Summary of the 2021 Region B Regional Water Plan[1]

Texas' regional water plans

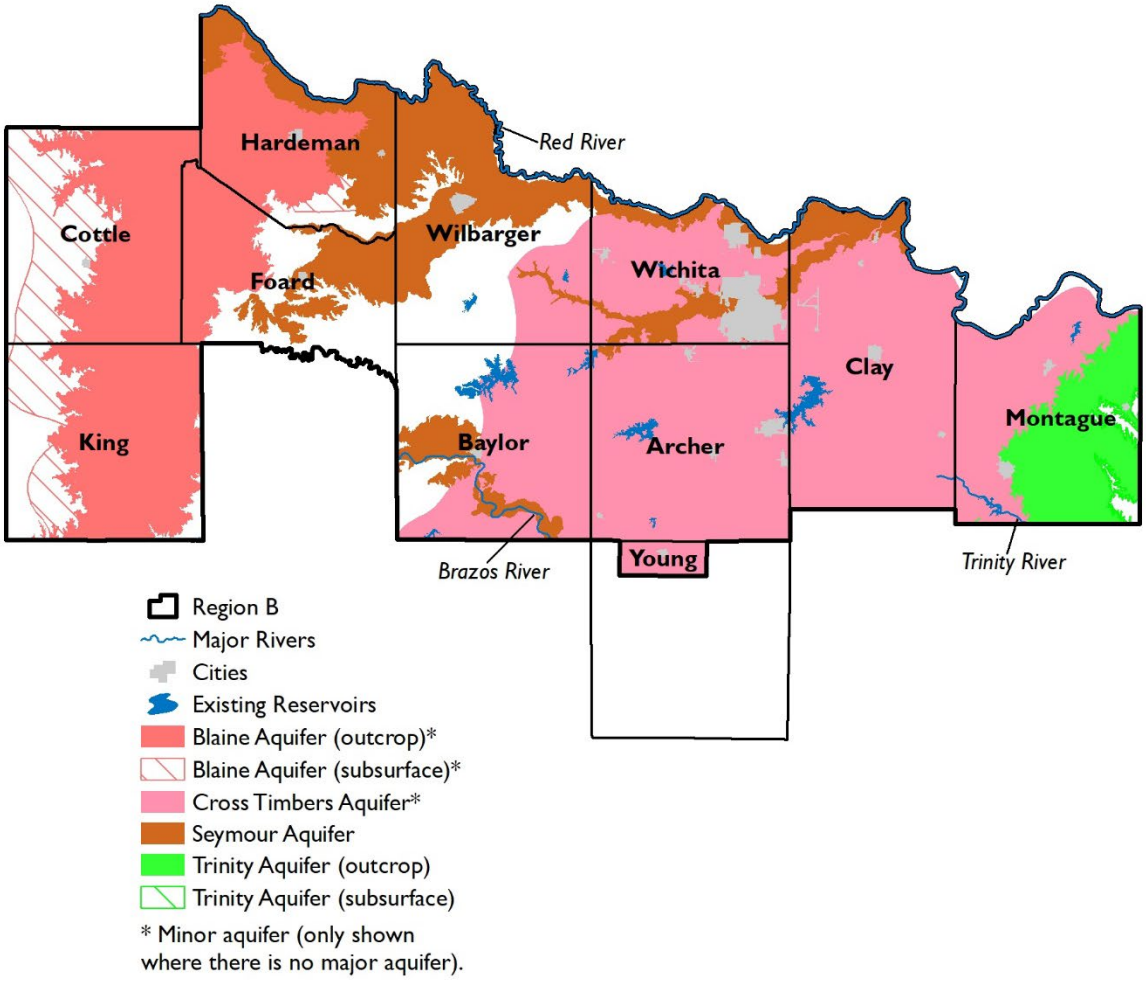
Regional water plans are funded by the Texas Legislature and developed every five years based on conditions that each region would face under a recurrence of a historical drought of record. The 16 regional water plans are developed by local representatives in a public, bottom-up process. The regional plans are reviewed and approved by the TWDB and become the basis for the state water plan. Regional and state water plans are developed to

- provide for the orderly development, management, and conservation of water resources,
- prepare for and respond to drought conditions, and
- make sufficient water available at a reasonable cost to ensure public health, safety, and welfare and further economic development while protecting the agricultural and natural resources of the entire state.

