

**Appendix 4A**  
**Comparison of Supply and Demand**







WUG Name	WUG County	WUG Basin	Type	WUG Demand						WUG Supply						Surplus/Shortage					
				2010	2020	2030	2040	2050	2060	2010	2020	2030	2040	2050	2060	2010	2020	2030	2040	2050	2060
SNYDER	SCURRY	COLORADO	MUN	2,792	2,834	2,844	2,829	2,832	2,832	2,281	2,193	2,835	2,712	2,638	2,517	-511	-641	-9	-117	-194	-315
COUNTY-OTHER	STERLING	COLORADO	MUN	52	56	57	56	54	55	52	56	57	56	54	55	0	0	0	0	0	0
IRRIGATION	STERLING	COLORADO	IRR	648	621	595	569	543	518	745	745	745	745	745	745	97	124	150	176	202	227
LIVESTOCK	STERLING	COLORADO	STK	503	503	503	503	503	503	503	503	503	503	503	503	0	0	0	0	0	0
MINING	STERLING	COLORADO	MIN	590	600	605	610	615	620	590	600	605	610	615	620	0	0	0	0	0	0
STERLING CITY	STERLING	COLORADO	MUN	297	321	330	330	319	324	297	321	330	330	319	324	0	0	0	0	0	0
COUNTY-OTHER	SUTTON	COLORADO	MUN	54	56	56	55	54	54	54	56	56	55	54	54	0	0	0	0	0	0
COUNTY-OTHER	SUTTON	RIO GRANDE	MUN	223	232	231	226	225	223	223	232	231	226	225	223	0	0	0	0	0	0
IRRIGATION	SUTTON	COLORADO	IRR	561	551	540	530	518	507	562	562	562	562	562	562	1	11	22	32	44	55
IRRIGATION	SUTTON	RIO GRANDE	IRR	1,250	1,226	1,202	1,178	1,155	1,132	1,250	1,232	1,232	1,232	1,232	1,232	0	6	30	54	77	100
LIVESTOCK	SUTTON	COLORADO	STK	358	358	358	358	358	358	358	358	358	358	358	358	0	0	0	0	0	0
LIVESTOCK	SUTTON	RIO GRANDE	STK	438	438	438	438	438	438	438	438	438	438	438	438	0	0	0	0	0	0
MINING	SUTTON	COLORADO	MIN	35	35	36	36	37	37	35	35	36	36	37	37	0	0	0	0	0	0
MINING	SUTTON	RIO GRANDE	MIN	45	47	47	48	48	49	45	47	47	48	48	49	0	0	0	0	0	0
SONORA	SUTTON	RIO GRANDE	MUN	1,195	1,252	1,252	1,236	1,235	1,222	1,919	1,919	1,919	1,919	1,919	1,919	724	667	667	683	684	697
CONCHO RURAL WSC	TOM GREEN	COLORADO	MUN	695	873	990	1,048	1,091	1,103	1,103	1,103	1,103	1,103	1,103	1,103	408	230	113	55	12	0
COUNTY-OTHER	TOM GREEN	COLORADO	MUN	1,761	1,703	1,633	1,553	1,476	1,408	1,720	1,720	1,720	1,720	1,720	1,720	-41	17	87	167	244	312
IRRIGATION	TOM GREEN	COLORADO	IRR	104,621	104,362	104,107	103,852	103,593	103,338	57,531	57,531	57,531	57,531	57,531	57,531	-47,090	-46,831	-46,576	-46,321	-46,062	-45,807
LIVESTOCK	TOM GREEN	COLORADO	STK	1,978	1,978	1,978	1,978	1,978	1,978	1,978	1,978	1,978	1,978	1,978	1,978	0	0	0	0	0	0
MANUFACTURING	TOM GREEN	COLORADO	MFG	2,226	2,498	2,737	2,971	3,175	3,425	0	0	0	0	0	0	-2,226	-2,498	-2,737	-2,971	-3,175	-3,425
MILLERSVIEW-DOOLE WSC	TOM GREEN	COLORADO	MUN	238	263	291	319	359	408	331	332	389	394	244	244	93	69	98	75	-115	-164
MINING	TOM GREEN	COLORADO	MIN	73	80	85	90	95	99	150	150	150	150	150	150	77	70	65	60	55	51
SAN ANGELO	TOM GREEN	COLORADO	MUN	20,800	21,418	21,734	21,744	21,907	21,969	11,616	11,393	11,170	10,946	10,723	10,500	-9,184	-10,025	-10,564	-10,798	-11,184	-11,469
