



Summary of the 2016 Brazos G Regional Water Plan¹

Texas' regional water plans

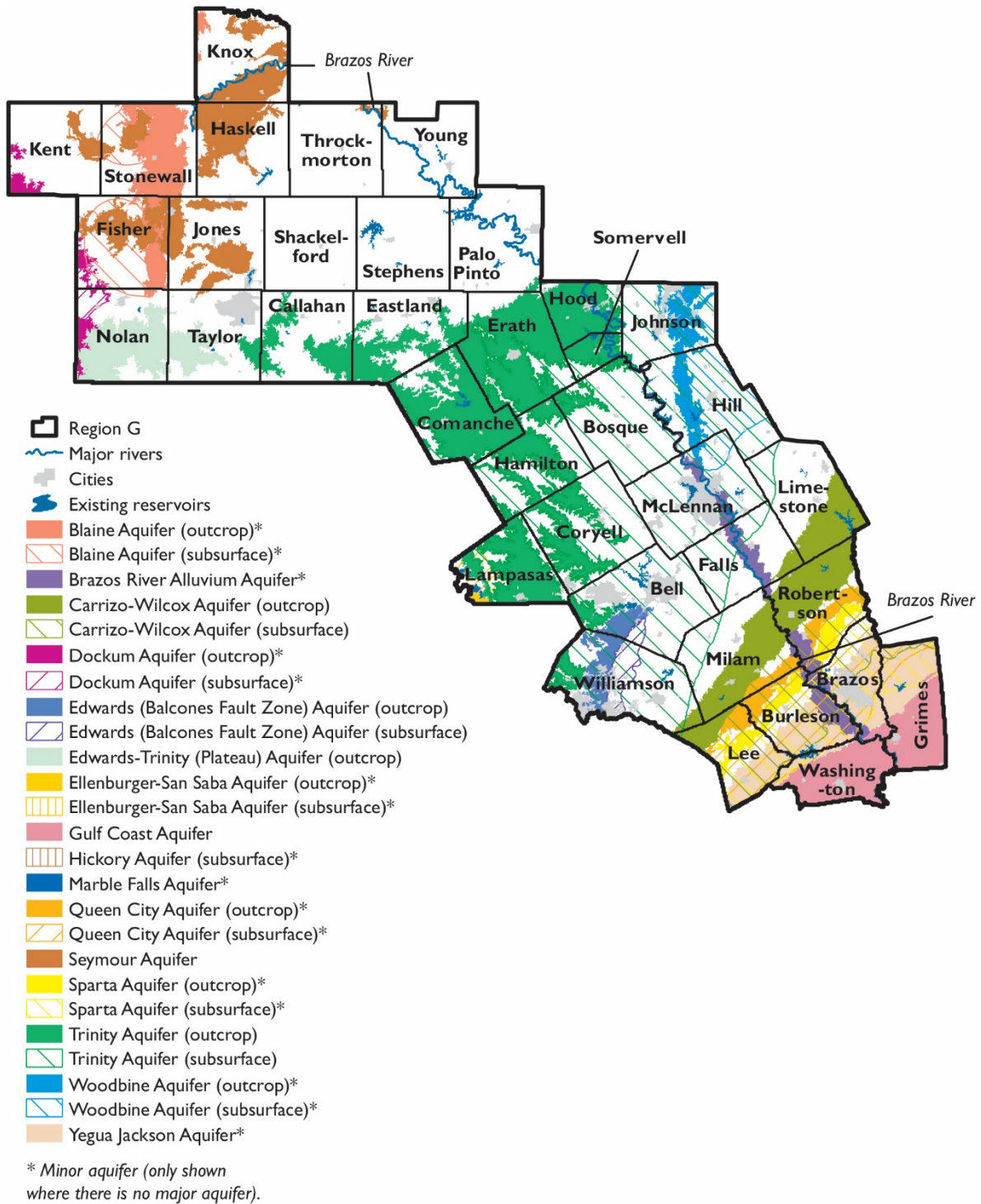
Regional water plans are funded by the Texas Legislature and developed every five years based on conditions that each region would face under a recurrence of a historical drought of record. The 16 regional water plans are developed by local representatives in a public, bottom-up process. The regional 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 Brazos G Regional Water Planning Area includes all or parts of 37 counties (Figure G.1). Over 90 percent of the region lies within the Brazos River Basin, with the Brazos River being the region's primary source of water. The Carrizo-Wilcox, Trinity, and Seymour aquifers provide the largest supplies of groundwater. The largest economic sectors in the region are manufacturing, retail trade, and services. Major cities in the region include Abilene, Bryan, College Station, Killeen, Round Rock, Temple, and Waco. The 2016 Brazos (G) Regional Water Plan can be found on the TWDB website at <http://www.twdb.texas.gov/waterplanning/rwp/plans/2016/#region-g>