The Region B Regional Water Planning Area includes all or parts of 11 counties (Figure B.1). Region B lies mainly in the Red River Basin, with smaller portions in the Trinity and Brazos basins. The three main components of the region's economy are farming, ranching, and mineral production. Water supply sources are generally split between surface water from the Red River Basin and groundwater. Major cities in the region include Wichita Falls and Vernon. The 2021 Region B Regional Water Plan can be found on the TWDB website at http://www.twdb.texas.gov/waterplanning/rwp/plans/2021/#region-b.

[1] Planning numbers presented throughout this document and as compared to the 2022 Interactive State Water Plan may vary due to rounding.

Figure B.1 - Region B regional water planning area



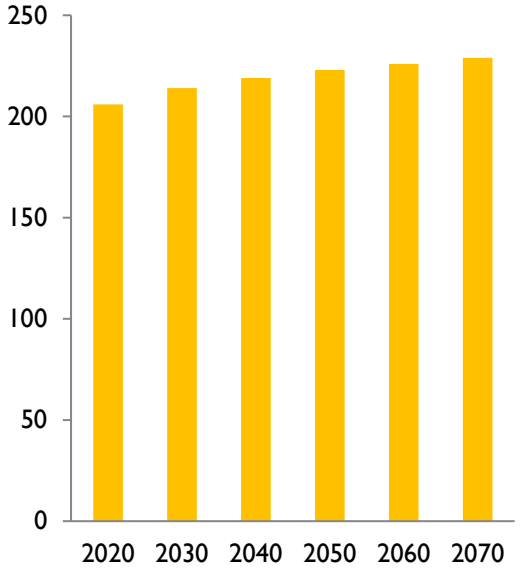
Plan highlights

- Additional supply needed in 2070—41,000 acre-feet per year
- Recommended water management strategy volume in 2070—49,000 acre-feet per year
- 20 recommended water management strategy projects with a total capital cost of $657 million
- Conservation accounts for 49 percent of 2070 strategy volumes
- New major reservoir (Lake Ringgold) accounts for 47 percent of 2070 strategy volumes.

Population and water demands

Approximately 1 percent of the state's 2020 population were projected to reside in Region B. Between 2020 and 2070, the region's population is projected to increase 11 percent (Table B.4, Figure B.2). By 2070, the total water demands for the region are projected to decrease approximately 1 percent (Table B.4).

Figure B.2 - Projected population for 2020–2070 (in thousands)



Existing water supplies

Region B has a variety of surface water and groundwater supply sources, with approximately half of the existing water supply in the region associated with groundwater (Table B.1, Figure B.3). By 2070, the total water supply is projected to decrease 16 percent (Table B.4). This projected decline in supply is primarily a result of surface water decreases due to reservoir sedimentation.

Needs

On a region-wide basis, Region B has water supply deficits from 2020 through 2070, with the majority of needs associated with irrigation (Table B.4). In the event of drought, Region B is projected to have a total water supply need of 25,000 acre-feet in 2020 (Table B.4).

Recommended water management strategies and cost

The Region B Planning Group recommended a variety of water management strategies and projects that would overall provide more water than is required to meet future needs (Figures B.4 and B.5, Tables B.2 and B.3). In all, the 78 strategies and 20 projects would provide 49,000 acre-feet of additional water supply by the year 2070 at a total capital cost of $657 million.

Recommended water management strategies meet all identified needs in the plan except for 17,000 acre-feet per year associated with irrigation, mining, and steam-electric power uses in 2020. These unmet needs decrease to approximately 14,000 acre-feet per year in 2070 and are associated with irrigation and mining uses. An unmet need does not prevent an associated entity from pursuing development of additional water supply.

Conservation

Conservation strategies represent 49 percent of the total volume of water associated with all recommended strategies in 2070. Water conservation was recommended for every municipal, irrigation, and steam-electric water user group that had an identified water supply need and for all mining water user groups in the region regardless of water need. Conservation was encouraged for manufacturing water user groups.

Table B.1 - Existing water supplies for 2020 and 2070 (acre-feet per year)

Water supply source	2020	2070
Surface water		
Kemp-Diversion Lake/Reservoir System	27,000	14,000
Little Wichita River Lake/Reservoir System	17,000	11,000
Red Livestock Local Supply	8,000	8,000
Red Run-of-River	3,000	3,000
Remaining surface water (sources providing less than 2% each)	5,000	5,000
Surface water total	**60,000**	**40,000**
Groundwater		
Seymour Aquifer	47,000	47,000
Blaine Aquifer	10,000	10,000
Cross Timbers Aquifer	6,000	5,000
Other Aquifer	5,000	5,000
Remaining groundwater (sources providing less than 2% each)	2,000	2,000
Groundwater total	**71,000**	**69,000**
Reuse	**10,000**	**9,000**
Region total	**141,000**	**118,000**

Note: Total values in this table are presented as rounded actual total values rather than the sum of rounded values to provide consistent referencing of total values.