STEAM ELECTRIC POWER	TOM GREEN	COLORADO	SEP	543	777	909	1,069	1,264	1,502	0	0	0	0	0	0	-543	-777	-909	-1,069	-1,264	-1,502
COUNTY-OTHER	UPTON	COLORADO	MUN	52	54	53	53	54	55	52	54	53	53	54	55	0	0	0	0	0	0
COUNTY-OTHER	UPTON	RIO GRANDE	MUN	100	102	102	101	102	104	100	102	102	101	102	104	0	0	0	0	0	0
IRRIGATION	UPTON	COLORADO	IRR	16,592	16,355	16,123	15,887	15,651	15,421	5,920	5,904	5,900	5,895	5,889	5,882	-10,672	-10,451	-10,223	-9,992	-9,762	-9,539
IRRIGATION	UPTON	RIO GRANDE	IRR	167	166	162	160	158	155	199	199	199	199	199	199	32	33	37	39	41	44
LIVESTOCK	UPTON	COLORADO	STK	78	78	78	78	78	78	78	78	78	78	78	78	0	0	0	0	0	0
LIVESTOCK	UPTON	RIO GRANDE	STK	134	134	134	134	134	134	134	134	134	134	134	134	0	0	0	0	0	0
MCCAMEY	UPTON	RIO GRANDE	MUN	559	606	621	629	648	668	1,071	1,070	1,070	1,071	1,070	1,069	512	464	449	442	422	401
MINING	UPTON	COLORADO	MIN	2,011	2,025	2,030	2,035	2,040	2,046	2,011	2,025	2,030	2,035	2,040	2,046	0	0	0	0	0	0
MINING	UPTON	RIO GRANDE	MIN	651	655	657	659	660	662	651	655	657	659	660	662	0	0	0	0	0	0
RANKIN	UPTON	RIO GRANDE	MUN	231	245	248	250	255	261	327	326	326	326	326	325	96	81	78	76	71	64
COUNTY-OTHER	WARD	RIO GRANDE	MUN	925	929	925	910	905	905	925	929	925	910	905	905	0	-400	-400	-400	-400	-400
IRRIGATION	WARD	RIO GRANDE	IRR	13,793	13,624	13,454	13,284	13,115	12,947	8,266	8,651	7,733	6,745	6,210	6,059	-5,527	-4,973	-5,721	-6,539	-6,905	-6,888
LIVESTOCK	WARD	RIO GRANDE	STK	126	126	126	126	126	126	126	126	126	126	126	126	0	0	0	0	0	0
MANUFACTURING	WARD	RIO GRANDE	MFG	7	7	7	7	7	7	7	7	7	7	7	7	0	0	0	0	0	0
MINING	WARD	RIO GRANDE	MIN	153	155	156	157	158	159	153	155	156	157	158	159	0	0	0	0	0	0
MONAHANS	WARD	RIO GRANDE	MUN	2,559	2,592	2,597	2,572	2,564	2,564	2,559	2,592	2,597	2,572	2,564	2,564	0	0	0	0	0	0
STEAM ELECTRIC POWER	WARD	RIO GRANDE	SEP	4,914	4,223	4,937	5,807	6,868	8,162	4,914	4,223	4,937	5,807	6,189	6,189	0	0	0	0	-679	-1,973
COUNTY-OTHER	WINKLER	RIO GRANDE	MUN	119	121	120	119	116	112	121	121	121	121	121	121	2	0	1	2	5	9
IRRIGATION	WINKLER	RIO GRANDE	IRR	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	0	0	0	0	0	0
KERMIT	WINKLER	RIO GRANDE	MUN	1,927	1,988	1,983	1,966	1,922	1,860	3,943	3,943	3,943	3,943	3,943	3,943	2,016	1,955	1,960	1,977	2,021	2,083
LIVESTOCK	WINKLER	COLORADO	STK	2	2	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	0
LIVESTOCK	WINKLER	RIO GRANDE	STK	149	149	149	149	149	149	167	167	167	167	167	167	18	18	18	18	18	18
MINING	WINKLER	RIO GRANDE	MIN	928	895	883	872	861	847	1,878	1,878	1,878	1,878	1,878	1,878	950	983	995	1,006	1,017	1,031
WINK	WINKLER	RIO GRANDE	MUN	331	341	341	338	331	320	657	657	657	657	657	657	326	316	316	319	326	337

