



# Summary of the 2021 South Central Texas (L) Regional Water Plan<sup>1</sup>

## Texas' regional water plans

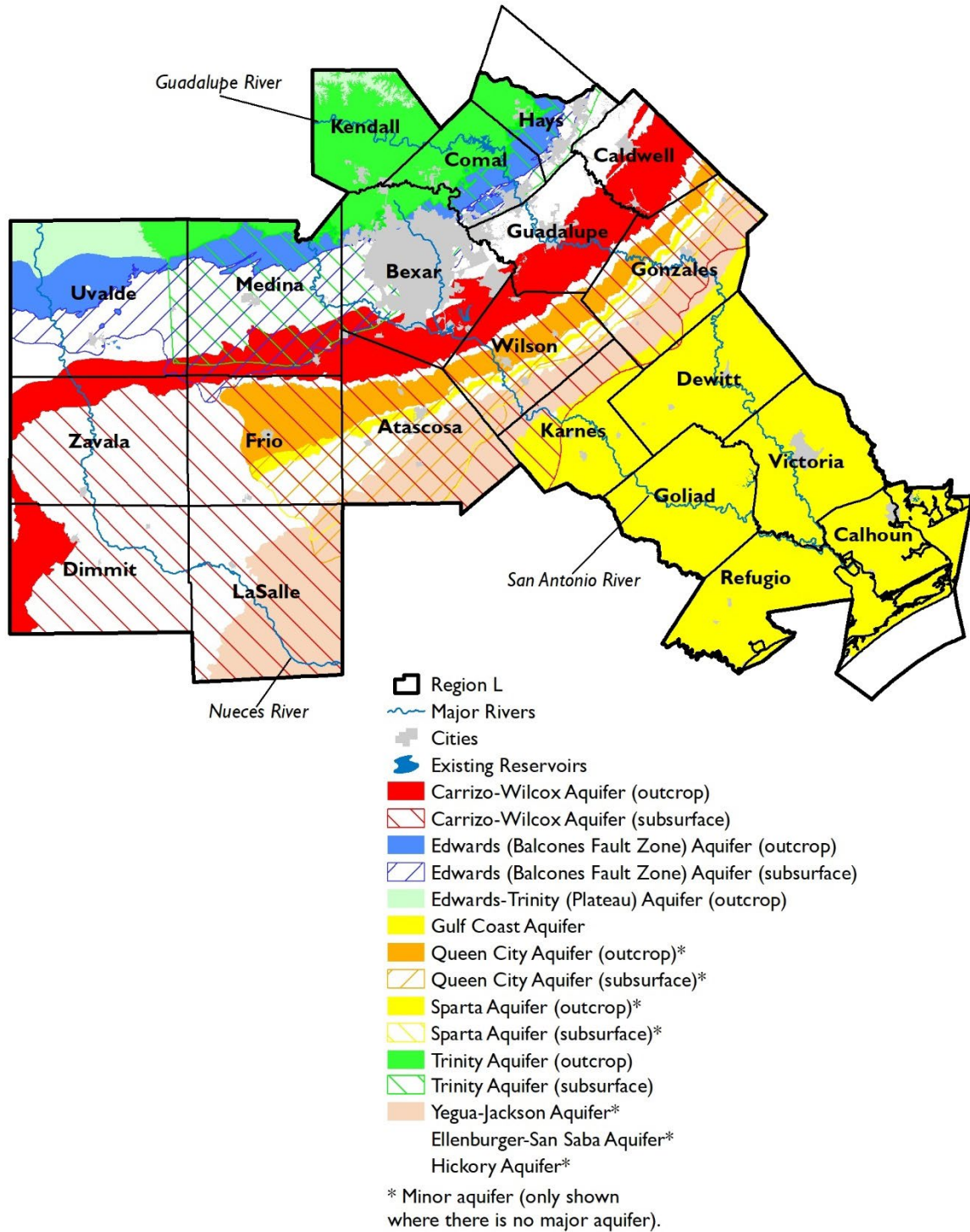
Regional water plans are funded by the Texas Legislature and developed every five years based on conditions that each region would face under a recurrence of a historical drought of record. The 16 regional water plans are developed by local representatives in a public, bottom-up process. The regional 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 South Central Texas (L) Regional Water Planning Area** includes all or parts of 21 counties (Figure L.1). The South Central Texas Region includes counties that are located in whole or in part in the Rio Grande, Nueces, San Antonio, Guadalupe, Lavaca, and Colorado river basins and the San Antonio-Nueces, Lavaca-Guadalupe, and Colorado-Lavaca coastal basins. Major urban population centers include the cities of San Antonio, Victoria, Seguin, New Braunfels, and San Marcos which are located within Bexar, Victoria, Guadalupe, Comal, and Hays counties, respectively. The regional economy is dominated by the trades and services and manufacturing sectors with much smaller, but significant, contributions from the agricultural and mining sectors. The 2021 South Central Texas (L) Regional Water Plan can be found on the TWDB website at <http://www.twdb.texas.gov/waterplanning/rwp/plans/2021/#region-l>.

