2.8</b>		
Dilley	1,229	1,825	0	0	Municipal Water Conservation	104	772
Pearsall	1,443	1,449	0	0	Municipal Water Conservation	116	324
Rural	727	1,007	0	0	Municipal Water Conservation		18
Industrial	0	0	0	0			
Steam-Electric	289	91	0	0			
Mining	109	96	0	0			
Irrigation	82,017	68,592	0	0			
Livestock	1,209	1,209	0	0			
<b>Goliad County</b>	<b>Table 2-12</b>		<b>Table 4A-1</b>		<b>Section 4B.2.9</b>		
Goliad	416	594	0	0	Municipal Water Conservation	30	100
Rural	608	848	0	0	Municipal Water Conservation		16
Industrial	4	24	0	0			
Steam-Electric	9,027	16,643	0	0			
Mining	398	46	0	0			
Irrigation	309	149	0	0			
Livestock	920	920	0	0	Livestock Water Conservation		
<b>Gonzales County</b>	<b>Table 2-12</b>		<b>Table 4-10</b>		<b>Section 4B.2.10</b>		
Gonzales	1,545	1,759	0	0	Municipal Water Conservation	116	414
Gonzales County WSC	1,748	2,360	0	0	Municipal Water Conservation	143	1,002
					Purchase from WWP (TWA)		1,000
Nixon	438	488	0	0	Municipal Water Conservation	35	93
Waelder	154	203	0	0	Municipal Water Conservation		11
Rural	393	204	0	0	Municipal Water Conservation	6	3
Industrial	2,400	3,402	0	0			
Steam-Electric	0	0	0	0			
Mining	28	24	0	0			
Irrigation	1,304	621	0	0			
Livestock	5,453	5,453	0	0			
<b>Guadalupe County</b>	<b>Table 2-12</b>		<b>Table 4A-1</b>		<b>Section 4B.2.11</b>		
Cibolo	866	2,730	0	0	Municipal Water Conservation	65	645
					Purchase from WWP (CRWA)	700	7,180
					Purchase from WWP (BMWD)	500	500