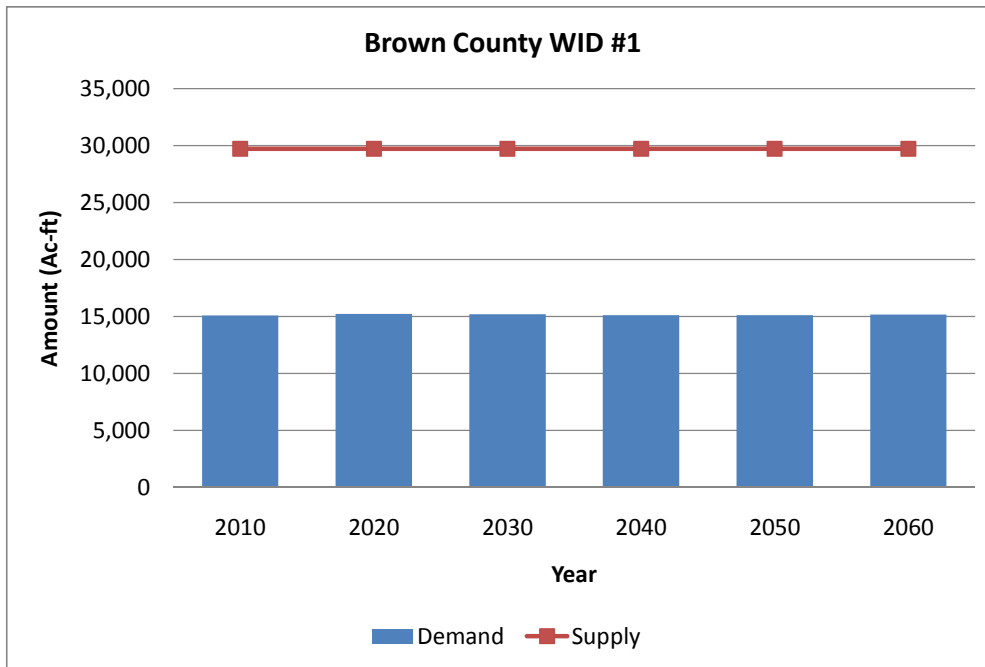
Comparison of Supply and Demand for Wholesale Water Providers

**Brown County WID**

Demands (AF/Y)						
Customers	2010	2020	2030	2040	2050	2060
Bangs	265	266	262	256	254	254
Brookesmith SUD	1,394	1,412	1,404	1,377	1,368	1,367
Manufacturing	577	636	686	734	775	837
Brown County Other <sup>1</sup>	385	385	379	370	367	367
City of Brownwood	3,896	3,927	3,889	3,816	3,792	3,792
City of Santa Anna	200	197	193	190	187	187
Coleman County WSC <sup>2</sup>	200	200	200	200	200	205
Early	799	812	810	801	797	797
Irrigation	6,970	6,970	6,970	6,970	6,970	6,970
Zephyr WSC	399	404	399	391	387	387
<b>Total Demand</b>	<b>15,085</b>	<b>15,209</b>	<b>15,192</b>	<b>15,105</b>	<b>15,097</b>	<b>15,163</b>
Current Water Supply (AF/Y)						
Sources	2010	2020	2030	2040	2050	2060
Brownwood Lake/Reservoir	29,712	29,712	29,712	29,712	29,712	29,712
<b>Total Current Supply</b>	<b>29,712</b>	<b>29,712</b>	<b>29,712</b>	<b>29,712</b>	<b>29,712</b>	<b>29,712</b>
Comparison of Supply and Demands (AF/Y)						
	2010	2020	2030	2040	2050	2060
<b>Surplus or (Shortage)</b>	14,627	14,503	14,520	14,607	14,615	14,549

<sup>1</sup> Includes sales from Brownwood and northern Brown County that is now served through Brookesmith and Zephyr

