

5.0 COMPARISON OF EXISTING SUPPLY AND PROJECTED DEMAND

To adequately manage the water resources in the Sabine Basin and plan for future growth, there needs to be an understanding of the existing water supply, projected demand, and anticipated need. The existing supply consists of water supply reservoirs, diversions from the Sabine River and its tributaries, ground water, and imports from outside the Basin. Projected water demands are the expected water use requirements developed from the TWDB's 1996 Consensus Projections as discussed in Section 2.0. The anticipated need is based on the difference between the supply and the demand.

The Sabine Basin has a vast resource of existing water supply in the Toledo Bend Reservoir. However, this supply is not easily accessible to other areas with need such as the Upper Basin. Therefore, the comparison of existing supply and demand was evaluated on a county by county basis. Supplies from surface water reservoirs, river diversions, and importation were attributed to different counties based on the existing water rights and contracts. Unpermitted additional yield of existing reservoirs was considered unassigned supply in the county of the reservoir. Ground water supply was estimated from the year 2000 ground water projections, since these projections better reflect existing ground water resources that are currently used or planned for future supply. The projected water demands for each decade are identified for the Basin and county by the TWDB. Further discussion of potential ground water resources is included in Section 8.0.

The total water supply was assumed to meet only the need of the county, unless there was unassigned supply available in the county. This was because it was assumed that a water right holder would be reluctant to reduce its existing contracted supply. Also, water supply sources such as Lake Murvaul have stipulations that the water can only be used for county needs. A summary of the supply, demand and projected need is presented in Table 5.1. Details of the distribution of water supply within the Basin are included in Appendix E.

Table 5.1: Comparison of Existing Supply and Demands

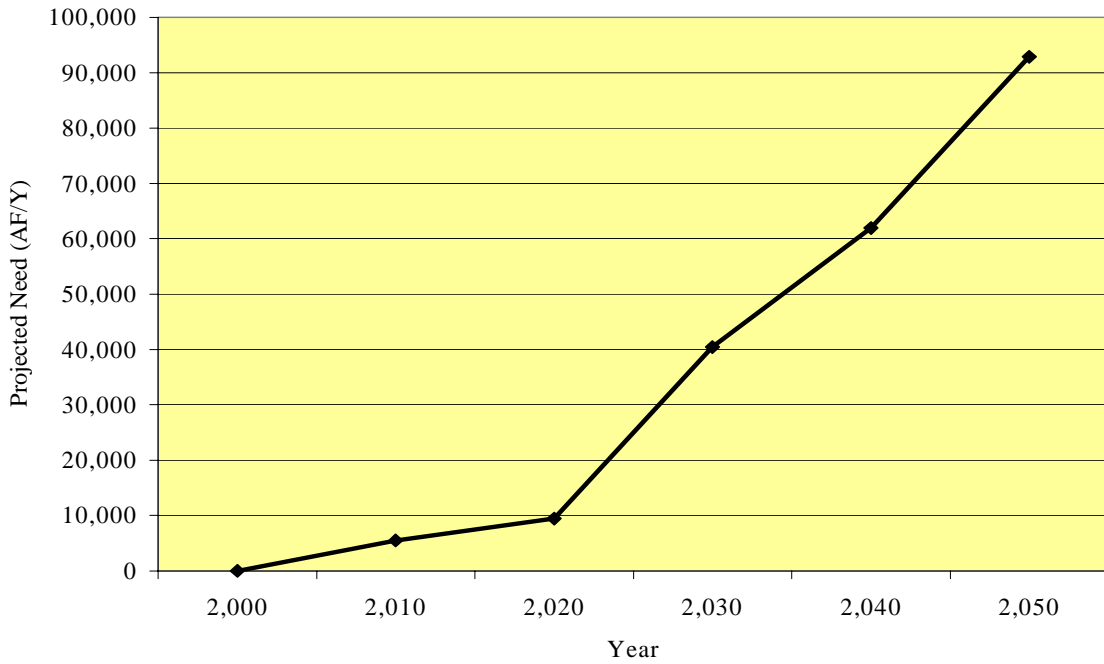
County	SUPPLY (acre-feet/year)					DEMAND (acre-feet/year)						2050	
	Surface	Groundwtr	Imports	Exports	Total	2000	2010	2020	2030	2040	2050	Difference	Available
Upper Basin													
Collin		11	2,638		2,649	523	415	754	1,269	2,032	2,638	11	
Rockwall		50	3,705		3,755	1,030	1,306	1,760	2,373	3,110	3,705	50	
Hunt	252,970	352	1,323	211,202	43,443	12,233	11,578	11,554	11,684	11,603	11,816	31,627	11,860
Kaufman	1,120	5			1,125	225	241	258	276	287	295	830	
Van Zandt	10,256	3,714		300	13,670	5,997	5,979	5,982	5,918	5,768	5,753	7,917	
Rains	4,271	114			4,385	2,037	2,097	2,135	2,183	2,207	2,299	2,086	
Hopkins	95	876			971	3,202	3,186	3,155	3,128	3,090	3,069	-2,098	-2,098
Wood	130,542	6,551		120,280	16,813	9,609	32,668	32,373	31,977	30,548	26,172	-9,359	-9,359
Smith	2,362	5,058			7,420	5,141	5,076	4,985	4,859	4,740	4,578	2,842	
Franklin			28		28	20	22	23	26	27	28	0	
Upshur	5,569	1,250			6,819	2,313	2,348	2,372	2,406	2,421	2,459	4,360	
Gregg	59,102	1,936	20,000		81,038	40,695	43,334	45,887	48,891	51,959	56,457	24,581	
Rusk	36,596	3,393		1,008	38,981	34,491	39,250	44,101	49,216	49,251	49,304	-10,323	-10,323
Harrison	145,293	2,606	34,000		181,899	127,443	162,637	181,332	207,615	230,577	265,858	-83,959	-83,959
Panola	28,173	3,661			31,834	9,643	9,083	15,100	23,283	23,423	23,132	8,702	
Total	676,349	29,577	61,694	332,790	434,830	254,602	319,220	351,771	395,104	421,043	457,563		-93,879
Lower Basin													
Shelby	1,460	2,793	3,800		6,593	6,271	6,570	6,908	7,371	7,832	8,380	-1,787	
San Augustine		103			103	185	180	176	174	172	172	-69	
Sabine		368			368	1,264	1,264	1,254	1,250	1,249	1,271	-903	
Jasper		1,838			1,838	1,854	1,839	1,810	1,833	1,854	1,893	-55	
Newton	750,285	4,144			754,429	4,201	4,200	4,160	4,133	4,058	4,047	750,382	
Orange	156,605	9,243		9,438	156,410	74,471	85,748	99,129	113,489	130,106	148,198	8,212	
Total	908,350	18,489	3,800	9,438	919,741	88,246	99,801	113,437	128,250	145,271	163,961	755,780	755,780

