

Summary of the 2016 Lower Colorado (K) Regional Water Plan¹

Texas' regional water plans

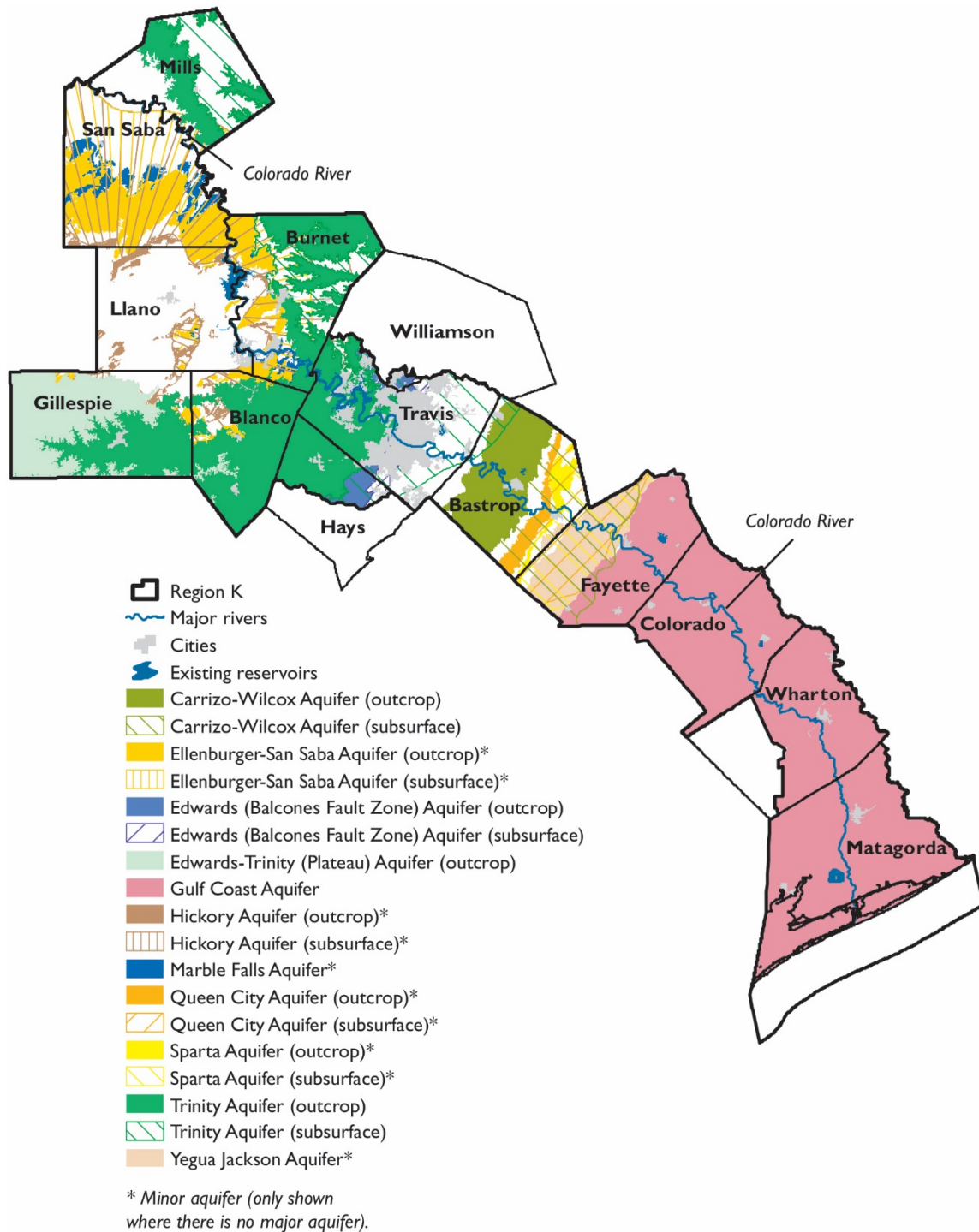
Regional water plans are funded by the Texas Legislature and developed every five years based on conditions that each region would face under a recurrence of a historical drought of record. The 16 regional water plans are developed by local representatives in a public, bottom-up process. The regional 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 Lower Colorado (K) Regional Water Planning Area includes all or parts of 14 counties (Figure K.1), portions of 6 river and coastal basins, and Matagorda Bay. Most of the region is located in the Colorado River Basin. Major cities in the region include Austin, Bay City, Pflugerville, and Fredericksburg. The largest economic sectors in the region include agriculture, government, service, manufacturing, and retail trade. The manufacturing sector is primarily concentrated in the technology and semiconductor industry in the Austin area. Oil, gas, petrochemical processing and mineral production are found primarily in Wharton and Matagorda counties near the coast. The 2016 Lower Colorado (K) Regional Water Plan can be found on the TWDB website at <http://www.twdb.texas.gov/waterplanning/rwp/plans/2016/#region-k>