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

Figure G.1 - Brazos G regional water planning area



Plan highlights

- Additional supply needed in 2070—566,000 acre-feet per year
- Recommended water management strategy volume in 2070—648,000 acre-feet per year
- 217 recommended water management strategy projects with a total capital cost of \$4.35 billion
- Conservation accounts for 23 percent of 2070 strategy volumes
- Seven new major reservoirs recommended (Brushy Creek, Cedar Ridge, Coryell County Off-Channel Reservoir,* Little River Off-Channel Reservoir, Millers Creek Augmentation,* Throckmorton, and Turkey Peak); two sites indicated * also recommended for designation as unique reservoir sites

Population and water demands

Approximately 8 percent of the state's 2020 population will reside in the Brazos G Region. Between 2020 and 2070, the region's population is projected to increase 84 percent (Table G.4, Figure G.2). By 2070, the total water demands for the region are projected to increase 38 percent (Table G.4).

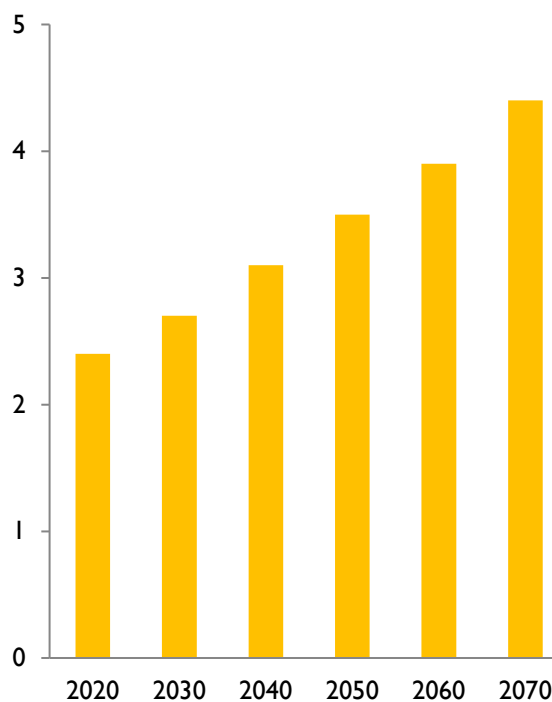
Existing water supplies

Nearly two-thirds of existing water supply in the Brazos G Region is associated with surface water (Table G.1, Figure G.3). By 2070 the total water supply is projected to decline 2 percent (Table G.4), primarily as a result of surface water declines due to reservoir sedimentation.

Needs

Although it appears that the Brazos G Region has enough water supplies to meet demands in 2020, the total water supply volume is not accessible to all water users throughout the region (Table G.4). In the event of drought, Region G is projected to have a total water supply need of 235,000 acre-feet in 2020 (Table G.4). A relatively small volume of municipal needs remain unmet in the region, however an unmet need does not prevent an associated entity from pursuing development of additional water supply.

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



Recommended water management strategies and cost

The Brazos G 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 G.4 and G.5, Tables G.2 and G.3). In all, the 430 strategies and 217 projects would provide 648,000 acre-feet of additional water supply by the year 2070 at a total capital cost of \$4.35 billion.