<sup>2</sup> Coleman Co. WSC supplied via Brookesmith SUD



Colorado River Municipal Water District

Member City	Demands (AF/Y)					
	2010	2020	2030	2040	2050	2060
Odessa	23,150	24,330	25,334	26,416	27,685	29,137
Big Spring	6,016	6,077	6,035	5,945	5,915	5,915
Snyder <sup>1</sup>	3,270	3,305	3,293	3,260	3,254	3,235
<b>Member Cities Total</b>	<b>32,436</b>	<b>33,712</b>	<b>34,662</b>	<b>35,621</b>	<b>36,854</b>	<b>38,287</b>
<b>Other Entities</b>						
Robert Lee	456	443	437	430	427	427
Coahoma	183	185	183	180	177	177
Manufacturing - Howard County	989	1,052	1,099	1,161	1,227	1,350
Stanton <sup>2</sup>	0	0	0	0	0	0
Midland 1966 Contract <sup>3</sup>	16,624	18,257	0	0	0	0
Midland Ivie Contract <sup>4</sup>	10,925	10,699	10,473	10,246	10,021	9,795
Midland - Future Contracts						
County Other - Midland County	21	21	21	21	21	21
Manufacturing - Midland County	28	31	34	37	39	42
Abilene	10,974	10,751	10,528	10,304	10,081	9,858
San Angelo	13,282	13,046	12,809	12,571	12,335	12,098
Millersview-Doole WSC <sup>5</sup>	500	500	500	500	0	0
Ballinger	600	600	600	600		
County Other - Ward County	400	400	400	400	400	400
Mining - Howard County	1,476	1,576	1,617	1,656	1,694	1,745
Mining - Coke County	318	358	380	402	423	444
<b>Other Entities Total</b>	<b>56,776</b>	<b>57,919</b>	<b>39,081</b>	<b>38,508</b>	<b>36,845</b>	<b>36,357</b>
<b>CRMWD Total Demand</b>	<b>89,212</b>	<b>91,631</b>	<b>73,743</b>	<b>74,129</b>	<b>73,699</b>	<b>74,644</b>

<sup>1</sup> Snyder provides water to Rotan and Scurry County-Other.

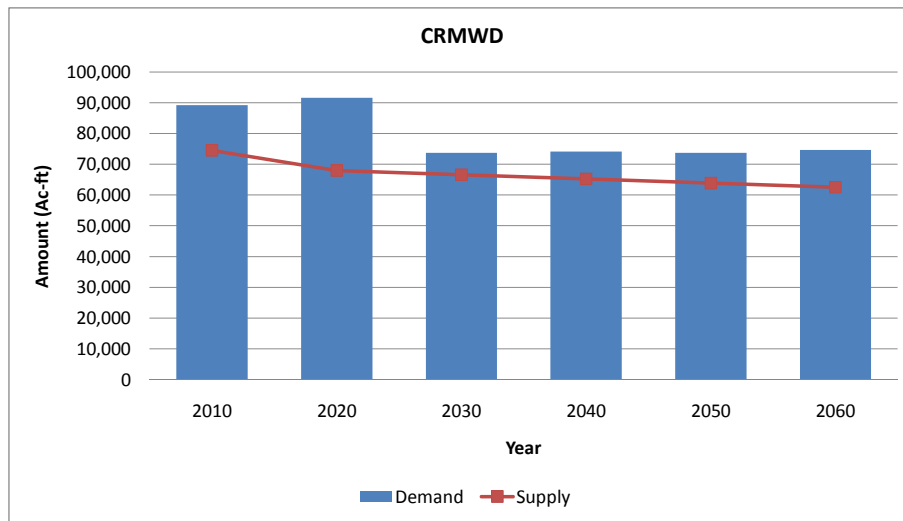
<sup>2</sup> Stanton contract expires in 2010. Renewal is considered a water management strategy.

<sup>3</sup> Midland 1966 contract expires in 2026. Renewal is considered a water management strategy.

<sup>4</sup> Contract is limited to 16.54 percent of the safe yield of O.H. Ivie minus sales to Midland County Other and Midland County Manufacturing

<sup>5</sup> Millersville Doole Contract expires in 2041.