¹ Planning numbers presented throughout this document and as compared to the 2017 Interactive State Water Plan may vary due to rounding.

Figure K.1 - Lower Colorado (K) regional water planning area



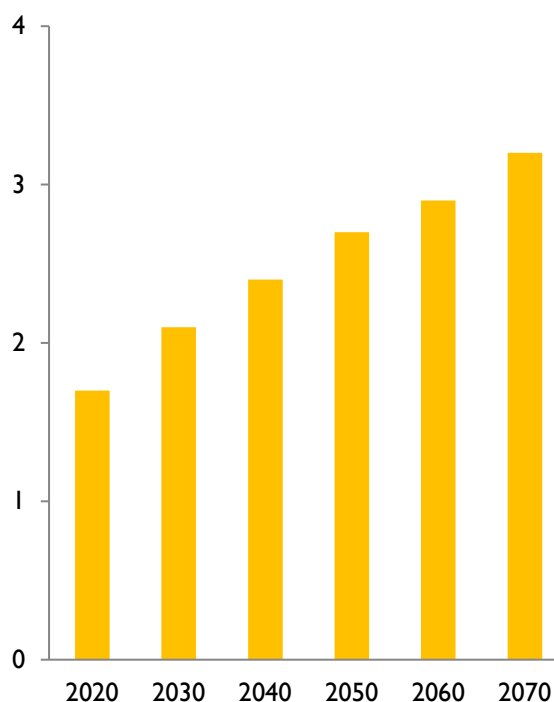
Plan highlights

- Additional supply needed in 2070—512,000 acre-feet per year
- Recommended water management strategy volume in 2070—745,000 acre-feet per year
- 124 recommended water management strategy projects with a total capital cost of \$3.8 billion
- Conservation accounts for 29 percent of 2070 strategy volumes
- Three new off-channel reservoirs recommended (Lower Colorado River Authority’s Lane City, Prairie, and Mid Basin reservoirs); aquifer storage & recovery projects (Austin, Buda, Sunset Valley, Creedmoor-Maha Water Supply Corporation, Mountain City, and Hays County)

Population and water demands

Approximately 6 percent of the state’s 2020 population will reside in the Lower Colorado (K) Region. Between 2020 and 2070, the region’s population is projected to increase 87 percent (Table K.4, Figure K.2). By 2070, the total water demands for the region are projected to increase 24 percent (Table K.4).

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



Existing water supplies

The Lower Colorado (K) Region has a variety of surface water and groundwater supply sources, with nearly three-quarters of the existing water supply in the region associated with surface water (Table K.1, Figure K.3). By 2070 the total water supply is projected to decline 1 percent (Table K.4). This projected decline in supply is primarily a result of surface water declines due to reservoir sedimentation.

Needs

The Lower Colorado (K) Region does not have enough existing water supplies to meet demand in any decade through 2070, with the majority of needs associated with irrigation water user groups (Table K.4). In the event of drought, Region K is projected to have a total water supply need of 374,000 acre-feet in 2020 (Table K.4).

