

# Summary of the 2016 Region B Regional Water Plan<sup>1</sup>

## 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

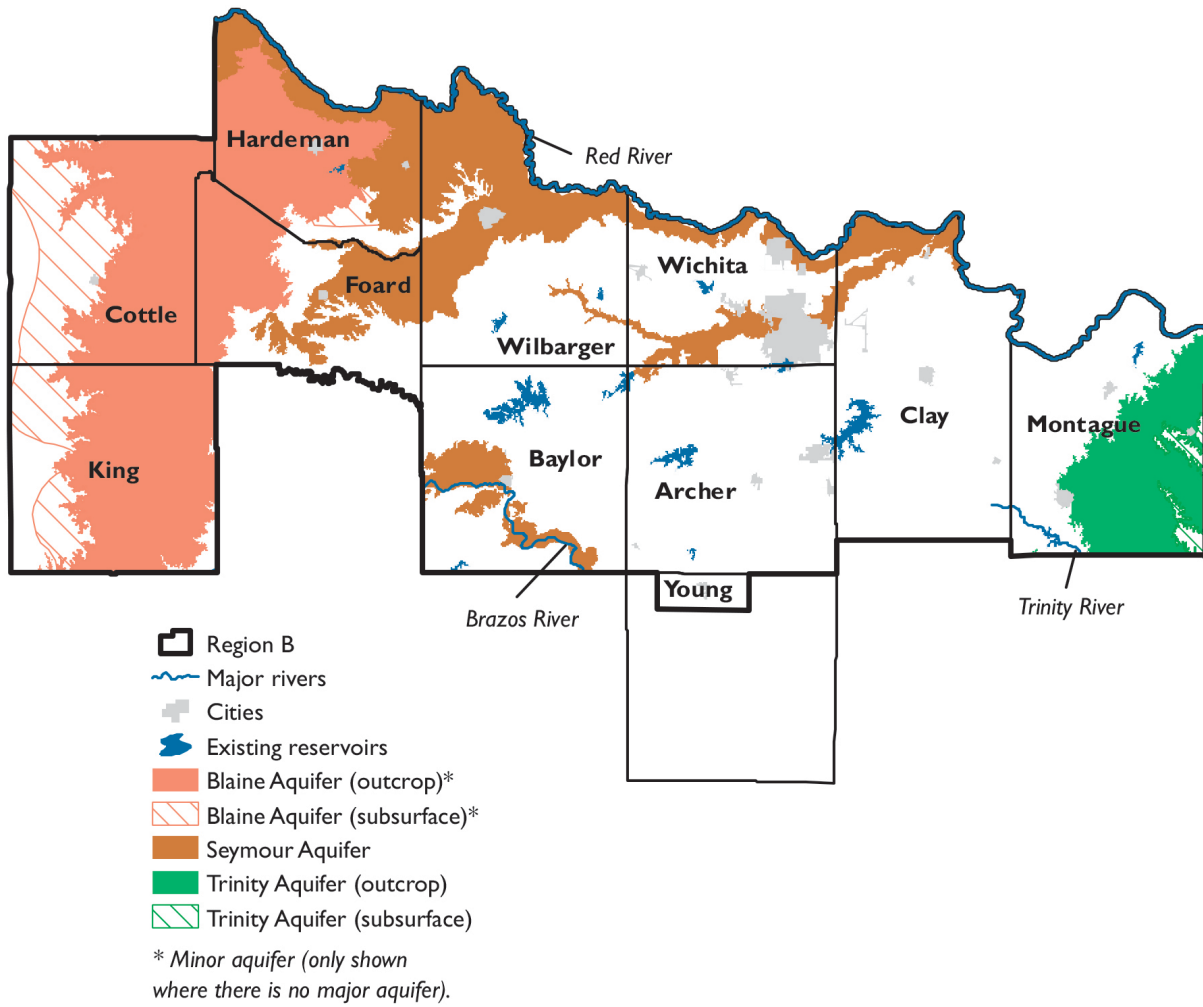
- provide for the orderly development, management, and conservation of water resources,
- prepare for and respond to drought conditions, and
- make sufficient water available at a reasonable cost to ensure public health, safety, and welfare and further economic development while protecting the agricultural 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 2016 Region B Regional Water Plan can be found on the TWDB website at <http://www.twdb.texas.gov/waterplanning/rwp/plans/2016/#region-b>