Current Water Supply (AF/Y)						
Sources	2010	2020	2030	2040	2050	2060
Lake Ivie <sup>1</sup>	66,350	65,000	63,650	62,300	60,950	59,600
Spence Reservoir <sup>1</sup>	560	560	560	560	560	560
Thomas Reservoir <sup>1</sup>	0	0	0	0	0	0
Ward County Well Field	5,200	0	0	0	0	0
Martin County Well Field	1,035	1,035	1,035	1,035	1,035	1,035
Ector County Well Field	440	440	440	440	440	440
Scurry County Well Field	900	900	900	900	900	900
<b>Total Current Supply</b>	<b>74,485</b>	<b>67,935</b>	<b>66,585</b>	<b>65,235</b>	<b>63,885</b>	<b>62,535</b>
<b>Comparison of Supply and Demands (AF/Y)</b>						
	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>
<b>Surplus or (Shortage)</b>	<b>(14,727)</b>	<b>(23,696)</b>	<b>(7,158)</b>	<b>(8,894)</b>	<b>(9,814)</b>	<b>(12,109)</b>

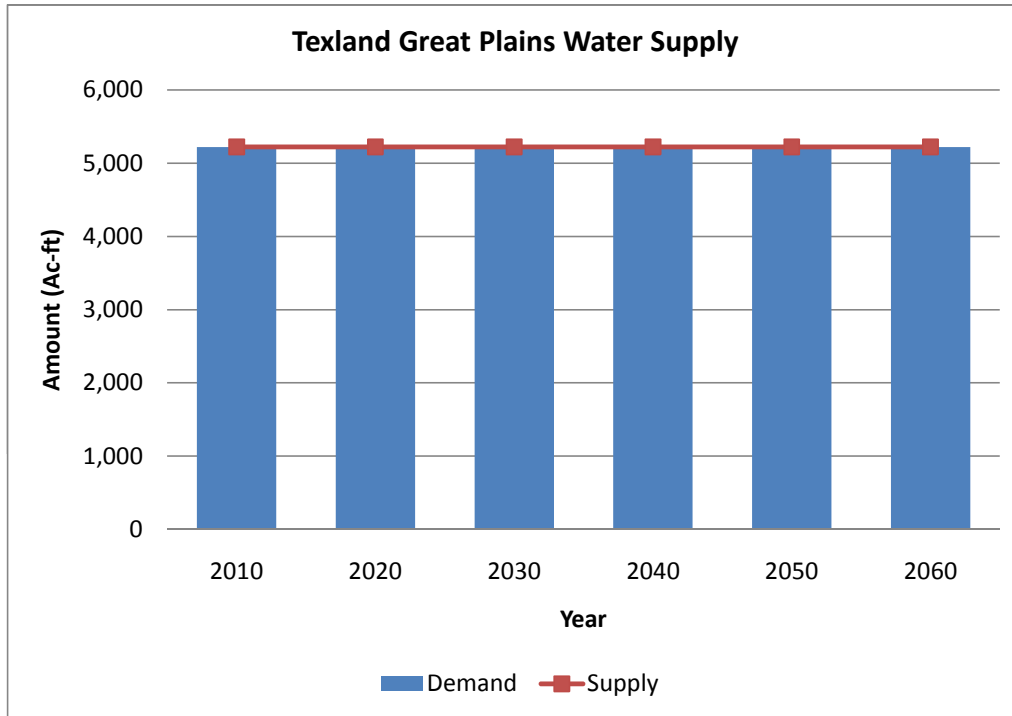


Comparison of Supply and Demand for Wholesale Water Providers

Texland Great Plains Water System, Ltd.

Demands (AF/Y)						
Customers	2010	2020	2030	2040	2050	2060
Ector County Municipal	64	64	64	64	64	64
Odessa Power Generation Facility*	5,156	5,156	5,156	5,156	5,156	5,156
<b>Total Demand</b>	<b>5,220</b>	<b>5,220</b>	<b>5,220</b>	<b>5,220</b>	<b>5,220</b>	<b>5,220</b>
Current Water Supply (AF/Y)						
Sources	2010	2020	2030	2040	2050	2060
Ogallala Aquifer - Andrews County	5,156	5,156	5,156	5,156	5,156	5,156
Ogallala Aquifer - Gaines County	64	64	64	64	64	64
<b>Total Current Supply</b>	<b>5,220</b>	<b>5,220</b>	<b>5,220</b>	<b>5,220</b>	<b>5,220</b>	<b>5,220</b>
Comparison of Supply and Demands (AF/Y)						
	2010	2020	2030	2040	2050	2060
<b>Surplus or (Shortage)</b>	0	0	0	0	0	0

