

4.6 Comparison of Demand to Supply with Water Quality Considerations

Characterizing water supplies and demands relative to water quality provides an important component of the regional plan. By addressing supply water quality over and against a common standard, the plan can identify where water is “available” but not necessarily “usable.” In the context of comparing water supply options to meet a demand, it is important to know the quality of the alternate supplies in order to know the costs associated to treat it so that it meets the needs of the user(s). This section provides information for surface water that shows the amount available, the amount considered surplus (exceeds the demand), and the amount that is available but does not meet common standards (i.e., the Texas secondary drinking water standards for total dissolved solids (TDS) and chlorides). Also presented in this section, is a tabular description of water quality in the Brazos River in terms of TDS and chloride content of the water (Table 4-81).¹ The data from which the averages in Table 4-82 are derived are flow-weighted and relatively long-term so that wet and dry periods are mitigated.

Table 4-81.
General Water Quality Characterization of the Brazos River

<i>Monitoring Station</i>	<i>Average Flow-Weighted Concentrations</i>		<i>Years of Record</i>
	<i>TDS (mg/L)</i>	<i>Cl (mg/L)</i>	
Brazos River at Seymour	3,660	1,448	1960 to 1986
Brazos River at South Bend	1,385	546	1942 to 1948 1978 to 1981
Brazos River at Possum Kingdom Dam	1,482	574	1942 to 1986
Brazos River near Dennis	1,450	569	1971 to 1986
Brazos River near Whitney	915	330	1949 to 1986
Brazos River near College Station	477	126	1962 to 1983
Brazos River at Richmond	386	95	1946 to 1986
Texas Secondary Drinking Water Standards	1,000	300	

¹ Ganze, C. Keith and Ralph A. Wurbs, “Compilation and Analysis of Monthly Salt Loads and Concentrations in the Brazos River Basin,” U.S. Army Corps of Engineers Contract No. DACW63-88-M-0793, January 1989.

Table 4-82 summarizes municipal surface water available for each county. Total surface water available for each county (Column 3) is the amount, either through water rights or contracts, that is available to meet the demand in the county. The surface water available that meets standards (Column 2) is that amount available from sources whose TDS and chloride concentrations are generally less than 1,000 mg/L and 300 mg/L, respectively. In several counties, portions of the total available surface water do not meet secondary drinking water standards. In these counties it is important to assess the impact of water quality on the supplies and demands. This is depicted graphically in Figure 4-11.

Table 4-82.
Municipal Surface Water Availability
Meeting Texas Secondary Constituent Levels¹

County	Surface Water Amount Meeting Standards¹ (acft/yr)	Total Surface Water Available (acft/yr)	Percentage of Municipal Surface Water Meeting Standards¹
Bell	95,076	95,076	100%
Bosque	1,673	1,693	99%
Brazos	8,009	8,009	100%
Burleson	0	0	N/A
Callahan	2,234	2,234	100%
Comanche	1,139	1,139	100%
Coryell	23,098	23,098	100%
Eastland	5,100	5,550	92%
Erath	3,254	3,254	100%
Falls	6,364	7,664	83%
Fisher	603	603	100%
Grimes	0	0	N/A
Hamilton	1,430	1,430	100%
Haskell	2,388	2,561	93%
Hill	6,344	7,154	89%
Hood	0	25,050	0%
Johnson	12,866	26,335	49%
Jones	2,731	4,494	61%
Kent	0	0	N/A
Knox	653	653	100%
Lampasas	7,417	7,417	100%
Lee	0	0	N/A
Limestone	435	4,727	9%
McLennan	87,506	100,001	88%
Milam	3,332	3,332	100%
Nolan	5,093	5,093	100%
Palo Pinto	12,120	14,471	84%
Robertson	0	0	N/A
Shackelford	1,988	1,993	100%
Somervell	0	0	N/A
Stephens	22,185	22,185	100%
Stonewall	93	93	100%
Taylor	53,175	53,175	100%
Throckmorton	255	255	100%
Washington	4,619	4,619	100%
Williamson	76,803	76,803	100%
Young	8,384	9,384	89%

¹ Texas Secondary Constituent Levels; chloride concentration = 300 mg/L; Total Dissolved Solids concentration = 1,000 mg/L.

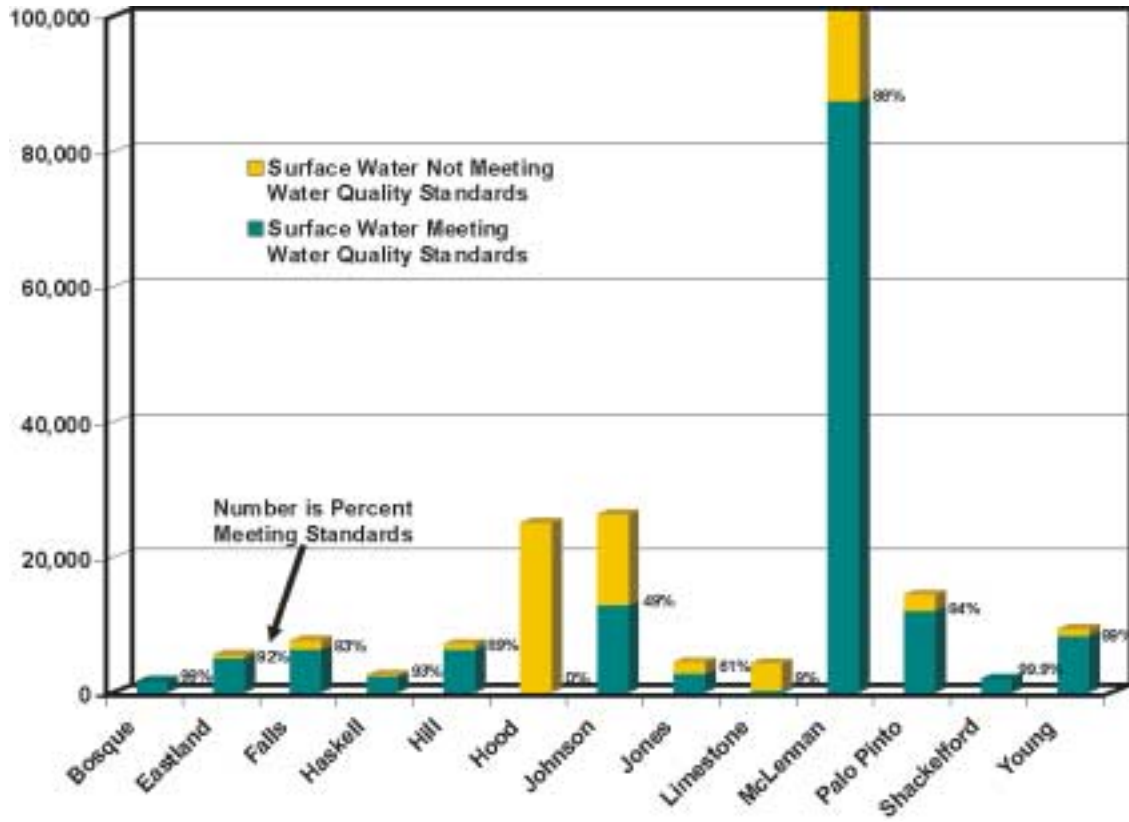


Figure 4-11. Surface Water Quality Meeting Secondary Drinking Water Standards