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<sup>1</sup> Planning numbers presented throughout this document and as compared to the 2017 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—49,000 acre-feet per year
- Recommended water management strategy volume in 2070—73,000 acre-feet per year
- 21 recommended water management strategy projects with a total capital cost of \$630 million
- Conservation accounts for 51 percent of 2070 strategy volumes
- One new major reservoir recommended (Lake Ringgold); designated as a unique reservoir site

## Population and water demands

Approximately 1 percent of the state's 2020 population will 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 5 percent (Table B.4).

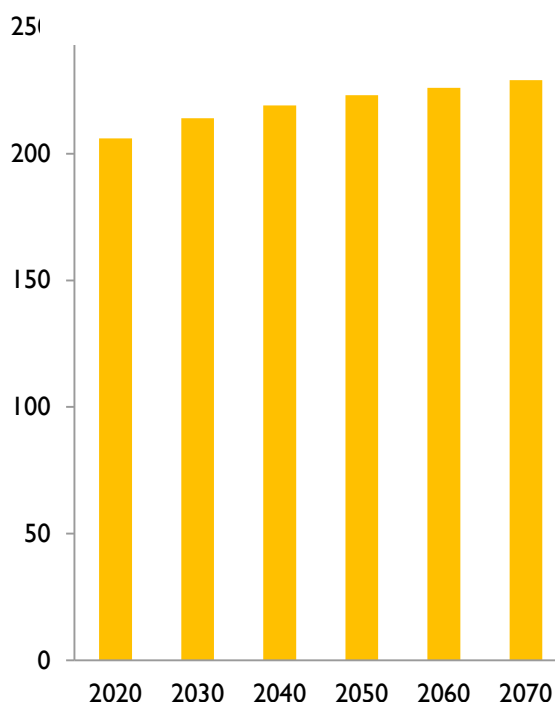
## Existing water supplies

Region B has a variety of surface water and groundwater supply sources, with a little more than half of the existing water supply in the region associated with surface water (Table B.1, Figure B.3). By 2070 the total water supply is projected to decline 18 percent (Table B.4). This projected decline in supply is primarily a result of surface water declines due to reservoir sedimentation.

## Needs

Although on a region-wide basis it might appear that Region B has enough water supplies to meet demands through 2070, the total water supply volume is not accessible to all water users throughout the region (Table B.4). In the event of drought, Region B is projected to have a total water supply need of 35,000 acre-feet in 2020 (Table B.4).

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



## 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 128 strategies and 21 projects would provide 73,000 acre-feet of additional water supply by the year 2070 at a total capital cost of \$630 million.