1. Upper Basin surplus was determined from the need by county (negative surplus) and **unassigned** surplus supply that could be used in other counties.
2. It was assumed that the surplus in Gregg, Panola, Smith, Upshur and Van Zandt counties are not available for supply outside the respective county.

The supply/demand analyses addresses the projected TWDB needs only and does not include demands for environmental flows. Based on this analysis, the results indicate that in the year 2050 the Lower Basin has an available future supply of over **755,700** AF/Y, and the Upper Basin has an expected need of approximately 94,000 AF/Y. This need is largely assigned to three counties: Harrison, Rusk and Wood. The projected need in Harrison County is attributed to manufacturing growth; the need in Rusk County is primarily for power; and Wood County's increased water requirement is largely due to mining and power. Hopkins County indicates a need of nearly 2,100 AF/Y, which is attributed to livestock demands. The unassigned 11,860 AF/Y in Hunt County is the portion of Dallas's contract in Lake Tawakoni that must remain in the Sabine Basin. This water does not have to remain in Hunt County, and is available for use where needed in the Upper Basin.

As shown on Table 5.1, the projected need in these counties will occur sometime after year 2000 and before 2030. The projected need in Wood County shows a sudden increase in water requirements by 2010 due to power and mining. Since there are no known plans for power or mining in this county in the immediate future, this need probably will not occur until after 2010. Harrison County does not show a need until after 2020. Summaries of the projected need in the Upper Basin and projected surplus in the Lower Basin by decade are presented on Figures 5.1 and 5.2, respectively.

Figure 5.1: Projected Need for New Supply – Upper Basin



**Figure 5.2: Projected Difference in Supply / TWDB Needs – Lower Basin
(Does not include environmental needs)**