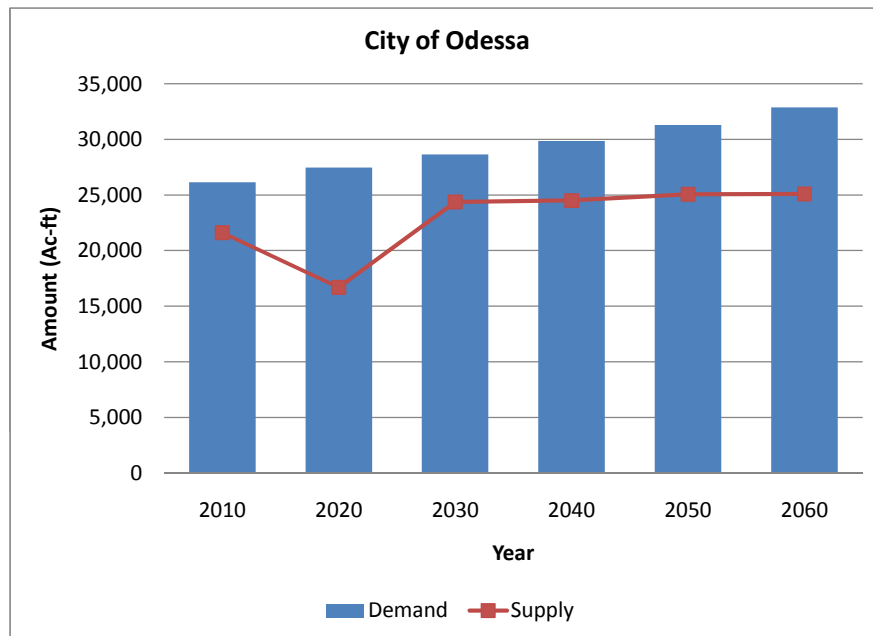
\* Odessa Power Generation Facility and Navasota Odessa Energy Combined