**Appendix D, Table 3 (Continued)**

County/Water User Group	Demand		Need (Shortage)		Recommended Management Strategies to Meet Needs (Shortages)	Amount from WMS	
	2010 (acft)	2060 (acft)	2010 (acft)	2060 (acft)		2010 (acft)	2060 (acft)
Crystal Clear WSC	2,041	5,551	0	2,716	Municipal Water Conservation		184
					Local Wilcox Aquifer		2,823
					Purchase from WWP (CRWA)	1,300	5,185
					Purchase from WWP (SSLGC)		900
Green Valley SUD	3,039	7,826	0	547	Purchase from WWP (SHWSC)	0	0
					Municipal Water Conservation		20
					Purchase from WWP (CRWA)	700	9,500
Marion	164	251	0	75	Purchase from NBU	552	552
					Municipal Water Conservation		10
City of New Berlin	70	180	0	0	Purchase from WWP (CRWA)	100	400
Santa Clara	220	954	76	810	Municipal Water Conservation		79
					Purchase from WWP (CRWA)	100	900
					Drought Management		11
Schertz	1,451	12,059	0	2,420	Municipal Water Conservation	22	1,088
					Purchase from WWP (SSLGC)	0	5,923
Seguin	5,018	9,047	0	0	Municipal Water Conservation	377	2,131
					Purchase from WWP (SSLGC)		
Springs Hill WSC	2,349	4,330	0	0	Municipal Water Conservation	174	877
					Purchase from WWP (TWA)		3,000
					Brackish Wilcox Groundwater for RWA		1,500
					Facilities Expansions		
Rural	270	13	0	0	Municipal Water Conservation	2	
Industrial	2,638	4,097	0	0			
Steam-Electric	4,788	7,515	0	0			
Mining	306	353	0	0			
Irrigation	1,070	705	0	0			
Livestock	1,057	1,057	0	0			
<b>Hays (Part) County</b>	<b>Table 2-12</b>		<b>Table 4A-1</b>		<b>Section 4B.2.12</b>		
County Line WSC	1,151	3,677	0	2,386	Municipal Water Conservation	43	473
					Local Trinity Aquifer		2,420
					Purchase from WWP (CRWA)	0	570
					Drought Management	58	
Goforth WSC	1,156	3,485	0	1,872	Recycled Water		
					Municipal Water Conservation		111
					Hays/Caldwell PUA Project		1639
Kyle	2,740	5,203	0	1,699	Purchase from WWP (GBRA)		300
					Municipal Water Conservation		443
					Hays/Caldwell PUA Project		9,355
Mountain City	45	183	0	134	Drought Management	137	
					Municipal Water Conservation	1	22
Niederwald	130	449	58	377	Hays/Caldwell PUA Project		150
					Municipal Water Conservation		42
					Purchase from WWP (GBRA)	58	377
Plum Creek Water Company	566	1,630	0	657	Drought Management	7	
					Municipal Water Conservation		54
San Marcos	8,038	24,439	0	11,387	Purchase from WWP (GBRA)		657
					Municipal Water Conservation	417	2,656
Wimberley WSC	776	1,966	219	1,409	Hays/Caldwell PUA Project		11,910
					Municipal Water Conservation		70
					Wimberley and Woodcreek Water Supply	320	1,480
Woodcreek	246	610	23	387	Drought Management	39	
					Municipal Water Conservation		37
Woodcreek Utilities	748	2,873	455	2,580	Wimberley and Woodcreek Water Supply	100	400
					Drought Management	12	
					Municipal Water Conservation	56	771
Rural	1,444	2,584	0	0	Wimberley and Woodcreek Water Supply	700	2,600
Industrial	212	386	0	0	Municipal Water Conservation		184
Steam-Electric	1,009	3,627	0	0			
Mining	142	163	82	103	Recycled Water	82	103
Irrigation	353	338	0	0			
Livestock	280	280	0	0			
<b>Karnes County</b>	<b>Table 2-12</b>		<b>Table 4A-1</b>		<b>Section 4B.2.13</b>		
El Oso WSC	555	728	0	0	Municipal Water Conservation	41	139
Falls City	113	145	0	0	Municipal Water Conservation	8	23
Karnes City	432	512	182	262	Municipal Water Conservation		11
					Local Carrizo	323	323
Kenedy	763	993	0	118	Municipal Water Conservation	58	268
					Local Gulf Coast Aquifer		161
Runge	195	247	0	0	Municipal Water Conservation	15	37
Rural (TDCJ)	500	500	0	0			
Rural	372	822	0	0	Municipal Water Conservation	68	258
Industrial	118	137	0	0			