Conservation

Conservation strategies represent 23 percent of the total volume of water associated with all recommended strategies in 2070. Water conservation was recommended for every municipal water user group with a water use greater than 140 gallons per capita per day, regardless of whether they had a need.

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

Water supply source	2020	2070
Surface water		
Brazos River Authority Main Stem Lake/Reservoir System	214,000	206,000
Brazos River Authority Little River Lake/Reservoir System	184,000	176,000
Brazos Livestock Local Supply	46,000	46,000
Waco Lake/Reservoir	38,000	29,000
Brazos Run-Of-River	24,000	23,000
Hubbard Creek Lake/Reservoir	24,000	23,000
Highland Lakes Lake/Reservoir System	23,000	23,000
Remaining surface water sources providing less than 2% each	129,000	122,000
Surface water subtotal:	682,000	648,000
Groundwater		
Carrizo-Wilcox Aquifer	105,000	112,000
Trinity Aquifer	102,000	101,000
Seymour Aquifer	89,000	80,000
Brazos River Alluvium Aquifer	52,000	52,000
Remaining groundwater sources providing less than 2% each	43,000	45,000
Groundwater subtotal:	391,000	390,000
Reuse	33,000	42,000
Region total	1,106,000	1,080,000

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

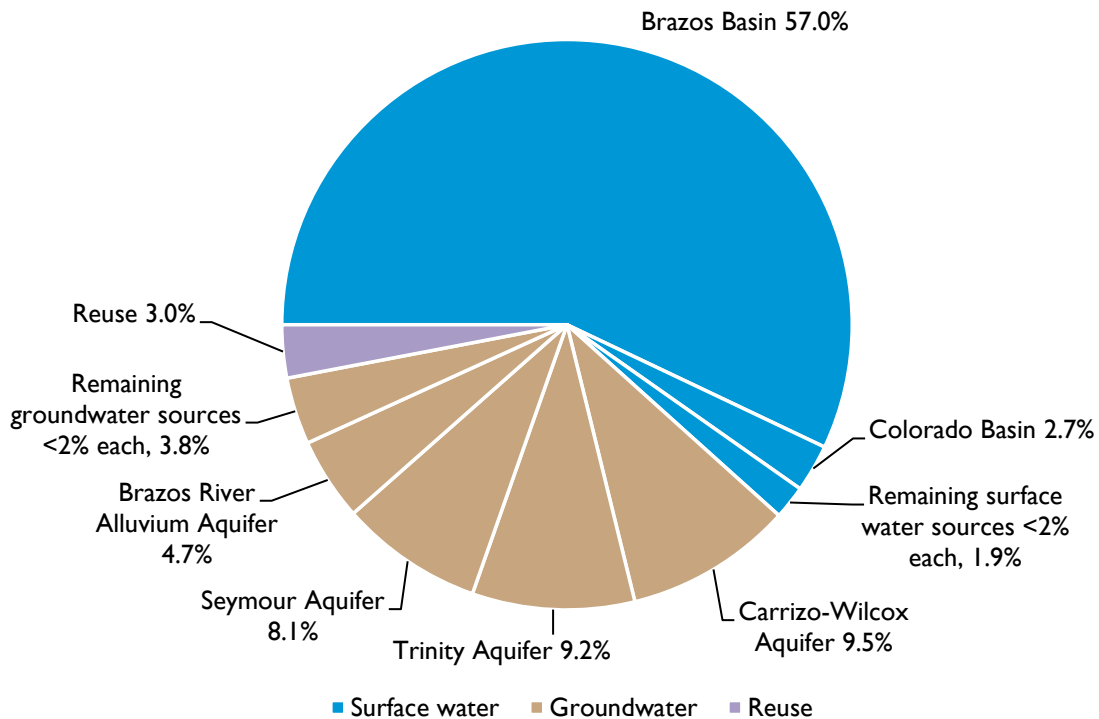


Table G.2 - Ten recommended water management strategy projects with largest capital cost

