

# Summary of the 2016 Plateau (J) 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

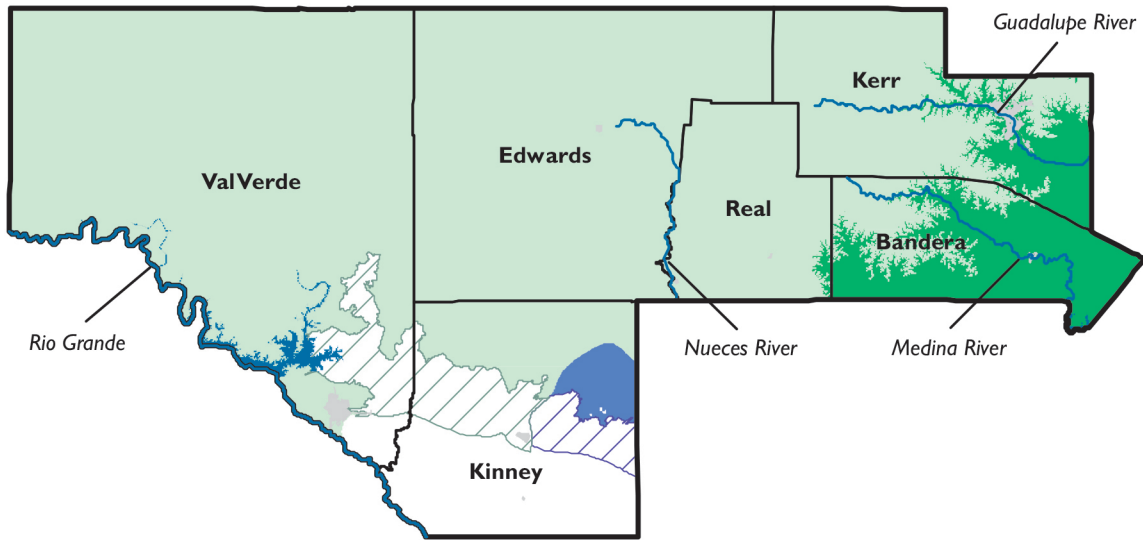
- provide for the orderly development, management, and conservation of water resources,
- prepare for and respond to drought conditions, and
- make sufficient water available at a reasonable cost to ensure public health, safety, and welfare and further economic development while protecting the agricultural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

**The Plateau (J) Regional Water Planning Area** includes all or parts of six counties (Figure J.1). The region includes portions of the Colorado, Guadalupe, Nueces, Rio Grande, and San Antonio river basins. Land use in the western portion of the planning area is primarily range land, while the eastern portion is a mix of forest land, range land, and agricultural areas. The economy of this region is based primarily on tourism, hunting, ranching, and government. Major cities in the region include Del Rio and Kerrville. The 2016 Plateau (J) Regional Water Plan can be found on the TWDB website at <http://www.twdb.texas.gov/waterplanning/rwp/plans/2016/#region-j>

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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 J.1 - Plateau (J) regional water planning area**



- Region J
- Major rivers
- Cities
- Existing reservoirs
- Edwards (Balcones Fault Zone) Aquifer (outcrop)
- Edwards (Balcones Fault Zone) Aquifer (subsurface)
- Edwards-Trinity (Plateau) Aquifer (outcrop)
- Edwards-Trinity (Plateau) Aquifer (subsurface)
- Trinity Aquifer
- Ellenburger-San Saba Aquifer\*
- Hickory Aquifer\*

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

## Plan highlights

- Additional supply needed in 2070—5,000 acre-feet per year
- Recommended water management strategy volume in 2070—22,000 acre-feet per year
- 55 recommended water management strategy projects with a total capital cost of \$140 million
- Conservation accounts for 2 percent of 2070 strategy volumes
- Aquifer storage & recovery accounts for 21 percent of 2070 strategy volumes

## Population and water demands

Approximately 1 percent of the state's 2020 population will reside in the Plateau (J) Region. Between 2020 and 2070, the region's population is projected to increase 31 percent (Table J.4, Figure J.2). By 2070, the total water demands for the region are projected to increase 13 percent (Table J.4).

