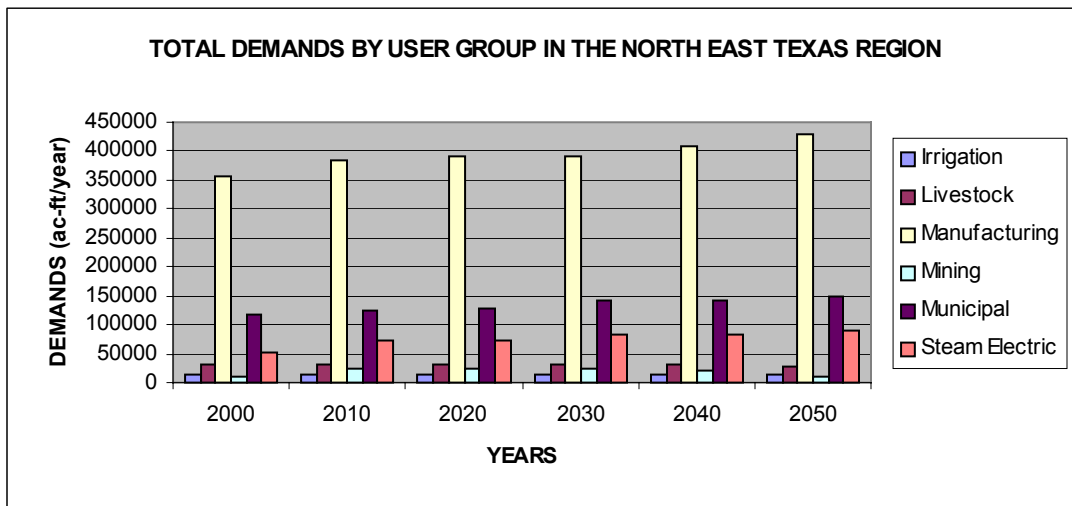


4.0 Comparison of Water Demands with Water Supplies to Determine Needs

The objective of this chapter is to compare the water demands within the North East Texas Region, as presented in Chapter 2, with currently available water supplies, as presented in Chapter 3. This chapter compares the demands and supplies of each water user group (W.U.G.) within the Region to determine which entities are projected to encounter demands greater than their projected supplies, or water supply shortages. Water shortages for all six user group categories (municipal, manufacturing, mining, steam electric, irrigation, and livestock) are presented in three ways. First, shortages are presented at the county level. W.U.G.s that span two or more counties are listed in the county where the highest percentage of the entity is located. Second, shortages are shown by river basin. W.U.G.s are listed in the river basin where the demands occur, rather than the basin where the supplies are located. If a W.U.G. spans two or more river basins, it is divided proportionately between the appropriate basins. Finally, water shortages are presented for major water providers. If an entity obtains water from more than one major water provider, it is listed under each of its water sources.

Within the North East Texas Region, three types of water shortages have been identified. The first, and most common, is caused by expiration of a water supply contract or permit. Most water supply contracts and permits have expiration dates, and the TWDB guidelines require that when the contract or permit expires, the water source is to be considered unavailable even though that source will usually be available through contract renewal. In this chapter, an “E” will designate W.U.G.s with shortages due to contract or permit expirations. In most cases, the recommended water supply strategy for these W.U.G.s will be renewal of their existing contract/permit on or before its expiration date. The second type of shortage is also contractual. These are instances where a contract expires, and the simple renewal of that contract will not adequately compensate for increased demands. In this case, an increase in the contract amount or additional water supply sources would be required to meet demands. This type of shortage is designated by “EI”. The final type of shortage addressed in this region is the “actual” or “physical” water shortage, designated by an “A”. In this case, the entity’s current water supply will not be sufficient to meet projected demands and additional water sources will be required. This type of shortage is most common among entities that utilize groundwater supplies because well capacity is held at existing development levels throughout the planning period.

Figure 4.1 illustrates projected demands of the six water user groups within the region.



4.1 County Summaries of Water Needs

The following subsections 4.1(a) – 4.1(s) identify water supply shortages in all six categories of water use within the North East Texas Region. The tables in this section list only the entities that have been determined to have water needs that exceed supply at some point within the planning period. Entities, which are anticipated to have a surplus, have been included in Table 4.43 at the end of this chapter.

4.1 (a) Bowie County

The primary source of water in Bowie County is Wright Patman Lake. A majority of the industrial and municipal user groups have contracts with the City of Texarkana (Texarkana Water Utilities) for water supply from Wright Patman. All of the projected water shortages in Bowie County are contractual. A summary of the estimated water supply shortages in Bowie County is listed below as Table 4.1. City of Texarkana also imports water from Arkansas, and exports water to Texarkana, Arkansas. For this water plan, these imports and exports are assumed to offset one another, and Arkansas demand/supply has been excluded from the plan totals.

Table 4.1 – Water Supply Shortages in Bowie County

Bowie County	Total Water Shortage in ac-ft/yr						Shortage
Year	2000	2010	2020	2030	2040	2050	Type
DeKalb		300	331	366	389	416	E
Hooks	69	454	465	484	495	528	EI
Maud		138	144	149	153	157	E
Nash		300	313	324	334	341	E
New Boston	325	1,164	1,217	1,280	1,346	1,425	EI
Redwater	134	290	300	461	542	628	EI
Wake Village	299	690	718	743	764	781	EI
Burns Redbank WSC	68	281	297	318	339	364	EI
Central Bowie WSC	503	517	1,099	1,121	1,294	1,765	EI
Macedonia-Eylau MUD #1	90	315	453	1,151	1,312	1,412	EI
Oak Grove WSC	16	34	129	146	162	182	EI

4.1 (b) Camp County

The Carrizo-Wilcox Aquifer supplies water for all of the municipalities in Camp County and is estimated to be sufficient to meet projected needs. The identified manufacturing shortage represents an increased poultry processing need for a processing plant now in the early development phases, which has a projected demand of 2.0 MGD. At present, this industry has not secured a water supply source. A summary of the identified water supply shortages in Camp County is listed below as Table 4.2.

Table 4.2 – Water Supply Shortages in Camp County

Camp County	Total Water Shortage in ac-ft/yr						Shortage Type
	2000	2010	2020	2030	2040	2050	
Manufacturing		2,232	2,232	2,232	2,232	2,232	A

4.1 (c) Cass County

Two municipalities in Cass County are supplied by the Carrizo-Wilcox Aquifer, and only one of these municipalities relies on groundwater as its sole supply source. The greater portion of the total municipal supply is provided by surface water from outside of the county. Four of the shortages in this county are contractual, but the City of Linden and Bloomburg WSC have actual shortages caused by inadequate groundwater supply. The following table, Table 4.3, is a summary of identified water supply shortages in Cass County.

Table 4.3 – Water Supply Shortages in Cass County

Cass County	Total Water Shortage in ac-ft/yr						Shortage Type
	2000	2010	2020	2030	2040	2050	
Atlanta		1,426	1,412	1,416	1,411	1,422	E
Linden	95	104	116	136	151	176	A
Queen City		36	45	58	72	92	E
Bloomburg WSC					8	20	A
Domino		40	53	65	76	85	EI
Holly Springs WSC	21	70	116	250	288	322	EI

4.1 (d) Delta County

The primary source for Delta County water supply is Big Creek Lake. Charleston WSC and West Delta WSC have contractual shortages due to contract expirations with their water supplier, the Delta County MUD. Enloe-Lake Creek will experience an expiration of its contract with Ben Franklin WSC, which is currently unable to supply both its own needs and its current contractual obligations. The City of Pecan Gap’s city lake supply is also inadequate to meet current demands. The following table, Table 4.4, is a summary of identified water supply shortages in Delta County.

Table 4.4 – Water Supply Shortages in Delta County

Delta County	Total Water Shortage in ac-ft/yr						Shortage Type
	2000	2010	2020	2030	2040	2050	
Ben Franklin WSC	9	8	5	29	28	27	A
Charleston WSC				131	126	123	E
Pecan Gap	15	13	11	9	7	6	A
Enloe-Lake Creek WSC				58	56	54	E
West Delta WSC				140	135	128	E

4.1 (e) Franklin County

Both the Carrizo-Wilcox Aquifer and Lake Cypress Springs are important water supplies in Franklin County. Water deficits shown for Mount Vernon, Cypress Springs WSC, and Pelican Bay are due to

expiration of contracts with Franklin County Water District (Lake Cypress Springs). A summary of the identified water supply shortages in Franklin County is provided as Table 4.5.

