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

---

1 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

- Region B
- Major rivers
- Cities
- Existing reservoirs
- Blaine Aquifer (outcrop)*
- Blaine Aquifer (subsurface)*
- Seymour Aquifer
- Trinity Aquifer (outcrop)
- Trinity Aquifer (subsurface)

*Minor aquifer (only shown where there is no major aquifer).*
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).

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)

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

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

<table>
<thead>
<tr>
<th>Recommended water management strategy project</th>
<th>Online decade</th>
<th>Sponsor(s)</th>
<th>Associated capital cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake Ringgold</td>
<td>2040</td>
<td>Wichita Falls</td>
<td>$330,510,000</td>
</tr>
<tr>
<td>Alternative Cooling Technology - Steam Electric Power Wilbarger County</td>
<td>2020</td>
<td>Steam Electric Power, Wilbarger</td>
<td>$89,740,000</td>
</tr>
<tr>
<td>Chloride Control Project</td>
<td>2020</td>
<td>County-Other, Baylor</td>
<td>$59,371,000</td>
</tr>
<tr>
<td>Water Conservation - Wichita Falls</td>
<td>2020</td>
<td>Wichita Falls</td>
<td>$36,656,000</td>
</tr>
<tr>
<td>Indirect Reuse To Lake Arrowhead</td>
<td>2020</td>
<td>Wichita Falls</td>
<td>$36,400,000</td>
</tr>
<tr>
<td>Local Seymour Aquifer</td>
<td>2020</td>
<td>Wichita Falls</td>
<td>$19,674,000</td>
</tr>
<tr>
<td>Wichita River Diversion</td>
<td>2020</td>
<td>Wichita Falls</td>
<td>$11,230,000</td>
</tr>
<tr>
<td>Additional Seymour Aquifer - Vernon</td>
<td>2020</td>
<td>Vernon</td>
<td>$9,810,000</td>
</tr>
<tr>
<td>WCWID No. 2 Canal Conversion to Pipeline</td>
<td>2020</td>
<td>Wichita WCID #2</td>
<td>$8,538,000</td>
</tr>
<tr>
<td>Direct Reuse - Vernon</td>
<td>2040</td>
<td>Vernon</td>
<td>$8,500,000</td>
</tr>
<tr>
<td>Other recommended projects</td>
<td>various</td>
<td>11 various</td>
<td>$19,146,000</td>
</tr>
<tr>
<td><strong>Total capital cost</strong></td>
<td></td>
<td></td>
<td><strong>$629,575,000</strong></td>
</tr>
</tbody>
</table>

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

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

* 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)

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

* 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)