Recommended water management strategies and cost

The Lower Colorado (K) 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 K.4 and K.5, Tables K.2 and K.3). In all, the 265 strategies and 124 projects would provide 745,000 acre-feet of additional water supply by the year 2070 at a total capital cost of \$3.8 billion.

Conservation

Conservation strategies represent 29 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 a need. Water conservation plans are required for entities seeking TWDB loans, new or amended water rights, or current holders of surface diversion permits under certain circumstances.

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

Water supply source	2020	2070
Surface water		
Colorado Run-Of-River	369,000	369,000
Highland Lakes Lake/Reservoir System	337,000	319,000
Remaining surface water sources providing less than 2% each	30,000	33,000
Surface water subtotal:	736,000	721,000
Groundwater		
Gulf Coast Aquifer	171,000	171,000
Carrizo-Wilcox Aquifer	24,000	31,000
Remaining groundwater sources providing less than 2% each	59,000	61,000
Groundwater subtotal:	254,000	263,000
Reuse	8,000	8,000
Region total	998,000	992,000

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

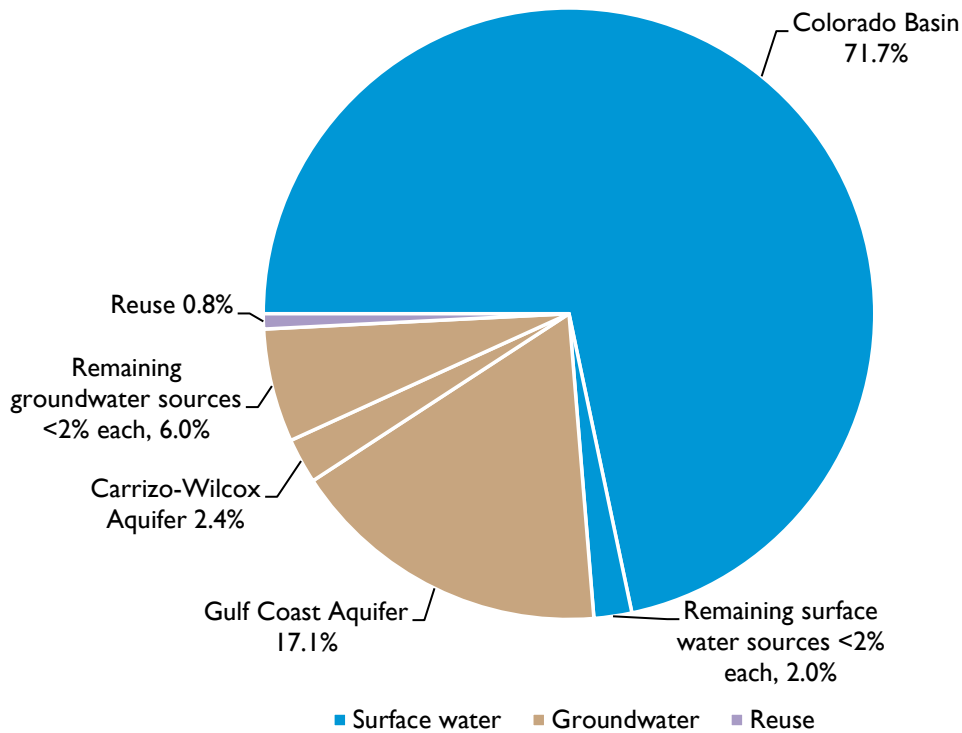


Table K.2 - Ten recommended water management strategy projects with largest capital cost