Table 4.5 – Water Supply Shortages in Franklin County

Franklin County	Total Water Shortage in ac-ft/yr						Shortage
Year	2000	2010	2020	2030	2040	2050	Type
Mount Vernon				707	738	780	E
Cypress Springs WSC					1,631	1,825	E
Pelican Bay (CSWSC)					75	75	E

4.1 (f) Gregg County

The major surface water supply source in Gregg County is the Sabine River, which flows through the southern portion of the county and provides water for the cities of Kilgore, White Oak and Longview. The City of Gladewater is supplied by Lake Gladewater. Gladewater currently has contractual commitments to other entities, which, in combination with its own projected municipal needs, exceed its permitted supply. As these contracts expire, Gladewater’s deficit appears to decline. In reality, these contracts will likely be extended. Liberty-Danville FWSD No.2 has a contract that does not expire within the planning period but is inadequate to meet projected demands in 2050. Most of the manufacturing demands in Gregg County are supplied from Longview. However, there are other sources, including local supply, direct reuse, and the Carrizo-Wilcox Aquifer, and these sources are insufficient to meet current demands. The City of Liberty City and West Gregg WSC utilize groundwater from the Carrizo-Wilcox and have insufficient well capacity. A summary of the identified water supply shortages in Gregg County is presented as Table 4.6.

Table 4.6 – Water Supply Shortages in Gregg County

Gregg County	Total Water Shortage in ac-ft/yr						Shortage
Year	2000	2010	2020	2030	2040	2050	Type
Clarksville City		135	143	150	155	161	E
Gladewater	157						A
Lakeport		107	113	119	123	127	EI
Liberty City	227	238	250	272	296	321	A
White Oak		877	897	937	979	1,038	E
Manufacturing	10,747	9,088	10,568	12,671	15,130	17,746	A
Warren City		40	43	49	54	61	E
Elderville WSC		433	488	593	669	767	EI
Liberty City WSC	166	210	243	303	348	407	A
Liberty-Danville FWSD 2						10	EI*
Tryon Road WSC		409	512	660	778	922	E
West Gregg WSC	28	76	138	225	297	386	A

* Contract is in perpetuity but is inadequate in 2050

4.1 (g) Harrison County

Most of the water shortages in this county are due to limited current well capacity to withdraw water from the Carrizo-Wilcox Aquifer. The following table, Table 4.7, is a summary of identified water supply shortages in Harrison County.

Table 4.7 – Water Supply Shortages in Harrison County

Harrison County	Total Water Shortage in ac-ft/yr						Shortage
Year	2000	2010	2020	2030	2040	2050	Type
Hallsville		264	275	288	301	310	E
Waskom			2	13	27	47	A
Big Oaks Mobile Home Pk	19	17	15	12	10	8	EI
Blocker-Crossroads WSC			7	26	44	60	A
Caddo Lake WSC			2	16	29	40	A
Cypress Valley WSC			3	30	54	76	EI
Elysian Fields WSC					1	6	A
Gum Springs WSC	51	591	754	906	1,041	1,161	EI
Harleton WSC		32	107	178	244	303	A
Leigh WSC				110	121	131	E
North Harrison WSC			6	26	45	62	A
Talley WSC	28	45	61	75	87	98	EI
Waskom WSC			7	31	54	74	A
West Harrison WSC			7	27	44	60	A

4.1 (h) Hopkins County

All actual shortages in this county are caused by current limited well capacity to withdraw water from the Carrizo-Wilcox Aquifer water supply. Contracts in Hopkins County are by and large with the City of Sulphur Springs. There is no steam electric demand shown in Hopkins County, since none existed during the demand assessment phase of this regional planning process. Subsequently, however, the City of Sulphur Springs has begun negotiations for development of a merchant power plant in Hopkins County, which, if constructed, would require an additional 7,281 ac-ft/yr of supply. The following table, Table 4.8, is a summary of identified water supply shortages in Hopkins County.

Table 4.8 – Water Supply Shortages in Hopkins County

Hopkins County	Total Water Shortage in ac-ft/yr						Shortage
Year	2000	2010	2020	2030	2040	2050	Type
Como	0	2	6	12	18	26	A
Brashear WSC		123	120	120	119	121	E
Brinker WSC				2	8	21	E
Gafford Chapel WSC	13	100	128	150	170	196	E
Martin Springs WSC		7	24	49	60	78	E
Miller Grove WSC		11	24	40	55	75	E
North Hopkins WSC			831	893	954	1030	E
Pickton WSC					5	12	A
Pleasant Hill WSC 2			31	33	35	37	E
Shady Grove #2 WSC		76	79	84	88	94	E
Shirley WSC				20	40	66	A

4.1 (i) Hunt County

Water shortages in Hunt County are predominately contractual in nature. The City of Wolfe City is expected to experience an actual supply deficit. Wolfe City’s water is supplied by a Woodbine Aquifer well and two city lakes, and the combined capacity is not sufficient to meet projected demands. Tri-

County Water Corporation has insufficient capacity to withdraw water from the Woodbine Aquifer. The following table, Table 4.9, is a summary of identified water supply shortages in Hunt County.

Table 4.9 – Water Supply Shortages in Hunt County

Hunt County	Total Water Shortage in ac-ft/yr						Shortage
Year	2000	2010	2020	2030	2040	2050	Type
Caddo Mills			174	183	191	197	EI
Commerce				2,132	2,296	2,504	E
Greenville		4,366	4,617	4,875	5,520	6,256	E
Lone Oak		89	95	102	108	113	E
Quinlan		229	243	256	267	276	EI
West Tawakoni		219	228	244	258	275	E
Wolfe City		2	9	43	56	74	A
Steam Electric		516	516	516	516	516	E
BHP WSC	26	239	274	301	336	317	EI
Caddo Basin SUD					892	938	E
Cash WSC			1,312	1,419	1,486	1,558	E
Combined Consomers WSC			864	925	928	988	E
Community Water Co.	0	0	92	88	85	81	E
Jacobia WSC				92	90	87	E
Maloy WSC		2	12	18	25	32	E
North Hunt WSC	146	266	284	298	344	375	EI
Shady Grove WSC				221	221	221	E
Tri-County WSC	108	114	108	98	94	85	A

4.1 (j) Lamar County

All identified shortages in Lamar County are municipal water user groups, and all are due to contract expirations, with the expectation of the Petty WSC. Petty WSC has a well in the Woodbine Aquifer that is not expected to be adequate to meet projected demands after 2020. A summary of the identified water supply shortages in Lamar County is presented below as Table 4.10.

Table 4.10 – Water Supply Shortages in Lamar County

Lamar County	Total Shortages in ac-ft/yr						Shortage
Year	2000	2010	2020	2030	2040	2050	Type
Blossom			236	241	245	248	E
Deport		118	121	124	126	127	E
Reno			611	656	682	707	E
Roxton			99	101	102	103	E
Lamar County WSD				2,122	2,188	2,289	E
M J C WSC		74	70	68	66	65	E
Pattonville WSC				43	42	43	E
Petty WSC			18	18	18	17	A

4.1 (k) Marion County

The Carrizo-Wilcox Aquifer supplies most of the water demand in Marion County, but current development is not sufficient to meet all of the projected needs in the county. All deficits in Marion County are municipal. A summary of the identified water supply shortages in Marion County is presented below as Table 4.11.

Table 4.11 – Water Supply Shortages in Marion County

Marion County	Total Water Shortage in ac-ft/yr						Shortage
Year	2000	2010	2020	2030	2040	2050	Type
Kellyville-Berea WSC		16	43	67	88	108	A
Pine Harbor Water System				6	26	43	A
Shady Shores Water System		1	8	14	19	24	A

4.1 (l) Morris County

Two cities within Morris County rely on the Carrizo-Wilcox for supply and the other two rely on surface water from Lake O’ the Pines. All of these municipalities have adequate supply for the next 50 years. There are no identified water supply shortages in Morris County.

4.1 (m) Rains County

Several user groups in Rains County show future shortages due to contract expirations. However, the Bright Star-Salem WSC is projected to experience an actual shortage. Bright Star-Salem WSC is situated on the outcrop of the Carrizo-Wilcox Aquifer, and groundwater development to meet continued growth is problematic. South Rains WSC has a contract amount with the City of Emory that is not sufficient to meet current demands. The following table, Table 4.12, is a summary of identified water supply shortages in Rains County.

Table 4.12 – Water Supply Shortages in Rains County

Rains County	Total Water Shortage in ac-ft/yr						Shortage
Year	2000	2010	2020	2030	2040	2050	Type
East Tawakoni			126	138	147	160	E
Emory				278	302	329	E
Point			131	141	151	164	E
Bright Star-Salem WSC				68	134	214	A
South Rains WSC	52	95	399	441	488	531	EI

4.1 (n) Red River County

The City of Detroit uses water supplied from the Trinity Aquifer. Detroit’s current capacity is inadequate to meet current demands, and another supply source will be required. The town of English also has a well that is currently insufficient. Other municipal shortages are caused by contract expirations with Texarkana and the Lamar County WSD. A summary of the identified water supply shortages in Red River County is listed in the following Table 4.13.