<sup>1</sup> Planning numbers presented throughout this document and as compared to the 2022 Interactive State Water Plan may vary due to rounding.

Figure L.1 - South Central Texas (L) regional water planning area



## Plan highlights

- Additional supply needed in 2070—401,000 acre-feet per year
- Recommended water management strategy volume in 2070—737,000 acre-feet per year
- 57 recommended water management strategy projects with a total capital cost of \$4.12 billion
- Conservation accounts for 23 percent of 2070 strategy volumes
- Groundwater development accounts for 23 percent of 2070 strategy volumes; new major reservoirs account for 14 percent of 2070 strategy volumes; and aquifer storage and recovery accounts for 10 percent of 2070 strategy volumes

## Population and water demands

Approximately 10 percent of the state's 2020 population were projected to reside in the South Central Texas (L) Region. Between 2020 and 2070, the region's population is projected to increase 73 percent (Table L.4, Figure L.2). By 2070, the total water demands for the region are projected to increase 26 percent (Table L.4).

## Existing water supplies

The South Central Texas (L) Region has a variety of surface water and groundwater supply sources, with more than two-thirds of the existing water supply in the region associated with groundwater (Table L.1, Figure L.3). By 2070 the total water supply is projected to increase 1 percent (Table L.4). This projected increase in supply is primarily a result of increased municipal demands supplied by groundwater and reuse.

## Needs

As the population increases in the South Central Texas (L) Region, so will the municipal water needs. From 2020 to 2070, municipal needs are projected to increase 767 percent (Table L.4). In the event of drought, Region L is projected to have a total water supply need of 204,000 acre-feet in 2020 (Table L.4).

## Recommended water management strategies and cost

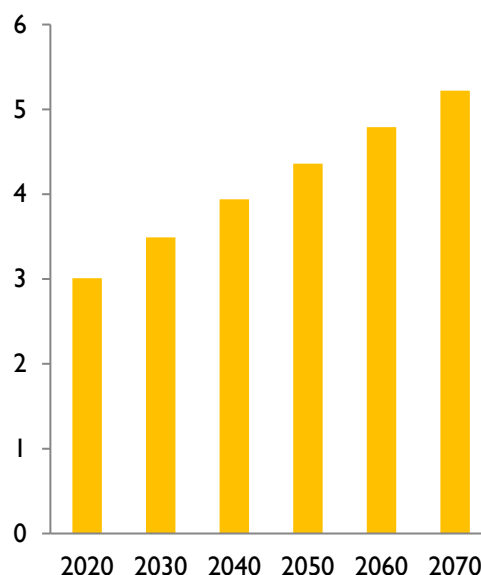
The South Central Texas (L) Planning Group recommended a variety of water management strategies and projects that would overall provide more water than is required to meet future needs (Figures L.4 and L.5, Tables L.2 and L.3). In all, the 259 strategies and 57 projects would provide 737,000 acre-feet of additional water supply by the year 2070 at a total capital cost of \$4.12 billion.

Recommended water management strategies meet all identified needs in the plan except for 174,000 acre-feet per year associated with irrigation, manufacturing, mining, and steam-electric power uses in 2020. Unmet needs decrease to approximately 155,000 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 23 percent of the total volume of water associated with all recommended strategies in 2070. The South Central Texas (L) plan recommends that municipal water user groups with water use of 140 gallons per capita per day or greater reduce their per capita water use by 1 percent per year until 140 gallons per capita per day is reached. For municipal water user groups with water use less than 140 gallons per capita per day, the plan recommends per capita water use be reduced by a quarter of a percent per year.

