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## *Population and Water Demand Projections [31 TAC §357.31]*



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# Chapter 2: Population and Water Demand Projections

## 2.1 Introduction

For the 2026 regional water planning cycle, 2020 census data was made available. A Coastal Bend Region municipal subcommittee was formed on January 20, 2022, at a regular public meeting to review population and municipal water projections. The subcommittee consists of Mark Scott, Esteban Ramos, Gene Camargo, and Carl Crull. On January 23, 2023, the Texas Water Development Board (TWDB) released draft population and municipal water demand projections for the Coastal Bend Regional Water Planning Group's (CBRWPG) review for a 1.0 migration scenario (at water user group level) and 0.5 migration scenario (at county-level). At the Coastal Bend Region's request, the TWDB prepared 0.5 migration scenario projections at the water user group level and sent them for CBRWPG consideration on March 3, 2023. The Coastal Bend Region municipal subcommittee met on April 10, 2023, to discuss projections and prepare a recommendation for Coastal Bend Region at the May 19, 2023 meeting. The TWDB provided revised municipal water demand projections on May 5, 2023, that were included in this analysis. On November 9, 2023, the TWDB adopted population and water demand projections for use in the 2026 regional water plan.

A Coastal Bend Region non-municipal subcommittee was formed on January 20, 2022, at a regular public meeting to review non-municipal water projections. The subcommittee consists of Charles Ring, Teresa Carrillo, Esteban Ramos, Andy Garza, Lonnie Stewart, and Mark Sugarek. On September 8 2022, the Coastal Bend Region non-municipal subcommittee met to review the TWDB water demand projections for manufacturing, irrigation, mining, steam electric, and livestock users through Year 2080. During the virtual meeting, draft TWDB projections were discussed along with TWDB methodology that was used to estimate the future water demands. The Coastal Bend Region non-municipal subcommittee had additional meetings to further review projections for each water use, which resulted in submission of alternative non-municipal water demands for TWDB consideration and is further discussed in respective sections.

This chapter contains TWDB- adopted population and water demand projections for each municipal, manufacturing, mining, irrigation, and livestock water demand projections by county and river basin for the 11-county Coastal Bend Regional Water Planning Area. These counties are located within three river basins: the Nueces River Basin, the San Antonio-Nueces Coastal Basin, and the Nueces-Rio Grande Coastal Basin (Figure 2.1).

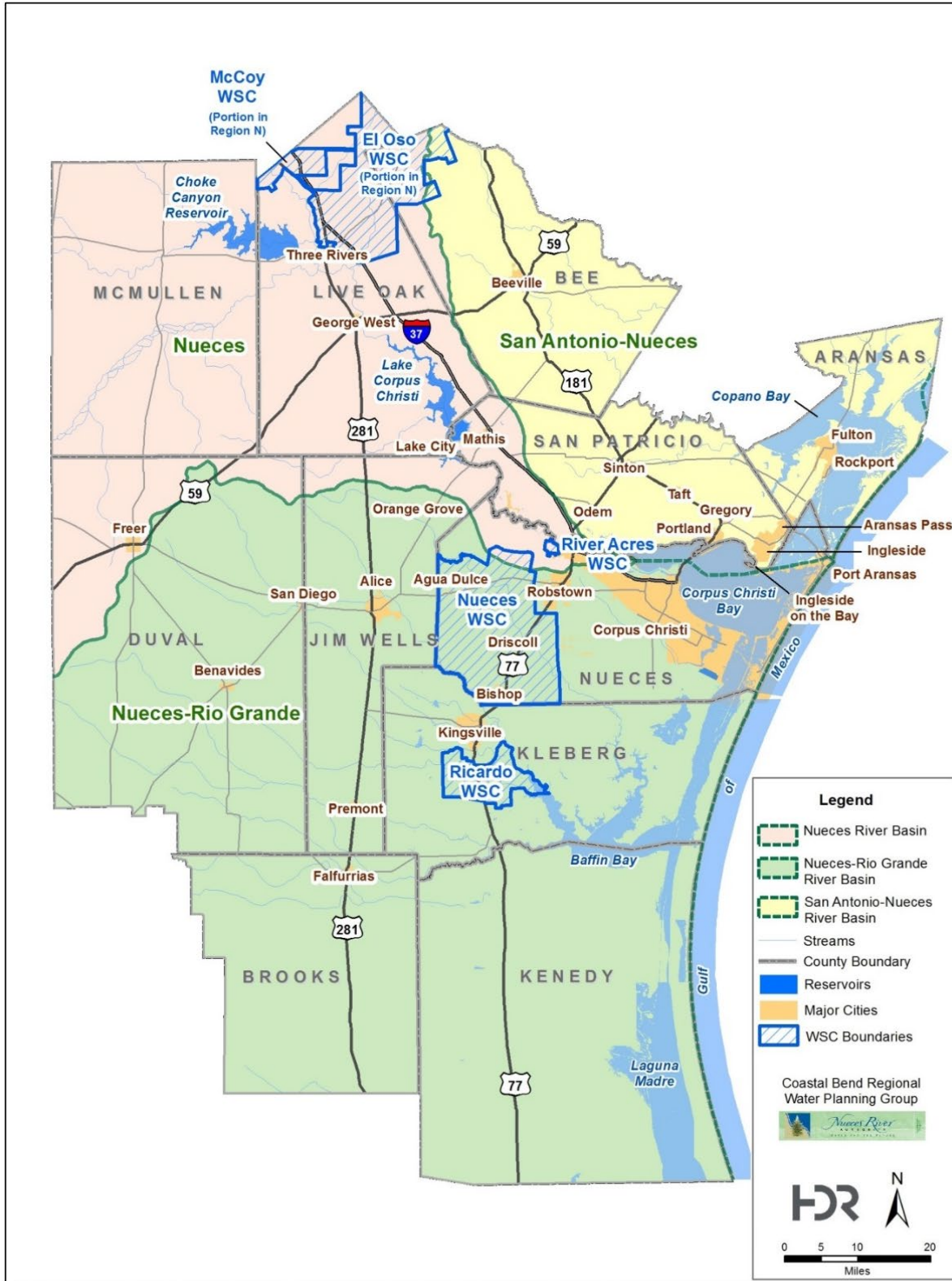
## 2.2 Population Projections

From 1990 to 2020, the population in the 11-county region grew by 57,129 (from 492,807 to 589,620), an increase of 19.6 percent (0.6 percent compound annual growth), as shown in Table 2.1. This compares with a statewide increase in population of 58.4 percent (1.55 percent annually). Most of the growth occurred in Nueces and San Patricio counties, the two largest counties in the region by population. Combined, they accounted for 74.4 percent of the total

increase, and in 2020 their populations totaled 71.6 percent of the region. In 2020, 59.9 percent of the region's total population lived in Nueces County, 11.7 percent in San Patricio County, 6.6 percent in Jim Wells County, 5.3 percent in Kleberg County, 5.7 percent in Bee County, and 10.8 percent in the remaining six counties combined.

The population in the 11-county region is projected to increase by 2,553 from 2020 to 2080, an increase of 0.4 percent (0.01 percent annually), as shown in Table 2.1. This compares to a statewide projected population growth in the same period of 79.5 percent (0.98 percent annually). The total population for the region in 2020 was 2.0 percent of the 29.1 million population statewide. It declines by 2080, to 1.1 percent of the projected 52.3 million statewide totals. In 2080, it is projected that 61.6 percent of the region's population will live in Nueces County, 12.7 percent in San Patricio County, 6.9 percent in Kleberg County, 5.8 percent in Jim Wells County, 5.1 percent in Bee County, and 7.8 percent in each of the remaining six counties.

Duval and Kleberg counties are the fastest growing counties in the region, based on percent growth since 2020, with future projections growing at an annual rate higher than the regional average of 0.12 percent (Figure 2.3). These growth numbers are predominantly from 2030 to 2060. The growth rate for Aransas, Kenedy, Live Oak, and McMullen counties is expected to be negative over the next 60 years and Bee, Brooks, Duval, Jim Wells, Kleberg, Nueces, and San Patricio are expected to have an overall positive growth rate from 2020 to 2080.



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**Figure 2.1.**  
**Coastal Bend Region River Basin Boundaries**