Table 4.13 – Water Supply Shortages in Red River County

Red River County	Total Water Shortage in ac-ft/yr						Shortage
Year	2000	2010	2020	2030	2040	2050	Type
Detroit	46	46	44	44	45	46	A
410 WSC			284	274	263	253	E
Annona		44	42	41	39	37	E
Avery		81	78	75	72	69	E
Red River County WSC				84	64	46	E
Town of English	7	6	5	3	2		A

4.1 (o) Smith County

The portion of Smith County that is in the North East Texas Region is almost solely supplied by the Carrizo-Wilcox Aquifer. Most projected shortages in this county are due to insufficient well capacity to withdraw water from the aquifer. Tyler’s supply comes from a source in Region I. A summary of the identified water supply shortages in Smith County is listed below as Table 4.14.

Table 4.14 – Water Supply Shortages in Smith County

Smith County	Total Water Shortage in ac-ft/yr						Shortage
Year	2000	2010	2020	2030	2040	2050	Type
Enchanted Lakes Water Co.	62	62	62	62	62	62	A
Lindale Rural WSC	108	108	108	108	108	108	A
Star Mountain WSC	80	135	185	237	288	344	A

4.1 (p) Titus County

Water supply in Titus County is predominately from Lakes Monticello, Bob Sandlin and Tankersley, and from the Carrizo-Wilcox Aquifer. Titus County FWSD supplies water to the City of Mount Pleasant. Mount Pleasant supplies Winfield, Tri-Water, and manufacturing demands in addition to its internal needs. Individual shortages are contractual. A summary of the identified water supply shortages in Titus County is listed below as Table 4.15.

Table 4.15 – Water Supply Shortages in Titus County

Titus County	Total Water Shortage in ac-ft/yr						Shortage
Year	2000	2010	2020	2030	2040	2050	Type
Winfield				116	127	134	E
Tri Water Supply Corp		1,476	1,624	1,730	1,843	1,935	E

4.1 (q) Upshur County

Municipal shortages in this county are due in part to insufficient water quality and yield in the Carrizo-Wilcox Aquifer. The identified steam electric shortage results from a proposed steam electric generation plant near Gilmer that has not yet secured a water supply. The following table, Table 4.16, is a summary of identified water supply shortages in Upshur County.

Table 4.16 – Water Supply Shortages in Upshur County

Upshur County	Total Water Shortage in ac-ft/yr						Shortage
Year	2000	2010	2020	2030	2040	2050	Type
Steam Electric		5,601	5,601	5,601	5,601	5,601	A
Diana WSC		6	81	162	235	299	A
East Mountain	87	109	120	140	158	174	A
Harmony ISD	2	17	31	44	56	66	A
Pritchett WSC	95	200	296	382	460	529	A
Union Grove WSC			29	58	83	106	A

4.1 (r) Van Zandt County

The cities of Canton, Grand Saline, and Van obtain water from the Carrizo-Wilcox Aquifer. In addition, Canton utilizes supply from its city lake. These three cities will all experience deficits due to inadequate supplies and will need to seek additional sources of water within the next 30 years. The City of Wills Point has a shortage due to contract expiration. Other actual shortages are due to insufficiencies in groundwater production capacity. The following table, Table 4.17, is a summary of identified water supply shortages in Van Zandt County.

Table 4.17 – Water Supply Shortages in Van Zandt County

Van Zandt County	Total Water Shortage in ac-ft/yr						Shortage
Year	2000	2010	2020	2030	2040	2050	Type
Canton				73	133	221	A
Edgewood			138	156	171	199	E
Grand Saline		50	98	163	218	294	A
Van			41	99	152	220	A
Wills Point			684	740	792	867	E
Ben Wheeler WSC			7	23	38	50	A
Corinth WSC			9	36	60	82	A
Crooked Creek WSC			12	33	53	70	A
Edom WSC		21	55	86	114	140	A
Fruitvale WSC		51	151	242	325	400	A
Little Hope-Moore WSC	186	186	186	186	186	186	A
Mac Bee WSC				929	997	1,053	E
South Tawakoni WSC			624	736	838	929	E

4.1 (s) Wood County

All actual shortages in Wood County are caused by groundwater sources, which will prove insufficient within the planning period. Additional sources of supply will be needed for these entities. The City of Winnsboro has a projected shortage due to contract expiration. Table 4.18, is a summary of identified water supply shortages in Wood County.

There is also a projected steam electric demand in Wood County, which is assigned to be met by local sources. This assumption is based on the reality that a steam electric facility would not locate in Wood

County unless a willing supply source existed. The most likely supply source would be from a major water supplier such as the Sabine River Authority. Therefore, this supply/demand comparison was not treated as a shortage.

Table 4.18 – Water Supply Shortages in Wood County

Wood County	Total Water Shortage in ac-ft/yr						Shortage Type
	2000	2010	2020	2030	2040	2050	
Mineola		39	90	167	224	319	A
Winnsboro					853	916	E
Fouke WSC						27	A
Lake Fork WSC	21	103	175	253	318	410	A

4.2 River Basin Summaries of Water Needs

The North East Texas Regional Water Planning Area is divided among four main river basins including the Red River Basin, the Sulphur River Basin, the Cypress River Basin, and the Sabine River Basin. There is a small area of the Neches Basin in Van Zandt County and a smaller portion of the Trinity Basin in Hunt and Van Zandt Counties. These two basins are not discussed because of the small area situated within the North East Texas Region.

4.2 (a) Red River Basin

The Red River Basin includes portions of Bowie, Lamar, and Red River Counties. Water shortages in the Red River Basin are by and large contractual shortages. The only actual shortage is in the town of English, which operates one well that is insufficient to meet demands. Tables 4.19 – 4.21 detail the shortages in the basin.

Table 4.19 – Water Shortages due to Contract Expirations – Red River Basin

Contract Expirations	Water Shortage in ac-ft/yr					
	2000	2010	2020	2030	2040	2050
City of Avery		81	78	75	72	69
City of Blossom			236	241	245	248
City of DeKalb		126	127	132	137	144
City of Reno			611	656	682	707
410 WSC			142	137	132	127
Lamar County WSD				1,061	1,094	1,444

Table 4.20 – Water Shortages due to Expirations and Insufficient Contract Amounts – Red River Basin

Expiration and Increase	Water Shortage in ac-ft/yr					
	2000	2010	2020	2030	2040	2050
City of Hooks	69	454	465	484	495	528
City of New Boston	64	232	243	256	269	285
Burns-Redbank WSC	68	281	297	318	339	364
Central Bowie WSC	101	104	222	226	261	356
Oak Grove WSC	8	17	61	70	78	88
Red River WSC				42	32	23

Table 4.21 – Actual Water Shortages – Red River Basin

Actual Shortages	Water Shortage in ac-ft/yr					
	2000	2010	2020	2030	2040	2050
Town of English	7	6	5	3	2	

4.2 (b) Sulphur River Basin

The Sulphur River Basin includes portions of Bowie, Cass, Franklin, Hopkins, Hunt, Lamar, Morris, Red River, and Titus Counties. It also includes all of Delta County. Water shortages in the Sulphur Basin are primarily due to contract expirations, though there are several entities with projected actual water needs. Most of the actual needs are caused by insufficient supplies from groundwater sources. The cities of Pecan Gap and Wolfe City have inadequate surface water sources in their city lakes. Tables 4.22 – 4.24 detail the shortages in the basin.