**Figure L.2 - Projected population for 2020–2070 (in millions)**

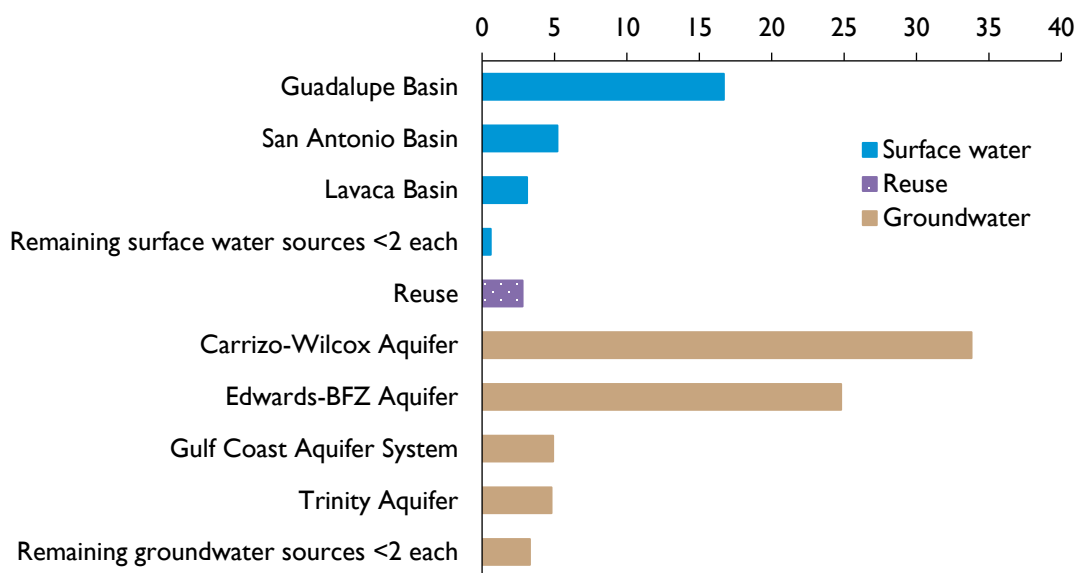


**Table L.1 - Existing water supplies for 2020 and 2070 (acre-feet per year)**

| Water supply source   | 2020             | 2070             |
|---|------------------|------------------|
| <b>Surface water</b>  |                  |                  |
| Canyon Lake/Reservoir   | 77,000           | 75,000           |
| Guadalupe Run-of-River  | 58,000           | 58,000           |
| Calaveras Lake/Reservoir                                      | 37,000           | 37,000           |
| Texana Lake/Reservoir   | 31,000           | 31,000           |
| Coleta Creek Lake/Reservoir                                   | 24,000           | 24,000           |
| Remaining surface water (sources providing less than 2% each) | 29,000           | 29,000           |
| <b>Surface water subtotal:</b>                                | <b>256,000</b>   | <b>254,000</b>   |
| <b>Groundwater</b>  |                  |                  |
| Carrizo-Wilcox Aquifer  | 339,000          | 340,000          |
| Edwards-BFZ Aquifer   | 249,000          | 250,000          |
| Gulf Coast Aquifer System                                     | 49,000           | 48,000           |
| Trinity Aquifer   | 48,000           | 51,000           |
| Remaining groundwater (sources providing less than 2% each)   | 33,000           | 34,000           |
| <b>Groundwater subtotal:</b>                                  | <b>717,000</b>   | <b>722,000</b>   |
| <b>Reuse</b>  | <b>29,000</b>    | <b>39,000</b>    |
| <b>Region total</b>   | <b>1,002,000</b> | <b>1,014,000</b> |

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 L.3 - Share of existing water supplies by water source in 2020 (percent)**



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

| Recommended water management strategy project | Online Decade | Sponsor(s)   | Associated capital cost |
|---|---------------|--|-------------------------|
| SAWS - Expanded Brackish Wilcox Project       | 2040          | San Antonio Water System   | \$819,805,000           |
| GBRA MBWSP                                    | 2030          | Guadalupe-Blanco River Authority                                       | \$403,046,000           |
| GBRA New Appropriation (Lower Basin)          | 2030          | Guadalupe-Blanco River Authority                                       | \$381,960,000           |
| ARWA/GBRA Shared Facilities Project           | 2020          | Guadalupe-Blanco River Authority;<br>Alliance Regional Water Authority | \$352,877,000           |
| SAWS Advanced Meter Infrastructure            | 2020          | San Antonio Water System   | \$208,060,000           |
| Recycled Water Program - SAWS                 | 2030          | San Antonio Water System   | \$196,963,028           |
| CRWA - Brackish Wilcox Groundwater            | 2030          | Canyon Regional Water Authority  | \$177,944,000           |
| ARWA Phase 2                                  | 2040          | Alliance Regional Water Authority                                      | \$130,526,000           |
| Cibolo Valley LCG Carrizo Project             | 2030          | Cibolo Valley Local Government<br>Corporation                          | \$130,277,000           |
| GBRA Victoria County Steam-electric Project   | 2030          | Guadalupe-Blanco River Authority                                       | \$117,260,000           |
| Other recommended projects                    | various       | 47 various   | \$1,203,737,000         |
| <b>Total capital cost*</b>                    |               |  | <b>\$4,122,455,028</b>  |