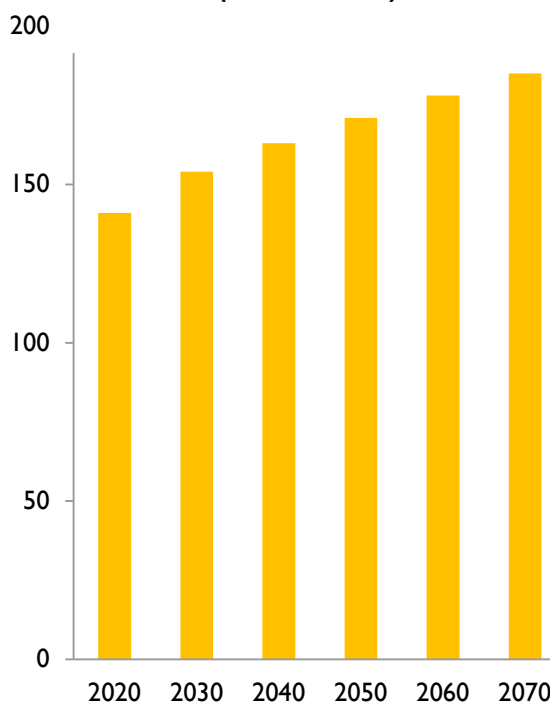
## Existing water supplies

The Plateau (J) Region has a variety of surface water and groundwater supply sources, with the major portion (71%) of the existing water supply in the region associated with groundwater (Table J.1, Figure J.3). The total water supply is projected to remain constant through 2070. (Table J.4).

## Needs

Although on a region-wide basis it might appear that the Plateau (J) Region 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 J.4). In the event of drought, Region J is projected to have a total water supply need of 4,000 acre-feet in 2020 (Table J.4).

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



## Recommended water management strategies and cost

The Plateau (J) 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 J.4 and J.5, Tables J.2 and J.3). In all, the 64 strategies and 55 projects would provide 22,000 acre-feet of additional water supply by the year 2070 at a total capital cost of \$140 million.