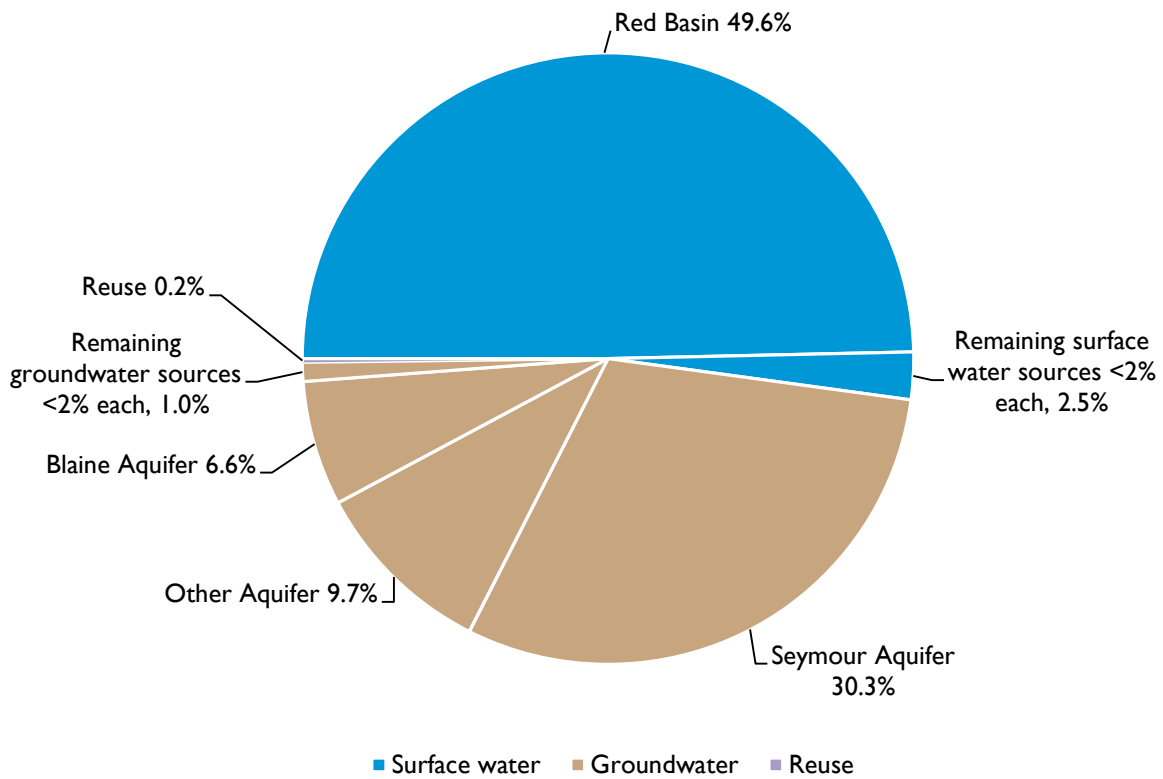
## Conservation

Conservation strategies represent 51 percent of the total volume of water associated with all recommended strategies in 2070. Water conservation was recommended for every municipal water user group that had an identified water supply need.

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

Water supply source	2020	2070
<b>Surface water</b>		
Kemp-Diversion Lake/Reservoir System	41,000	21,000
Little Wichita River Lake/Reservoir System	12,000	12,000
Red Livestock Local Supply	7,000	7,000
Red Run-Of-River	3,000	3,000
Remaining surface water sources <2% each	6,000	6,000
<b>Surface water subtotal:</b>	<b>69,000</b>	<b>49,000</b>
<b>Groundwater</b>		
Seymour Aquifer	40,000	40,000
Other Aquifer	13,000	10,000
Blaine Aquifer	9,000	9,000
Remaining groundwater sources <2% each	1,000	1,000
<b>Groundwater subtotal:</b>	<b>63,000</b>	<b>60,000</b>
<b>Reuse</b>	<b>&lt;500</b>	<b>0</b>
<b>Region total</b>	<b>132,000</b>	<b>109,000</b>

**Figure B.3 - Share of existing water supplies by water source in 2020**



**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	\$330,510,000
Alternative Cooling Technology - Steam Electric Power Wilbarger County	2020	Steam Electric Power, Wilbarger	\$89,740,000
Chloride Control Project	2020	County-Other, Baylor	\$59,371,000
Water Conservation - Wichita Falls	2020	Wichita Falls	\$36,656,000
Indirect Reuse To Lake Arrowhead	2020	Wichita Falls	\$36,400,000
Local Seymour Aquifer	2020	Wichita Falls	\$19,674,000
Wichita River Diversion	2020	Wichita Falls	\$11,230,000
Additional Seymour Aquifer - Vernon	2020	Vernon	\$9,810,000
WCWID No. 2 Canal Conversion to Pipeline	2020	Wichita WCID #2	\$8,538,000
Direct Reuse - Vernon	2040	Vernon	\$8,500,000
<i>Other recommended projects</i>	<i>various</i>	<i>11 various</i>	<i>\$19,146,000</i>
<b>Total capital cost</b>			<b>\$629,575,000</b>