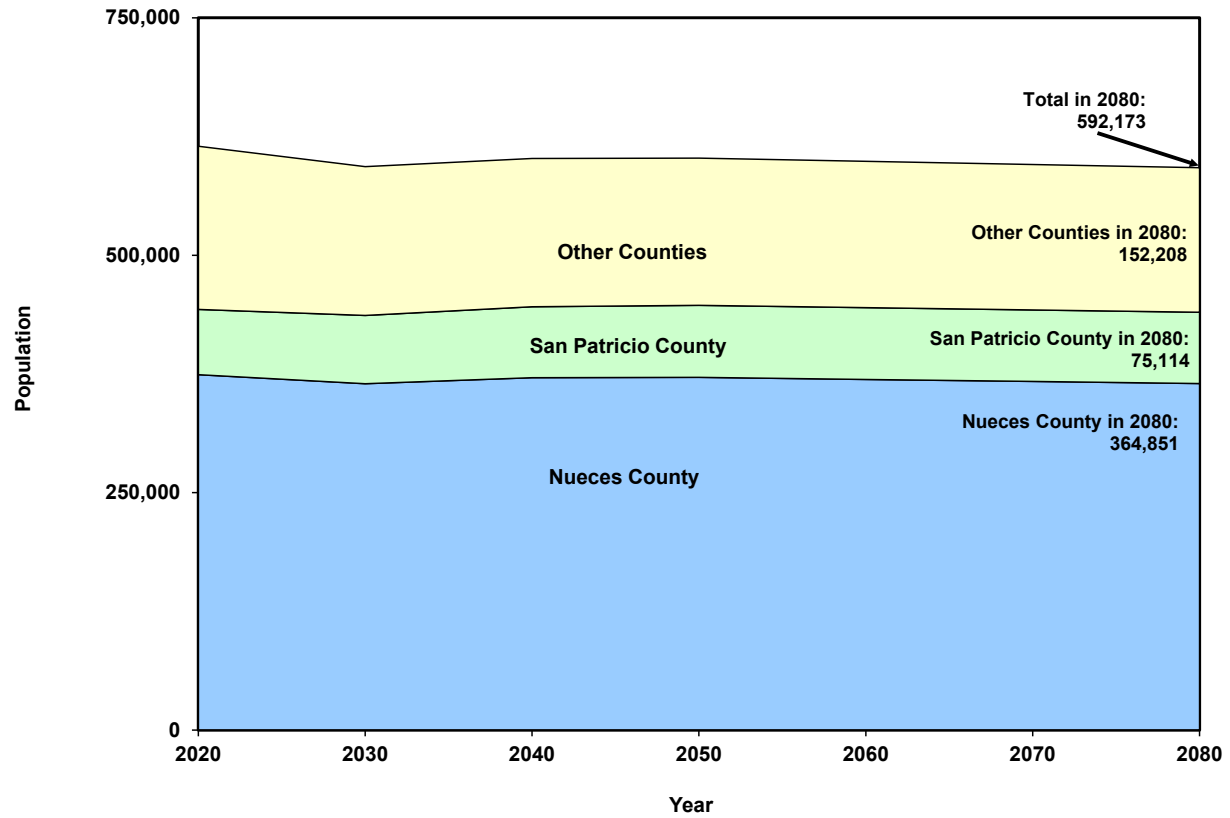


**Table 2.1.**  
**Coastal Bend Region Population (by City/County)**

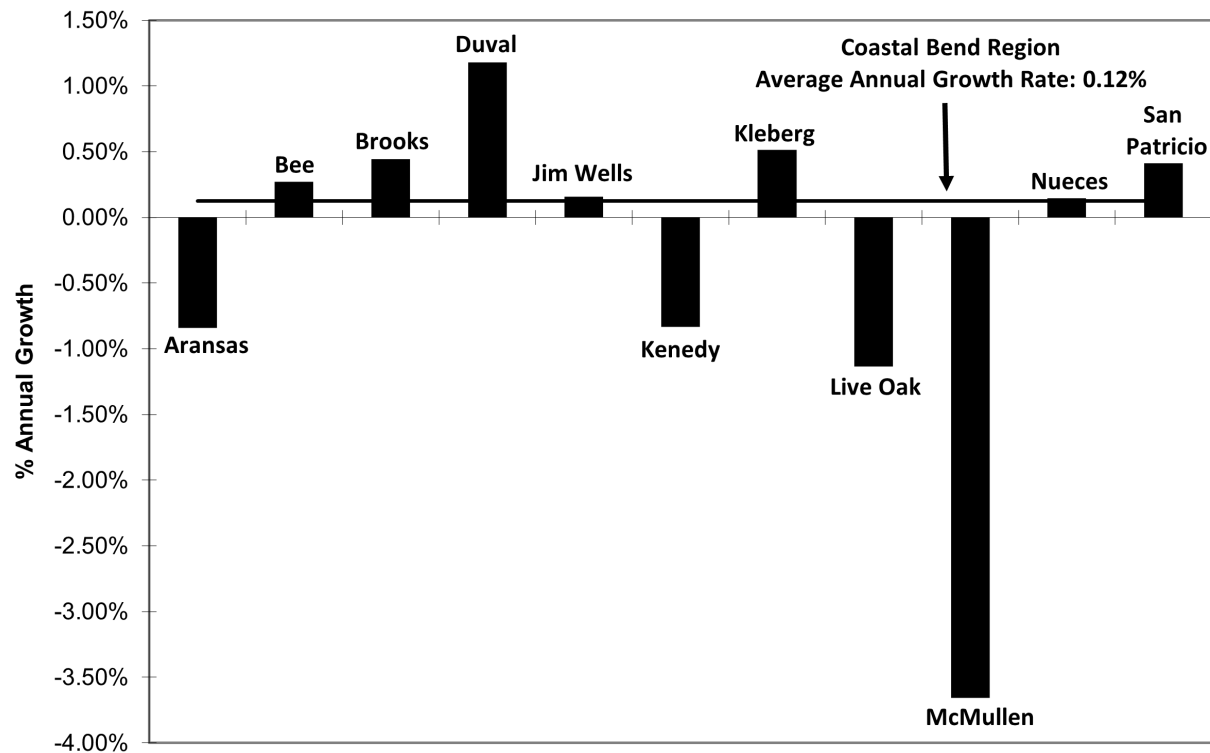
County/River Basin	Historical <sup>1</sup>				Projections <sup>1</sup>						Percent Growth <sup>2</sup>	Percent Growth <sup>2</sup>
	1990	2000	2010	2020	2030	2040	2050	2060	2070	2080	1990-2020	2020-80
Aransas County	17,892	22,497	23,146	23,818	24,415	24,299	23,708	23,195	22,691	22,196	0.96%	-0.12%
Bee County	25,135	32,359	33,679	33,670	31,363	31,563	31,337	31,030	30,725	30,422	0.98%	-0.17%
Brooks County	8,204	7,976	7,223	7,076	6,895	6,702	6,493	6,256	6,020	5,785	-0.49%	-0.34%
Duval County	12,918	13,120	11,650	9,643	9,261	8,828	8,436	8,108	7,782	7,458	-0.97%	-0.43%
Jim Wells County	37,679	39,326	40,970	39,079	38,692	38,400	37,573	36,430	35,294	34,164	0.12%	-0.22%
Kenedy County	460	414	416	350	336	306	283	266	249	232	-0.91%	-0.68%
Kleberg County	30,274	31,549	32,061	31,040	33,923	34,901	36,068	37,772	39,466	41,151	0.08%	0.47%
Live Oak County	9,556	12,309	20,244	21,451	11,093	10,740	10,499	10,473	10,447	10,421	2.73%	-1.20%
McMullen County	817	851	1,681	1,548	546	511	493	455	417	379	2.15%	-2.32%
Nueces County	291,123	313,575	340,223	353,178	364,690	371,130	371,485	369,261	367,050	364,851	0.65%	0.05%
San Patricio County	58,749	67,138	64,816	68,767	71,973	74,569	75,816	75,578	75,344	75,114	0.53%	0.15%
<b>Total for Region</b>	<b>492,807</b>	<b>541,114</b>	<b>576,109</b>	<b>589,620</b>	<b>593,187</b>	<b>601,949</b>	<b>602,191</b>	<b>598,824</b>	<b>595,485</b>	<b>592,173</b>	<b>0.60%</b>	<b>0.01%</b>
Nueces River Basin	49,281	54,111	69,235	71,263	58,251	57,980	56,968	55,559	54,096	52,565	1.24%	-0.51%
Nueces-Rio Grande River Basin	349,893	384,191	395,152	402,556	415,125	421,497	422,087	420,696	419,389	418,192	0.47%	0.06%
San Antonio-Nueces River Basin	93,633	102,812	111,723	115,801	119,811	122,472	123,136	122,569	122,000	121,416	0.71%	0.08%
<b>Total for Region</b>	<b>492,807</b>	<b>541,114</b>	<b>576,109</b>	<b>589,620</b>	<b>593,187</b>	<b>601,949</b>	<b>602,191</b>	<b>598,824</b>	<b>595,485</b>	<b>592,173</b>	<b>0.60%</b>	<b>0.01%</b>
<b>Total for Texas</b>	<b>16,986,510</b>	<b>20,851,790</b>	<b>25,145,561</b>	<b>29,145,505</b>	<b>34,243,764</b>	<b>38,478,446</b>	<b>42,228,326</b>	<b>45,660,162</b>	<b>49,027,720</b>	<b>52,319,248</b>	<b>1.82%</b>	<b>0.98%</b>

<sup>1</sup> Historical data and projections from Texas Water Development Board.

<sup>2</sup> Compound annual growth rate.



**Figure 2.2.**  
**Coastal Bend Region Population**



**Figure 2.3.**  
**Percent Annual Population Growth Rate for 2020 through 2080 by County**

Corpus Christi and Kingsville are the two largest cities in the region, accounting for 58.7 percent of the total population in 2010, decreasing to 58.6 percent of the total in 2080. Population projections for the 46 cities, water supply corporations, and “County-Other” users in the region are shown in Table 2.2. County-Other category includes persons residing outside of cities and also outside water utility boundaries. Population for water user groups by county and river basin are included in Appendix A.



**Table 2.2.**  
**Coastal Bend Region Population (by City/County)**

City/County	Historical <sup>1</sup>				Projections <sup>1</sup>						Percent Growth <sup>2</sup>	Percent Growth <sup>2</sup>
	1990	2000	2010	2020	2030	2040	2050	2060	2070	2080	1990-10	2020-80
ARANSAS PASS (P)	912	867	846	832	842	837	816	798	780	763	-1.15%	-4.10%
RINCON WSC	--	--	--	--	23	23	22	23	22	21	N/A	-8%
ROCKPORT	5,355	7,385	17,259	18,088	18,530	18,443	17,997	17,611	17,232	16,859	2.49%	-0.12%
COUNTY-OTHER, ARANSAS	10,862	12,692	5,041	4,898	5,020	4,996	4,873	4,763	4,657	4,553	1.16%	-0.37%
<b>Aransas County</b>	<b>17,892</b>	<b>22,497</b>	<b>23,146</b>	<b>23,818</b>	<b>24,415</b>	<b>24,299</b>	<b>23,708</b>	<b>23,195</b>	<b>22,691</b>	<b>22,196</b>	<b>1.30%</b>	<b>-0.84%</b>
BEEVILLE	13,547	13,129	13,538	13,086	13,233	13,852	14,552	15,394	16,317	17,333	-0.26%	0.47%
EL OSO WSC (P)	271	320	2,060	2,999	472	612	796	1,043	1,370	1,803	1.53%	-2.22%
COUNTY-OTHER, BEE	11,317	18,910	14,348	12,094	12,196	11,590	10,428	8,962	7,330	5,490	2.52%	4.57%
PETTUS MUD	--	--	562	496	451	480	512	551	593	640	N/A	0
SKIDMORE WSC	--	--	637	632	649	667	687	718	753	794	N/A	0
TDCJ CHASE FIELD	--	--	2,534	4,363	4,362	4,362	4,362	4,362	4,362	4,362	N/A	0
<b>Bee County</b>	<b>25,135</b>	<b>32,359</b>	<b>33,679</b>	<b>33,670</b>	<b>31,363</b>	<b>31,563</b>	<b>31,337</b>	<b>31,030</b>	<b>30,725</b>	<b>30,422</b>	<b>1.19%</b>	<b>0.27%</b>
FALFURRIAS	5,788	5,297	4,795	4,443	4,331	4,285	4,305	4,361	4,481	4,693	-0.75%	0.09%
COUNTY-OTHER, BROOKS	2,416	2,679	2,428	2,633	2,564	2,417	2,188	1,895	1,539	1,092	-0.37%	N/A
<b>Brooks County</b>	<b>8,204</b>	<b>7,976</b>	<b>7,223</b>	<b>7,076</b>	<b>6,895</b>	<b>6,702</b>	<b>6,493</b>	<b>6,256</b>	<b>6,020</b>	<b>5,785</b>	<b>-0.63%</b>	<b>0.44%</b>
FREER WCID	3,271	3,241	2,844	2,417	2,254	2,125	2,007	1,901	1,790	1,671	-0.74%	-0.61%
SAN DIEGO (P)	4,109	3,928	4,057	3,733	3,748	3,746	3,732	3,733	3,803	3,974	-0.68%	N/A
COUNTY-OTHER, DUVAL	5,538	5,951	3,120	2,222	2,074	1,838	1,642	1,474	1,248	934	-0.15%	N/A
DUVAL COUNTY CRD	--	--	1,629	1,271	1,185	1,119	1,055	1,000	941	879	N/A	-1%
<b>Duval County</b>	<b>12,918</b>	<b>13,120</b>	<b>11,650</b>	<b>9,643</b>	<b>9,261</b>	<b>8,828</b>	<b>8,436</b>	<b>8,108</b>	<b>7,782</b>	<b>7,458</b>	<b>-0.46%</b>	<b>1.18%</b>
ALICE	19,788	19,010	22,191	20,651	20,549	21,799	22,830	24,021	25,441	27,158	-0.18%	0.46%
ORANGE GROVE	1,175	1,288	1,560	1,443	1,434	1,399	1,369	1,345	1,331	1,327	0.58%	-0.14%
PREMONT	2,914	2,772	2,510	2,330	2,318	2,272	2,231	2,201	2,186	2,189	-0.47%	-0.10%
SAN DIEGO MUD 1	874	825	1,018	936	743	767	792	824	861	907	0.15%	-2.69%
COUNTY-OTHER, JIM WELLS	12,928	15,431	11,917	12,041	11,979	10,496	8,683	6,361	3,776	849	1.34%	1.44%
JIM WELLS COUNTY FWSD 1	--	--	1,774	1,678	1,669	1,667	1,668	1,678	1,699	1,734	N/A	0%
<b>Jim Wells County</b>	<b>37,679</b>	<b>39,326</b>	<b>40,970</b>	<b>39,079</b>	<b>38,692</b>	<b>38,400</b>	<b>37,573</b>	<b>36,430</b>	<b>35,294</b>	<b>34,164</b>	<b>0.40%</b>	<b>0.16%</b>
COUNTY-OTHER, KENEDY	460	414	416	350	336	306	283	266	249	232	-0.50%	-0.83%