Recommended water management strategy project	Online decade	Sponsor(s)	Associated capital cost
Lake Granger Augmentation-Phase 2-BRA	2020	Brazos River Authority	\$637,057,000
Little River OCR-BRA	2030	Brazos River Authority	\$487,611,000
Brushy Creek RUA Water Supply	2020	Cedar Park	\$69,666,000
Brushy Creek RUA Water Supply	2020	Leander	\$142,186,000
Brushy Creek RUA Water Supply	2020	Liberty Hill	\$3,555,000
Brushy Creek RUA Water Supply	2020	Round Rock	\$102,995,000
Cedar Ridge Reservoir	2020	Abilene	\$290,868,000
Chloride Control Project-BRA	2020	Brazos River Authority	\$172,652,000
BRA System Ops Infrastructure- Somervell SE	2020	Steam Electric Power, Somervell	\$128,162,000
Carrizo Aquifer Development-Robertson County Irrigation	2020	Irrigation, Robertson	\$128,018,000
Carrizo Aquifer Development-Hutto (Heart of Texas-Lee co.)	2020	Heart of Texas Water Suppliers LLC	\$127,086,000
Lake Granger ASR	2020	Brazos River Authority	\$99,820,000
Lake Granger Augmentation-Phase I-BRA	2020	Brazos River Authority	\$85,170,000
<i>Other recommended projects</i>	<i>various</i>	<i>207 various</i>	<i>\$1,873,113,000</i>
Total capital cost			\$4,347,959,000

Table G.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
BRA System Operation Main Stem	86,000	12	104,000
Brushy Creek RUA-Existing Contracts	786,000	4	40,000
Hood County SE Reallocation to Somerville County SE	na	1	27,000
Little River OCR	588,000	3	26,000
Carrizo Aquifer Development	315,000	10	25,000
Industrial Water Conservation	na	52	22,000
Cedar Ridge Reservoir	177,000	11	21,000
Simsboro - Brazos County ASR	182,000	1	20,000
Reduce Demand Through Alternative Cooling	na	2	17,000
McLennan Co. SE Reduction to Limestone Co. SE	na	1	17,000
<i>Other recommended strategies</i>		<i>359</i>	<i>322,000</i>
Total annual water volume			641,000

* Multiple strategies may serve portions of the same population

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

	Decade	2020	2030	2040	2050	2060	2070	change
Population		2,371,000	2,721,000	3,097,000	3,495,000	3,918,000	4,351,000	84%
Existing supplies	Surface water	682,000	676,000	671,000	662,000	657,000	649,000	-5%
	Groundwater	392,000	391,000	386,000	386,000	390,000	391,000	0%
	Reuse	33,000	35,000	36,000	39,000	40,000	42,000	27%
	Total water supplies	1,107,000	1,102,000	1,093,000	1,087,000	1,088,000	1,082,000	-2%
Demands	Municipal	363,000	408,000	455,000	512,000	570,000	630,000	74%
	County-other	40,000	43,000	48,000	50,000	57,000	63,000	58%
	Manufacturing	22,000	25,000	27,000	30,000	32,000	35,000	59%
	Mining	62,000	70,000	69,000	71,000	75,000	81,000	31%
	Irrigation	292,000	284,000	277,000	269,000	262,000	256,000	-12%
	Steam-electric	239,000	273,000	289,000	323,000	341,000	362,000	51%
	Livestock	50,000	50,000	50,000	50,000	50,000	50,000	0%
	Total water demand	1,068,000	1,152,000	1,215,000	1,303,000	1,387,000	1,478,000	38%
Needs	Municipal	23,000	51,000	88,000	134,000	181,000	232,000	909%
	County-other	9,000	11,000	14,000	16,000	21,000	27,000	200%
	Manufacturing	7,000	7,000	9,000	10,000	11,000	12,000	71%
	Mining	42,000	50,000	50,000	54,000	58,000	64,000	52%
	Irrigation	83,000	83,000	83,000	77,000	70,000	67,000	-19%
	Steam-electric	71,000	88,000	99,000	129,000	144,000	163,000	130%
	Total water needs	235,000	291,000	344,000	419,000	486,000	566,000	141%
Strategy supplies	Municipal	151,000	173,000	198,000	235,000	278,000	322,000	113%
	County-other	11,000	14,000	18,000	19,000	25,000	31,000	182%
	Manufacturing	8,000	8,000	9,000	11,000	12,000	13,000	63%
	Mining	24,000	25,000	24,000	24,000	22,000	22,000	-8%
	Irrigation	46,000	50,000	54,000	52,000	38,000	28,000	-39%
	Steam-electric	144,000	166,000	177,000	201,000	214,000	232,000	61%
	Total strategy supplies	384,000	436,000	480,000	542,000	589,000	648,000	69%