Figure B.3 - Share of existing water supplies by water source in 2020 (percent)

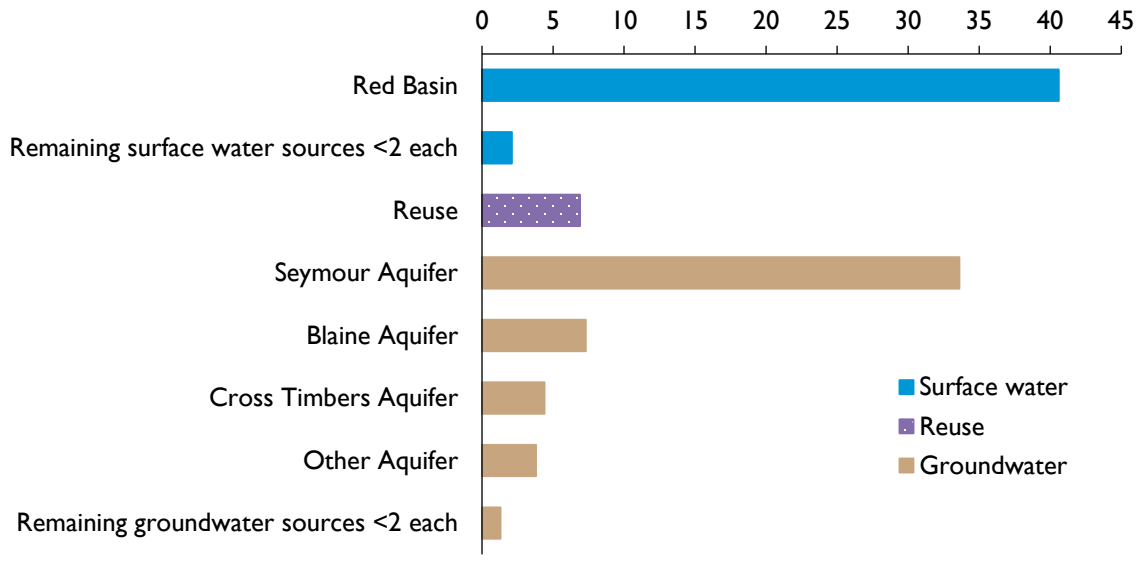


Table B.2 - Ten recommended water management strategy projects with largest capital cost

Recommended water management strategy project	Online Decade	Sponsor(s)	Associated capital cost
Lake Ringgold	2040	Wichita Falls	$442,867,000
Alternative Cooling Technology - Steam-Electric Power Wilbarger County	2020	Steam-Electric Power (Wilbarger)	$101,500,000
Chloride Control Project	2020	Red River Authority of Texas	$69,430,000
WCWID No. 2 Canal Conversion to Pipeline	2020	Wichita WCID #2	$9,713,000
Water Conservation (Replace Transmission Pipeline) - Vernon	2020	Vernon	$8,820,000
Mining Conservation - Montague	2020	Mining (Montague)	$8,554,000
Indirect Reuse - Bowie	2020	Bowie	$5,123,000
Treated Water Line - RRA Clay County	2020	Red River Authority of Texas	$3,546,000
Mining Conservation - Clay	2020	Mining (Clay)	$1,852,000
Automated Meter Infrastructure (AMI) - Red River Authority	2030	Red River Authority of Texas	$1,430,000
Other recommended projects	*various*	*10 various*	*$3,687,000*
		Total capital cost	**$656,522,000**

Table B.3 - Ten recommended water management strategies with largest supply volume assigned to water user groups