\* Capital costs associated with the CRWA Siesta project have been corrected. Total capital costs may vary from those presented in the 2021 Region L Regional Water Plan.

**Table L.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 |
|--|---|------------------------------------|---|
| Municipal Water Conservation               | 4,763,000                                     | 106                                | 167,000                                       |
| SAWS Expanded Brackish Groundwater Project | 2,880,000                                     | 1                                  | 70,000  |
| GBRA Lower Basin Storage Project           | 33,000  | 2                                  | 60,000  |
| Drought Management - SAWS                  | 2,880,000                                     | 1                                  | 57,000  |
| FE - CPS Direct Recycle Pipeline           | na  | 1                                  | 50,000  |
| GBRA Lower Basin New Appropriation         | na  | 2                                  | 41,000  |
| Reuse - SAWS - Reuse Water Programs        | 2,880,000                                     | 1                                  | 40,000  |
| FE - SAWS ASR Treatment Plant Expansion    | 2,880,000                                     | 1                                  | 34,000  |
| ARWA/GBRA Project (Phase 1)                | 758,000                                       | 9                                  | 29,000  |
| Local Groundwater Development              | 173,000                                       | 22                                 | 28,000  |
| Other recommended strategies               | na  | 113                                | 162,000                                       |
| <b>Total annual water volume</b>           |   |                                    | <b>737,000</b>                                |

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.

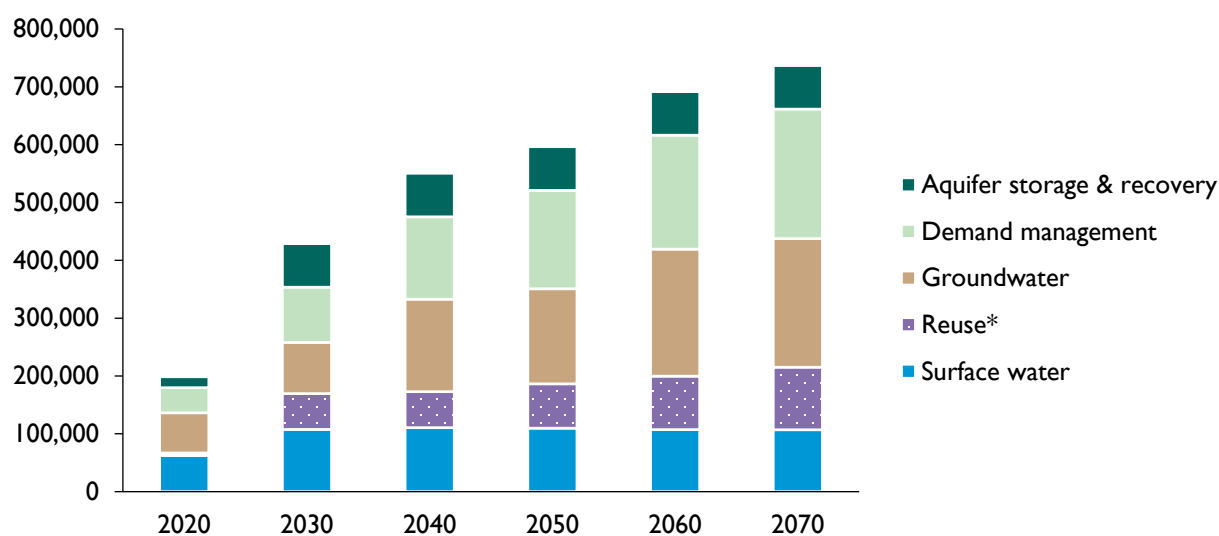
\* Multiple strategies may serve portions of the same population