City/County	Historical <sup>1</sup>				Projections <sup>1</sup>						Percent Growth <sup>2</sup>	Percent Growth <sup>2</sup>
	1990	2000	2010	2020	2030	2040	2050	2060	2070	2080	1990-10	2020-80
<b>Kenedy County</b>	<b>460</b>	<b>414</b>	<b>416</b>	<b>350</b>	<b>336</b>	<b>306</b>	<b>283</b>	<b>266</b>	<b>249</b>	<b>232</b>	<b>-0.50%</b>	<b>-0.83%</b>
KINGSVILLE	25,276	25,575	26,189	25,307	27,641	28,437	29,380	30,760	32,131	33,494	0.18%	0.47%
RICARDO WSC	1,503	2,301	3,156	3,030	3,321	3,417	3,537	3,710	3,880	4,052	2.84%	0.49%
BAFFIN BAY WSC	--	--	689	735	806	830	859	900	943	983	N/A	0.49%
NAVAL AIR STATION KINGSVILLE	--	--	57	52	55	57	59	61	63	64	N/A	0.35%
COUNTY-OTHER, KLEBERG	3,495	3,673	1,152	1,158	1,269	1,304	1,347	1,413	1,477	1,544	-0.41%	2.27%
RIVIERA WATER SYSTEM	--	--	818	758	831	856	886	928	972	1,014	N/A	0.49%
<b>Kleberg County</b>	<b>30,274</b>	<b>31,549</b>	<b>32,061</b>	<b>31,040</b>	<b>33,923</b>	<b>34,901</b>	<b>36,068</b>	<b>37,772</b>	<b>39,466</b>	<b>41,151</b>	<b>0.29%</b>	<b>0.51%</b>
EL OSO WSC (P)	812	1,000	2,694	3,923	758	827	827	827	827	827	-1.09%	-3.48%
GEORGE WEST	2,586	2,524	2,148	1,888	1,707	1,550	1,426	1,311	1,206	1,111	-0.28%	-0.88%
MCCOY WSC (P)	185	443	7,522	7,803	53	42	33	26	20	16	-0.45%	-9.80%
OLD MARBACH SCHOOL WSC	--	--	642	607	587	560	539	531	522	513	N/A	-0.28%
THREE RIVERS	1,889	1,878	1,848	1,735	2,624	2,577	2,565	2,550	2,537	2,527	-0.11%	-0.15%
COUNTY-OTHER, LIVE OAK	4,084	6,464	5,390	5,495	5,364	5,184	5,109	5,228	5,335	5,427	2.29%	3.49%
<b>Live Oak County</b>	<b>9,556</b>	<b>12,309</b>	<b>20,244</b>	<b>21,451</b>	<b>11,093</b>	<b>10,740</b>	<b>10,499</b>	<b>10,473</b>	<b>10,447</b>	<b>10,421</b>	<b>0.94%</b>	<b>-1.14%</b>
THREE RIVERS	--	--	1,093	1,026	72	73	67	61	56	51	N/A	-6.44%
COUNTY-OTHER, MCMULLEN	817	851	588	522	474	438	426	394	361	328	-0.72%	-1.43%
<b>McMullen County</b>	<b>817</b>	<b>851</b>	<b>1,681</b>	<b>1,548</b>	<b>546</b>	<b>511</b>	<b>493</b>	<b>455</b>	<b>417</b>	<b>379</b>	<b>-0.72%</b>	<b>-3.66%</b>
BISHOP	3,337	3,305	3,332	3,160	3,265	3,323	3,326	3,305	3,282	3,261	-0.31%	0.05%
CORPUS CHRISTI	257,453	277,450	294,154	303,472	313,373	318,911	319,214	317,292	315,382	313,482	0.85%	0.05%
CORPUS CHRISTI NAVAL AIR STATION	--	--	1,289	1,320	1,360	1,384	1,385	1,380	1,374	1,368	N/A	0.06%
DRISCOLL	688	825	682	621	641	652	654	649	645	640	0.36%	0.05%
NUECES WSC	--	--	2,064	5,805	5,977	6,071	6,081	6,068	6,054	6,041	N/A	0.07%
RIVER ACRES WSC	2,130	2,750	1,829	1,952	2,017	2,052	2,054	2,042	2,028	2,014	0.64%	0.05%
COUNTY-OTHER, NUECES	27,515	29,245	16,406	20,080	20,738	21,107	21,126	20,992	20,865	20,737	-0.21%	4.85%
NUECES COUNTY WCID 3	--	--	14,082	11,486	11,864	12,076	12,086	12,009	11,933	11,857	N/A	0.05%
NUECES COUNTY WCID 4	--	--	3,597	2,631	2,717	2,766	2,769	2,752	2,733	2,715	N/A	0.05%
VIOLET WSC	--	--	2,788	2,651	2,738	2,788	2,790	2,772	2,754	2,736	N/A	0.05%



City/County	Historical <sup>1</sup>				Projections <sup>1</sup>						Percent Growth <sup>2</sup>	Percent Growth <sup>2</sup>
	1990	2000	2010	2020	2030	2040	2050	2060	2070	2080	1990-10	2020-80
<b>Nueces County</b>	<b>291,123</b>	<b>313,575</b>	<b>340,223</b>	<b>353,178</b>	<b>364,690</b>	<b>371,130</b>	<b>371,485</b>	<b>369,261</b>	<b>367,050</b>	<b>364,851</b>	<b>0.78%</b>	<b>0.15%</b>
ARANSAS PASS (P)	6,246	7,201	8,721	8,584	8,585	8,591	8,611	8,671	8,729	8,787	0.90%	-0.12%
GREGORY	2,458	2,318	1,800	1,714	1,644	1,593	1,575	1,602	1,628	1,654	-1.26%	-0.06%
INGLESIDE	5,696	9,388	8,956	9,402	9,741	10,019	10,156	10,146	10,135	10,125	2.53%	0.12%
MATHIS	5,423	5,034	4,958	4,333	3,819	3,431	3,274	3,414	3,553	3,690	-0.46%	-0.27%
ODEM	2,366	2,499	3,132	3,055	2,984	2,934	2,919	2,955	2,990	3,026	0.05%	-0.02%
PORTLAND	12,224	14,827	15,099	17,910	22,106	23,940	25,926	28,076	30,405	32,927	1.06%	1.02%
RINCON WSC	--	--	3,333	3,698	3,939	4,149	4,246	4,213	4,180	4,149	N/A	0.19%
SINTON	5,549	5,676	4,998	4,812	4,689	4,602	4,575	4,634	4,692	4,749	0.10%	-0.02%
TAFT	3,222	3,396	2,742	2,549	2,422	2,327	2,293	2,338	2,382	2,425	-0.28%	-0.08%
COUNTY-OTHER, SAN PATRICIO	15,565	16,799	11,077	12,710	12,044	12,983	12,241	9,529	6,650	3,582	-1.43%	1.12%
<b>San Patricio County</b>	<b>58,749</b>	<b>67,138</b>	<b>64,816</b>	<b>68,767</b>	<b>71,973</b>	<b>74,569</b>	<b>75,816</b>	<b>75,578</b>	<b>75,344</b>	<b>75,114</b>	<b>0.49%</b>	<b>0.41%</b>
<b>Total For Region</b>	<b>492,807</b>	<b>541,114</b>	<b>576,109</b>	<b>589,620</b>	<b>593,187</b>	<b>601,949</b>	<b>602,191</b>	<b>598,824</b>	<b>595,485</b>	<b>592,173</b>	<b>0.68%</b>	<b>0.12%</b>

Notes: (P) Partial

1 Historical Data and Projections from Texas Water Development Board

2 Compound annual growth rate

## 2.3 Water Demand Projections

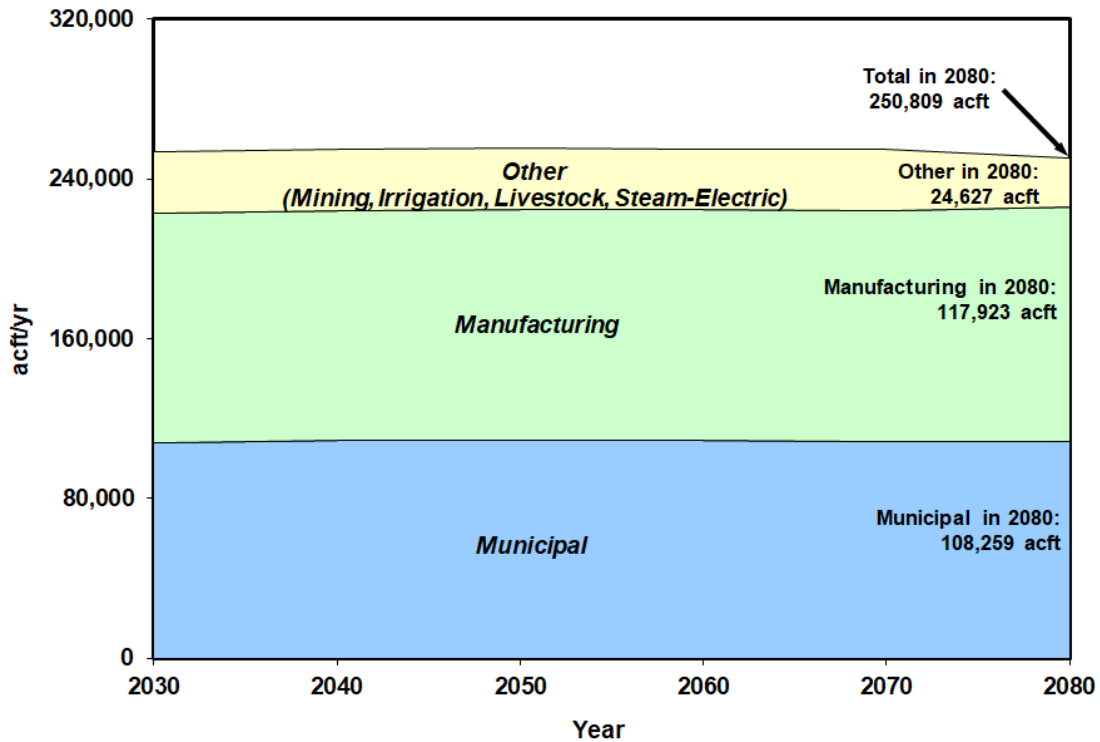
The TWDB water demand projections have been compiled for each type of consumptive water use: municipal, manufacturing, steam-electric power, mining, irrigation, and livestock. In these consumptive types of water use there is a “loss” in water. In non-consumptive water use, such as navigation, hydroelectric generating, or recreation, there is little or no water loss. As shown in Table 2.3, total water use for the region is projected to decrease by 2,689 acre-feet per year (ac-ft/yr) between 2030 and 2080, from 253,498 ac-ft/yr to 250,809 ac-ft/yr, a 1.06 percent drop. Municipal and mining are projected to increase until 2050 and 2060, respectively, and then decline. Manufacturing is projected to increase, while steam-electric, irrigation, and livestock water use are all projected to remain constant from 2030 to 2080. The trend in projected total water use for the region is shown in Figure 2.4. In 2020, 51.3 percent of the total water use was for municipal purposes, 31.9 percent for manufacturing, 1.8 percent for steam-electric water, 3.1 percent for mining, 8.9 percent for irrigation, and 3.0 percent for livestock. In 2080, municipal use as a percentage of the total is projected to decrease to 43.2 percent, manufacturing use to increase to 47 percent, steam-electric water use to increase to 1.9 percent, mining use to decrease to 0.4 percent, irrigation water use to decrease to 5.5 percent, and livestock use to decrease to 2 percent. Municipal water demand projections include water conservation attributed to updated plumbing code savings. These components of total water use for 2020 and 2080 are shown in Figure 2.5.

**Table 2.3.**  
**Coastal Bend Region Total Water Demand by Type of Use and River Basin (ac-ft/yr)**

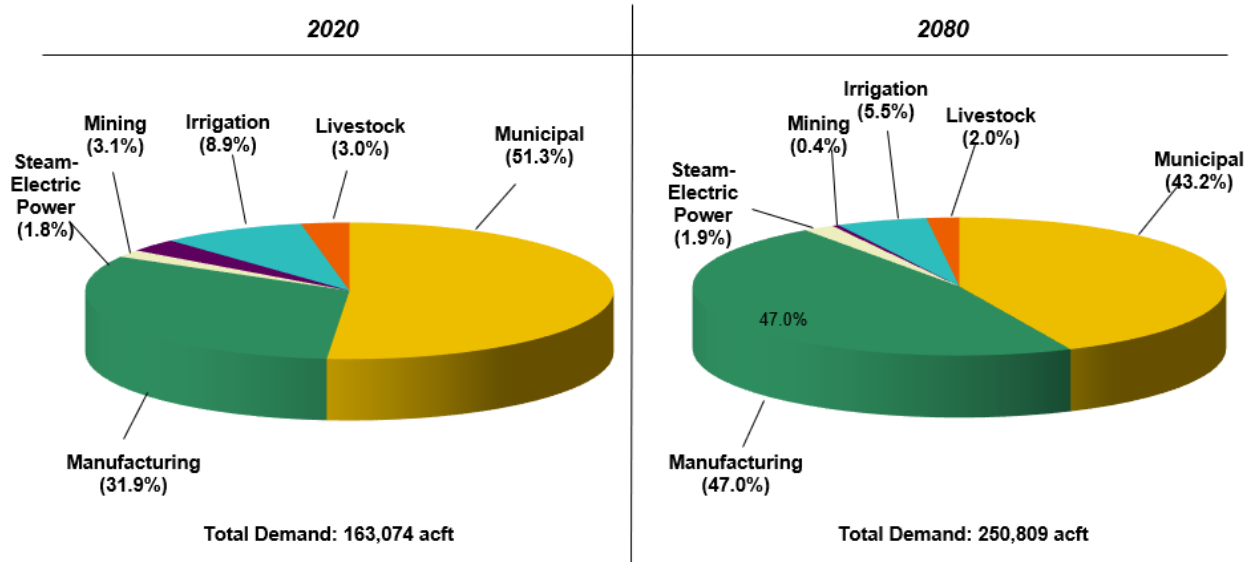
Water Use	Historical <sup>1</sup>			Projections <sup>2</sup>					
	2000	2010	2020	2030	2040	2050	2060	2070	2080
Municipal	98,573	90,620	83,775	107,817	109,080	109,273	108,888	108,541	108,259
Manufacturing	54,481	44,820	52,056	115,120	115,273	115,432	115,596	115,877	117,923
Steam-Electric	8,799	388	2,865	4,777	4,777	4,777	4,777	4,777	4,777
Mining	12,397	5,255	5,045	6,960	7,001	7,026	7,045	7,058	1,026
Irrigation	21,971	18,398	14,501	13,861	13,861	13,861	13,861	13,861	13,861
Livestock	8,838	7,073	4,832	4,963	4,963	4,963	4,963	4,963	4,963
<b>Total for Region</b>	<b>205,059</b>	<b>166,554</b>	<b>163,074</b>	<b>253,498</b>	<b>254,955</b>	<b>255,332</b>	<b>255,130</b>	<b>255,077</b>	<b>250,809</b>
Nueces River Basin	38,217	36,642	35,876	58,538	58,639	58,637	58,563	58,483	52,389
Nueces-Rio Grande River Basin	136,744	94,936	92,952	136,638	137,638	137,843	137,675	137,645	139,316
San Antonio-Nueces River Basin	30,098	34,976	34,246	58,322	58,678	58,852	58,892	58,949	59,104
<b>Total for Region</b>	<b>205,059</b>	<b>166,554</b>	<b>163,074</b>	<b>253,498</b>	<b>254,955</b>	<b>255,332</b>	<b>255,130</b>	<b>255,077</b>	<b>250,809</b>

<sup>1</sup> Historical Data from Texas Water Development Board Water Use Survey Historical Summary Estimates

<sup>2</sup> Projections from Texas Water Development Board



**Figure 2.4.**  
**Coastal Bend Region Water Demand**



**Figure 2.5.**  
**Total Water Demand by Type of Use**

### 2.3.1 Municipal Water Demand

Water that is used by households (e.g., drinking, bathing, food preparation, dishwashing, laundry, flushing toilets, lawn watering and landscaping, swimming pools and hot tubs), commercial establishments (e.g., restaurants, car washes, hotels, laundromats, and office buildings), and for fire protection, public recreation, and sanitation are all referred to as municipal water. This type of water must meet safe drinking water standards as specified by federal and state laws and regulations.