Recommended water management strategy project	Online decade	Sponsor(s)	Associated capital cost
City of Austin - Rainwater Harvesting	2020	Austin	\$690,167,000
City of Austin - Direct Reuse	2020	Austin	\$536,176,000
LCRA - Prairie Site Off-Channel Reservoir	2030	Lower Colorado River Authority	\$376,000,000
City of Austin - Aquifer Storage and Recovery	2020	Austin	\$312,316,000
LCRA - Mid-Basin Off-Channel Reservoir	2020	Lower Colorado River Authority	\$298,000,000
LCRA - Excess Flows Permit Off-Channel Reservoir	2020	Lower Colorado River Authority	\$298,000,000
LCRA - Lane City Off-Channel Reservoir	2020	Lower Colorado River Authority	\$218,593,000
Irrigation Operations Conveyance Improvements	2020	Irrigation, Colorado	\$22,582,000
Irrigation Operations Conveyance Improvements	2020	Irrigation, Matagorda	\$83,311,000
Irrigation Operations Conveyance Improvements	2020	Irrigation, Wharton	\$49,164,000
New Surface Water Infrastructure - Aqua WSC	2040	Heart of Texas Water Suppliers LLC	\$127,538,000
Irrigation Conservation - On Farm	2020	Irrigation, Colorado	\$14,211,000
Irrigation Conservation - On Farm	2020	Irrigation, Matagorda	\$52,428,000
Irrigation Conservation - On Farm	2020	Irrigation, Wharton	\$30,939,000
<i>Other recommended projects</i>	<i>various</i>	<i>114 various</i>	<i>\$667,783,000</i>
		Total capital cost	\$3,777,208,000

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

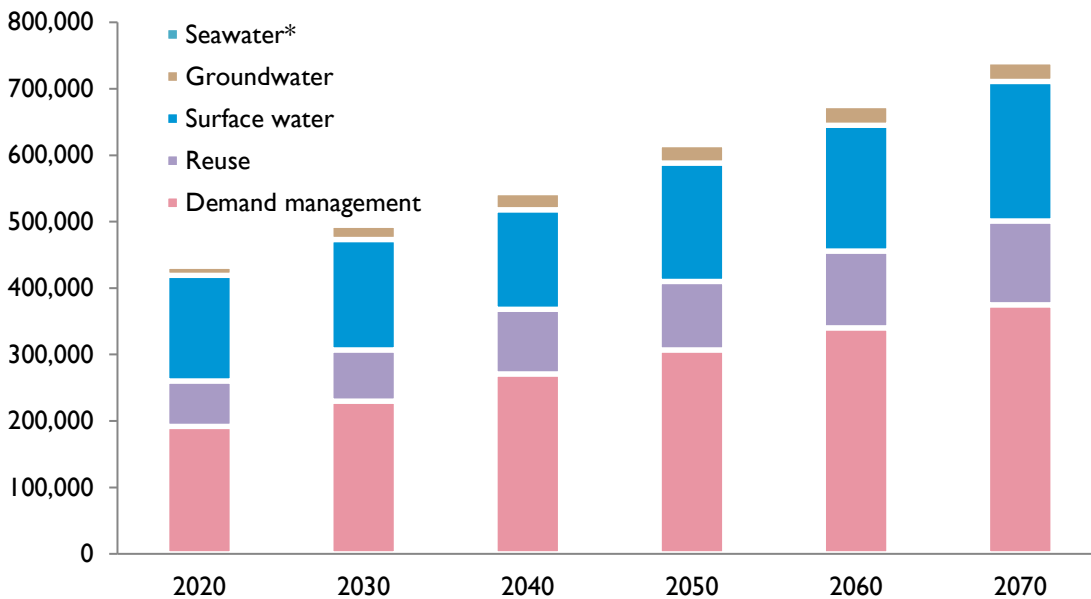
Recommended water management strategy name	Population served by strategy*	Number of water user groups served	Supply in acre-feet per year in 2070
Drought Management	3,189,000	90	157,000
LCRA - Lane City Reservoir	581,000	20	76,000
Irrigation Conservation - Operation Conveyance Improvements	na	3	64,000
City Of Austin Return Flows	1,596,000	5	57,000
City Of Austin - Aquifer Storage And Recovery	1,596,000	1	50,000
Irrigation Conservation - On Farm	na	3	50,000
City Of Austin - Direct Reuse	1,596,000	2	38,000
City Of Austin - Conservation	1,596,000	1	37,000
City Of Austin - Lake Long Enhanced Storage	1,596,000	2	22,000
City Of Austin - Indirect Potable Reuse Through Lady Bird Lake	1,596,000	1	20,000
<i>Other recommended strategies</i>		<i>161</i>	<i>172,000</i>
		Total annual water volume	743,000