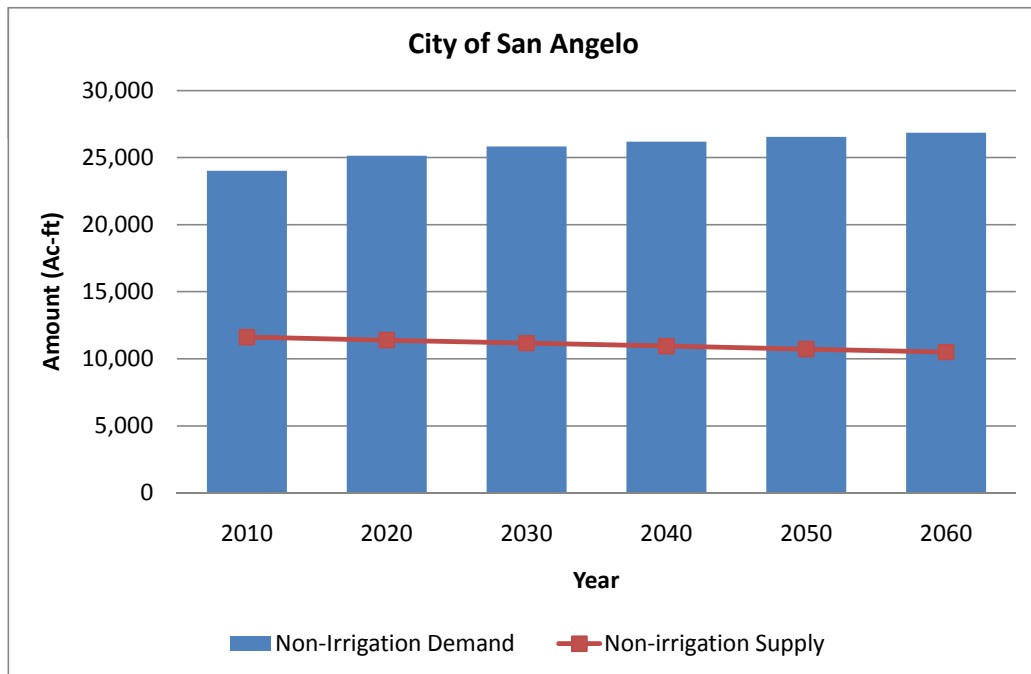
City of Odessa

City of Odessa						
Demands (AF/Y)						
Customers	2010	2020	2030	2040	2050	2060
City of Odessa	21,927	22,687	23,350	24,145	25,222	26,484
Ector County UD - Odessa Sales	1,480	1,847	2,177	2,473	2,706	2,932
Manufacturing - Odessa Sales	1,243	1,296	1,307	1,298	1,257	1,221
Manufacturing - Reuse	1,500	1,650	1,800	1,950	2,100	2,250
<b>Total Demand</b>	<b>26,150</b>	<b>27,480</b>	<b>28,634</b>	<b>29,866</b>	<b>31,285</b>	<b>32,887</b>
Current Water Supply (AF/Y)						
Sources	2010	2020	2030	2040	2050	2060
Colorado River MWD Lake/Reservoir System	13,366	13,098	20,632	20,613	21,015	20,894
Direct Reuse - Ector County	3,000	3,150	3,300	3,450	3,600	3,750
Ector Well Field (CRMWD)	440	440	440	440	440	440
Ward County Well Field	4,800	0	0	0	0	0
<b>Total Current Supply</b>	<b>21,606</b>	<b>16,688</b>	<b>24,372</b>	<b>24,503</b>	<b>25,055</b>	<b>25,084</b>
Comparison of Supply and Demands (AF/Y)						
	2010	2020	2030	2040	2050	2060
<b>Surplus or (Shortage)</b>	<b>(4,544)</b>	<b>(10,792)</b>	<b>(4,262)</b>	<b>(5,363)</b>	<b>(6,230)</b>	<b>(7,803)</b>