**Appendix D, Table 3 (Continued)**

County/Water User Group	Demand		Need (Shortage)		Recommended Management Strategies to Meet Needs (Shortages)	Amount from WMS	
	2010 (acft)	2060 (acft)	2010 (acft)	2060 (acft)		2010 (acft)	2060 (acft)
Steam-Electric	0	0	0	0			
Mining	106	100	0	0			
Irrigation	1,382	836	0	0			
Livestock	1,185	1,185	0	0			
<b>Kendall County</b>	<b>Table 2-12</b>		<b>Table 4A-1</b>		<b>Section 4B.2.14</b>		
Boerne	1,570	4,282	0	276	Municipal Water Conservation	98	816
					Western Canyon WTP Expansion		276
Rural	2,750	7,460	0	3,514	Municipal Water Conservation		264
					Purchase from WWP (GBRA)		3,140
					Western Canyon WTP Expansion		374
Industrial	0	0	0	0			
Steam-Electric	0	0	0	0			
Mining	6	6	0	0			
Irrigation	714	646	0	0			
Livestock	446	446	0	0			
<b>LaSalle County</b>	<b>Table 2-12</b>		<b>Table 4A-1</b>		<b>Section 4B.2.15</b>		
Cotulla	1,407	1,743	0	0	Municipal Water Conservation	118	745
Encinal	110	107	0	0	Municipal Water Conservation	9	14
Rural	282	500	0	0	Municipal Water Conservation	3	42
Industrial	0	0	0	0			
Steam-Electric	0	0	0	0			
Mining	0	0	0	0			
Irrigation	4,791	4,097	0	0			
Livestock	1,687	1,687	0	0			
<b>Medina County</b>	<b>Table 2-12</b>		<b>Table 4A-1</b>		<b>Section 4B.2.16</b>		
Castroville	680	961	294	575	Municipal Water Conservation	53	302
					Edwards Transfers	294	575
					Drought Management		34
					Purchase from WWP (BMWD)		
Devine	837	896	0	0	Municipal Water Conservation	63	196
East Medina SUD	881	1,385	0	491	Municipal Water Conservation		54
					Edwards Transfers		491
					Drought Management		44
Hondo	1,784	2,717	319	1,252	Municipal Water Conservation	125	640
					Edwards Transfers	319	1,252
					Drought Management		89
La Coste	205	281	92	168	Municipal Water Conservation		11
					Edwards Transfers	92	168
					Drought Management		10
Natalia	330	519	194	383	Municipal Water Conservation	24	73
					Edwards Transfers	194	383
					Drought Management		17
Yancey WSC	832	1,603	214	985	Municipal Water Conservation	61	316
					Edwards Transfers	214	985
Rural	1,527	2,949	0	1,296	Municipal Water Conservation		244
					Edwards Transfers		1,296
Industrial	67	103	0	0			
Steam-Electric	0	0	0	0			
Mining	130	143	0	0			
Irrigation	54,450	44,015	7,770	0	Irrigation Water Conservation	7,770	
Livestock	1,298	1,298	0	0			
<b>Refugio County</b>	<b>Table 2-12</b>		<b>Table 4A-1</b>		<b>Section 4B.2.17</b>		
Refugio	645	777	0	0	Municipal Water Conservation	44	144
Woodsboro	283	293	0	0	Municipal Water Conservation	5	20
Rural	321	232	0	0			
Industrial	0	0	0	0			
Steam-Electric	0	0	0	0			
Mining	7	8	0	0			
Irrigation	69	69	0	0			
Livestock	623	623	0	0			
<b>Uvalde County</b>	<b>Table 2-12</b>		<b>Table 4A-1</b>		<b>Section 4B.2.18</b>		
Sabinal	407	389	127	109	Municipal Water Conservation	34	145
					Edwards Transfers	127	109
					Drought Management		20
Uvalde	6,087	6,178	3,172	3,263	Municipal Water Conservation	521	2,652
					Edwards Transfers	3,172	3,263
					Drought Management		304
Rural	1,572	2,532	0	0	Municipal Water Conservation		137
Industrial	432	538	0	0			
Steam-Electric	0	0	0	0			
Mining	313	418	0	0			
Irrigation	55,791	45,703	0	0			
Livestock	1,284	1,284	0	0			