The TWDB computes the municipal water demand projections by multiplying the projected population of an entity by the entity's projected per capita water use, adjusted for conservation savings. Again, projected population is the "most-likely" scenario. The projected per capita water use accounts for current plumbing fixtures as well as water savings due to plumbing fixture requirements identified in the Texas Health and Safety Code, Chapter 372. Any additional changes in plumbing fixtures to promote more aggressive water savings beyond those realized in the Texas Health and Safety Code, would be expected to reduce projected water demands. The projected per capita water use is an "expected" scenario of water conservation, including installation of water-efficient plumbing fixtures as defined by the 1991 State Water-Efficient Plumbing Act. In all cases, applying this conservation scenario to the per capita use results in a declining per capita water use over time.

In 2020, total reported municipal use in the Coastal Bend Region was 83,775 ac-ft/yr<sup>1</sup>. Nueces and San Patricio counties accounted for 68.1 percent of the total. Municipal use is projected to increase 29.2 percent to 108,259 ac-ft by year 2080 (Table 2.4). Bee, Jim Wells, Kenedy, Kleberg, and Nueces counties see increases, at 3.6, 0.2, 39.1, 42.2, and 68.9 percent, respectively. Aransas, Brooks, Duval, Live Oak, McMullen, and San Patricio counties see decreases of 7.2, 8.9, 28.6, 38.1, 72.1, and 28.4 percent, respectively. By 2080, Nueces and San Patricio counties will account for 75.3 percent of the total municipal water use in the region (Figure 2.6).

Generally, the increase in water use for the entities in the region is less than their respective increases in population (i.e., low flow plumbing fixtures). This is attributable to a declining per capita water use, which includes conservation built-in the TWDB demand projections. Per capita water use in Corpus Christi is projected to decline 8.5 percent, from 201 gallons per capita daily (gpcd) in 2019 to 167.5 gpcd in 2080. The average per capita water use of all municipal water user groups in the Coastal Bend Region was 159 gpcd in 2019, which is projected to decline to 156.3 gpcd in 2080 with conservation built-in the TWDB demand projections. Additional water conservation recommended by the CBRWPG for select municipal water user group entities is described in Section 5B.1. Municipal water use projections for the 57 entities in the region, including County- Other, are presented in Table 2.5.

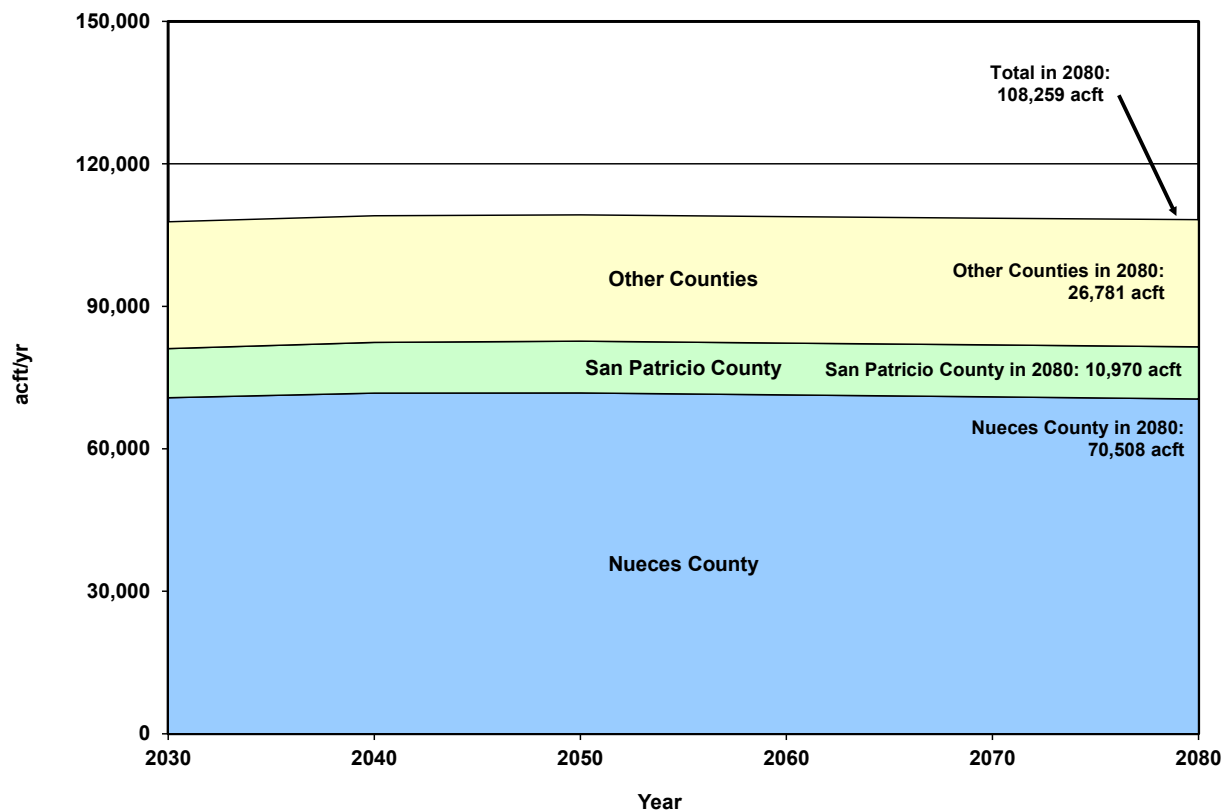
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<sup>1</sup> TWDB Water Use Survey, 2020.

**Table 2.4.**  
**Coastal Bend Region Municipal Water Demand by County (ac-ft/yr)**

County	Historical			Projections <sup>1</sup>					
	2000	2010	2020	2030	2040	2050	2060	2070	2080
Aransas	3,314	4,182	3,824	3,914	3,882	3,788	3,706	3,625	3,547
Bee	4,220	6,062	6,047	6,007	6,070	6,107	6,148	6,201	6,267
Brooks	1,970	1,842	1,525	1,475	1,441	1,418	1,397	1,386	1,389
Duval	2,323	1,947	1,837	1,593	1,520	1,458	1,408	1,359	1,318
Jim Wells	8,562	7,257	6,516	6,829	6,824	6,764	6,668	6,589	6,531
Kenedy	46	109	87	175	160	148	139	130	121
Kleberg	5,415	4,033	4,255	5,021	5,144	5,316	5,564	5,809	6,049
Live Oak	1,990	1,649	2,437	1,631	1,575	1,538	1,528	1,516	1,508
McMullen	135	156	183	73	68	65	60	55	51
Nueces	61,725	53,581	41,746	70,750	71,714	71,782	71,359	70,933	70,508
San Patricio	8,873	9,802	15,318	10,349	10,682	10,889	10,911	10,938	10,970
<b>Total for Region</b>	<b>98,573</b>	<b>90,620</b>	<b>83,775</b>	<b>107,817</b>	<b>109,080</b>	<b>109,273</b>	<b>108,888</b>	<b>108,541</b>	<b>108,259</b>

<sup>1</sup> Projections from Texas Water Development Board



**Figure 2.6.**  
**Coastal Bend Region Municipal Water Demand**

**Table 2.5.**  
**Coastal Bend Region Municipal Water Demand by City/County (ac-ft/yr)**

City/County	Historical			Projections <sup>1</sup>					
	2000	2010	2020	2030	2040	2050	2060	2070	2080
Aransas Pass (P)	146	413	377	116	115	112	110	107	105
Rincon WSC	--		--	2	2	2	2	2	2
Rockport	1,357	3,178	2,906	3,266	3,240	3,162	3,094	3,027	2,962
County-Other	1,811	591	541	530	525	512	500	489	478
<b>Aransas County</b>	<b>3,314</b>	<b>4,182</b>	<b>3,824</b>	<b>3,914</b>	<b>3,882</b>	<b>3,788</b>	<b>3,706</b>	<b>3,625</b>	<b>3,547</b>
Beeville	2,529	3,457	3,448	2,805	2,927	3,075	3,253	3,448	3,663
El Oso (P)	60	85	85	94	122	159	208	273	359
County-Other	1,631	1,426	1,422	1,645	1,556	1,400	1,203	984	737
Pettus Mud	--	98	98	65	68	73	79	85	91
Skidmore WSC	--	95	95	103	105	108	113	119	125
TDCJ Chase Field	--	901	899	1,295	1,292	1,292	1,292	1,292	1,292
<b>Bee County</b>	<b>4,220</b>	<b>6,062</b>	<b>6,047</b>	<b>6,007</b>	<b>6,070</b>	<b>6,107</b>	<b>6,148</b>	<b>6,201</b>	<b>6,267</b>
Falfurrias	1,661	1,464	1,212	1,162	1,147	1,152	1,167	1,199	1,256
County-Other	309	378	313	313	294	266	230	187	133
<b>Brooks County</b>	<b>1,970</b>	<b>1,842</b>	<b>1,525</b>	<b>1,475</b>	<b>1,441</b>	<b>1,418</b>	<b>1,397</b>	<b>1,386</b>	<b>1,389</b>
Freer WCID	624	572	540	501	470	444	421	396	370
San Diego MUD 1	471	770	727	678	675	672	673	685	716
County-Other	1,228	393	371	253	223	199	179	151	113
Duval County CRD	--	211	199	161	152	143	135	127	119
<b>Duval County</b>	<b>2,323</b>	<b>1,947</b>	<b>1,837</b>	<b>1,593</b>	<b>1,520</b>	<b>1,458</b>	<b>1,408</b>	<b>1,359</b>	<b>1,318</b>
Alice	5,281	4,209	3,779	4,009	4,235	4,436	4,667	4,943	5,276
Orange Grove	353	331	297	364	354	347	341	337	336
Premont	807	512	460	554	541	532	524	521	522
San Diego (P)	99	242	217	134	138	143	148	155	163
Jim Wells County FWSD1	--	277	249	112	112	112	113	114	117
County-Other	2,022	1,686	1,514	1,656	1,444	1,194	875	519	117
<b>Jim Wells County</b>	<b>8,562</b>	<b>7,257</b>	<b>6,516</b>	<b>6,829</b>	<b>6,824</b>	<b>6,764</b>	<b>6,668</b>	<b>6,589</b>	<b>6,531</b>
County-Other	46	109	87	175	160	148	139	130	121
<b>Kenedy County</b>	<b>46</b>	<b>109</b>	<b>87</b>	<b>175</b>	<b>160</b>	<b>148</b>	<b>139</b>	<b>130</b>	<b>121</b>
Kingsville	4,440	3,033	3,200	3,907	4,002	4,135	4,329	4,522	4,714
Ricardo WSC	296	319	337	385	394	408	428	447	467
County-Other	679	436	460	208	212	219	230	240	251
Baffin Bay WSC	--	138	146	129	132	136	143	150	156
Naval Air Station Kingsville	--	106	112	264	273	282	292	301	306
Riviera Water System	--	0	0	128	131	136	142	149	155
<b>Kleberg County</b>	<b>5,415</b>	<b>4,033</b>	<b>4,255</b>	<b>5,021</b>	<b>5,144</b>	<b>5,316</b>	<b>5,564</b>	<b>5,809</b>	<b>6,049</b>
El Oso WSC (P)	189	93	137	152	165	165	165	165	165
George West	642	365	540	304	275	253	233	214	197
McCoy WSC	50	48	71	6	5	4	3	2	2
Old Marbach School WSC	--	62	91	86	82	79	78	76	75
Three Rivers	425	316	325	444	434	432	430	427	426