Table 4.22 – Water Shortages due to Contract Expiration – Sulphur River Basin

Contract Expirations	Water Shortage in ac-ft/yr					
	2000	2010	2020	2030	2040	2050
City of Annona		44	42	41	39	37
City of Commerce				2,132	2,296	2,504
City of DeKalb		174	204	234	252	272
City of Deport		118	121	124	126	127
City of Maud		138	144	149	153	157
City of Mount Vernon				707	738	780
City of Nash		300	313	324	334	341
City of Queen City		17	20	24	29	38
City of Roxton			99	101	102	103
Brashear WSC		123	120	120	119	121
Brinker WSC				2	8	21
Charleston WSC				131	126	123
Cypress Springs WSC					328	352
Enloe-Lake Creek WSC				58	56	54
410 WSC			142	137	131	126
Gafford Chapel WSC	13	100	128	150	170	196
Lamar County WSD				1,061	1,094	1,445
Maloy WSC		2	12	18	25	32
MJC WSC		74	70	68	66	65
North Hopkins WSC			831	893	954	1,033
Pattonville WSC				43	42	43
Pleasant Hill WSC			31	33	35	37
Red River County WSC				42	32	23
Shady Grove #2 WSC		76	79	84	88	94
West Delta WSC				140	135	128

Table 4.23 – Water Shortages due to Expiration and Insufficient Contract Amount – Sulphur River Basin

Expiration and Increase	Water Shortages in ac-ft/yr					
	2000	2010	2020	2030	2040	2050
City of Domino		40	53	65	76	85
City of New Boston	261	932	974	1,024	1,077	1,140
City of Redwater	134	290	300	461	542	628
City of Wake Village	299	690	718	743	764	781
Central Bowie WSC	402	413	877	895	1,033	1,409
Macedonia-Eylau WSC	90	315	453	1,151	1,312	1,412
North Hunt WSC	146	266	284	298	344	375
Oak Grove WSC	8	17	68	76	84	94

Table 4.24 – Actual Water Shortages – Sulphur River Basin

Actual Shortages	Water Shortages in ac-ft/yr					
	2000	2010	2020	2030	2040	2050
City of Como	38	43	47	53	59	67
City of Detroit	46	46	44	44	45	46
City of Pecan Gap	15	13	11	9	7	6
City of Wolfe City		2	9	43	56	74
Ben Franklin WSC	9	8	5	29	28	27
Bloomburg WSC					3	8
Petty WSC			18	18	18	17

4.2 (c) Cypress River Basin

The Cypress River Basin includes portions of Cass, Franklin, Gregg, Harrison, Hopkins, Morris, Titus, Upshur, and Wood Counties, as well as all of Camp and Marion Counties. Supply shortages in the Cypress River Basin occur primarily among entities, which utilize groundwater from the Carrizo-Wilcox Aquifer.

Table 4.25 – Water Shortages due to Contract Expiration – Cypress River Basin

Contract Expirations	Water Shortages in ac-ft/yr					
	2000	2010	2020	2030	2040	2050
City of Atlanta		1,426	1,412	1,416	1,411	1,422
City of Queen City		19	25	34	43	54
City of Winfield				116	127	134
City of Winnsboro					212	226
Cypress Springs WSC					1,407	1,498
Leigh WSC				110	121	131
Pelican Bay					75	75
Tri Water Supply Corp		1,476	1,624	1,730	1,843	1,935
Tryon Road WSC		248	312	400	472	557

Table 4.26 – Water Shortages due to Expiration and Insufficient Contract Amount – Cypress River Basin

Expiration and Increase	Water Shortages in ac-ft/yr					
	2000	2010	2020	2030	2040	2050
Cypress Valley WSC			3	30	54	76
Gum Springs WSC	7	74	95	114	130	145
Holly Springs WSC	21	70	116	250	288	322
Talley WSC	5	9	11	14	16	18

Table 4.27 – Actual Water Shortages – Cypress River Basin

Actual Shortages	Water Shortages in ac-ft/yr					
	2000	2010	2020	2030	2040	2050
City of Linden	95	94	96	106	111	126
City of Waskom			2	13	27	47
Manufacturing (Camp Co.)	2,232	2,232	2,232	2,232	2,232	2,232
Steam Electric (Upshur Co.)		5,601	5,601	5,601	5,601	5,601
Bloomburg WSC					5	12
Caddo Lake WSC			2	16	29	40
Diana WSC		6	81	162	235	299
Glenwood WSC				2	5	9
Harleton WSC		32	107	178	244	303
Harmony ISD	2	17	31	44	56	66
Kellyville-Berea WSC		16	43	67	88	108
North Harrison WSC			6	26	45	62
Pickton WSC					3	6
Pine Harbor Water System				6	26	43
Shady Shores WSC		1	8	14	19	24
West Harrison WSC			1	4	7	10

4.2 (d) Sabine River Basin

The Sabine Basin includes portions of Gregg, Harrison, Hunt, Rains, Smith, Upshur, Van Zandt, and Wood Counties as well as all of Rains County. The Sabine Basin has the highest number of shortages in the region, and over 50 percent of these shortages are due to deficits in groundwater supply. Another 40 percent are due to contract expiration.

Table 4.28 – Water Shortages due to Contract Expiration – Sabine River Basin

Contract Expirations	Water Shortages in ac-ft/yr					
	2000	2010	2020	2030	2040	2050
City of Clarksville City		135	143	150	155	161
City of East Tawakoni			126	138	147	160
City of Edgewood			138	156	171	199
City of Emory				278	302	329
City of Greenville		4,366	4,617	4,875	5,520	6,256
City of Hallsville		264	275	288	301	310
City of Lone Oak		89	95	97	108	113
City of Point			131	141	151	164
City of West Tawakoni		219	228	244	258	275
City of Warren City		40	43	49	54	61
City of White Oak		877	897	937	979	1038
City of Wills Point			341	369	395	433
City of Winnsboro					641	690
Steam Electric (Hunt Co.)		516	516	516	516	516
Caddo Basin SUD					892	938
Cash WSC			1,,312	1,419	1,486	1,558
Combined Consumers		14	864	925	928	988
Jacobia WSC				92	90	87
Mac Bee WSC				929	997	1053
Martin Springs WSC		7	24	49	60	78
Miller Grove WSC	5	11	24	40	55	75
South Tawakoni WSC			624	736	838	929
Tryon Road WSC		161	200	260	306	365
Community Water Co.	0	0	92	88	85	81

Table 4.29 – Water Shortages due to Expiration and Insufficient Contract Amount – Sabine River Basin

Expiration and Increase	Water Shortages in ac-ft/yr					
	2000	2010	2020	2030	2040	2050
City of Caddo Mills			174	183	191	197
City of Lakeport		107	113	119	123	127
City of Quinlan		229	243	256	267	276
BHP WSC	26	239	274	301	336	317
Elderville WSC		433	488	593	669	767
Gum Springs WSC	44	517	659	792	911	1,016
South Rains WSC	52	95	399	441	488	531
Talley WSC	23	36	50	61	71	80

Table 4.30 – Actual Water Shortages – Sabine River Basin

Actual Shortages	Water Shortages in ac-ft/yr					
	2000	2010	2020	2030	2040	2050
City of Canton				73	133	221
City of East Mountain	87	109	120	140	158	174
City of Gladewater	157					
City of Grand Saline		50	98	163	218	294
City of Kilgore		62	146	268	395	548
Liberty City	227	238	250	272	296	321
City of Mineola		39	90	167	224	319
City of Van			30	33	35	38
Manufacturing (Gregg Co.)	10,166	8,909	10,820	13,393	16,401	19,602
Steam Electric (Wood Co.)						7,500
Big Oaks MHP	19	17	15	12	10	8
Blocker-Crossroads WSC			7	26	44	60
Bright Star-Salem WSC				68	134	214
Corinth WSC			9	36	60	82
Crooked Creek WSC			12	33	53	70
Elysian Fields WSC					1	6
Enchanted Lakes Water	62	62	62	62	62	62
Fouke WSC						27
Fruitvale WSC		51	151	242	325	400
Lake Fork WSC	21	103	175	253	318	410
Liberty City-Danville						10
Liberty City WSC	166	210	243	303	348	407
Lindale Rural WSC	57	293	504	723	939	1,176
Pickton WSC					3	6
Pritchett WSC	95	200	296	382	460	529
Shirley WSC				20	40	66
Star Mountain WSC	108	108	108	108	108	108
Tri County WSC	108	114	108	98	94	85
Union Grove WSC			29	58	83	106
West Gregg WSC	28	76	138	225	297	386
West Harrison WSC			7	23	37	50

4.3 Summary of Needs – Major Water Providers

The following section presents the supply/demand analysis for the 13 major water providers in the North East Texas Region. Tables present the total water supply for each major water provider assuming that current contracts, permits, and water rights are held constant. Demands are comprised of current contract amounts unless an entity’s projected demand exceeds the contract amount sometime in the future. Where projected demand exceeds the contract amount, a notation has been made, and the estimated demand has been entered. While this method does not take into account that entities may use alternate water sources rather than increase contracts, it gives major water providers a good idea of what future demands will be if all current users continue with existing supplies and contracts. Finally, the amount of surplus is noted. The analysis indicates that none of the major water providers in the North East Texas Region will have a shortage of water supply.

4.3 (a) Cherokee Water Company

This provider supplies the city of Longview and industry with surface water supply from Lake Cherokee in Gregg and Rusk Counties, Region I. Longview obtains water from three major water providers, Cherokee Water, Sabine River Authority, and Northeast Texas Municipal Water District. Assuming contract amounts stay constant over the planning period, Cherokee Water Company. will have adequate supply, which is shown below in Table 4.31.