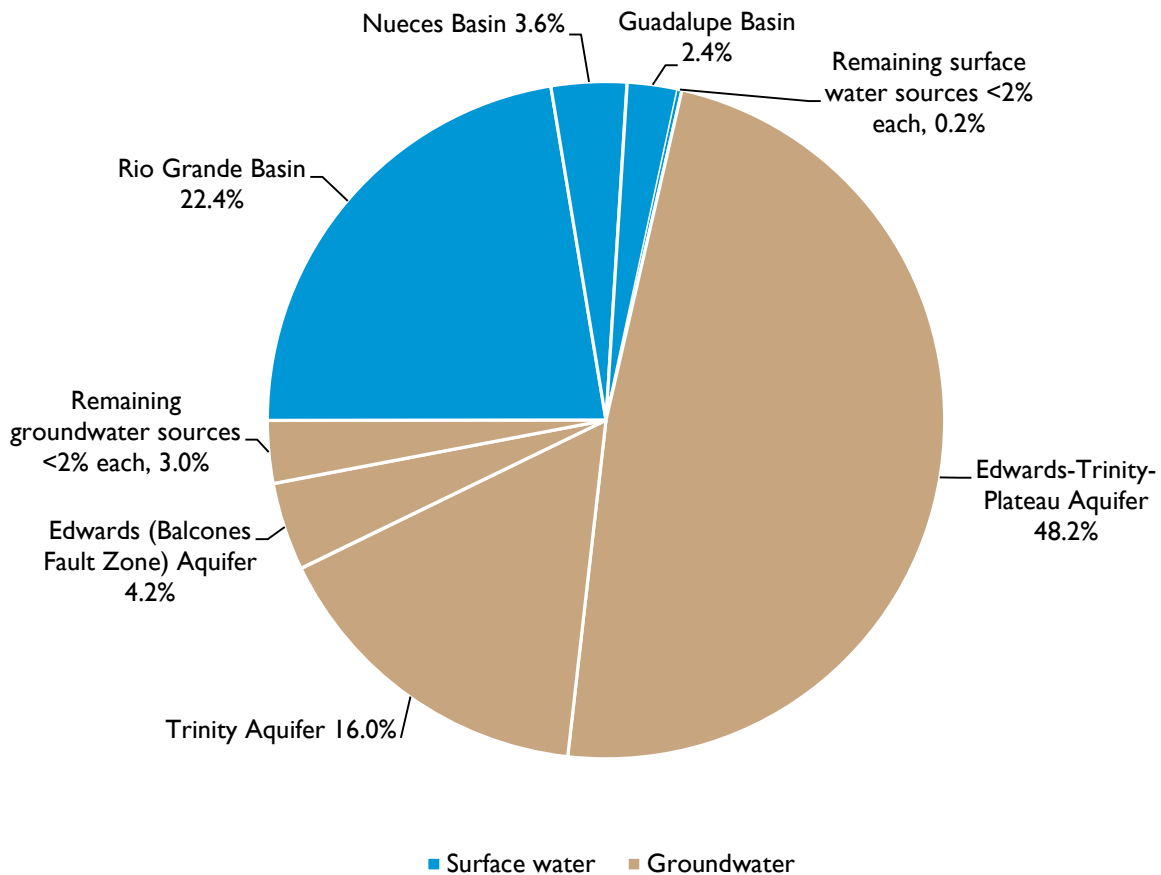
## Conservation

Conservation strategies represent 2 percent of the total volume of water associated with all recommended strategies in 2070. Water conservation was encouraged for every municipal water user group that had a water supply shortage. Water loss audits and line replacement was recommended for those entities with needs that could be met with the expected savings.

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

Water supply source	2020	2070
<b>Surface water</b>		
Rio Grande Run-Of-River	15,000	15,000
Nueces Run-Of-River	2,000	2,000
Remaining surface water sources providing less than 2% each	2,000	2,000
<b>Surface water subtotal:</b>	<b>19,000</b>	<b>19,000</b>
<b>Groundwater</b>		
Edwards-Trinity-Plateau Aquifer	33,000	33,000
Trinity Aquifer	11,000	11,000
Edwards (Balcones Fault Zone) Aquifer	3,000	3,000
Remaining groundwater sources providing less than 2% each	2,000	2,000
<b>Groundwater subtotal:</b>	<b>49,000</b>	<b>49,000</b>
<b>Reuse</b>	<b>0</b>	<b>0</b>
<b>Region total</b>	<b>68,000</b>	<b>68,000</b>

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



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

Recommended water management strategy project	Online decade	Sponsor(s)	Associated capital cost
City of Bandera - Surface water acquisition, treatment and ASR	2040	Bandera	\$29,450,000
CCP/UGRA - Surface water treatment and distribution lines	2020	County-Other, Kerr	\$25,581,000
CCP / UGRA - Desalination plant	2020	County-Other, Kerr	\$14,539,000
City of Kerrville - Increased water treatment and ASR capacity	2020	Kerrville	\$11,543,000
City of Kerrville - Water loss audit and main-line repair	2020	Kerrville	\$9,339,000
City of Del Rio - Water loss audit and main-line repair	2020	Del Rio	\$8,673,000
CCP/UGRA - Off-channel surface water storage	2020	County-Other, Kerr	\$7,534,000
CCP/UGRA - Well field for dense, rural areas	2020	County-Other, Kerr	\$4,357,000
Bandera Co. FWSD #1 - Additional well for Pebble Beach Subdivision	2020	County-Other, Bandera	\$3,717,000
City of Kerrville - Increase wastewater reuse	2020	Kerrville	\$3,248,000
<i>Other recommended projects</i>	<i>various</i>	<i>45 various</i>	<i>\$26,387,000</i>
		<b>Total capital cost</b>	<b>\$144,368,000</b>

**Table J.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
City Of Kerrville - Increase Wastewater Reuse	26,000	1	5,000
City of Kerrville - Increased Water Treatment and ASR Capacity	26,000	1	3,000
City of Del Rio - Develop a Wastewater Reuse Program	50,000	1	3,000
EKC/UGRA - ASR Facility	28,000	1	1,000
EKC/UGRA - Construction of an Off-Channel Surface Water Storage	28,000	1	1,000
EKC/UGRA - Acquisition of Surface Water Rights	28,000	1	1,000
CCP/UGRA - Well Field for Dense, Rural Areas	28,000	1	1,000
City Of Del Rio - Water Treatment Plant Expansion	50,000	1	1,000
City Of Del Rio - Renovate, Drill & Equip New Well, Connect To Distribution System	50,000	1	1,000
Fort Clark Springs MUD - Increase Storage Facility	1,000	1	1,000
<i>Other recommended strategies</i>		<i>54</i>	<i>1,000</i>
		<b>Total annual water volume</b>	<b>19,000</b>