**Table B.3 - Ten recommended water management strategies with largest supply volume**

Recommended water management strategy name	Population served by strategy*	Number of water user groups served	Supply in acre-feet per year in 2070
Lake Ringgold	173,000	17	19,000
Irrigation Conservation - WCWID No. 2 Wichita	na	1	12,000
Indirect Reuse To Lake Arrowhead	173,000	17	11,000
Alternative Cooling Technology - Steam Electric Power Wilbarger County	na	1	5,000
Municipal Conservation - Wichita Falls	121,000	1	4,000
Irrigation Conservation - Wichita	na	1	4,000
Irrigation Conservation - Wilbarger	na	1	3,000
Chloride Control Project - RRA - Irrigation	na	3	3,000
Wichita River Diversion	173,000	17	2,000
Precipitation Enhancement - Wichita Falls	121,000	1	1,000
<i>Other recommended strategies</i>		<i>69</i>	<i>5,000</i>
<b>Total annual water volume</b>			<b>69,000</b>

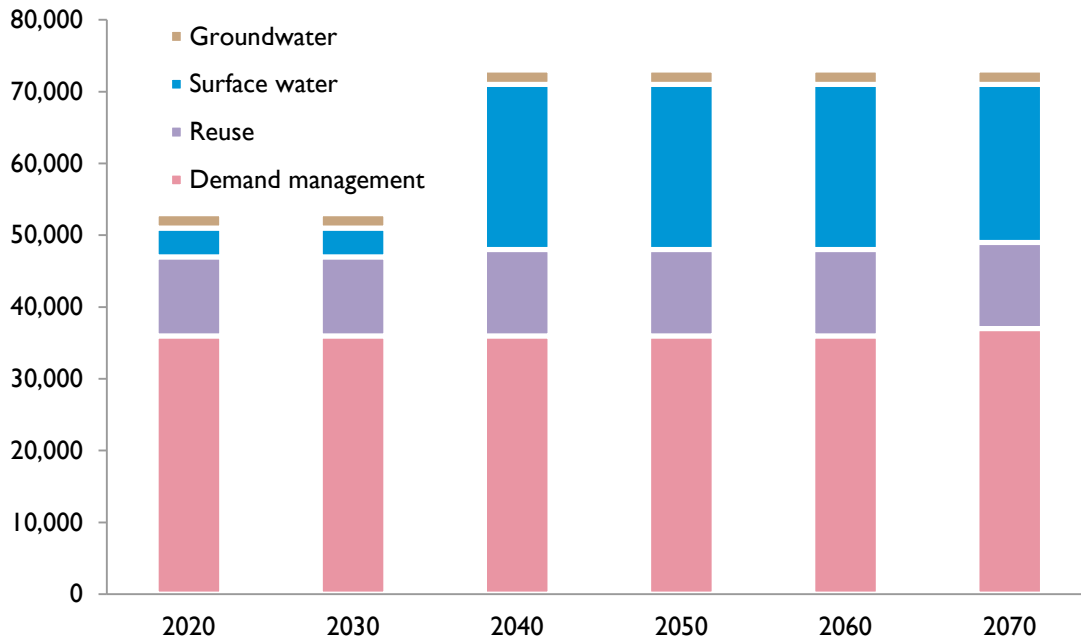
\* Multiple strategies may serve portions of the same population