City/County	Historical			Projections <sup>1</sup>					
	2000	2010	2020	2030	2040	2050	2060	2070	2080
County-Other	684	765	1,273	639	614	605	619	632	643
<b>Live Oak County</b>	<b>1,990</b>	<b>1,649</b>	<b>2,437</b>	<b>1,631</b>	<b>1,575</b>	<b>1,538</b>	<b>1,528</b>	<b>1,516</b>	<b>1,508</b>
Three Rivers	--	--	--	12	12	11	10	9	9
County-Other	135	156	183	61	56	54	50	46	42
<b>McMullen County</b>	<b>135</b>	<b>156</b>	<b>183</b>	<b>73</b>	<b>68</b>	<b>65</b>	<b>60</b>	<b>55</b>	<b>51</b>
Bishop	459	467	364	550	558	558	555	551	547
Corpus Christi	55,629	40,514	31,565	59,084	59,885	59,942	59,581	59,223	58,866
Driscoll	97	96	75	80	81	81	81	80	80
Nueces WSC		685	534	986	997	999	997	994	992
River Acres WSC <sup>2</sup>	314	442	344	315	319	320	318	316	313
County-Other	5,214	3,347	2,608	2,607	2,639	2,641	2,625	2,609	2,593
Corpus Christi Naval Air Station	--	675	526	2,078	2,111	2,112	2,105	2,096	2,086
Nueces County WCID 3 <sup>2</sup>	--	4,460	3,475	3,452	3,504	3,507	3,485	3,463	3,441
Nueces County WCID 4	--	2,648	2,063	1,370	1,391	1,392	1,384	1,374	1,365
Violet WSC	--	246	192	228	229	230	228	227	225
<b>Nueces County</b>	<b>61,725</b>	<b>53,581</b>	<b>41,746</b>	<b>70,750</b>	<b>71,714</b>	<b>71,782</b>	<b>71,359</b>	<b>70,933</b>	<b>70,508</b>
Aransas Pass (P)	1,210	724	1,132	1,185	1,180	1,183	1,191	1,199	1,207
Gregory	249	176	275	270	260	257	262	266	270
Ingleside	873	582	910	986	1,008	1,022	1,021	1,020	1,019
Mathis	671	534	835	469	419	400	417	434	451
Odem	319	276	431	432	423	421	426	431	437
Portland	1,976	1,503	2,349	3,555	3,837	4,155	4,500	4,873	5,277
Rincon WSC	--	351	549	378	396	405	402	399	396
Sinton	1,036	825	1,289	1,073	1,051	1,045	1,058	1,071	1,084
Taft	559	317	495	337	323	318	324	330	336
County-Other	1,980	4,513	7,053	1,664	1,785	1,683	1,310	915	493
<b>San Patricio County</b>	<b>8,873</b>	<b>9,802</b>	<b>15,318</b>	<b>10,349</b>	<b>10,682</b>	<b>10,889</b>	<b>10,911</b>	<b>10,938</b>	<b>10,970</b>
<b>Total for Region</b>	<b>98,573</b>	<b>90,620</b>	<b>83,775</b>	<b>107,817</b>	<b>109,080</b>	<b>109,273</b>	<b>108,888</b>	<b>108,541</b>	<b>108,259</b>

Note: (P) Partial

<sup>1</sup> Projections from Texas Water Development Board

<sup>2</sup> These entities rely on supplies delivered by Nueces County WCID 3. Nueces County WCID 3 diverts water from the Lower Nueces River and conveys supplies through an unlined canal. By lining the canals, the amount of water necessary for diversion by Nueces County WCID 3 to meet customer needs could be reduced.

## 2.3.2 Manufacturing Water Demand

Manufacturing is an integral part of the Texas economy, and for many industries, water plays a key role in the manufacturing process. Some of these processes require direct consumption of water as part of the products; others consume very little water but use a large quantity for cleaning and cooling. Whether the water is a product component or used to transport waste heat and materials, it is considered manufacturing water use. According to TWDB studies, over the past two decades, industrial water use in Texas has declined by 60 percent at the same time that output product has nearly doubled. The water-using manufacturers in the 11-county Coastal Bend Region are food processing, chemicals, petroleum refining, stone and concrete,

fabricated metal, and electronic and electrical equipment. Of these industries present in the region, chemicals and petroleum refining are the largest and biggest water users.

Petroleum refining is one of the largest industries in the region, accounting for about 60 percent of all manufacturing water use. Corpus Christi, in Nueces County, is home to nearly 13 percent of Texas' petroleum refining capacity. The refineries in the Corpus Christi area have implemented significant water conservation and water use efficiency improvement programs. These refineries use between 35 and 46 gallons of water per barrel of crude petroleum refined, compared to the State average of 100 gallons per barrel refined.<sup>2</sup>

The TWDB provided draft manufacturing water demand projections to the Coastal Bend Region in January 2022. The TWDB projected manufacturing water demand for years 2030 through 2080 is based on the highest region-county manufacturing water use in 5 years of aggregated data (2015 to 2019) for manufacturing water users from the annual water use survey. In 2020, total manufacturing water use for Coastal Bend Region was 52,056 acre-feet (ac-ft). Nueces and San Patricio counties accounted for 93.7 percent of this total (Table 2.6).

The Coastal Bend Region non-municipal subcommittee met to review TWDB water demand projections for manufacturing, irrigation, mining, steam electric, and livestock users through Year 2080 and prepared a recommendation for the Coastal Bend Region's consideration at the January 26, 2023 meeting. At that meeting, the Coastal Bend Region requested additional information from water providers and local stakeholders for consideration at the May 18, 2023, meeting.

At the January 26, 2023, meeting, the CBRWPG adopted the Coastal Bend Region non-municipal subcommittee input to reduce McMullen County manufacturing to 2018 use for Year 2030 and remain constant through Year 2080. The CBRWPG also considered proposed increases for Nueces County. Given that about 95 percent of the Coastal Bend Region manufacturing demand occurs in Nueces and San Patricio counties, and both counties anticipate substantial growth in the future, the CBRWPG requested additional outreach, thereby deferring action on Nueces and San Patricio county manufacturing water demand projections to the May 18, 2023 meeting.

Manufacturing water users in Nueces and San Patricio counties are predominantly served by the City of Corpus Christi and San Patricio Municipal Water SPMWD (SPMWD). Although not a current water provider, the Port of Corpus Christi is tracking industrial growth in the area.

HDR received feedback from the City of Corpus Christi and SPMWD on February 27, 2023, and the Port of Corpus Christi on April 26, 2023, on manufacturing projections. HDR met with City of Corpus Christi and SPMWD representatives on February 27, 2023, to discuss TWDB draft manufacturing water demand projections. The City of Corpus Christi provided information that showed Nueces County's manufacturing water use was 35,290 ac-ft in 2022. Based on information provided by the SPMWD, San Patricio County's manufacturing water use was

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<sup>2</sup> "Report of Water Use for Refineries and Selected Cities in Texas, 1976-1987," South Texas Water Authority, Kingsville, Texas, 1990.

25,902 ac-ft in 2022, which corresponds to an annual increase of about 16 percent since 2019. The following input was provided:

- Nueces County Manufacturing – The City of Corpus Christi recommended increasing Nueces County projections to match those from the 2021 Plan for Years 2030-2060 and no changes to TWDB draft projections for 2070-2080.
- San Patricio County Manufacturing – The SPMWD recommended alternative San Patricio County manufacturing projections of 56,986 ac-ft/yr in 2030, equal to SPMWD's contracted supplies with manufacturers in 2022. For subsequent decades, a 0.5 percent annual increase was projected which resulted in an estimate of 59,835 ac-ft/yr in 2040 increasing to 72,730 ac-ft/yr in 2080.
- The Port of Corpus Christi projected significantly higher water demands for Nueces County – manufacturing and provided a demand range from 8,775 to 12,872 ac-ft/yr in 2030 and to remain constant through 2050.
- The Port of Corpus Christi projected demands for San Patricio County – manufacturing, to range from 35,394 to 41,559 ac-ft/yr in 2030 increasing to range from 61,290 to 136,084 ac-ft/yr by 2040.

On May 18, 2023, the CBRWPG considered the above alternate manufacturing water demand projections and adopted the alternative projections from the City of Corpus Christi and SPMWD with an understanding that recommended water management strategies would be assigned to show an over-allocation of calculated needs to account for the Port of Corpus Christi projections and the range of possibilities in future manufacturing water demands as driven by market forces and technology improvements that make industrial growth in the Coastal Bend Region difficult to predict. The Coastal Bend Region provided the official revision request to the TWDB on July 12, 2023.

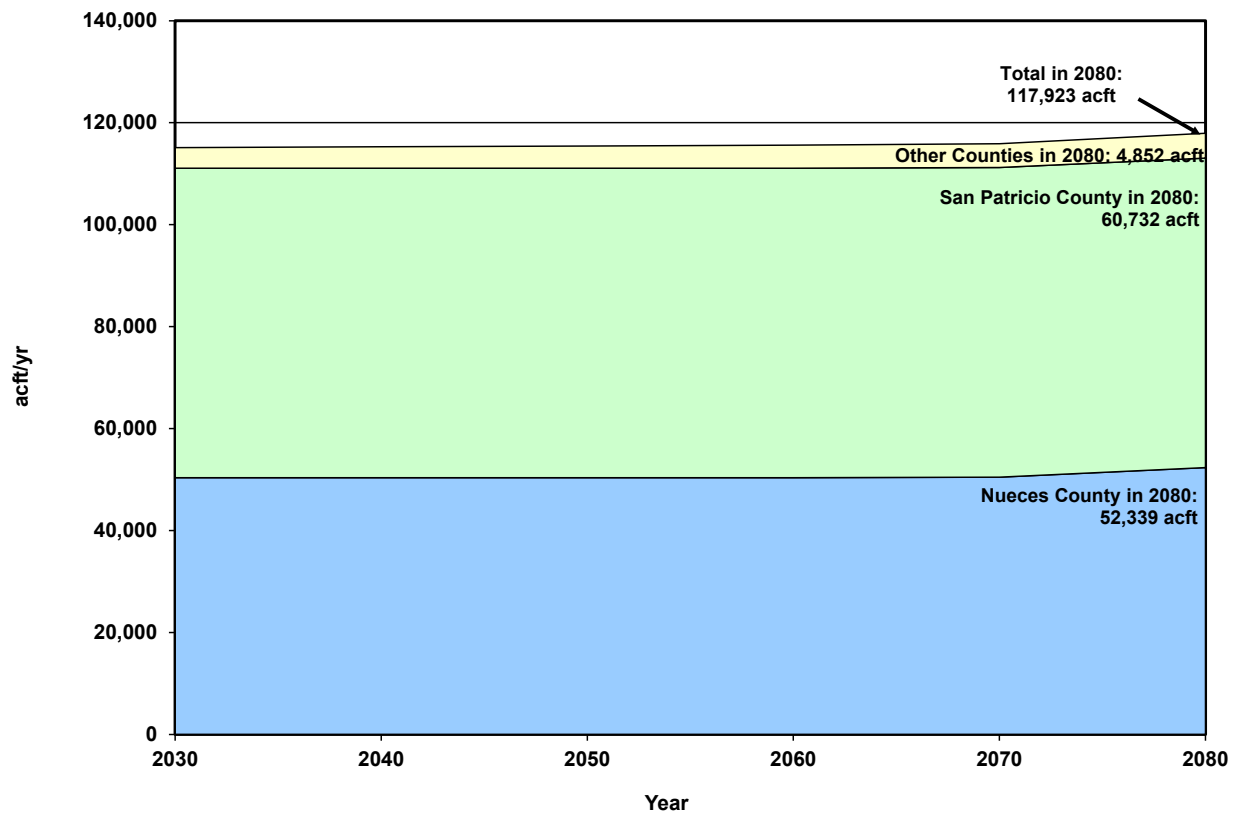
The TWDB considered the CBRWPG's alternate projections and issued a recommendation for the TWDB Board consideration on October 20, 2023, of manufacturing demands that were different than those adopted by the Coastal Bend Region. While it was noted that the TWDB manufacturing demands for San Patricio County were higher for 2030-2040 than the Coastal Bend Region's alternate projections but lower for 2050-2080, the TWDB Board ultimately adopted their staff recommendations on November 9, 2023, which were 11,998 ac-ft lower than the Coastal Bend Region requested revision for San Patricio County's 2080 projection. Manufacturing use was 52,056 ac-ft in 2020 and is projected to be 117,923 ac-ft in 2080, a 126.5 percent increase. In 2080, Nueces and San Patricio counties are projected to account for 96 percent of the total manufacturing water use in the region (Figure 2.7).