Table 4.31 – Water Supplies and Demands for Cherokee Water Company

SUPPLIES (ac-ft/yr)	2000	2010	2020	2030	2040	2050
Lake Cherokee	18,000	18,000	18,000	18,000	18,000	18,000
TOTAL	18,000	18,000	18,000	18,000	18,000	18,000

DEMANDS (ac-ft/yr)	2000	2010	2020	2030	2040	2050
City of Longview	16,000	16,000	16,000	16,000	16,000	16,000
Manufacturing	2,000	2,000	2,000	2,000	2,000	2,000
TOTAL	18,000	18,000	18,000	18,000	18,000	18,000

SURPLUS (ac-ft/yr)	2000	2010	2020	2030	2040	2050
TOTAL	0	0	0	0	0	0

4.3 (b) Franklin County Water District

The Franklin County Water District (FCWD) holds water rights in Lake Cypress Springs of 11,710 ac-ft. FCWD serves wholesale customers only, and these customers include Cypress Springs WSC, the City of Mount Vernon and the City of Winnsboro. These wholesale customers hold water supply contracts with FCWD which expire in 2024 or 2040. Ninety-nine percent (99 percent) of FCWD’s water is in these wholesale contracts and the remaining 1 percent is used for local irrigation. FCWD is estimated to have adequate supply through 2050, which is shown in Table 4.32. Shortages are due to contract expiration.

Table 4.32 – Water Supplies and Demands for Franklin County Water District

SUPPLIES (ac-ft/yr)	2000	2010	2020	2030	2040	2050
Lake Cypress Springs	11,710	11,710	11,710	11,710	11,710	11,710
TOTAL	11,710	11,710	11,710	11,710	11,710	11,710

DEMANDS (ac-ft/yr)	2000	2010	2020	2030	2040	2050
Cypress Springs WSC	3,500	3,500	3,500	3,500	3,500	3,500
City of Mount. Vernon	3,000	3,000	3,000	3,000	3,000	3,000
City of Winnsboro	5,000	5,000	5,000	5,000	5,000	5,000
Irrigation	210	210	210	210	210	210
TOTAL	11,710	11,710	11,710	11,710	11,710	11,710

SURPLUS (ac-ft/yr)	2000	2010	2020	2030	2040	2050
TOTAL	0	0	0	0	0	0

4.3 (c) Northeast Texas Municipal Water District

Northeast Texas Municipal Water District obtains water from numerous sources, listed below. This provider supplies the cities of Avinger, Daingerfield, Hughes Springs, Jefferson, Lone Star, Longview, Ore City Pittsburg, and Mims WSC. Northeast Texas Municipal Water District is projected to maintain a supply surplus throughout the planning period which is shown in Table 4.33.

Table 4.33 – Water Supplies and Demands for Northeast Texas Municipal Water District

SUPPLIES (ac-ft/yr)	2000	2010	2020	2030	2040	2050
Lake O’ the Pines	130,600	130,600	130,600	130,600	130,600	130,600
Lake Bob Sandlin	12,000	12,000	12,000	12,000	12,000	12,000
Johnson Creek Lake	6,700	6,700	6,700	6,700	6,700	6,700
Lake Monticello	7,700	7,700	7,700	7,700	7,700	7,700
Swauno Creek	4,500	4,500	4,500	4,500	4,500	4,500
TOTAL	161,500	161,500	161,500	161,500	161,500	161,500

DEMANDS (ac-ft/yr)	2000	2010	2020	2030	2040	2050
Avinger	1,551	1,551	1,551	1,551	1,551	1,551
Daingerfield	10,572	10,572	10,572	10,572	10,572	10,572
Hughes Springs	5,781	5,781	5,781	5,781	5,781	5,781
Jefferson	9,776	9,776	9,776	9,776	9,776	9,776
Lone Star	4,,841	4,841	4,841	4,841	4,841	4,841
Longview	20,000	20,000	20,000	20,000	20,000	20,000
Ore City	2,773	2,773	2,773	2,773	2,773	2,773
Pittsburg	13,633	13,633	13,633	13,633	13,633	13,633
Mims WSC	801	801	801	801	801	801
Manufacturing	91,300	91,300	91,300	91,300	91,300	91,300
TOTAL	161,028	161,028	161,028	161,028	161,028	161,028

SURPLUS (ac-ft/yr)	2000	2010	2020	2030	2040	2050
TOTAL	472	472	472	472	472	472

4.3 (d) Sabine River Authority

The Sabine River Authority (SRA) holds water rights in two surface water bodies including Lake Fork (Wood and Rains Counties) and Lake Tawakoni (Hunt, Rains, and Van Zandt Counties). The Sabine River Authority supplies the cities of Commerce, Edgewood, Emory, Greenville, Quitman, Kilgore, Longview, Point, West Tawakoni, Wills Point, the Ables Springs WSC, Cash WSC, Combined Consumers WSC, Community Water Company, MacBee WSC and South Tawakoni, as well as industry.

Several of the Sabine River Authority’s customers have water shortages, all caused by contract expiration. Approximately 75 percent of the firm water supply in both Lake Fork and Lake Tawakoni is committed to entities in Regions C and I as noted in Table 4.34.

Table 4.34 – Water Supplies and Demands for Sabine River Authority

SUPPLIES (ac-ft/yr)	2000	2010	2020	2030	2040	2050
Lake Tawakoni	238,100	238,100	238,100	238,100	238,100	238,100
Lake Fork	188,660	188,660	188,660	188,660	188,660	188,660
TOTAL	426,760	426,760	426,760	426,760	426,760	426,760

DEMANDS (ac-ft/yr)	2000	2010	2020	2030	2040	2050
Commerce	8,396	8,396	8,396	8,396	8,396	8,396
Edgewood	840	840	840	840	840	840
Emory	2,016	2,016	2,016	2,016	2,016	2,016
Greenville	21,283	21,283	21,283	21,283	21,283	21,283
Quitman	1,120	1,120	1,120	1,120	1,120	1,120
Kilgore	6,721	6,721	6,721	6,721	6,721	6,721
Longview	20,000	20,000	20,000	20,000	20,000	20,000
Point	448	448	448	448	448	448
West Tawakoni	1,120	1,120	1,120	1,120	1,120	1,120
Wills Point	2,540	2,540	2,540	2,540	2,540	2,540
Ables Springs WSC	1,120	1,120	1,120	1,120	1,120	1,120
Cash WSC	3,314	3,314	3,314	3,314	3,314	3,314
Combined Consumers WSC	2,240	2,240	2,240	2,240	2,240	2,240
Mac Bee WSC	5,399	5,399	5,399	5,399	5,399	5,399
South Tawakoni WSC	560	560	560	560	560	560
Mining	7,000	7,000	7,000	7,000	7,000	7,000
Other Regions	342,643	342,643	342,643	342,643	342,643	342,643
Manufacturing	3,500	3,500	3,500	3,500	3,500	3,500
TOTAL	426,760	426,760	426,760	426,760	426,760	426,760

SURPLUS (ac-ft/yr)	2000	2010	2020	2030	2040	2050
TOTAL	0	0	0	0	0	0

4.3 (e) Sulphur River Basin Authority

This supplier currently has no customers, but anticipates becoming a wholesale water supplier when new reservoirs are developed in the Sulphur River Basin.

4.3 (f) Titus County Fresh Water Supply District No.1

This entity supplies the City of Mount Pleasant and Texas Utilities with water from Lake Bob Sandlin. TCFWSD has no uncommitted water supply in Lake Bob Sandlin. Though both contracts expire within the planning period, they include an option for renewal; therefore, no shortages are projected for this system as shown in Table 4.35.

Table 4.35 Water Supplies and Demands for Titus County Fresh Water Supply District

SUPPLIES (ac-ft/yr)	2000	2010	2020	2030	2040	2050
Lake Bob Sandlin	48,500	48,500	48,500	48,500	48,500	48,500
TOTAL	48,500	48,500	48,500	48,500	48,500	48,500

DEMANDS (ac-ft/yr)	2000	2010	2020	2030	2040	2050
Mt. Pleasant	10,000	10,000	10,000	10,000	10,000	10,000
Texas Utilities	38,500	38,500	38,500	38,500	38,500	38,500
TOTAL	48,500	48,500	48,500	48,500	48,500	48,500

SURPLUS (ac-ft/yr)	2000	2010	2020	2030	2040	2050
TOTAL	0	0	0	0	0	0

4.3 (g) City of Greenville

Greenville owns city lakes which have a combined firm yield of 1,200 ac-ft. In addition, Greenville has a contract with the Sabine River Authority for 21,283 ac-ft/yr of supply from Lake Tawakoni. This contract with Sabine River Authority expires in 2006, but it is assumed in this chapter to be renewed until 2050. Greenville supplies water to its own municipal, steam electric, mining, and industrial customers as well as Jacobia WSC, Shady Grove WSC, and the City of Caddo Mills. It should be noted that Shady Grove WSC was inadvertently omitted from the TWDB tables in Appendix A, but their demands have been included here. Shady Grove WSC should be included in the plan update. Caddo Mills currently has a contract with Greenville for 166 ac-ft, but the city’s demand will exceed that amount by 2020. As shown in Table 4.36, Greenville has a water supply surplus of approximately 63 percent of its total supply.