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

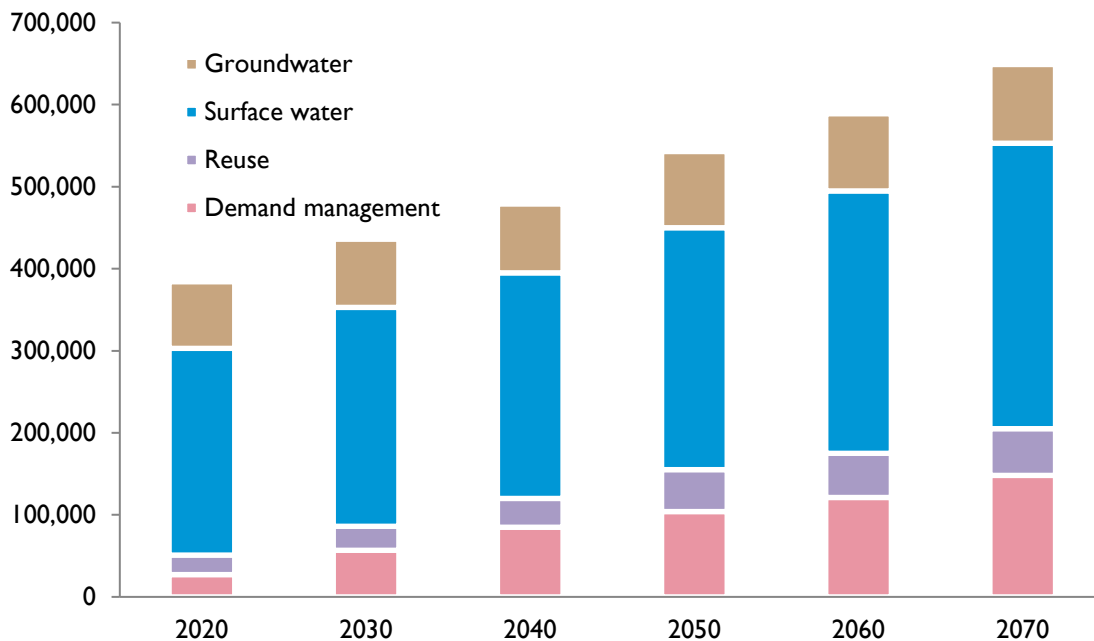
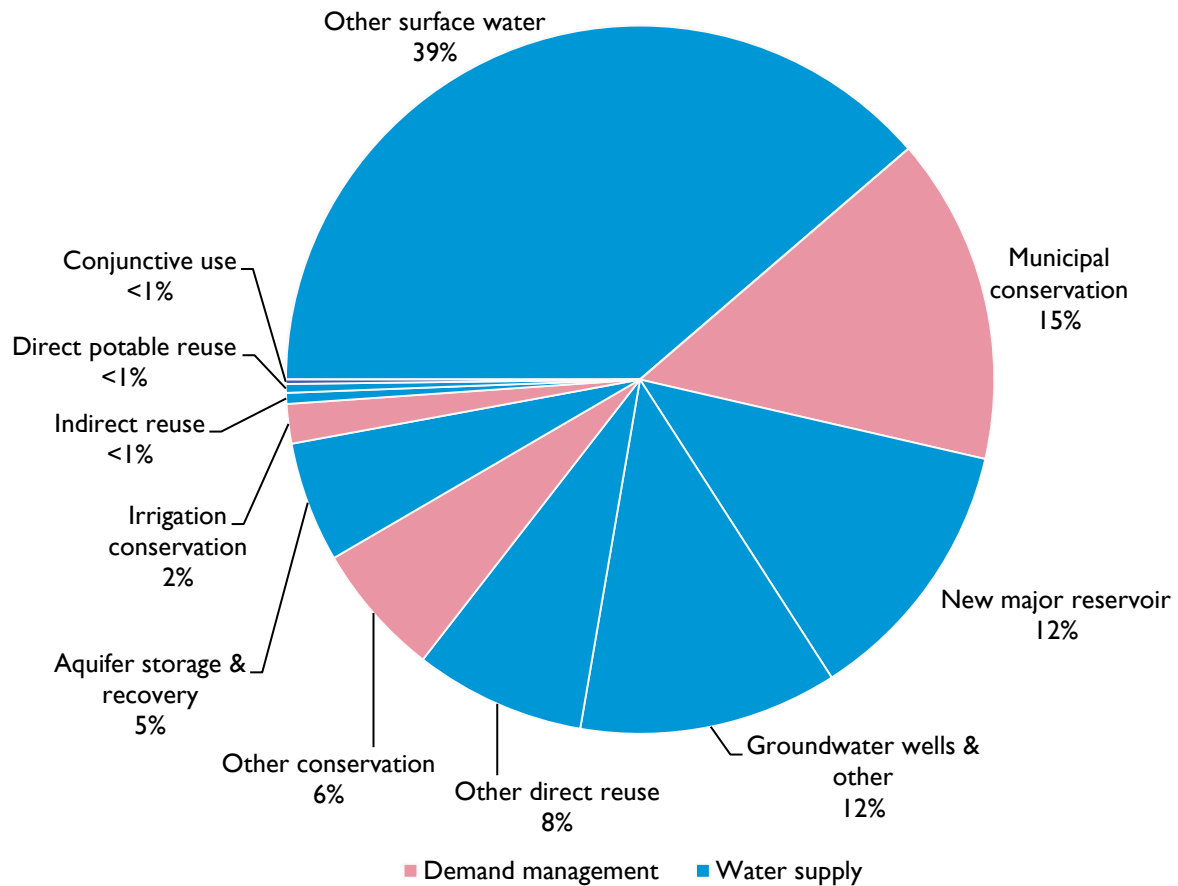