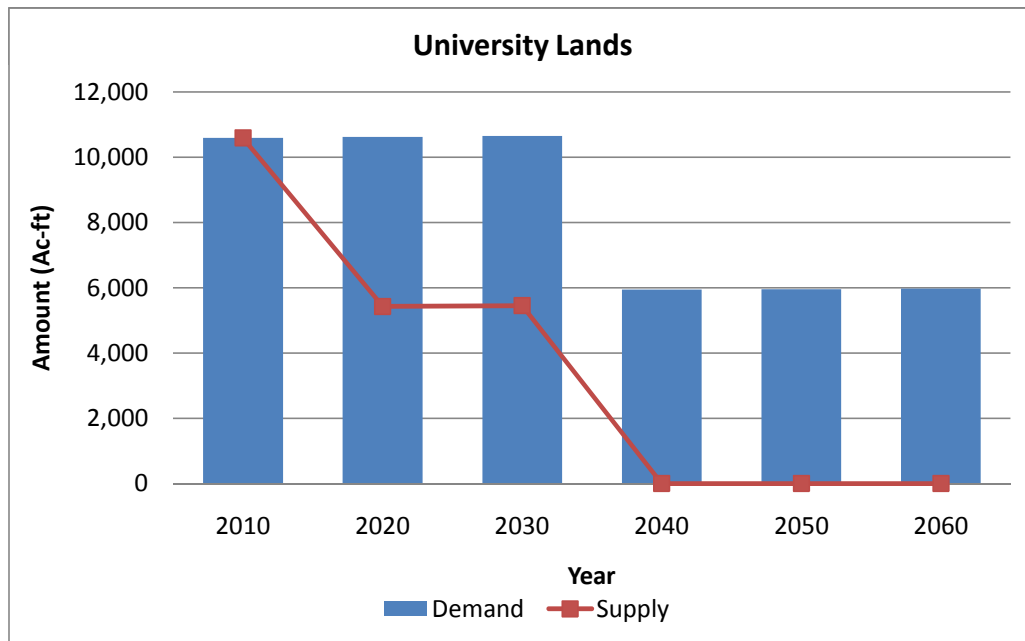
**City of San Angelo**

<b>Demands (AF/Y)</b>						
<b>Customers</b>	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>
City of San Angelo	20,800	21,418	21,734	21,744	21,907	21,969
Manufacturing	2,226	2,498	2,737	2,971	3,175	3,425
Miles	200	200	200	200	200	200
San Angelo Municipal Sales	250	250	250	250	250	250
Tom Green County WCID #1 - Reuse <sup>1</sup>	8,500	8,500	8,500	8,500	8,500	8,500
Tom Green County WCID #1 - Twin Buttes	18,000	18,000	18,000	18,000	18,000	18,000
Steam Electric Power - San Angelo	543	777	909	1,021	1,021	1,021
<b>Total Demand</b>	<b>50,519</b>	<b>51,643</b>	<b>52,330</b>	<b>52,686</b>	<b>53,053</b>	<b>53,365</b>
<b>Current Water Supply (AF/Y)</b>						
<b>Sources</b>	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>
Concho River combined Run-of-River City of San Angelo	642	642	642	642	642	642
Direct Reuse - Tom Green County <sup>1</sup>	8,500	8,500	8,500	8,500	8,500	8,500
San Angelo System - Twin Buttes, Lake Nasworthy, and O.C. Fisher	0	0	0	0	0	0
Ivie Reservoir	10,974	10,751	10,528	10,304	10,081	9,858
<b>Total Current Supply</b>	<b>20,116</b>	<b>19,893</b>	<b>19,670</b>	<b>19,446</b>	<b>19,223</b>	<b>19,000</b>
<sup>1</sup> Supply for irrigation						
<b>Comparison of Supply and Demands (AF/Y)</b>						
	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>
<b>Surplus or (Shortage) - Non-irrigation</b>	<b>(12,403)</b>	<b>(13,750)</b>	<b>(14,660)</b>	<b>(15,240)</b>	<b>(15,830)</b>	<b>(16,365)</b>
<b>Surplus or (Shortage) - Irrigation</b>	<b>(18,000)</b>	<b>(18,000)</b>	<b>(18,000)</b>	<b>(18,000)</b>	<b>(18,000)</b>	<b>(18,000)</b>



**University Lands**

<b>Demands (AF/Y)</b>						
<b>Customers</b>	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>
City of Andrews <sup>1</sup>	671	708	730	750	760	773
CRMWD	5,200	5,200	5,200	5,200	5,200	5,200
City of Midland - Midland Paul Davis Well Field <sup>2</sup>	4,722	4,722	4,722	0	0	0
<b>Total Demand<sup>3</sup></b>	<b>10,593</b>	<b>10,630</b>	<b>10,652</b>	<b>5,950</b>	<b>5,960</b>	<b>5,973</b>
<sup>1</sup> Andrews obtains 20 percent of supply from University Lands.						
<sup>2</sup> The City of Midland expects its well field on University Lands will be depleted by 2035.						
<sup>3</sup> Demand assumes that contracts with University lands will be renewed for the duration of the planning period.						
<b>Current Water Supply (AF/Y)</b>						
<b>Sources</b>	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>
Cenozoic Pecos Alluvium, Aquifer - Ward County - CRMWD <sup>1</sup>	5,200	0	0	0	0	0
Ogallala Aquifer - Martin and Andrews County - Midland <sup>2</sup>	4,722	4,722	4,722	0	0	0
Ogallala Aquifer - Andrews County - City of Andrews	671	708	730	0	0	0
<b>Total Current Supply</b>	<b>10,593</b>	<b>5,430</b>	<b>5,452</b>	<b>0</b>	<b>0</b>	<b>0</b>
<sup>1</sup> CRMWD contracts expires in 2019. Renewal of contract is considered to be a strategy for University Lands						
<sup>2</sup> Midland contract expired in 2035. Midland expects supply depleted by 2035.						
<sup>3</sup> Andrews contract expires in 2033. Renewal of contract is considered to be a strategy for University Lands						
<b>Comparison of Supply and Demands (AF/Y)</b>						
	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>
<b>Surplus or (Shortage)</b>	0	(5,200)	(5,200)	(5,950)	(5,960)	(5,973)



**Upper Colorado River Authority**

<b>Demands (AF/Y)</b>						
<b>Customers</b>	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>
Robert Lee	0	0	0	0	0	0
Miles	200	200	200	200	200	200
Paint Rock	25	25	25	25	25	25
San Angelo	3,637	3,518	3,400	3,282	3,163	3,045
<b>Total Demand</b>	<b>3,862</b>	<b>3,743</b>	<b>3,625</b>	<b>3,507</b>	<b>3,388</b>	<b>3,270</b>
<b>Current Water Supply (AF/Y)</b>						
<b>Sources</b>	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>
Mountain Creek Lake <sup>1</sup>	0	0	0	0	0	0
O C Fisher Reservoir <sup>1</sup>	0	0	0	0	0	0
<b>Total Current Supply</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<sup>1</sup> Robert Lee has a contract for water from Mountain Creek. This reservoir has no reliable supply.						
<sup>1</sup> According to the Colorado WAM this reservoir does not have a reliable supply.						
<b>Comparison of Supply and Demands (AF/Y)</b>						
	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>
<b>Surplus or (Shortage)</b>	<b>(3,862)</b>	<b>(3,743)</b>	<b>(3,625)</b>	<b>(3,507)</b>	<b>(3,388)</b>	<b>(3,270)</b>