* Multiple strategies may serve portions of the same population

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

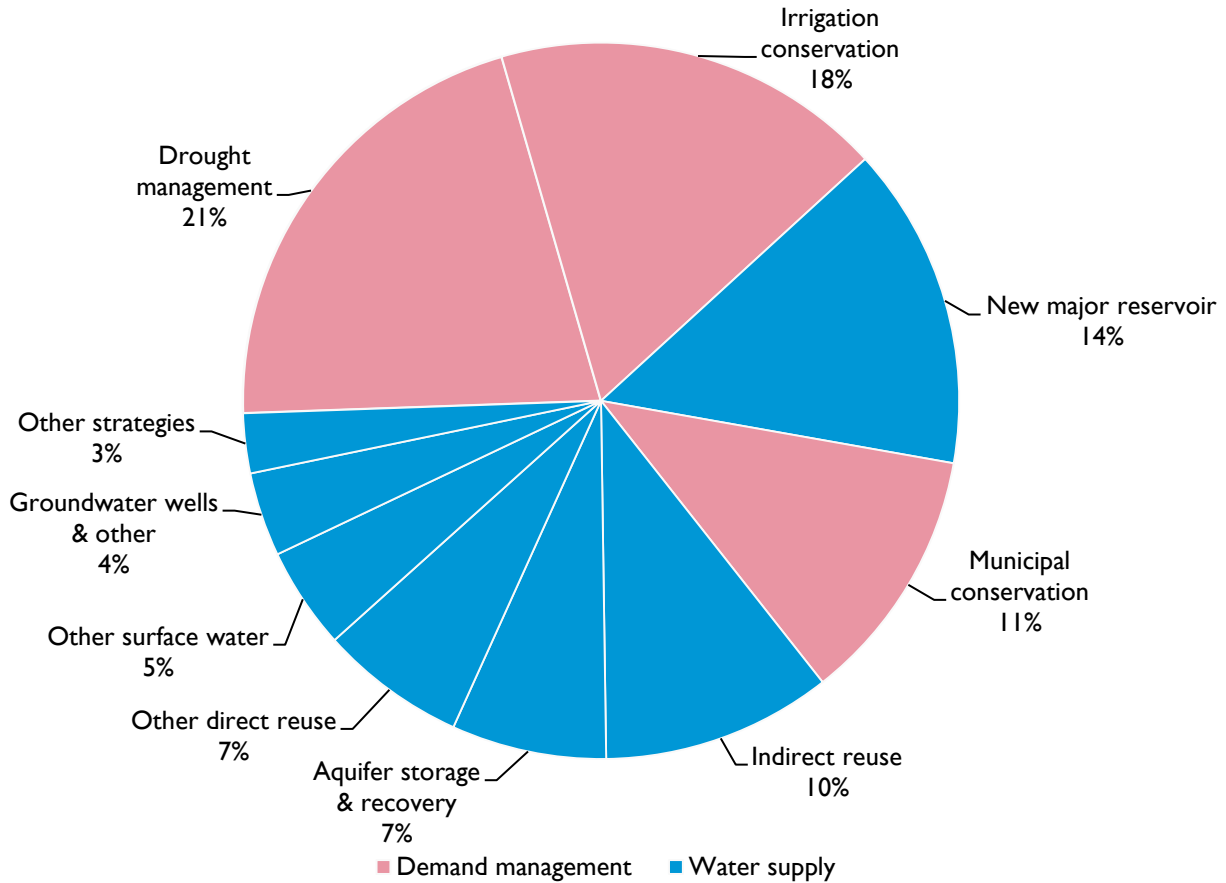
	Decade	2020	2030	2040	2050	2060	2070	change
Population		1,737,000	2,065,000	2,382,000	2,658,000	2,928,000	3,243,000	87%
Existing supplies	Surface water	736,000	737,000	737,000	732,000	726,000	721,000	-2%
	Groundwater	254,000	256,000	259,000	261,000	262,000	263,000	4%
	Reuse	8,000	8,000	8,000	8,000	8,000	8,000	0%
	Total water supplies	999,000	1,001,000	1,004,000	1,002,000	997,000	992,000	-1%
Demands	Municipal	277,000	328,000	379,000	425,000	470,000	523,000	89%
	County-other	30,000	32,000	32,000	34,000	35,000	36,000	20%
	Manufacturing	56,000	70,000	86,000	96,000	106,000	118,000	111%
	Mining	21,000	26,000	28,000	30,000	32,000	35,000	67%
	Irrigation	607,000	591,000	575,000	559,000	544,000	529,000	-13%
	Steam-electric	178,000	185,000	187,000	195,000	200,000	207,000	16%
	Livestock	14,000	14,000	14,000	14,000	14,000	14,000	0%