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

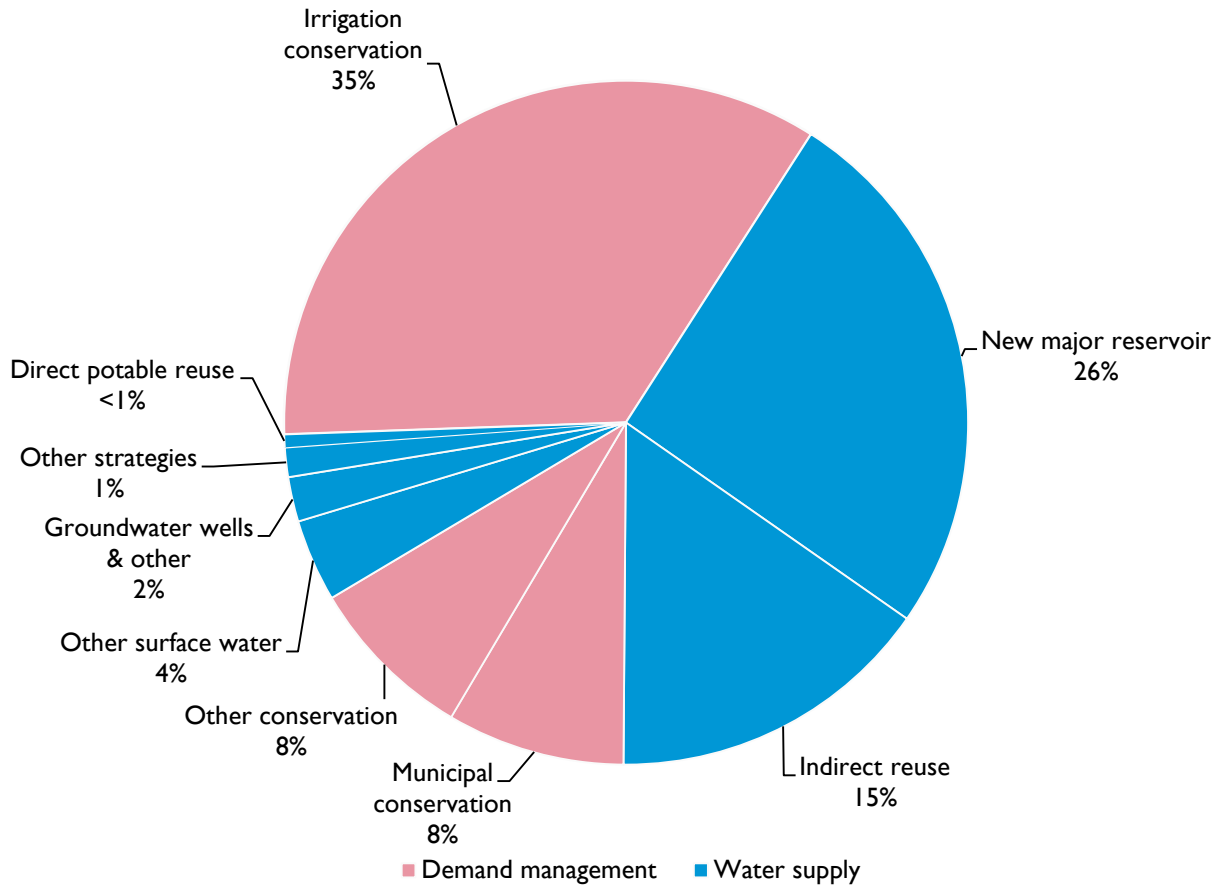
	Decade	2020	2030	2040	2050	2060	2070	change
<b>Population</b>		<b>206,000</b>	<b>214,000</b>	<b>219,000</b>	<b>223,000</b>	<b>226,000</b>	<b>229,000</b>	<b>11%</b>
<b>Existing supplies</b>	Surface water	69,000	65,000	61,000	58,000	54,000	50,000	-28%
	Groundwater	63,000	63,000	61,000	60,000	60,000	60,000	-5%
	Reuse	<500	<500	<500	0	0	0	0%
	<b>Total water supplies</b>	<b>133,000</b>	<b>129,000</b>	<b>123,000</b>	<b>118,000</b>	<b>113,000</b>	<b>109,000</b>	<b>-18%</b>
<b>Demands</b>	Municipal	29,000	30,000	30,000	30,000	30,000	31,000	7%
	County-other	3,000	3,000	3,000	3,000	3,000	3,000	0%
	Manufacturing	4,000	4,000	5,000	5,000	5,000	5,000	25%
	Mining	5,000	4,000	3,000	2,000	2,000	2,000	-60%
	Irrigation	100,000	97,000	95,000	93,000	93,000	93,000	-7%
	Steam-electric	10,000	10,000	10,000	10,000	10,000	10,000	0%
	Livestock	11,000	11,000	11,000	11,000	11,000	11,000	0%
	<b>Total water demand</b>	<b>163,000</b>	<b>160,000</b>	<b>157,000</b>	<b>154,000</b>	<b>154,000</b>	<b>154,000</b>	<b>-6%</b>
<b>Needs</b>	Municipal	8,000	9,000	9,000	10,000	10,000	11,000	38%
	County-other	<500	<500	<500	<500	<500	<500	0%
	Manufacturing	1,000	1,000	2,000	2,000	2,000	2,000	100%
	Mining	2,000	1,000	<500	<500	<500	<500	-100%
	Irrigation	23,000	23,000	24,000	26,000	28,000	31,000	35%
	Steam-electric	1,000	2,000	3,000	4,000	5,000	6,000	500%
	Livestock	<500	<500	<500	<500	<500	<500	0%
	<b>Total water needs</b>	<b>35,000</b>	<b>36,000</b>	<b>38,000</b>	<b>41,000</b>	<b>45,000</b>	<b>49,000</b>	<b>40%</b>
<b>Strategy supplies</b>	Municipal	20,000	20,000	37,000	37,000	37,000	37,000	85%