**Table 2.6.**  
**Coastal Bend Region Manufacturing Water Demand by County and River Basin (ac-ft/yr)**

County	Historical*			Projections <sup>1</sup>					
	2000	2010	2020	2030	2040	2050	2060	2070	2080
Aransas	235	0	0	0	0	0	0	0	0
Bee	1	0	0	0	0	0	0	0	0
Brooks	0	0	0	0	0	0	0	0	0
Duval	0	0	0	0	0	0	0	0	0
Jim Wells	0	79	1	87	90	93	96	100	104
Kenedy	0	0	0	0	0	0	0	0	0
Kleberg	0	1,275	1,045	1,088	1,128	1,170	1,213	1,258	1,305
Live Oak	1,767	2,124	2,198	2,843	2,948	3,057	3,170	3,287	3,409
McMullen	0	219	5	34	34	34	34	34	34
Nueces	39,763	33,517	36,590	50,363	50,363	50,363	50,363	50,472	52,339
San Patricio	12,715	7,606	12,217	60,705	60,710	60,715	60,720	60,726	60,732
<b>Total for Region</b>	<b>54,481</b>	<b>44,820</b>	<b>52,056</b>	<b>115,120</b>	<b>115,273</b>	<b>115,432</b>	<b>115,596</b>	<b>115,877</b>	<b>117,923</b>

Note: \*Self-reported use

<sup>1</sup> Projections from Texas Water Development Board



**Figure 2.7.**  
**Coastal Bend Region Manufacturing Water Demand**

### 2.3.3 Steam-Electric Water Demand

The TWDB provided draft steam-electric water demand projections to the Coastal Bend Region in January 2022. The draft steam-electric power water demand projections for each region-county were developed based upon:

1. The highest single-year county water use from within the most recent 5 years of data for steam-electric power water users from the annual water use survey (WUS),
2. Near-term additions and retirements of generating facilities, and
3. Holding the projected water demand volume constant through 2080.

Only two Coastal Bend Region counties report steam-electric water demands, Nueces and San Patricio counties. Projections for steam-electric power water demand are based on power generation projections—determined by population and manufacturing growth—and on generating capacity and water use for that projected capacity. The steam-electric generation process uses water in boilers and for cooling the generating equipment. The usual practice is to use freshwater with a very low concentration of dissolved solids for boiler feed water and to use either freshwater or saline water for power plant cooling purposes. At two of the three plants located in Corpus Christi in Nueces County, freshwater is used for the boiler feed and seawater is used for cooling. The Nueces Bay Power Station is not currently operating. The use of saltwater for cooling at Topaz (formerly AEP-CPL's) Barney Davis Power Station saves approximately 6,300 ac-ft/yr in freshwater (1999 figures). At the third plant, Lon C. Hill, fresh water is used for the boiler feed and cooling. Table 2.7 shows that in 2020, 2,865 ac-ft/yr of water was used.

At the January 26, 2023, meeting, the CBRWPG considered subcommittee input and requested additional outreach and deferring action on steam-electric water demand projections to the May 18 meeting. HDR received feedback from the City of Corpus Christi and SPMWD on February 27, 2023, on steam-electric projections. With projected steam electric growth, the SPMWD recommended a revised 2030 water demand projection to 6,161 ac-ft, equal to current contracts as of 2022. The SPMWD suggested the water demand remain constant at 6,161 ac-ft for 2040 through 2080. No changes were recommended for Nueces County.

On May 18, 2023, the CBRWPG considered the alternate steam-electric water demand projection and approved. After discussion with the TWDB, it was determined that some of this demand was more appropriately categorized as manufacturing in alignment with TWDB methods. The TWDB considered the CBRWPG's alternate projections and issued a recommendation for TWDB Board consideration on October 20, 2023, of steam-electric demands. The TWDB Board adopted their staff recommendations at the end of 2023.

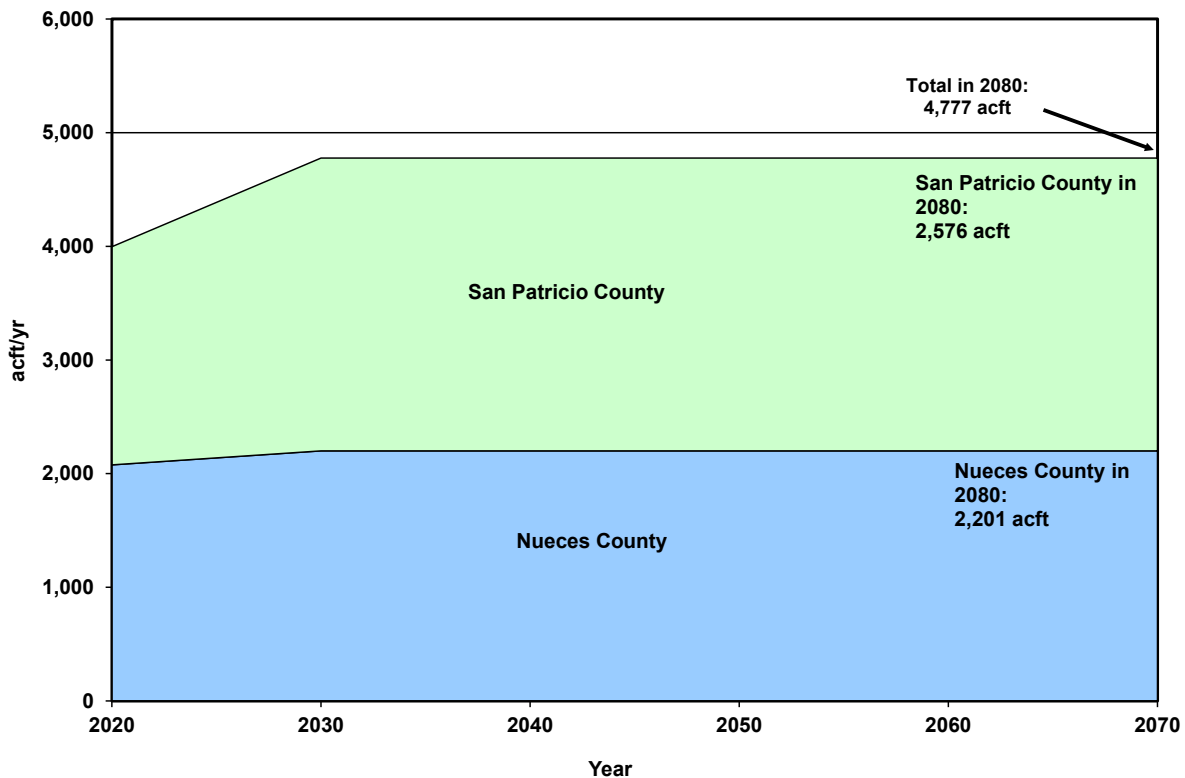
The TWDB adopted steam-electric water demands for the 2026 regional water plan are provided in Table 2.7, which shows a constant demand of 2,201 ac-ft/yr and 2,576 ac-ft/yr from 2030 to 2080 for Nueces and San Patricio counties, respectively. In 2080, steam-electric demands for freshwater are projected to be 4,777 ac-ft/yr (Figure 2.8).

**Table 2.7.**  
**Coastal Bend Region Steam-Electric Water Demand by County and River Basin (ac-ft/yr)**

County	Historical*			Projections <sup>1</sup>					
	2000	2010	2020	2030	2040	2050	2060	2070	2080
Aransas	0	0	0	0	0	0	0	0	0
Bee	0	0	0	0	0	0	0	0	0
Brooks	0	0	0	0	0	0	0	0	0
Duval	0	0	0	0	0	0	0	0	0
Jim Wells	0	0	0	0	0	0	0	0	0
Kenedy	0	0	0	0	0	0	0	0	0
Kleberg	0	0	0	0	0	0	0	0	0
Live Oak	0	0	0	0	0	0	0	0	0
McMullen	0	0	0	0	0	0	0	0	0
Nueces	8,799	388	2,213	2,201	2,201	2,201	2,201	2,201	2,201
San Patricio	0	0	652	2,576	2,576	2,576	2,576	2,576	2,576
<b>Total for Region</b>	<b>8,799</b>	<b>388</b>	<b>2865</b>	<b>4,777</b>	<b>4,777</b>	<b>4,777</b>	<b>4,777</b>	<b>4,777</b>	<b>4,777</b>

Note: \* Self-reported use.

<sup>1</sup> Projections from Texas Water Development Board.



**Figure 2.8.**  
**Coastal Bend Region Steam-Electric Water Demand**

### 2.3.4 Mining Water Demand

The TWDB provided draft mining water demand projections to the Coastal Bend Region in August 2022. On September 8, 2023, the Coastal Bend Region non-municipal subcommittee

met to review TWDB water demand projections for mining users through Year 2080. During the virtual meeting, draft TWDB projections were discussed along with TWDB methodology that was used to estimate the future water demands. At the January 26, 2023, meeting, the CBRWPG considered subcommittee input and approved adoption of the TWDB's draft mining projections. The TWDB Board adopted their staff recommendations at the end of 2023.

The TWDB used 2010-2019 historical WUS data to inform the development of their draft mining projections. Additionally, projections for mining water demand are based on projected production of mineral commodities, and historic rates of water use, moderated by water requirements of technological processes used in mining.

The development of natural gas from the shale in the Eagleford Group is active in several counties in the Coastal Bend Region, especially Live Oak and McMullen counties. Water demands associated with these mining activities impact local groundwater use. The impacts of developing gas wells in the Eagleford shale and uranium mining activities on groundwater supplies in the Coastal Bend Region should continue to be considered in future planning efforts.

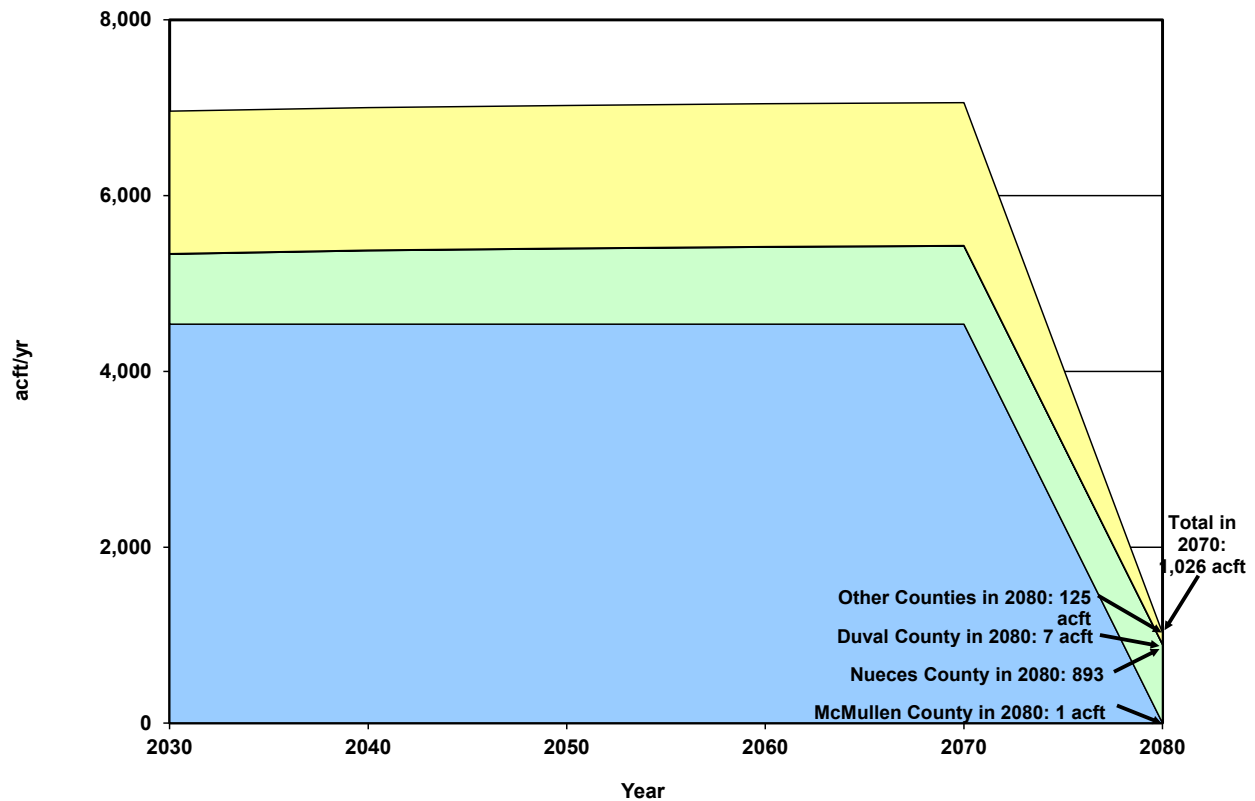
**Table 2.8.**  
**Coastal Bend Region Mining Water Demand by County and River Basin (ac-ft/yr)**

County	Historical*			Projections <sup>1</sup>					
	2000	2010	2020	2030	2040	2050	2060	2070	2080
Aransas	81	19	0	0	0	0	0	0	0
Bee	29	384	3	239	239	239	239	239	0
Brooks	127	334	0	16	16	16	16	16	16
Duval	4,544	1,594	78	6	6	6	6	7	7
Jim Wells	347	49	0	0	0	0	0	0	0
Kenedy	1	82	12	3	3	3	3	3	3
Kleberg	2,627	558	12	10	10	10	10	10	10
Live Oak	3,105	118	618	1,264	1,264	1,264	1,264	1,264	2
McMullen	176	440	3,607	4,538	4,538	4,538	4,538	4,538	1
Nueces	1,275	1,369	715	796	835	858	876	887	893
San Patricio	85	308	0	88	90	92	93	94	94
<b>Total for Region</b>	<b>12,397</b>	<b>5,255</b>	<b>5,045</b>	<b>6,960</b>	<b>7,001</b>	<b>7,026</b>	<b>7,045</b>	<b>7,058</b>	<b>1,026</b>

Note: \* Self-reported use.