Recommended water management strategy name	2070 projected population served by strategy*	Number of water user groups served	Strategy volume in acre-feet per year in 2070
Lake Ringgold	166,000	18	23,000
Irrigation Conservation - WCWID No. 2	na	1	13,000
Alternative Cooling Technology - Steam-Electric Power Wilbarger County	na	1	5,000
Chloride Control Project - RRA	na	1	3,000
Irrigation Conservation - Wichita	na	1	1,000
Municipal Conservation - Wichita Falls	122,000	5	1,000
Additional Groundwater Supply - City of Vernon	14,000	2	1,000
Indirect Reuse - Bowie	6,000	1	1,000
Water Conservation (Replace Transmission Pipeline) - Vernon	14,000	1	<500
Develop Ogallala Aquifer in Donley County - Greenbelt MIWA	6,000	5	<500
Other recommended strategies	*na*	*42*	*1,000*
		Total annual water volume	**49,000**

** Multiple strategies may serve portions of the same population*

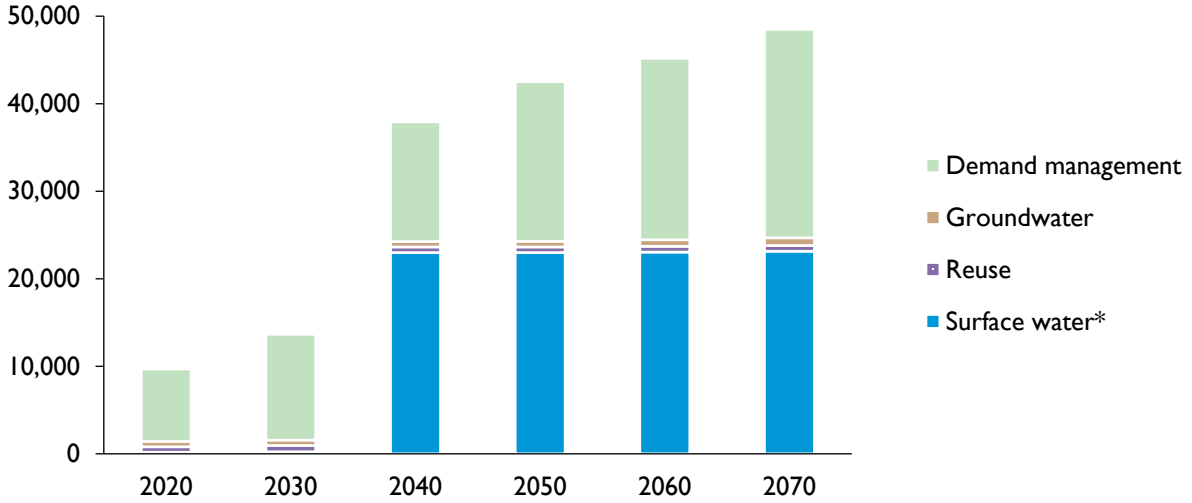
Table B.4 - Population, existing supplies, demands, needs, and strategies 2020–2070 (acre-feet per year)

	Decade	2020	2030	2040	2050	2060	2070	Change
	Population	**206,000**	**214,000**	**219,000**	**223,000**	**226,000**	**229,000**	***11%***
Existing supplies	Surface water	60,000	56,000	53,000	49,000	46,000	40,000	***-33%***
	Groundwater	71,000	71,000	70,000	69,000	69,000	69,000	***-3%***
	Reuse	10,000	10,000	10,000	9,000	9,000	9,000	***-10%***
	Total water supplies	**141,000**	**137,000**	**132,000**	**128,000**	**124,000**	**118,000**	***-16%***
Demands	Municipal	31,000	31,000	31,000	32,000	32,000	32,000	***3%***
	County-other	2,000	2,000	2,000	2,000	2,000	2,000	***0%***
	Manufacturing	2,000	3,000	3,000	3,000	3,000	3,000	***50%***
	Mining	5,000	4,000	3,000	2,000	2,000	2,000	***-60%***
	Irrigation	96,000	96,000	96,000	96,000	96,000	96,000	***0%***
	Steam-electric	8,000	8,000	8,000	8,000	8,000	8,000	***0%***
	Livestock	11,000	11,000	11,000	11,000	11,000	11,000	***0%***
	Total water demand	**156,000**	**156,000**	**155,000**	**154,000**	**154,000**	**155,000**	***-1%***
Needs	Municipal	<500	1,000	1,000	2,000	3,000	6,000	***500%****
	County-other	<500	<500	<500	<500	<500	<500	***0%***
	Manufacturing	0	0	0	0	<500	<500	***0%***
	Mining	2,000	1,000	1,000	<500	<500	<500	***-100%***
	Irrigation	21,000	23,000	25,000	27,000	28,000	30,000	***43%***
	Steam-electric	2,000	2,000	3,000	4,000	4,000	5,000	***150%***
	Total water needs	**25,000**	**26,000**	**30,000**	**32,000**	**36,000**	**41,000**	***64%***
Strategy supplies	Municipal	2,000	2,000	24,000	25,000	25,000	25,000	***1150%***
	County-other	<500	<500	<500	<500	<500	<500	***0%***
	Manufacturing	<500	<500	1,000	1,000	1,000	1,000	***0%****
	Mining	1,000	1,000	1,000	<500	<500	<500	***-100%***
	Irrigation	7,000	8,000	9,000	13,000	14,000	17,000	***143%***
	Steam-electric	<500	2,000	3,000	4,000	4,000	5,000	***150%****
	Total strategy supplies	**10,000**	**14,000**	**38,000**	**43,000**	**45,000**	**49,000**	***390%***