	Total water demand	1,183,000	1,245,000	1,302,000	1,352,000	1,401,000	1,462,000	24%
Needs	Municipal	7,000	27,000	44,000	64,000	115,000	176,000	2414%
	County-other	1,000	1,000	2,000	3,000	5,000	6,000	500%
	Manufacturing	1,000	1,000	1,000	1,000	1,000	1,000	0%
	Mining	4,000	9,000	10,000	11,000	12,000	14,000	250%
	Irrigation	335,000	320,000	304,000	289,000	274,000	260,000	-22%
	Steam-electric	25,000	27,000	27,000	32,000	42,000	55,000	120%
	Total water needs	374,000	384,000	387,000	400,000	450,000	512,000	37%
Strategy supplies	Municipal	165,000	225,000	274,000	331,000	373,000	411,000	149%
	County-other	9,000	14,000	14,000	15,000	15,000	16,000	78%
	Manufacturing	1,000	1,000	1,000	1,000	1,000	1,000	0%
	Mining	4,000	5,000	6,000	6,000	7,000	7,000	75%
	Irrigation	215,000	207,000	204,000	215,000	223,000	241,000	12%
	Steam-electric	41,000	46,000	48,000	51,000	59,000	69,000	68%
	Total strategy supplies	436,000	498,000	547,000	619,000	678,000	745,000	71%