	County-other	<500	<500	1,000	1,000	1,000	1,000	0%*
	Manufacturing	2,000	2,000	3,000	3,000	3,000	3,000	50%
	Mining	1,000	1,000	1,000	<500	<500	<500	-100%
	Irrigation	28,000	28,000	27,000	26,000	26,000	25,000	-11%
	Steam-electric	1,000	2,000	3,000	4,000	5,000	6,000	500%
	<b>Total strategy supplies</b>	<b>53,000</b>	<b>53,000</b>	<b>71,000</b>	<b>72,000</b>	<b>72,000</b>	<b>73,000</b>	<b>38%</b>

\* Based on change from the earliest decade of volumes ≥500 acre-feet per year

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



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



### Region B voting planning group members (2012 – 2016)

Curtis Campbell, river authorities (Chair); Tamela Armstrong, industry; Jimmy Banks, water districts; Charlies Bell, counties; J.K. Rooter Brite, environment; Jack Campsey, groundwater management areas; Mark Christopher, counties; N.E. Deweber, water utilities; Rebecca Dodge, environment; Ed Garnett, municipalities; Mitch Grant, municipalities; Dale Hughes, agriculture; Bobby Kidd, water districts; Kenneth Liggett, counties; Mike McGuire, water districts; Monte McMahon, electric-generating utilities; Tracy Mesler, groundwater management areas; Dean Myers, small business; Jerry Payne, public; Wilson Scaling, agriculture; Russell Schreiber, municipalities; Gayle Simpson, municipalities; Tom Stephens, industry; Pamela Stephens, environment; Jeff Watts, water utilities

For more information on Texas or specific regions, counties, or cities, please visit the 2017 Interactive State Water Plan website: [texasstatewaterplan.org](http://texasstatewaterplan.org)



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