Table 4.36 – Water Supplies and Demands for the City of Greenville

SUPPLIES (ac-ft)	2000	2010	2020	2030	2040	2050
Lake Tawakoni	21,283	21,283	21,283	21,283	21,283	21,283
City Lakes	1,200	1,200	1,200	1,200	1,200	1,200
TOTAL	22,483	22,483	22,483	22,483	22,483	22,483

DEMANDS (ac-ft)	2000	2010	2020	2030	2040	2050
Caddo Mills	166	166	*174	183	191	197
Greenville Municipal	6,291	6,689	7,021	7,520	8,034	8,620
Jacobia WSC	336	336	336	336	336	336
Shady Grove WSC	336	336	336	336	336	336
Steam Electric	800	800	800	800	800	800
Manufacturing	740	818	903	998	1,129	1,276
Mining	24	25	27	33	35	45
TOTAL	8,693	9,170	9,597	10,206	10,861	11,610

SURPLUS (ac-ft)	2000	2010	2020	2030	2040	2050
TOTAL	14,090	13,313	12,886	12,277	11,622	10,873

* Caddo Mills will require a contract increase to meet demands.

4.3 (h) City of Marshall

This water provider, located in Harrison County, supplies water to several water supply corporations including Cypress Valley WSC, Talley WSC, Gill WSC, and Leigh WSC, with water from the Big Cypress Bayou. It also supplies its own water needs. Shortages in this system are caused by contractual inadequacies. Leigh’s deficit is a matter of contract expiration. However, in the case of Cypress Valley WSC and Talley WSC, water is purchased from Marshall though there is no formal contract in place. Marshall is projected to have a surplus of approximately 64 percent of its total water supply which is shown in Table 4.37.

Table 4.37 – Water Supplies and Demands for the City of Marshall

SUPPLIES (ac-ft/yr)	2000	2010	2020	2030	2040	2050
Big Cypress Bayou	16,000	16,000	16,000	16,000	16,000	16,000
TOTAL	16,000	16,000	16,000	16,000	16,000	16,000

DEMANDS (ac-ft/yr)	2000	2010	2020	2030	2040	2050
Marshall Municipal	4,906	5,113	5,177	3,393	5,609	5,955
Cypress Valley WSC	5	5	13	40	64	86
Talley WSC	32	49	65	79	118	102
Gill WSC	125	125	125	125	125	125
Leigh WSC	184	184	184	184	184	184
TOTAL	5,252	5,476	5,564	3,821	6,100	6,452

SURPLUS (ac-ft/yr)	2000	2010	2020	2030	2040	2050
TOTAL	10748	10524	10436	12179	9900	9548

4.3 (i) City of Longview

The City of Longview purchases supply from NETMWD, Cherokee Water Co., and SRA. Shortages in this system are contractual. Table 4.38 shows the Longview system is projected to have a supply surplus throughout the planning period of approximately 56 percent of total available supply. Shortages in this system are caused mainly by contractual expirations, with one contractual inadequacy.

Table 4.38 – Water Supplies and Demands for the City of Longview

SUPPLIES (ac-ft/yr)	2000	2010	2020	2030	2040	2050
Cherokee Water Company	16,000	16,000	16,000	16,000	16,000	16,000
NETMWD	20,000	20,000	20,000	20,000	20,000	20,000
Big Sandy Creek	1,120	1,120	1,120	1,120	1,120	1,120
Sabine River Authority	20,000	20,000	20,000	20,000	20,000	20,000
Sabine River	19,337	19,337	19,337	19,337	19,337	19,337
TOTAL	76,457	76,457	76,457	76,457	76,457	76,457

DEMANDS (ac-ft/yr)	2000	2010	2020	2030	2040	2050
Longview Municipal	15,864	16,295	16,875	17,601	18,316	19,298
Hallsville	368	368	368	368	368	368
White Oak	1,120	1,120	1,120	1,120	1,120	1,120
C&C Mobile Home Park	18	18	18	18	18	18
Elderville WSC	516	516	516	570	646	744
Tryon Road WSC	1,031	1,031	1,031	1,031	1,031	1,031
Gum Springs WSC	415	593	754	906	1041	1161
Manufacturing	9,245	11,001	11,812	12,622	13,926	15,361
TOTAL	28,577	30,942	32,494	34,236	36,466	39,101

SURPLUS (ac-ft/yr)	2000	2010	2020	2030	2040	2050
TOTAL	47,880	45,515	43,963	42,221	39,991	37,356

4.3 (j) City of Mount Pleasant

Mount Pleasant has water rights in Lake Cypress Springs of 3,590 ac-ft. The city has a contract with Titus County Freshwater Supply District for 10,000 ac-ft from Lake Bob Sandlin. Finally, Mount Pleasant has water rights in Lake Tankersley of 3,000 ac-ft, bringing the city's total available supply to 16,590 ac-ft. Mount Pleasant provides water to its own municipal customers as well as some of the mining and manufacturing users in Titus County. Mount Pleasant’s wholesale customers include Tri Water Supply Corporation and the City of Winfield. Lake Bob Sandlin State Park is a separate entity from Mount Pleasant, but is treated as a retail customer. The City is currently using 54 percent of its available supply and is projected to use 64 percent by 2050, as shown in Table 4.39

Table 4.39 – Water Supplies and Demands for the City of Mount Pleasant

SUPPLIES (ac-ft/yr)	2000	2010	2020	2030	2040	2050
Lake Tankersley	3,000	3,000	3,000	3,000	3,000	3,000
Lake Cypress Springs	3,590	3,590	3,590	3,590	3,590	3,590
Lake Bob Sandlin	10,000	10,000	10,000	10,000	10,000	10,000
TOTAL	16,590	16,590	16,590	16,590	16,590	16,590

DEMANDS (ac-ft/yr)	2000	2010	2020	2030	2040	2050
Mount Pleasant Municipal	3,012	3,167	3,312	3,512	3,722	3,970
Tri Water Supply Corp.	1,216	1,476	1,624	1,730	1,843	1,935
Winfield	153	153	153	153	153	153
Lake Bob Sandlin Park	1	1	1	1	1	1
Manufacturing	3,421	3,421	3,421	3,421	3,650	3,882
Mining	1,098	450	315	272	275	324
TOTAL	8,901	8,668	8,826	9,089	9,644	10,265

SURPLUS (ac-ft/yr)	2000	2010	2020	2030	2040	2050
TOTAL	7,689	7,922	7,764	7,501	6,946	6,325

4.3 (k) City of Paris

The City of Paris, Lamar County, has water rights in Lake Crook of 1,000 ac-ft/yr, and in Pat Mayse Lake of 61,612 ac-ft/yr. Paris serves its own municipal, steam electric and manufacturing needs. In addition, the city has wholesale contracts with Lamar County Water Supply District and MJC WSC. Currently, Paris has almost 50 percent of its total available supply in use. As shown in Table 4.40, it is expected that 58 percent of the City’s supply will be in use by 2050.

Table 4.40 – Water Supplies and Demands for the City of Paris

SUPPLIES (ac-ft/yr)	2000	2010	2020	2030	2040	2050
Pat Mayse Lake	59,900	59,570	59,200	58,900	58,600	58,300
Lake Crook	1,000	1,000	1,000	1,000	1,000	1,000
TOTAL	60,900	60,570	60,200	59,900	59,600	59,300

DEMANDS (ac-ft/yr)	2000	2010	2020	2030	2040	2050
Lamar County WSD	5,601	5,601	5,601	5,601	5,601	5,601
M J C WSC	92	92	92	92	92	92
Manufacturing	5,422	6,213	6,932	7,575	8,590	9,608
Steam Electric	12,209	12,209	12,209	12,209	12,209	12,209
Paris Municipal	7,583	7,750	7,904	8,237	8,552	8,973
TOTAL	30,907	31,865	32,738	33,714	35,044	36,483

SURPLUS (ac-ft/yr)	2000	2010	2020	2030	2040	2050
TOTAL	29,993	28,705	27,462	26,186	24,556	22,817

4.3 (l) City of Sulphur Springs

Sulphur Springs, located in Hopkins County, has two sources of water supply. Lake Sulphur Springs has a safe yield of 7,800 ac-ft/yr. The city has a contract with the Sulphur River Municipal Water District (SRMWD) for 16,034 ac-ft/yr of supply from the Cooper Reservoir, available for the life of the reservoir. Yields shown for Cooper reservoir in Table 4.41 are based upon the latest TNRCC water availability model for the Sulphur River. Sulphur Springs currently has a surplus totaling 62 percent of total available supply. By 2050, the surplus decreases to 46 percent. Sulphur Springs is anticipating the construction of a power plant in the near future. If this occurs, the system’s demands will increase by an estimated 7,281 ac-ft/yr, which is shown below in Table 4.41.