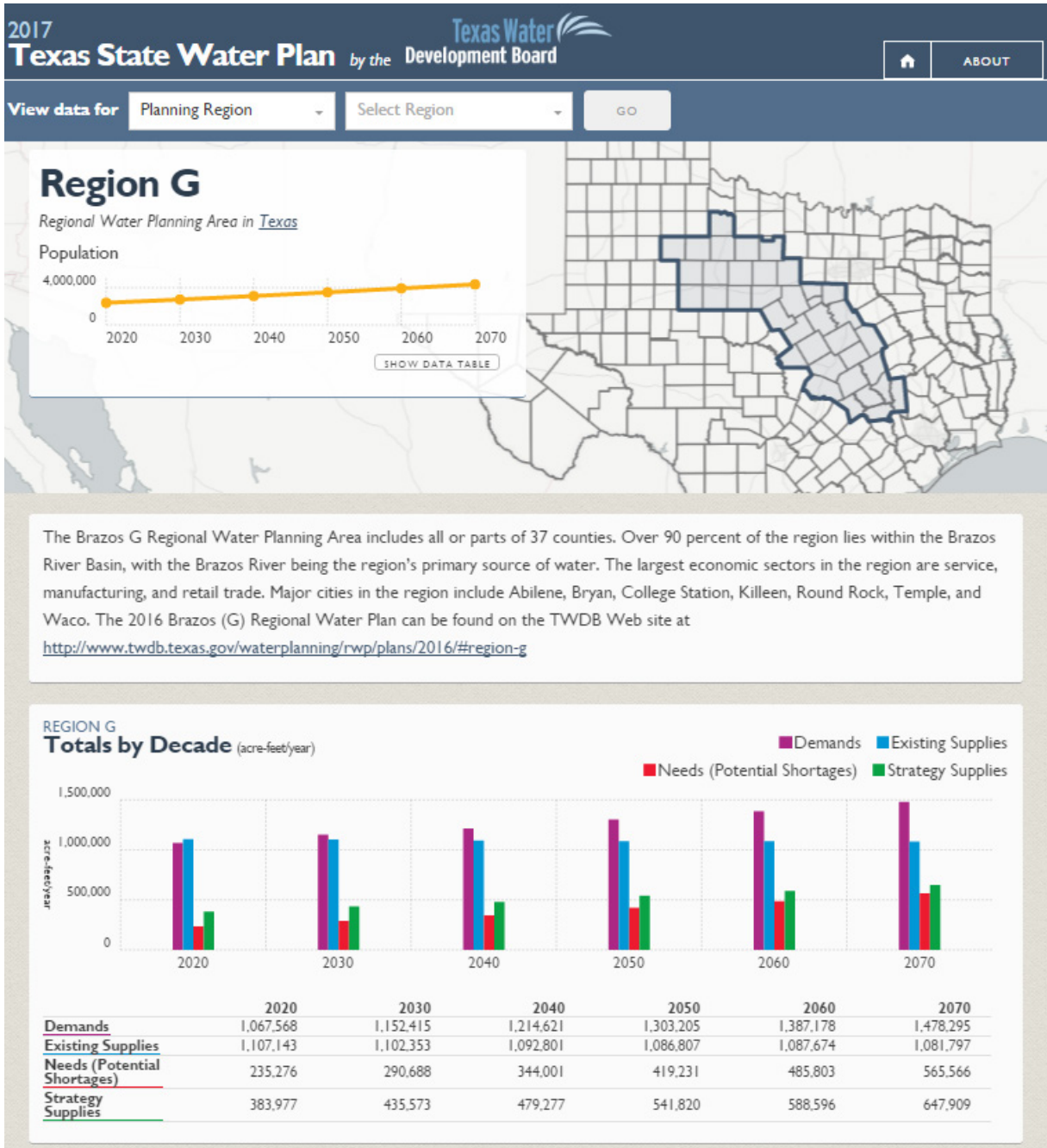
Figure G.5 - Share of recommended water management strategies by strategy type in 2070



Brazos G voting planning group members (2012 – 2016)

Wayne Wilson, agriculture (Chair); Dale Adams, groundwater management areas; Charles Beseda, water utilities; David Blackburn, municipalities; Jim Briggs, municipalities; Tim Brown, counties; Tom Clark, municipalities; Joe Cooper, water districts; Alva Cox, municipalities; Travis Floyd, counties; Phil Ford, river authorities; Larry Groth, municipalities; James Hodson, industry; Zach Holland, groundwater management areas; Kelly Kinard, water districts; Mike McGuire, groundwater management areas; Gary Newman, public; Tommy O'Brien, municipalities; Judy Parker, groundwater management areas; Brian Patrick, electric-generating utilities; Gail Peek, small business; Sheril Smith, environment; Gary Spicer, electric-generating utilities; Dale Spurgin, agriculture; Mike Sutherland, counties; Randy Waclawczyk, industry; Kevin Wagner, environment; Kathleen J. Webster, water districts; Kenny Weldon, municipalities; Gary Westbrook, groundwater management areas

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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