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

|                          | Decade                         | 2020             | 2030             | 2040             | 2050             | 2060             | 2070             | Change      |
|--------------------------|--------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------|
|                          | <b>Population</b>              | <b>3,013,000</b> | <b>3,491,000</b> | <b>3,937,000</b> | <b>4,357,000</b> | <b>4,795,000</b> | <b>5,219,000</b> | <b>73%</b>  |
| <b>Existing supplies</b> | Surface water                  | 256,000          | 253,000          | 250,000          | 251,000          | 253,000          | 254,000          | -1%         |
|                          | Groundwater                    | 717,000          | 719,000          | 721,000          | 722,000          | 722,000          | 722,000          | 1%          |
|                          | Reuse                          | 29,000           | 34,000           | 39,000           | 39,000           | 39,000           | 39,000           | 34%         |
|                          | <b>Total water supplies</b>    | <b>1,002,000</b> | <b>1,005,000</b> | <b>1,009,000</b> | <b>1,011,000</b> | <b>1,014,000</b> | <b>1,014,000</b> | <b>1%</b>   |
| <b>Demands</b>           | Municipal                      | 415,000          | 468,000          | 518,000          | 568,000          | 619,000          | 668,000          | 61%         |
|                          | County-other                   | 18,000           | 18,000           | 19,000           | 20,000           | 26,000           | 32,000           | 78%         |
|                          | Manufacturing                  | 73,000           | 83,000           | 83,000           | 83,000           | 83,000           | 83,000           | 14%         |
|                          | Mining                         | 49,000           | 50,000           | 49,000           | 45,000           | 41,000           | 41,000           | -16%        |
|                          | Irrigation                     | 359,000          | 359,000          | 359,000          | 358,000          | 358,000          | 358,000          | 0%          |
|                          | Steam-electric                 | 106,000          | 106,000          | 106,000          | 106,000          | 106,000          | 106,000          | 0%          |
|                          | Livestock                      | 32,000           | 32,000           | 32,000           | 32,000           | 32,000           | 32,000           | 0%          |
|                          | <b>Total water demand</b>      | <b>1,051,000</b> | <b>1,115,000</b> | <b>1,164,000</b> | <b>1,211,000</b> | <b>1,264,000</b> | <b>1,320,000</b> | <b>26%</b>  |
| <b>Needs</b>             | Municipal                      | 24,000           | 48,000           | 83,000           | 121,000          | 164,000          | 208,000          | 767%        |
|                          | County-other                   | 1,000            | 1,000            | 1,000            | 1,000            | 3,000            | 9,000            | 800%        |
|                          | Manufacturing                  | 10,000           | 13,000           | 13,000           | 13,000           | 13,000           | 13,000           | 30%         |
|                          | Mining                         | 16,000           | 17,000           | 15,000           | 12,000           | 10,000           | 9,000            | -44%        |
|                          | Irrigation                     | 131,000          | 132,000          | 134,000          | 136,000          | 138,000          | 141,000          | 8%          |
|                          | Steam-electric                 | 22,000           | 22,000           | 22,000           | 22,000           | 22,000           | 22,000           | 0%          |
|                          | <b>Total water needs</b>       | <b>204,000</b>   | <b>232,000</b>   | <b>268,000</b>   | <b>305,000</b>   | <b>350,000</b>   | <b>401,000</b>   | <b>97%</b>  |
| <b>Strategy supplies</b> | Municipal                      | 186,000          | 322,000          | 442,000          | 487,000          | 578,000          | 618,000          | 232%        |
|                          | County-other                   | 1,000            | 1,000            | 1,000            | 1,000            | 4,000            | 10,000           | 900%        |
|                          | Manufacturing                  | 3,000            | 21,000           | 21,000           | 21,000           | 21,000           | 21,000           | 600%        |
|                          | Mining                         | 6,000            | 8,000            | 9,000            | 10,000           | 11,000           | 11,000           | 83%         |
|                          | Steam-electric                 | 3,000            | 77,000           | 77,000           | 77,000           | 77,000           | 77,000           | 2467%       |
|                          | <b>Total strategy supplies</b> | <b>199,000</b>   | <b>429,000</b>   | <b>551,000</b>   | <b>596,000</b>   | <b>692,000</b>   | <b>737,000</b>   | <b>270%</b> |

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.