Figure K.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

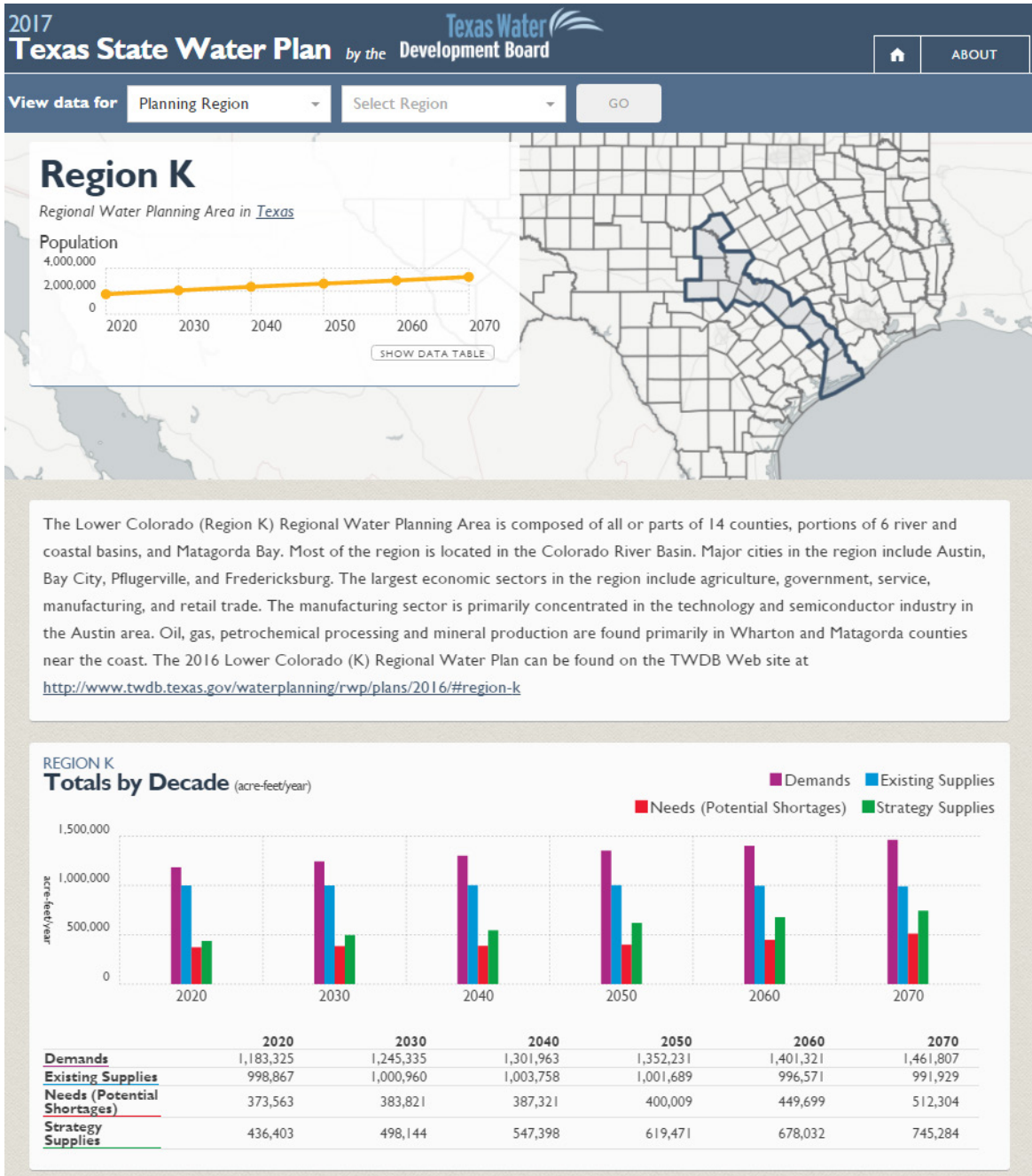
Figure K.5 - Share of recommended water management strategies by strategy type in 2070



Lower Colorado (K) voting planning group members (2012 – 2016)

John Burke, water utilities; Bill Luedeke, groundwater management areas; Jim Barho, environment; David Van Dresae, water districts; Ronald Gertson, small business; Teresa Lutes, municipalities; Rob Ruggiero, small business; Jennifer Walker, environment; Barbara Johnson, industry; Bill Neve, counties; Doug Powell, recreational; W. A. Roeder, agriculture; James Sultemeier, counties; Joseph King, electric-generating utilities; Haskell Simon, agriculture; David Weelock, river authorities; Byron Thedosis, counties; Karen Haschke, public; Jim Brasher, groundwater management areas; Jim Totten, groundwater management areas; John Dupnik, groundwater management areas; Paul Tybor, groundwater management areas; Brandon Wade, municipalities; Ronald Fielser, groundwater management areas; Brenton Lewis, municipalities; Donna Klaeger, counties; Charlie Shell, groundwater management areas; Mike Reagor, municipalities; Lauri Gilliam, municipalities; John Hoffman, electric-generating utilities

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



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