Note: Total values in this table are presented as rounded actual total values rather than the sum of rounded values to provide consistent referencing of total values. Calculated percent change is based on rounded values.

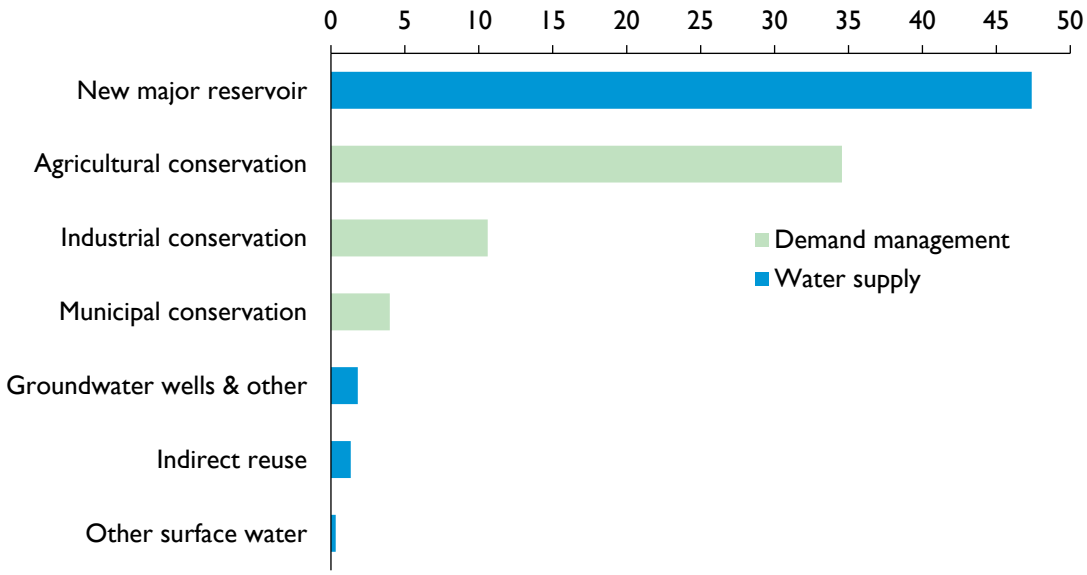
** Percentage based on change from the earliest decade with volumes ≥500 acre-feet per year.*

Figure B.4 - Volume of recommended water management strategies by water resource (acre-feet per year)