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

- Irrigation conservation: 35%
- New major reservoir: 26%
- Indirect reuse: 15%
- Municipal conservation: 8%
- Other conservation: 8%
- Other strategies: 1%
- Groundwater wells & other: 2%
- Other surface water: 4%
- Direct potable reuse: <1%
- Other strategies: 1%
- Other surface water: 4%
- Other conservation: 8%
- Municipal conservation: 8%
- Direct potable reuse: <1%
- Other strategies: 1%
- Groundwater wells & other: 2%
- Other surface water: 4%
- Other conservation: 8%
- Municipal conservation: 8%
- Direct potable reuse: <1%
- Other strategies: 1%
- Groundwater wells & other: 2%
- Other surface water: 4%
- Other conservation: 8%
- Municipal conservation: 8%
- Direct potable reuse: <1%
- Other strategies: 1%
- Groundwater wells & other: 2%
- Other surface water: 4%
- Other conservation: 8%
- Municipal conservation: 8%
- Direct potable reuse: <1%
- Other strategies: 1%
- Groundwater wells & other: 2%
- Other surface water: 4%
- Other conservation: 8%
- Municipal conservation: 8%
- Direct potable reuse: <1%
- Other strategies: 1%
- Groundwater wells & other: 2%
- Other surface water: 4%
- Other conservation: 8%
- Municipal conservation: 8%
- Direct potable reuse: <1%
- Other strategies: 1%
- Groundwater wells & other: 2%
- Other surface water: 4%
- Other conservation: 8%
- Municipal conservation: 8%
- Direct potable reuse: <1%
- Other strategies: 1%
- Groundwater wells & other: 2%
- Other surface water: 4%
- Other conservation: 8%
- Municipal conservation: 8%
- Direct potable reuse: <1%
- Other strategies: 1%
- Groundwater wells & other: 2%
- Other surface water: 4%
- Other conservation: 8%
- Municipal conservation: 8%
- Direct potable reuse: <1%
- Other strategies: 1%
- Groundwater wells & other: 2%
- Other surface water: 4%
- Other conservation: 8%
- Municipal conservation: 8%
- Direct potable reuse: <1%
- Other strategies: 1%
- Groundwater wells & other: 2%
- Other surface water: 4%
- Other conservation: 8%
- Municipal conservation: 8%
- Direct potable reuse: <1%
- Other strategies: 1%
- Groundwater wells & other: 2%
- Other surface water: 4%
- Other conservation: 8%
- Municipal conservation: 8%
- Direct potable reuse: <1%
- Other strategies: 1%
- Groundwater wells & other: 2%
- Other surface water: 4%
- Other conservation: 8%
- Municipal conservation: 8%
- Direct potable reuse: <1%
- Other strategies: 1%
- Groundwater wells & other: 2%
- Other surface water: 4%
- Other conservation: 8%
- Municipal conservation: 8%
- Direct potable reuse: <1%
- Other strategies: 1%
- Groundwater wells & other: 2%
- Other surface water: 4%
- Other conservation: 8%
- Municipal conservation: 8%
- Direct potable reuse: <1%
- Other strategies: 1%
- Groundwater wells & other: 2%
- Other surface water: 4%
- Other conservation: 8%
- Municipal conservation: 8%
- Direct potable reuse: <1%
- Other strategies: 1%
- Groundwater wells & other: 2%
- Other surface water: 4%
- Other conservation: 8%
- Municipal conservation: 8%
- Direct potable reuse: <1%
- Other strategies: 1%
- Groundwater wells & other: 2%
- Other surface water: 4%
- Other conservation: 8%
- Municipal conservation: 8%
- Direct potable reuse: <1%
- Other strategies: 1%
- Groundwater wells & other: 2%
- Other surface water: 4%
- Other conservation: 8%
- Municipal conservation: 8%
- Direct potable reuse: <1%
- Other strategies: 1%
- Groundwater wells & other: 2%
- Other surface water: 4%
- Other conservation: 8%
- Municipal conservation: 8%
- Direct potable reuse: <1%
- Other strategies: 1%
- Groundwater wells & other: 2%
- Other surface water: 4%
- Other conservation: 8%
- Municipal conservation: 8%
- Direct potable reuse: <1%
- Other strategies: 1%
- Groundwater wells & other: 2%
- Other surface water: 4%
- Other conservation: 8%
- Municipal conservation: 8%
- Direct potable reuse: <1%
- Other strategies: 1%
- Groundwater wells & other: 2%
- Other surface water: 4%
- Other conservation: 8%
- Municipal conservation: 8%
- Direct potable reuse: <1%
- Other strategies: 1%
- Groundwater wells & other: 2%
- Other surface water: 4%
- Other conservation: 8%
- Municipal conservation: 8%
- Direct potable reuse: <1%
- Other strategies: 1%
- Groundwater wells & other: 2%
- Other surface water: 4%
- Other conservation: 8%
- Municipal conservation: 8%
- Direct potable reuse: <1%
- Other strategies: 1%
- Groundwater wells & other: 2%
- Other surface water: 4%
- Other conservation: 8%
- Municipal conservation: 8%
- Direct po...
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)