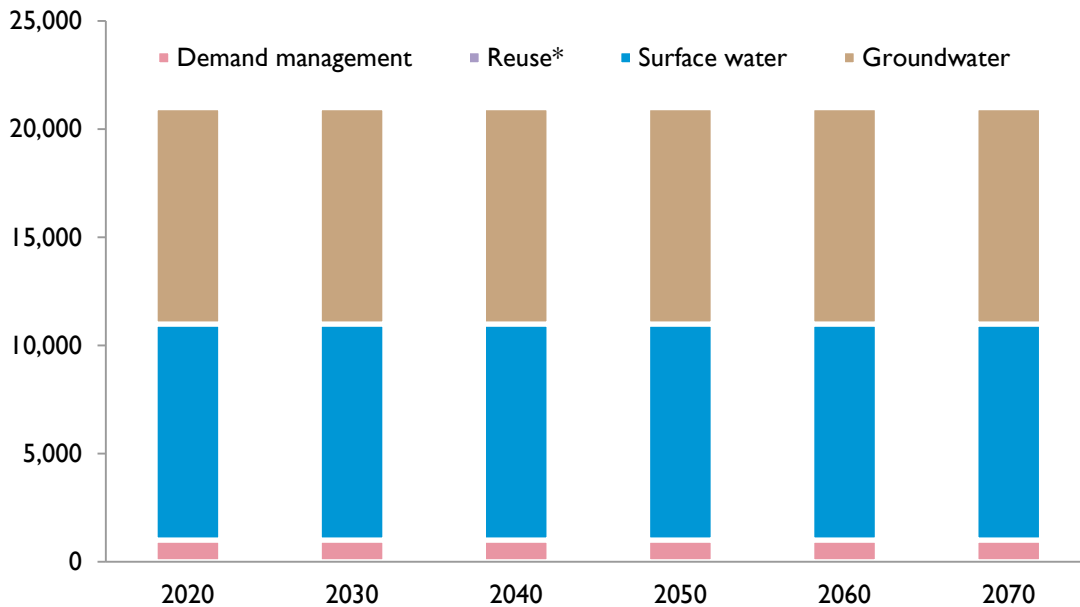
\* Multiple strategies may serve portions of the same population

**Table J.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>141,000</b>	<b>154,000</b>	<b>163,000</b>	<b>171,000</b>	<b>178,000</b>	<b>185,000</b>	<b>31%</b>
<b>Existing supplies</b>	Surface water	20,000	20,000	20,000	20,000	20,000	20,000	0%
	Groundwater	49,000	49,000	49,000	49,000	49,000	49,000	0%
	<b>Total water supplies</b>	<b>68,000</b>	<b>68,000</b>	<b>68,000</b>	<b>68,000</b>	<b>68,000</b>	<b>68,000</b>	<b>0%</b>
<b>Demands</b>	Municipal	19,000	19,000	20,000	21,000	21,000	22,000	16%
	County-other	7,000	8,000	8,000	8,000	9,000	9,000	29%
	Manufacturing	<500	<500	<500	<500	<500	<500	0%
	Mining	<500	<500	<500	<500	<500	<500	0%
	Irrigation	11,000	11,000	11,000	11,000	10,000	10,000	-9%
	Livestock	3,000	3,000	3,000	3,000	3,000	3,000	0%
	<b>Total water demand</b>	<b>40,000</b>	<b>41,000</b>	<b>42,000</b>	<b>43,000</b>	<b>44,000</b>	<b>45,000</b>	<b>13%</b>
<b>Needs</b>	Municipal	3,000	4,000	4,000	4,000	4,000	4,000	33%
	County-other	<500	<500	<500	<500	<500	1,000	0%*
	Mining	<500	<500	<500	<500	<500	<500	0%
	Irrigation	<500	<500	<500	<500	<500	<500	0%
	Livestock	<500	<500	<500	<500	<500	<500	0%
	<b>Total water needs</b>	<b>4,000</b>	<b>4,000</b>	<b>4,000</b>	<b>4,000</b>	<b>5,000</b>	<b>5,000</b>	<b>25%</b>
	<b>Strategy supplies</b>	Municipal	15,000	15,000	15,000	15,000	15,000	15,000
County-other		6,000	6,000	6,000	6,000	6,000	6,000	0%
Mining		<500	<500	<500	<500	<500	<500	0%
Irrigation		<500	<500	<500	<500	<500	<500	0%
Livestock		<500	<500	<500	<500	<500	<500	0%
<b>Total strategy supplies</b>		<b>21,000</b>	<b>22,000</b>	<b>22,000</b>	<b>22,000</b>	<b>22,000</b>	<b>22,000</b>	<b>5%</b>