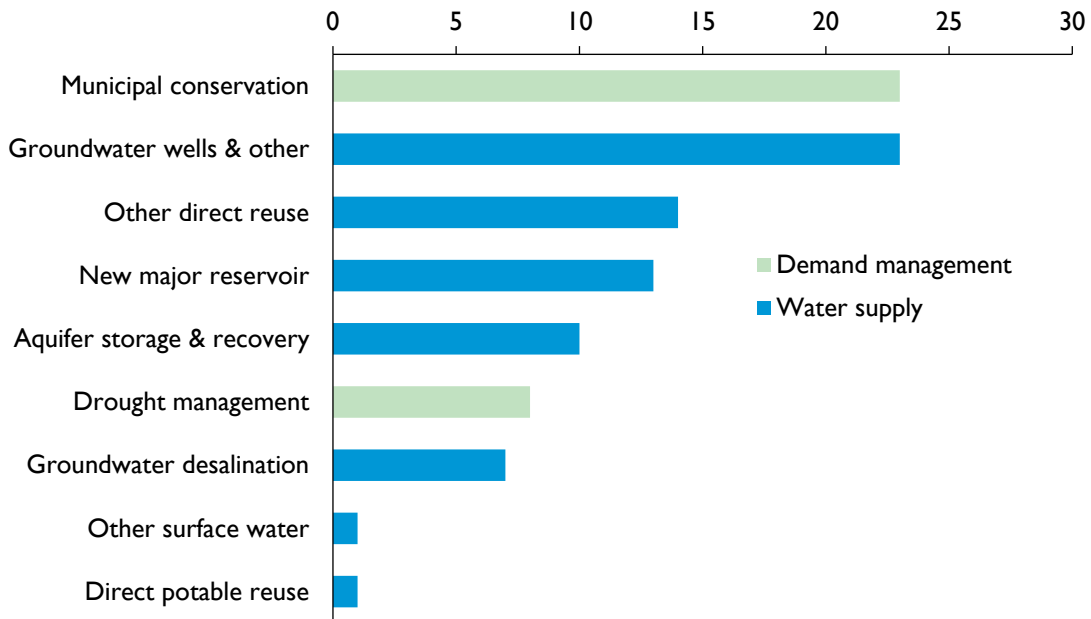
**Figure L.4 - Volume of recommended water management strategies by water resource (acre-feet per year)**



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



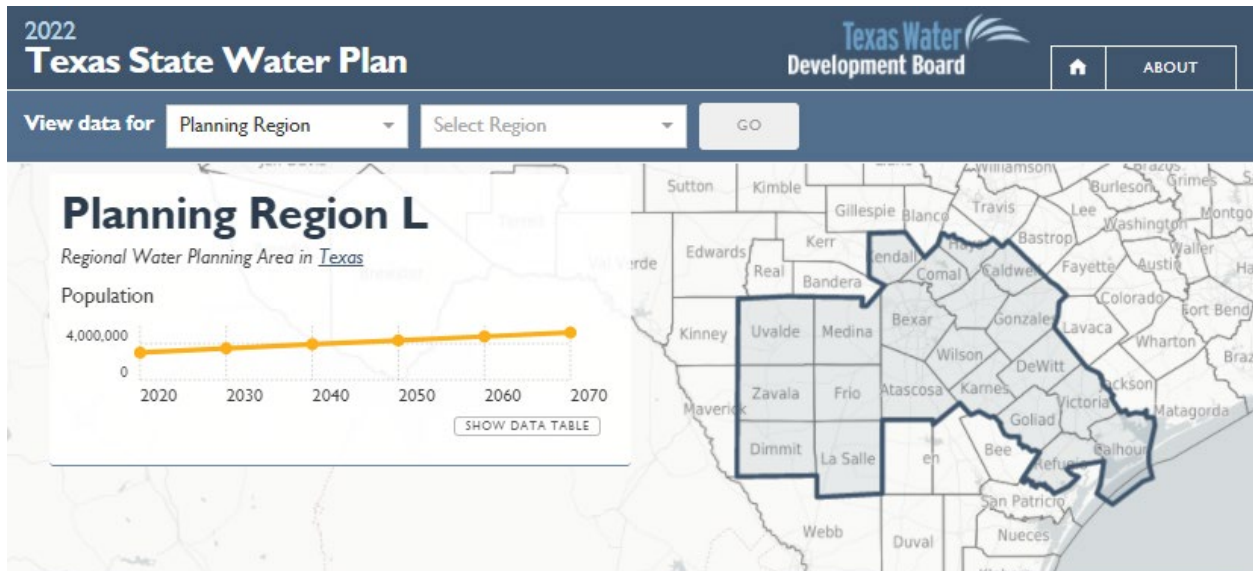
**Figure L.5 - Share of recommended water management strategies by strategy type in 2070 (percent)**