**Strategy volume at a scale not represented in the figure in at least one decade*

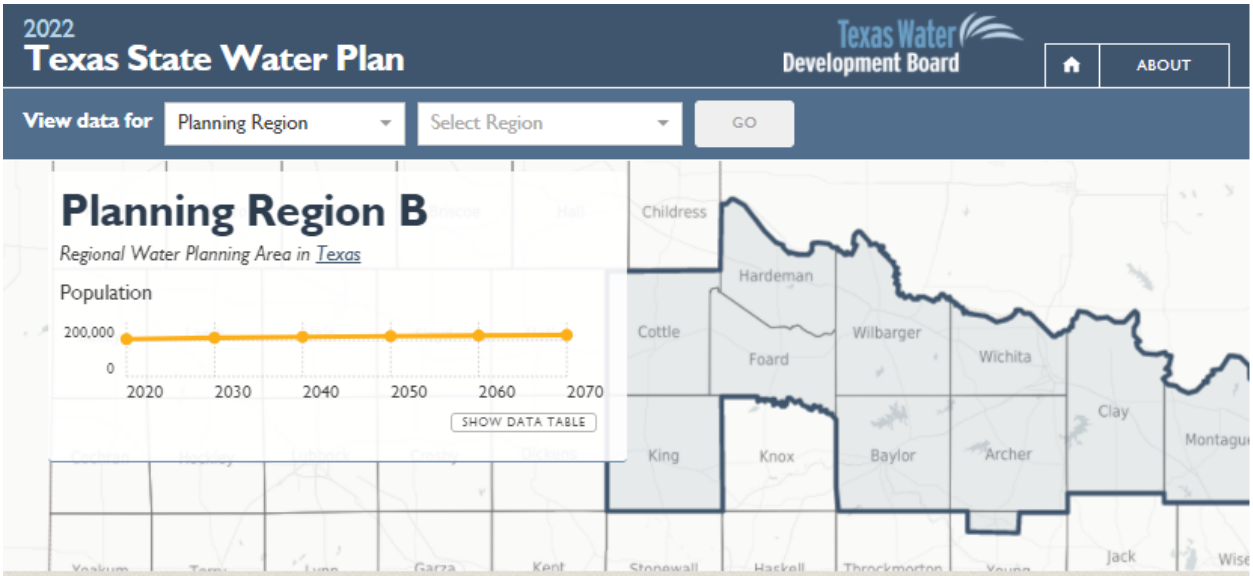
Figure B.5 - Share of recommended water management strategies by strategy type in 2070 (percent)



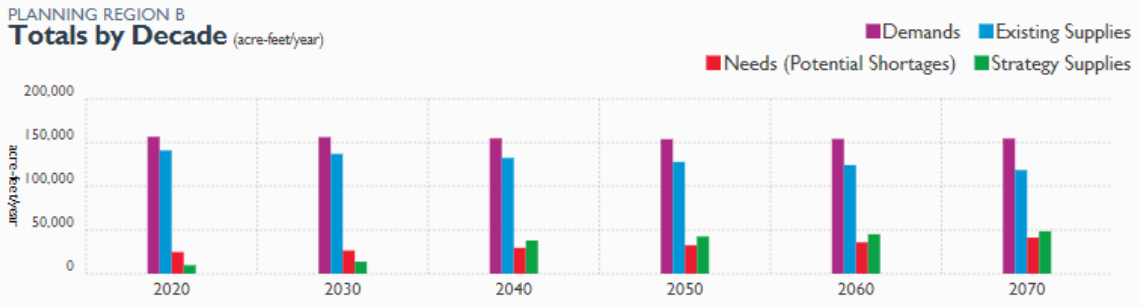
Region B voting planning group members (2017–2021)

Russell Schreiber, municipalities (Chair); Tamela Armstrong, industries; Jimmy Banks, public; J.K. Rooter Brite, environment; Curtis Campbell, river authorities; Jack Campsey, groundwater management areas; Mark Christopher, counties; N.E. Deweber, water utilities; Rebecca L. Dodge, environment; Carrie Dodson, groundwater management areas; Tommy Holub, water utilities; Dale Hughes, agriculture; Randy Jackson, counties; Joe Jarosek, municipalities; Darell Kennon, municipalities; Bobby Kidd, water districts; Steve Lewis, electric generating utilities; Kenneth Liggett, counties; Mike McGuire, water districts; Monte McMahon, electric generating utilities; Tracy Mesler, groundwater management areas; Kyle Miller, water districts; Dean Myers, small business; Heath Ownbey, agriculture; Jerry Payne, environment; Wilson Scaling, agriculture; Gayle Simpson, municipalities; Todd Thomas, agriculture; and Randy Whiteman, river authorities.

For more information on Texas or specific regions, counties, or cities, please visit the 2022 Interactive State Water Plan website: **2022.texasstatewaterplan.org**.



The Region B Regional Water Planning Area encompasses all or parts of 11 counties in north central Texas bordering the Red River. Parts of three river basins (Red, Brazos, and Trinity) lie within the region. The major cities in the region include Wichita Falls, Burkburnett, and Vernon. The 2021 Regional Water Plans can be found on the TWDB website at: http://www.twdb.texas.gov/waterplanning/rwp/plans/2021/index.asp.



	2020	2030	2040	2050	2060	2070
Demands	156,489	156,083	154,727	153,806	154,108	154,535
Existing Supplies	140,854	136,964	132,308	127,804	124,257	118,421
Needs (Potential Shortages)	24,745	26,492	29,552	32,448	35,827	41,256
Strategy Supplies	9,691	13,652	37,934	42,509	45,183	48,503

Texas Water Development Board

Texas Water Development Board
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