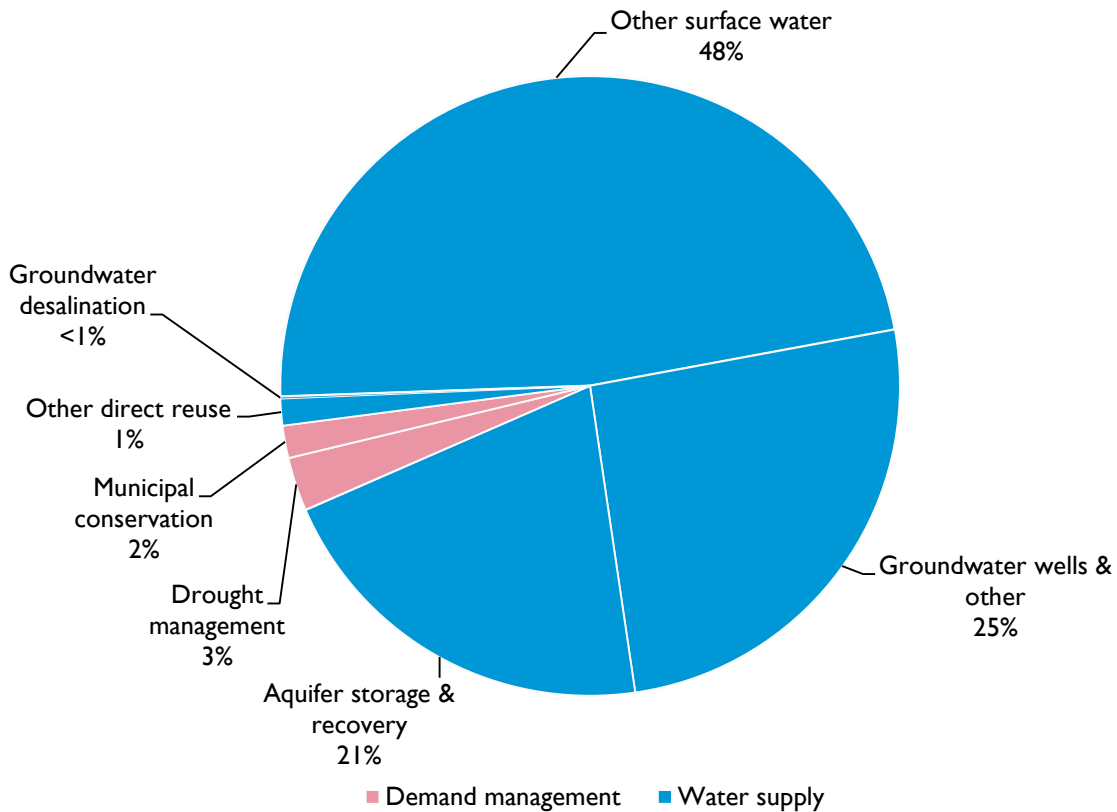
\* Based on change from the earliest decade of volumes  $\geq 500$  acre-feet per year

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



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

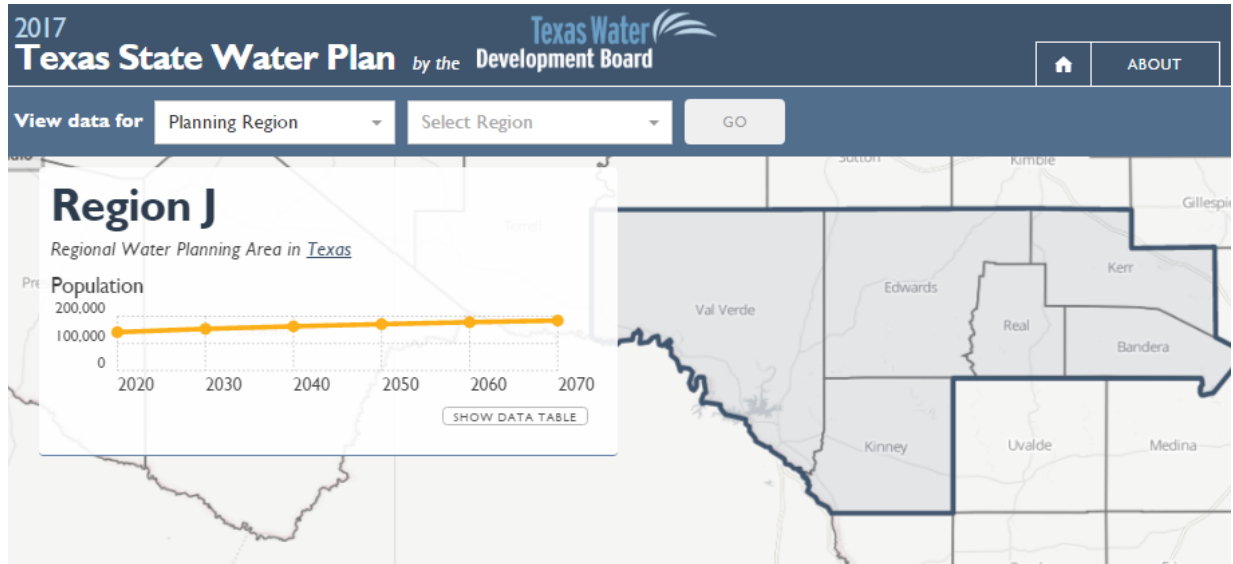
**Figure J.5 - Share of recommended water management strategies by strategy type in 2070**