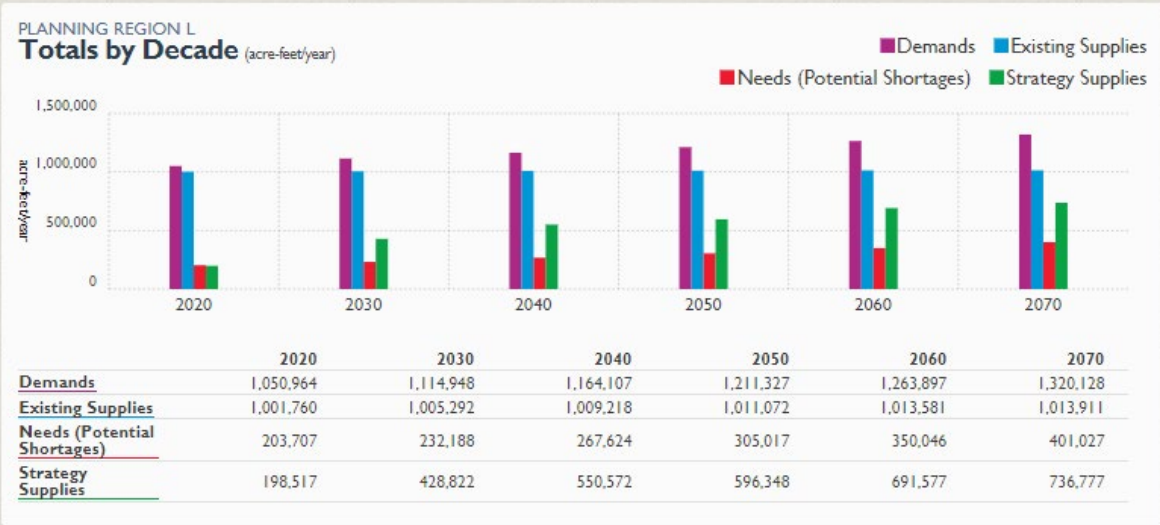
## South Central Texas (L) voting planning group members (2017–2021)

Suzanne B. Scott, river authorities (Chair); Tim Andruss, water districts; Donna Balin, environment; John Byrum, river authorities; Pat Calhoun, counties; Gene Camargo, water utilities; Curt Campbell, groundwater management areas; Rey Chavez, industries; Alan Cockerell, water utilities; Will Conley, counties; Don Dietzmann, groundwater management areas; Art Dohmann, groundwater management areas; Blair Fitzsimons, agriculture; Charlie Flatten, environment; Vic Hilderbran, groundwater management areas; Kevin Janak, electric generating utilities; Tom Jungman, agriculture; John Kight, counties; Russell Labus, water districts; Glenn Lord, industries; Doug McGookey, small business; Daniel Meyer, groundwater management areas; Gary Middleton, municipalities; Con Mims, river authorities; Kevin Patteson, river authorities; Illiana Pena, environment; Robert Puente, municipalities; Humberto Ramos, water districts; Steve Ramsey, water utilities; Weldon Riggs, agriculture; David Roberts, small business; Roland Ruiz, water districts; Diane Savage, groundwater management areas; Greg Sengelmann, water districts; Mitchell Sowards, small business; Heather Sumpter, groundwater management areas; Tom Taggart, municipalities; Ian Taylor, municipalities; Diane Wassenich, public; Bill West, river authorities; and Adam Yablonski, agriculture.

For more information on Texas or specific regions, counties, or cities, please visit the 2022 Interactive State Water Plan website: [2022.texasstatewaterplan.org](https://2022.texasstatewaterplan.org).



The South-Central Texas (Region L) Regional Water Planning Area includes all or parts of 21 counties, portions of 9 river and coastal basins, the Guadalupe Estuary, and San Antonio Bay. The largest cities in the region are San Antonio, Victoria, San Marcos, and New Braunfels. The region contains the two largest springs in Texas: Comal and San Marcos. The 2021 Regional Water Plans can be found on the TWDB website at: <http://www.twdb.texas.gov/waterplanning/rwp/plans/2021/index.asp>.



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