<sup>1</sup> Projections from Texas Water Development Board

In 2010, for the 11 counties of the Coastal Bend Planning Area, 5,255 ac-ft was used in the mining of sand, gravel, production of crude oil, and possibly mineral/uranium exploration. Water is required in the mining of these minerals either for processing, leaching to extract certain ores, controlling dust at the plant site, or for reclamation. Duval, McMullen and Nueces counties accounted for 87.2 percent of the 2020 total use (Table 2.8). Mining water use in 2020 was 5,045 ac-ft and is projected to increase 40 percent to 7,058 ac-ft in 2070 before decreasing to 1,026 ac-ft in 2080. Nueces and San Patricio counties will account for 96 percent of the 2080 total use (Figure 2.9). The drop in projected demands is attributable to estimates of Eagleford activities slowing down after 2040; however, future trends are difficult to predict considering technology enhancements and energy market.



**Figure 2.9.**  
**Coastal Bend Region Mining Water Demand**

### 2.3.5 Irrigation Water Demand

The TWDB provided draft irrigation water demand projections to the Coastal Bend Region in August 2022. The draft irrigation water demand projections are based upon the average of the most recent 5 years of water use estimates (2015 through 2019) for each region-county. The projections either held constant between 2030 and 2080 or, in counties where the total groundwater availability over the planning period is projected to be less than the groundwater-portion of the baseline water demand projections, the irrigation water demand projections are held constant for 10 years beyond the point that the groundwater availability falls below the baseline demand. In most cases, this is in 2030 to 2040, after projected demands will begin to decline, depending on and commensurate with the groundwater availability.

On September 8, 2023, a Coastal Bend Region non-municipal subcommittee met to review TWDB water demand projections for irrigation users through Year 2080. During the virtual meeting, draft TWDB projections were discussed along with TWDB methodology that was used to estimate the future water demands. At the January 26, 2023, meeting, the CBRWPG considered subcommittee input and approved adoption of the TWDB's draft irrigation projections. The TWDB Board adopted their staff recommendations at the end of 2023.

Irrigated crop production in Coastal Bend Region is projected in 9 of the 11 counties. Irrigation survey data provided by the TWDB reported 27,336 acres of irrigated farmland in 2010 for the

Coastal Bend Region, with over 99 percent irrigated with groundwater. In 2017, about 14,780 ac-ft of water was used to irrigate 26,210 acres in the region. Major crops include corn, cotton, sorghum, hay and vegetables.

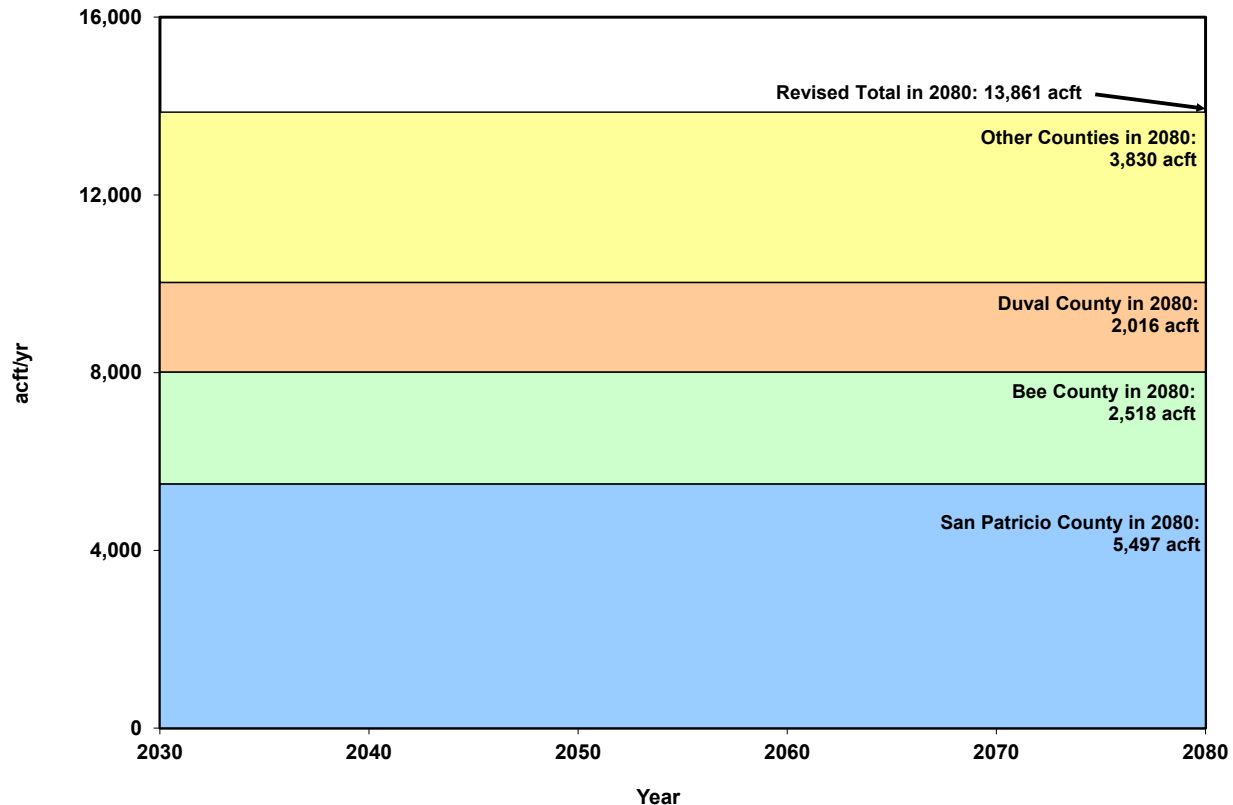
The irrigation water demand projections are based on specific assumptions regarding crop prices, crop yields, agricultural policy, and technological advances in irrigation systems. The TWDB estimated 2020 total irrigated water use in the Coastal Bend Region at 14,501 ac-ft based on self-reported irrigation water use surveys (Table 2.9). Bee, Duval and San Patricio counties accounted for 68 percent of that total. Irrigated water use is projected to remain constant from 2030 to 2080 at 13,861 ac-ft (Figure 2.10). In Bee and Live Oak counties, most irrigation occurs in the southern portion of those counties in the more productive Evangeline layers of the Gulf Coast Aquifer.

**Table 2.9.**  
**Coastal Bend Region Irrigation Water Demand by County and River Basin (ac-ft/yr)**

County	Historical*			Projections <sup>1</sup>					
	2000	2010	2020	2030	2040	2050	2060	2070	2080
Aransas	0	0	0	0	0	0	0	0	0
Bee	2,798	4,425	2,391	2,518	2,518	2,518	2,518	2,518	2,518
Brooks	25	803	807	597	597	597	597	597	597
Duval	4,524	1,642	2,638	2,016	2,016	2,016	2,016	2,016	2,016
Jim Wells	3,731	1,574	1,967	1,665	1,665	1,665	1,665	1,665	1,665
Kenedy	107	0	0	0	0	0	0	0	0
Kleberg	1,002	576	220	141	141	141	141	141	141
Live Oak	3,539	700	717	844	844	844	844	844	844
McMullen	0	0	120	24	24	24	24	24	24
Nueces	1,680	1,503	753	559	559	559	559	559	559
San Patricio	4,565	7,175	4,888	5,497	5,497	5,497	5,497	5,497	5,497
<b>Total for Region</b>	<b>21,971</b>	<b>18,398</b>	<b>14,501</b>	<b>13,861</b>	<b>13,861</b>	<b>13,861</b>	<b>13,861</b>	<b>13,861</b>	<b>13,861</b>

Note: \* Self-reported use.

<sup>1</sup> Projections from Texas Water Development Board



**Figure 2.10.**  
**Coastal Bend Region Irrigation Water Demand**

### 2.3.6 Livestock Water Demand

In the 11-county Coastal Bend Region, the principal livestock type is beef cattle, with some dairy herds. Livestock drinking water is obtained from wells, stock watering tanks that are dug/constructed on the ranches, and streams that flow through the ranches.

The TWDB provided draft livestock water demand projections to the Coastal Bend Region in January 2022. On September 8, 2023, the Coastal Bend Region non-municipal subcommittee met to review TWDB water demand projections for livestock users through Year 2080. During the virtual meeting, draft TWDB projections were discussed along with TWDB methodology that was used to estimate the future water demands. At the January 26, 2023, meeting, the CBRWPG considered subcommittee input and approved adoption of the TWDB's draft livestock projections. The TWDB Board adopted their staff recommendations at the end of 2023.

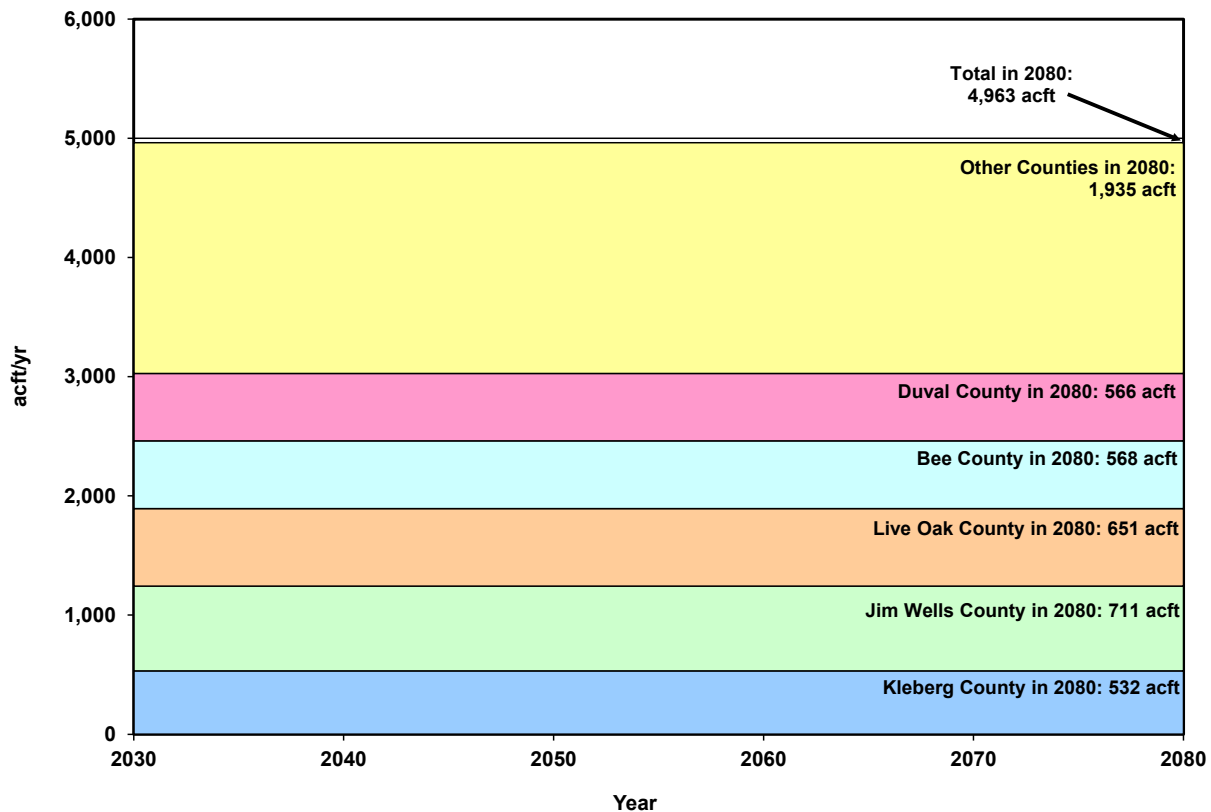
The livestock water demand projections are based on estimates of the maximum carrying capacity of the rangeland of the area and the estimated number of gallons of water per head of livestock per day. In 2020, livestock water use for the Coastal Bend Region was reported as 4,832 ac-ft: 10.2 percent in Kleberg County, 13.3 percent in Kenedy County, 14.0 percent in Jim Wells County, 11.6 percent in Bee County, and 50.9 percent in the remaining counties. From 2030 to 2080, the TWDB projects water use for livestock to remain constant at 4,963 ac-ft (Table 2.10 and Figure 2.11).