## Plateau (J) voting planning group members (2012 – 2016)

Johnathan Letz, small business (Chair); Peggy Postal, groundwater management areas; Melony Talamantes, water districts; Melony Talamantes, water districts; Zach Davis, agriculture; Otila Gonzalez, municipalities; Ronnie Pace, industry; Jerry Simpton, other; Lee Sweeten, counties; Tully Shahan, environment; Mitch Lomas, municipalities; Thomas Qualia, public; Homer Stevens, tourism; Charles Wiedenfeld, water utilities; Ray Buck, river authorities; William Wilson, other; Stuart Barron, municipalities; Roland Trees, water districts; Jerry Heffley, water utilities; Rene Villareal, water districts; Gene Williams, water districts; Ken Carver, groundwater management areas; Joel Pigg, groundwater management areas; Genell Hobbs, groundwater management areas; Howard Jackson, water utilities; Kent Lowery, water districts; Perry Bushong, water districts

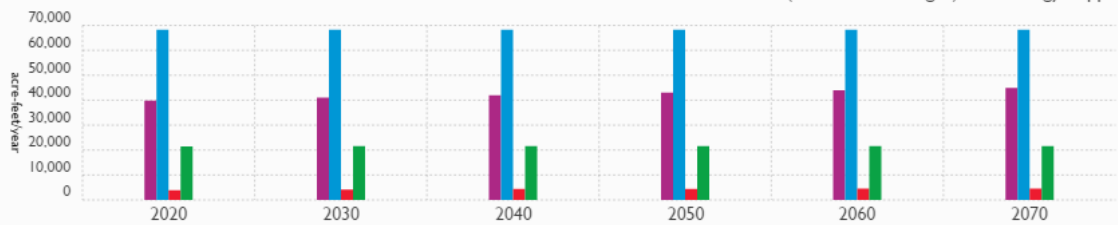
For more information on Texas or specific regions, counties, or cities, please visit the 2017 Interactive State Water Plan website: [texasstatewaterplan.org](http://texasstatewaterplan.org)



Located on the southern edge of the Edwards Plateau, the Plateau (Region J) Regional Water Planning Area covers six counties. The region includes portions of the Colorado, Guadalupe, Nueces, Rio Grande, and San Antonio river basins. Land use in the western portion of the planning area is primarily range land, while the eastern portion is a mix of forest land, range land, and agricultural areas. The economy of this region is based primarily on tourism, hunting, ranching, and government. Major cities in the region include Del Rio and Kerrville. The 2016 Plateau (J) Regional Water Plan can be found on the TWDB Web site at <http://www.twdb.texas.gov/waterplanning/rwp/plans/2016/#region-j>

**REGION J Totals by Decade** (acre-feet/year)

Legend: Demands (purple), Existing Supplies (blue), Needs (Potential Shortages) (red), Strategy Supplies (green)



	2020	2030	2040	2050	2060	2070
<b>Demands</b>	39,802	41,033	42,009	42,987	43,971	44,937
<b>Existing Supplies</b>	68,209	68,209	68,209	68,209	68,209	68,209
<b>Needs (Potential Shortages)</b>	3,857	4,223	4,393	4,465	4,545	4,626
<b>Strategy Supplies</b>	21,494	21,549	21,578	21,589	21,597	21,602



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