**Appendix D, Table 3 (Continued)**

County/Water User Group	Demand		Need (Shortage)		Recommended Management Strategies to Meet Needs (Shortages)	Amount from WMS	
	2010 (acft)	2060 (acft)	2010 (acft)	2060 (acft)		2010 (acft)	2060 (acft)
<b>Victoria County</b>	<b>Table 2-12</b>		<b>Table 4A-1</b>		<b>Section 4B.2.19</b>		
Victoria	11,924	14,360	0	0	Municipal Water Conservation	874	2,485
Rural	2,666	3,674	0	310	Municipal Water Conservation		32
					Purchase from WWP (GBRA)		310
Industrial	28,726	43,520	0	14,441	Purchase from WWP (GBRA)		14,441
Steam-Electric	4,052	53,178	1,791	51,076	Purchase from WWP (GBRA - Exelon)		49,126
					Purchase from WWP (GBRA)	1,791	1,950
					Steam Electric Water Conservation	500	500
Mining	3,944	6,041	0	0			
Irrigation	9,936	4,759	0	0			
Livestock	1,085	1,085	0	0			
<b>Wilson County</b>	<b>Table 2-12</b>		<b>Table 4A-1</b>		<b>Section 4B.2.20</b>		
Floresville	1,805	3,000	0	433	Municipal Water Conservation	136	714
					Local Carrizo Aquifer		484
La Vernia	278	764	0	0	Municipal Water Conservation	21	227
					Purchase from WWP (CRWA)	400	400
Oak Hills WSC	693	2,160	0	298	Municipal Water Conservation		136
					Local Carrizo Aquifer		323
Poth	348	585	0	0	Municipal Water Conservation	20	64
SS WSC	1,563	5,030	223	3,690	Municipal Water Conservation		221
					Local Carrizo Aquifer	807	4,033
					Purchase from WWP (CRWA)		690
					Brackish Wilcox Groundwater for SS WSC		1120
					Drought Management	78	
Stockdale	350	558	0	0	Municipal Water Conservation	27	171
Sunko WSC	613	1,326	0	16	Municipal Water Conservation	3	92
					Local Carrizo Aquifer		161
Rural	609	2,006	0	33	Municipal Water Conservation		116
Industrial	1	1	0	0			
Steam-Electric	0	0	0	0			
Mining	242	218	0	0			
Irrigation	11,296	6,330	0	0			
Livestock	1,808	1,808	0	0			
<b>Zavala County</b>	<b>Table 2-12</b>		<b>Table 4A-1</b>		<b>Section 4B.2.21</b>		
Crystal City	2,247	2,370	0	0	Municipal Water Conservation	192	1,002
Rural	864	1,371	0	0	Municipal Water Conservation	42	149
Industrial	1,043	1,315	0	0			
Steam-Electric	0	0	0	0			
Mining	122	130	0	0			
Irrigation	71,800	58,692	54,600	41,492	Irrigation Water Conservation	6,948	6,948
Livestock	756	756	0	0			
<b>Wholesale Water Providers</b>	<b>Tables 2-13 through 2-19</b>		<b>Table 4A-3</b>		<b>Section 4B.3</b>		
San Antonio Water System	217,954	328,442	73,600	193,264	Municipal Water Conservation <sup>2</sup>		
					Drought Management	19,767	0
					Edwards Transfers	35,935	35,935
					ASR Project and Phased Expansion	3,800	16,000
					Recycled Water Program Expansion	15,127	15,127
					Regional Carrizo for Bexar County		11,700
					Edwards Aquifer Recharge – Type 2 Projects		21,577
					Brackish Groundwater Desalination (Wilcox)		26,400
					LCRA/SAWS Water Project		90,000
					Seawater Desalination		84,012
Guadalupe-Blanco River Authority	137,065	279,484	0	16,708	Municipal Water Conservation <sup>2</sup>		
					Wimberley and Woodcreek Water Supply Project	4,480	
					Simsboro Groundwater Project		50,000
					GBRA Mid-Basin/Gonzales Project (Surface Water)		25,000
					Storage Above Canyon Reservoir (ASR)		3,140
					GBRA/Exelon Project		49,126
					GBRA Lower Basin Storage		26,452
					GBRA New Appropriation (Lower Basin)		11,500
				Western Canyon WTP Expansion		5,600	
Bexar Met	43,439	57,954	16,638	35,418	Municipal Water Conservation <sup>2</sup>		
					Edwards Transfers	3,000	3,000
					Local Trinity	2,016	2,016
					Local Carrizo	4,030	16,129
					Medina Lake Firm-Up (ASR – 15 wells)	9,933	9,933
				Purchase from WWP (CRWA)	2,800	8,250	

**Appendix D, Table 3 (Concluded)**

County/Water User Group	Demand		Need (Shortage)		Recommended Management Strategies to Meet Needs (Shortages)	Amount from WMS	
	2010 (acft)	2060 (acft)	2010 (acft)	2060 (acft)		2010 (acft)	2060 (acft)
Canyon Regional Water Authority	21,054	53,534	7,920	40,400	Municipal Water Conservation <sup>2</sup>		
					Wells Ranch Project Phase I	5,200	5,200
					Wells Ranch Project Phase II	5,800	5,800
					Purchase from WWP (GBRA)		5,000
					Brackish Wilcox Groundwater for RWA		11,200
					Siesta Project		5,042
Lavaca-Navidad River Authority			10,046	10,489	Hays/Caldwell PUA Project		10,260
					Municipal Water Conservation <sup>2</sup>		
					Lavaca River Off-Channel Reservoir	26,242	26,242
Schertz-Seguin Local Government Corp.	12,704	21,071	0	4,935	Municipal Water Conservation <sup>2</sup>		
					Regional Carrizo for SSLGC Project Expansion		10,364
					Brackish Wilcox Groundwater for RWA		2,000
Springs Hill WSC	3,384	5,365	0	0	Municipal Water Conservation <sup>2</sup>		
					Purchase from WWP (TWA)		3,000
					Brackish Wilcox Groundwater for RWA		1,500
Texas Water Alliance	0	18,480	0	18,480	Municipal Water Conservation <sup>2</sup>		
					TWA Regional Carrizo	27,000	27,000

<sup>1</sup> Historical per capita water use data unavailable or insufficient for calculation of yield.

<sup>2</sup> Municipal Water Conservation

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