Table 4.41 – Water Supplies and Demands for the City of Sulphur Springs

SUPPLIES (ac-ft/yr)	2000	2010	2020	2030	2040	2050
Cooper Lake	16,034	15,935	15,726	15,717	15,608	15,608
Lake Sulphur Springs	7,800	7,800	7,800	7,800	7,800	7,800
TOTAL	23,834	23,735	23,526	23,517	23,408	23,408

DEMANDS (ac-ft/yr)	2000	2010	2020	2030	2040	2050
Sulphur Springs Municipal	2,771	2,920	3,037	3,240	3,407	3,637
Brashear WSC	173	123	120	120	119	121
Brinker WSC	70	114	221	275	281	294
Gafford Chapel	62	109	130	234	254	280
Martin Springs WSC	223	376	402	452	463	481
North Hopkins WSC	713	778	831	893	954	1,030
Pleasant Hill WSC	28	30	31	33	35	37
Shady Grove WSC	72	76	79	84	88	94
Manufacturing	2,666	2,861	3,024	3,151	3,409	3,668
Livestock	2,221	2,310	2,431	2,696	2,711	3,000
TOTAL	8,999	9,697	10,306	11,178	11,721	12,642

SURPLUS (ac-ft/yr)	2000	2010	2020	2030	2040	2050
TOTAL	14,835	14,038	13,230	12,339	11,687	10,766

4.3 (m) City of Texarkana

The City of Texarkana, Bowie County, is comprised of Texarkana, Texas, and Texarkana, Arkansas. There is supply and demand in both states. For planning purposes, it has been assumed that water supply from Arkansas will meet Arkansas demand. Therefore, supply and demands in Table 4.42 only consider the Texas side of the city.

Texarkana, Texas supply comes from Lake Wright Patman through a contract with the U.S. Corps of Engineers for 108,661 ac-ft/yr. Demands come from three counties and are as follows: Texarkana municipal and manufacturing, City of DeKalb, City of Hooks, City of Maud, City of Nash, City of New Boston, City of Redwater, City of Wake Village, City of Atlanta, City of Queen City, City of Domino, City of Annona, City of Avery, central Bowie WSC, Macedonia-Eylau MUD #1, Oak Grove WSC, Red River WSC and manufacturing in Cass County. The Federal Correctional Institution is actually a commercial customer but is being treated as a separate entity for the purposes of this plan. Currently, Texarkana has a surplus totaling 10 percent of total available supply. By 2050, the surplus decreases to 5

percent. Water shortages projected for the Texarkana system are contractual. Most are caused by expirations, though several entities require contract amount increases as noted on Table 4.42.

Table 4.42 – Water Supplies and Demands for the City of Texarkana

SUPPLIES (ac-ft/yr)	2000	2010	2020	2030	2040	2050
Lake Wright Patman	108,661	108,661	108,661	108,661	108,661	108,661
TOTAL	108,661	108,661	108,661	108,661	108,661	108,661

DEMANDS (ac-ft/yr)	2000	2010	2020	2030	2040	2050
DeKalb	470	470	470	470	470	470
Hooks	500	500	500	500	500	*528
Fed. Correctional Institution	230	235	240	250	261	275
Maud	246	246	246	246	246	246
Nash	368	368	368	368	368	368
New Boston	*1,109	1,164	1,217	1,280	1,346	1,425
Redwater	*326	335	345	506	587	673
Wake Village	*657	690	718	743	764	781
Central Bowie WSC	*761	775	1,099	1,121	1,294	1,765
Macedonia-Eylau MUD #1	*642	867	1,005	1,151	1,312	1,412
Oak Grove	*90	107	122	139	156	175
Atlanta	1,904	1,904	1,904	1,904	1,904	1,904
Queen City	364	364	364	364	364	*384
Domino	55	55	55	*85	96	104
Annona	68	68	68	68	68	68
Avery	92	92	92	92	92	92
Red River WSC	110	110	110	110	110	110
Manufacturing Bowie	1,916	2,124	2,338	2,562	2,798	3,043
Manufacturing Cass	80,082	76,814	76,814	74,508	77,487	80,589
Texarkana Municipal	7,421	7,660	7,889	8,240	8,557	8,976
TOTAL	97,411	94,948	95,964	94,707	98,780	103,388
SURPLUS (ac-ft/yr)	2000	2010	2020	2030	2040	2050
TOTAL	11,250	13,713	12,697	13,954	9,881	5,273

- Needs a contract increase to meet projected demand.

4.4 Water Surpluses in the North East Texas Region

Table 4.43 lists the entities within the North East Texas Region which have a supply surplus throughout the planning period. Though many entities have surpluses in some years, those that eventually run short of supply due to contract/permit expiration or demands which exceed supply have been omitted from this table. Table 4.43 will not agree with tables 4.31-4.42 for major water providers, as tables 4.31-4.42 do not take into account contract expirations. Table 4.43 lists only those WUG’s that experience a surplus in each year of the planning period.

Table 4.43 Water Surpluses in the North East Texas Region

Total Water Supply Surplus in ac-ft/yr

Bowie County	2000	2010	2020	2030	2040	2050
Texarkana	12,902	21,069	20,958	23,351	19,819	16,053
Cody's Mobile HP	42	41	42	42	42	43
El Chaparral MHP	39	38	40	40	41	41
Park Terrace MHP	34	34	34	34	34	34
Plattners MHP	7	6	7	9	10	10
Woodland Estates	19	19	18	18	17	17
Total	13,043	21,207	21,099	23,494	19,963	16,198

Total Water Supply Surplus in ac-ft/yr

Camp County	2000	2010	2020	2030	2040	2050
Pittsburg	1,461	1,426	1,405	1,365	1,322	1,268
Bi-County WSC	410	205	192	185	179	176
Cherokee Point WC	108	104	104	104	103	103
Newsome WSC	69	52	49	48	47	41
Sharon WSC	7	2	2	2	0	0
Thunderbird WS	15	0	0	0	0	2
Total	2,070	1,789	1,752	1,704	1,651	1,590

Total Water Supply Surplus in ac-ft/yr

Cass County	2000	2010	2020	2030	2040	2050
Hughes Springs	5,086	5,072	5,086	5,173	5,180	5,179
Lone Star	4,574	4,583	4,592	4,601	4,611	4,620
Naples	3	0	6	10	17	19
Omaha	28	28	33	35	40	42
Bi-County WSC	161	130	117	86	75	78
Atlanta St. Rec.	7	7	7	7	7	7
Avinger	1,538	1,518	1,499	1,483	1,466	1,452
Douglasville	4	5	5	6	6	7
Green Hills Subd.	12	13	13	13	14	14

Total Water Supply Surplus in ac-ft/yr

Cass County	2000	2010	2020	2030	2040	2050
Linden-Kildare HS	11	10	9	8	8	7
Linden-Kildare Jr Hs	8	7	6	5	5	4
Marietta WSC	36	27	19	12	5	0
McLeod ISD	34	33	32	31	31	30
McLeod WSC	31	25	21	16	12	9
Sherwood Addition	11	12	12	12	12	12
Spring Valley Subd	11	12	12	12	12	12
Whispering Pines MHP	5	6	6	7	7	7
Whispering Pines Subd.	10	10	10	10	10	11
Total	11,470	11,498	11,485	11,527	11,518	11,510

Total Water Supply Surplus in ac-ft/yr (cont.)

Delta County	2000	2010	2020	2030	2040	2050
Cooper	569	581	596	1,125	1,136	1,139
Manufacturing	9,180	9,180	9,180	9,180	9,180	9,180
Delta County MUD	1,852	182	182	0	0	0
Total	9,931	9,943	9,958	10,305	10,316	10,319

Total Water Supply Surplus in ac-ft/yr

Franklin County	2000	2010	2020	2030	2040	2050
Manufacturing	1	1	1	1	1	1
Deer Cove POA WS	1	1	1	1	1	1
Total	2	2	2	2	2	2

Total Water Supply Surplus in ac-ft/yr

Gregg County	2000	2010	2020	2030	2040	2050
Kilgore	812	717	729	552	417	253
Steam Electric	1,249	1,749	1,749	1,749	1,749	2,749
C&C Mobile HP	9	9	10	10	10	10
Gladewater	7	19	18	17	16	15
Longview	59,476	40,165	39,587	38,863	23,645	1,544
E J Water Company	33	36	39	38	39	39
Forest Lake Estates	10	12	14	14	15	14
Garden Acres Subd.	52	52	53	53	53	53
Sabine ISD	13	15	17	17	18	17
Sun Acres MHP	3	3	4	4	4	4
Total	61,664	42,777	42,220	41,317	25,966	4,698

Total Water Supply Surplus in ac-ft/yr

Harrison County	2000	2010	2020	2030	2040	2050
Marshall	8,909	8,702	8,638	8,422	8,206	7,860
Manufacturing	84,667	64,554	58,527	52,783	40,066	25,908

Total Water Supply Surplus in ac-ft/yr (cont.)