**Table 2.10.**  
**Coastal Bend Region Livestock Water Demand by County and River Basin (ac-ft/yr)**

County	Historical*			Projections <sup>1</sup>					
	2000	2010	2020	2030	2040	2050	2060	2070	2080
Aransas	23	63	52	52	52	52	52	52	52
Bee	995	1,147	560	568	568	568	568	568	568
Brooks	747	449	452	478	478	478	478	478	478
Duval	873	710	556	566	566	566	566	566	566
Jim Wells	1,064	1,122	675	711	711	711	711	711	711
Kenedy	901	840	643	631	631	631	631	631	631
Kleberg	1,900	726	494	532	532	532	532	532	532
Live Oak	833	779	633	651	651	651	651	651	651
McMullen	659	464	281	278	278	278	278	278	278
Nueces	279	324	196	218	218	218	218	218	218
San Patricio	564	449	290	278	278	278	278	278	278
<b>Total for Region</b>	<b>8,838</b>	<b>7,073</b>	<b>4,832</b>	<b>4,963</b>	<b>4,963</b>	<b>4,963</b>	<b>4,963</b>	<b>4,963</b>	<b>4,963</b>

Note: \* Self-reported use.

<sup>1</sup> Projections from Texas Water Development Board



**Figure 2.11.**  
**Coastal Bend Region Livestock Water Demand**

## 2.4 Water Demand Projections for Current Wholesale and Major Water Providers

There are four current regional wholesale water providers (WWPs) in the Coastal Bend Region: the City of Corpus Christi, SPMWD, South Texas Water Authority (STWA), and Nueces County Water Control and Improvement District #3 (WCID 3). On October 17, 2024, the CBRWPG designated four major water providers: City of Corpus Christi, SPMWD, STWA, and the City of Alice. The City of Corpus Christi provides water to SPMWD and STWA, as shown in Table 2.11. The City of Corpus Christi is contracted to provide up to 83,800 ac-ft/yr to SPMWD (46,800 ac-ft/yr of raw water and 37,000 ac-ft/yr of treated water supplies after Year 2020) and meet demands of STWA and their customers. For the 2026 regional water plan, water supply constraints are considered based on system yield (raw water) or water treatment plant capacity (treated water), whichever is the most constraining. Accordingly, the water demands for each WWP and their customers are shown in Table 2.11 and are categorized according to raw or treated water demands for ease of comparison to supplies discussed in Chapters 3 and 4. The City of Corpus Christi and SPMWD provide both raw and treated water supplies to their customers. STWA solely provides treated water supplies to its customers. Nueces County WCID 3 provides treated water supplies to its customers. Two potential future WWP were identified for recommended water management strategies: the Port of Corpus Christi Authority (PCCA) and Poseidon Water. However, because they are not current MWP, they are not included in the table.

**Table 2.11.**  
**Coastal Bend Region Water Demand Projections for Current Wholesale and Major Water Providers**

Wholesale and Major Water Providers (Water User/County)	2030 (ac-ft/yr)	2040 (ac-ft/yr)	2050 (ac-ft/yr)	2060 (ac-ft/yr)	2070 (ac-ft/yr)	2080 (ac-ft/yr)
<b>CITY OF CORPUS CHRISTI (Major and Wholesale Water Provider)</b>						
<b>Raw Water Demand</b>						
<b>Municipal</b>						
<i>Jim Wells County</i>						
City of Alice <sup>1</sup>	2,254	2,480	2,681	2,912	3,188	3,521
<i>Bee County</i>						
City of Beeville	1,550	1,672	1,820	1,998	2,193	2,408
<i>San Patricio County</i>						
City of Mathis	469	419	400	417	434	451
San Patricio MWD (based on water supply contract)	46,800	46,800	46,800	46,800	46,800	46,800
<i>Live Oak County</i>						
City of Three Rivers	3,363	3,363	3,363	3,363	3,363	3,363
<b>Non-Municipal</b>						
<i>Nueces County</i>						
Manufacturing	9,199	9,199	9,199	9,199	9,221	9,594
Steam Electric	2,201	2,201	2,201	2,201	2,201	2,201
<b>Total Raw Water Demand</b>	<b>65,836</b>	<b>66,134</b>	<b>66,464</b>	<b>66,890</b>	<b>67,400</b>	<b>68,338</b>



Wholesale and Major Water Providers (Water User/County)	2030 (ac-ft/yr)	2040 (ac-ft/yr)	2050 (ac-ft/yr)	2060 (ac-ft/yr)	2070 (ac-ft/yr)	2080 (ac-ft/yr)
<b>Treated Water Demand</b>						
<b>Municipal</b>						
<i>Nueces County</i>						
Nueces County WCID 4	630	640	640	637	632	628
City of Corpus Christi	58,748	59,549	59,606	59,245	58,887	58,530
Corpus Christi Naval Air Station	2,078	2,111	2,112	2,105	2,096	2,086
Violet WSC	228	229	230	228	227	225
<i>San Patricio County</i>						
San Patricio MWD	34,760	34,760	34,760	34,760	34,760	34,760
<i>Kleberg County</i>						
South Texas Water Authority (based on water supply contract)	4,596	4,660	4,687	4,696	4,750	4,945
<b>Non-Municipal</b>						
Manufacturing (Nueces County)	36,796	36,796	36,796	36,796	36,883	38,377
<b>Total Treated Water Demand</b>	<b>137,836</b>	<b>138,745</b>	<b>138,831</b>	<b>138,467</b>	<b>138,235</b>	<b>139,551</b>
<b>Total Water Demand</b>	<b>203,672</b>	<b>204,879</b>	<b>205,295</b>	<b>205,357</b>	<b>205,635</b>	<b>207,889</b>
<b>River Basin</b>						
Nueces	18,164	18,234	18,224	18,187	18,163	18,350
Nueces- Rio Grande	100,158	101,173	101,451	101,372	101,479	103,331
San Antonio- Nueces	85,350	85,472	85,620	85,798	85,993	86,208
<b>Total Water Demand</b>	<b>203,672</b>	<b>204,879</b>	<b>205,295</b>	<b>205,357</b>	<b>205,635</b>	<b>207,889</b>
<b>SAN PATRICIO MUNICIPAL WATER DISTRICT (Major and Wholesale Water Provider)</b>						
<b>Raw Water Demand</b>						
<b>Non-Municipal</b>						
<i>San Patricio County</i>						
Manufacturing (San Patricio County)	12,119	12,120	12,121	12,122	12,123	12,124
Steam-Electric (San Patricio County)	2,576	2,576	2,576	2,576	2,576	2,576
<b>Total Raw Water Demand</b>	<b>14,695</b>	<b>14,696</b>	<b>14,697</b>	<b>14,698</b>	<b>14,699</b>	<b>14,700</b>
<b>Treated Water Demand</b>						
<b>Municipal</b>						
<i>Nueces County</i>						
City of Aransas Pass	0	0	0	0	0	0
Nueces County WCID 4	740	751	752	747	742	737
County-Other <sup>1</sup>	0	0	0	0	0	0
<i>San Patricio County</i>						
City of Aransas Pass	452	447	450	458	466	474
City of Gregory	270	260	257	262	266	270
City of Ingleside	986	1,008	1,022	1,021	1,020	1,019
City of Odem	432	423	421	426	431	437
City of Portland	3,555	3,837	4,155	4,500	4,873	5,277
Rincon WSC	378	396	405	402	399	396
City of Taft	337	323	318	324	330	336
County-Other <sup>1,2</sup>	1,158	1,279	1,177	804	409	152
<i>Aransas County</i>						
City of Aransas Pass	116	115	112	110	107	105



Wholesale and Major Water Providers (Water User/County)	2030 (ac-ft/yr)	2040 (ac-ft/yr)	2050 (ac-ft/yr)	2060 (ac-ft/yr)	2070 (ac-ft/yr)	2080 (ac-ft/yr)
City of Rockport	3,172	3,146	3,068	3,000	2,933	2,868
Rincon	2	2	2	2	2	2
County-Other <sup>1</sup>	0	0	0	0	0	0
<b>Municipal Treated Water Demand</b>	<b>11,598</b>	<b>11,987</b>	<b>12,139</b>	<b>12,056</b>	<b>11,978</b>	<b>12,073</b>
<b>Non-Municipal</b>						
Manufacturing (San Patricio County)	48,476	48,480	48,484	48,488	48,493	48,498
Industrial Treated Water Demand	<b>48,476</b>	<b>48,480</b>	<b>48,484</b>	<b>48,488</b>	<b>48,493</b>	<b>48,498</b>
<b>Total Water Demand</b>	<b>74,769</b>	<b>75,163</b>	<b>75,320</b>	<b>75,242</b>	<b>75,170</b>	<b>75,271</b>
<b>River Basin</b>						
Nueces	-	-	-	-	-	-
Nueces- Rio Grande	-	-	-	-	-	-
San Antonio- Nueces	74,769	75,163	75,320	75,242	75,170	75,271
<b>Total Water Demand</b>	<b>74,769</b>	<b>75,163</b>	<b>75,320</b>	<b>75,242</b>	<b>75,170</b>	<b>75,271</b>
<b>SOUTH TEXAS WATER AUTHORITY (Major and Wholesale Water Provider)</b>						
<b>Municipal</b>						
<i>Nueces County</i>						
Driscoll	80	81	81	81	80	80
Bishop <sup>1</sup>	268	276	276	273	269	265
Nueces WSC	986	997	999	997	994	992
County-Other, Nueces <sup>3</sup>	2,607	2,639	2,641	2,625	2,609	2,593
<i>Kleberg County</i>						
Kingsville + County-Other <sup>1</sup>	6	0	0	0	50	242
Naval Air Station Kingsville	264	273	282	292	301	306
Ricardo WSC	385	394	408	428	447	467
<b>Total Water Demand (All Treated)</b>	<b>4,596</b>	<b>4,660</b>	<b>4,687</b>	<b>4,696</b>	<b>4,750</b>	<b>4,945</b>
<b>River Basin</b>						
Nueces	98	99	99	99	99	99
Nueces- Rio Grande	4,498	4,561	4,588	4,597	4,651	4,846
San Antonio- Nueces	-	-	-	-	-	-
<b>Total Water Demand</b>	<b>4,596</b>	<b>4,660</b>	<b>4,687</b>	<b>4,696</b>	<b>4,750</b>	<b>4,945</b>
<b>NUECES COUNTY WCID #3 (Wholesale Water Provider)</b>						
<i>Nueces County</i>						
Nueces County WCID 3	3,452	3,504	3,507	3,485	3,463	3,441
River Acres WSC	315	319	320	318	316	313
<b>Total Water Demand (All Treated)</b>	<b>3,767</b>	<b>3,823</b>	<b>3,827</b>	<b>3,803</b>	<b>3,779</b>	<b>3,754</b>
<b>River Basin</b>						
Nueces	315	319	320	318	316	313
Nueces- Rio Grande	3,452	3,504	3,507	3,485	3,463	3,441
San Antonio- Nueces	-	-	-	-	-	-
<b>Total Water Demand</b>	<b>3,767</b>	<b>3,823</b>	<b>3,827</b>	<b>3,803</b>	<b>3,779</b>	<b>3,754</b>
<b>City of Alice (Major Water Provider)</b>						
<b>Municipal</b>						
<i>Jim Wells County</i>						
City of Alice <sup>4</sup>	4,009	4,235	4,436	4,667	4,943	5,276
<b>Total Water Demand</b>	<b>4,009</b>	<b>4,235</b>	<b>4,436</b>	<b>4,667</b>	<b>4,943</b>	<b>5,276</b>



Wholesale and Major Water Providers (Water User/County)	2030 (ac-ft/yr)	2040 (ac-ft/yr)	2050 (ac-ft/yr)	2060 (ac-ft/yr)	2070 (ac-ft/yr)	2080 (ac-ft/yr)
<b>River Basin</b>						
Nueces	-	-	-	-	-	-
Nueces- Rio Grande	4,009	4,235	4,436	4,667	4,943	5,276
San Antonio- Nueces	-	-	-	-	-	-
<b>Total Water Demand</b>	<b>4,009</b>	<b>4,235</b>	<b>4,436</b>	<b>4,667</b>	<b>4,943</b>	<b>5,276</b>

<sup>1</sup> Wholesale water provider does not meet full demand (i.e., additional supply from groundwater)

<sup>2</sup> Includes Taft Southwest, and Seaboard WSC.

<sup>3</sup> Includes Coastal Bend Youth City, KB Foundation, Geo Center, and Nueces County WCID #5.

<sup>4</sup> The demand listed for the City of Alice, Major Water Provider, is met by with multiple water supplies including local brackish groundwater desalination, reuse, and raw water from City of Corpus Christi's Lake Corpus Christi according to contractual arrangements.



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