Harrison County	2000	2010	2020	2030	2040	2050
Mining	520	520	520	520	520	520
Steam Electric	23,240	23,240	23,240	23,240	23,240	23,240
Caddo Lake State Pk	0	1	1	2	3	4
Scottsville	50	53	56	58	61	63
Gill WSC	151	136	123	110	100	90
Holiday Springs MHP	4	4	4	5	5	5
Karnack WSC	60	62	64	66	68	70
Pinehill MHP	2	3	3	4	5	5
Rolling Acres	2	2	2	3	3	3
Shadowood Water Co	22	22	23	24	25	25
Total	117,627	97,299	91,201	85,237	72,302	57,793

Total Water Supply Surplus in ac-ft/yr

Hopkins County	2000	2010	2020	2030	2040	2050
Cumby	32	27	24	17	12	4
Sulphur Springs	15,135	15,703	15,243	14,905	14,371	17,110
Livestock	328	328	328	328	328	328
Manufacturing	14	11	11	7	4	4
Cornersville WSC	129	127	126	122	119	113
Total	15,638	16,196	15,732	15,379	14,834	17,559

Total Water Supply Surplus in ac-ft/yr

Hunt County	2000	2010	2020	2030	2040	2050
Campbell	35	26	18	11	5	0
Celeste	41	32	24	17	11	6
Manufacturing	200	200	200	200	200	173
Ables Springs WSC	896	858	820	782	744	706
Hasco Water Systems	3	2	3	4	4	6
Hickory Creek SUD	163	129	93	63	56	45
Little Creek Acres	88	87	88	88	89	90
W Oak Phoenix WS	42	42	42	43	43	43
Whispering Oaks Water Co-op	3	2	3	3	4	4
Total	1,471	1,378	1,291	1,211	1,156	1,073

Total Water Supply Surplus in ac-ft/yr

Lamar County	2000	2010	2020	2030	2040	2050
Paris	24,122	23,089	22,062	26,230	24,709	22,849
Total	24,122	23,089	22,062	26,230	24,709	22,849

Total Water Supply Surplus in ac-ft/yr (cont.)

Marion County	2000	2010	2020	2030	2040	2050
Jefferson	10,423	10,411	10,399	10,380	10,354	10,322
Steam Electric	3,832	3,832	3,832	3,832	3,832	3,832

Total Water Supply Surplus in ac-ft/yr

Marion County	2000	2010	2020	2030	2040	2050
C&C Water Works	3	3	4	4	5	5
Ore City	92	91	90	89	88	87
Crestwood WSC	78	79	79	80	81	81
E. Marion Co WSC	125	15	106	95	88	82
Holiday Harbor Gold Coast WSC	80	81	81	82	82	83
Indian Hills Harbor Subdivision	111	112	113	113	114	115
Mims WSC	695	655	619	585	554	527
Tejas Village WS	3	3	3	3	4	4
Total	15,442	15,282	15,326	15,263	15,202	15,138

Total Water Supply Surplus in ac-ft/yr

Morris County	2000	2010	2020	2030	2040	2050
Daingerfield	10,165	10,183	10,203	10,219	10,230	10,228
Total	10,165	10,183	10,203	10,219	10,230	10,228

Total Water Supply Surplus in ac-ft/yr

Rains County	2000	2010	2020	2030	2040	2050
Cedar Cove Landing	4	4	4	3	3	2
Lone Oak	13	13	13	12	12	12
Total	17	17	17	15	15	14

Total Water Supply Surplus in ac-ft

Red River County	2000	2010	2020	2030	2040	2050
Bogata	180	187	194	201	207	214
Clarksville	85	115	146	168	176	182
Steam Electric	10,000	6,500	4,500	1,500	1,500	1,500
Total	10,265	6,802	4,840	1,869	1,883	1,896

Total Water Supply Surplus in ac-ft/yr

Smith County	2000	2010	2020	2030	2040	2050
Lindale	991	928	871	804	739	666
Crystal Systems Texas, Inc.	195	195	195	195	195	195

Total Water Supply Surplus in ac-ft/yr (cont.)

Smith County	2000	2010	2020	2030	2040	2050
Garden Valley Golf Resort	156	155	155	155	154	154
Lindale Rural WS	729	729	729	729	729	729
Silver Leaf Vacation	414	404	395	383	370	354
Smith County Club	734	688	647	604	562	516
Twin Oaks Ranch Water Supply	40	34	29	24	19	13
Total	3,259	3,133	3,021	2,894	2,768	2,627

Total Water Supply Surplus in ac-ft/yr

Titus County	2000	2010	2020	2030	2040	2050
Mt. Pleasant	7,697	9,017	9,550	9,391	8,951	8,421
Talco	613	609	604	599	590	577
Manufacturing	41,163	41,071	41,000	40,945	40,818	40,693
Steam Electric	16,720	13,720	13,720	1,020	1,020	1,020
Lake Bob Sandlin SP	4	4	4	4	4	4
North East Tx. CC	1,589	1,590	1,591	1,591	1,592	1,593
Total	67,786	66,011	66,469	53,550	51,383	52,308

Total Water Supply Surplus in ac-ft/yr

Upshur County	2000	2010	2020	2030	2040	2050
Big Sandy	97	89	91	81	68	56
Gilmer	5,221	5,149	5,158	5,076	4,982	4,906
Ore City	2,779	2,774	2,778	2,771	2,763	2,756
Irrigation	200	200	200	200	200	200
Manufacturing	750	750	750	750	750	750
Ambassador College	543	543	544	544	544	544
Brookshire's Camp Joy	15	16	17	18	18	20
Texas Water System	38	39	32	32	33	46
Total	9,643	9,560	9,570	9,472	9,358	9,278

Total Water Supply Surplus in ac-ft/yr

Van Zandt County	2000	2010	2020	2030	2040	2050
Canton North Estates	22	21	20	19	18	17
Edgewood	735	719	702	684	669	641
Golden WSC	61	57	52	48	45	42
Martins Mill WSC	24	18	13	9	5	1
Total	842	815	787	760	737	701

Total Water Supply Surplus in ac-ft/yr (cont.)

Wood County	2000	2010	2020	2030	2040	2050
Alba	38	42	46	48	50	49
Hawkins	1059	1,044	1,032	1,011	996	968
Quitman	237	206	179	145	112	69
Brookhaven Retreat	4	4	4	4	4	4
Big Woods Springs	23	25	26	27	28	27
Clear Lakes Village	75	80	84	86	89	88
Holly Ranch Water	278	299	318	326	338	334
Jones WSC	178	148	121	82	55	1
Ramey WSC	280	247	217	179	150	100
Yantis	106	109	100	96	93	86
Jarvis Christian College	279	284	288	290	292	291
New Hope WSC	218	200	183	162	146	117
Sharon WSC	417	170	153	125	105	65
Total	3,192	2,858	2,751	2,581	2,458	2,199

4.5 Socio-Economic Impacts of Not Meeting Water Needs

Section 357.7(4) of the rules for implementing Senate Bill 1 require that the social and economic impact of not meeting regional water supply needs be evaluated by the Regional Water Planning Groups. The North East Texas Regional Water Planning Group took advantage of TWDB technical assistance in this regard. Board staff completed the analysis of the social and economic impacts of not meeting water needs as identified in Exhibit B, Table 7. TWDB evaluated each negative value, showing an unmet water need for an individual water user group (WUG), using data that connected water use with the economy and the population of the region. The detailed results of the analysis are found in a separate report as well as Tables 9 and 10, included in Appendix A.

Looking at the region as a whole, including all six WUGs, the value of need in 2000 is 18,596 acre-feet, increasing to 121,346 acre-feet by 2050. This projected need could, in a worst case scenario, impact 41,744 jobs in 2000, up to 171,346 jobs in 2050. Not meeting projected water needs could impact the population in the region by 80,923 people in 2000 up to 368,070 people in 2050. In addition to these impacts, the effects of not meeting water needs on gross business output, regional incomes and school enrollment were analyzed. Collectively, the summation of all of these impacts gives the region a view of the ultimate magnitude of the impacts caused by not meeting all of the entire list of needs. These summations should be considered a worst-case scenario for the region.