



Summary of the 2021 Brazos G Regional Water Plan¹

Texas' regional water plans

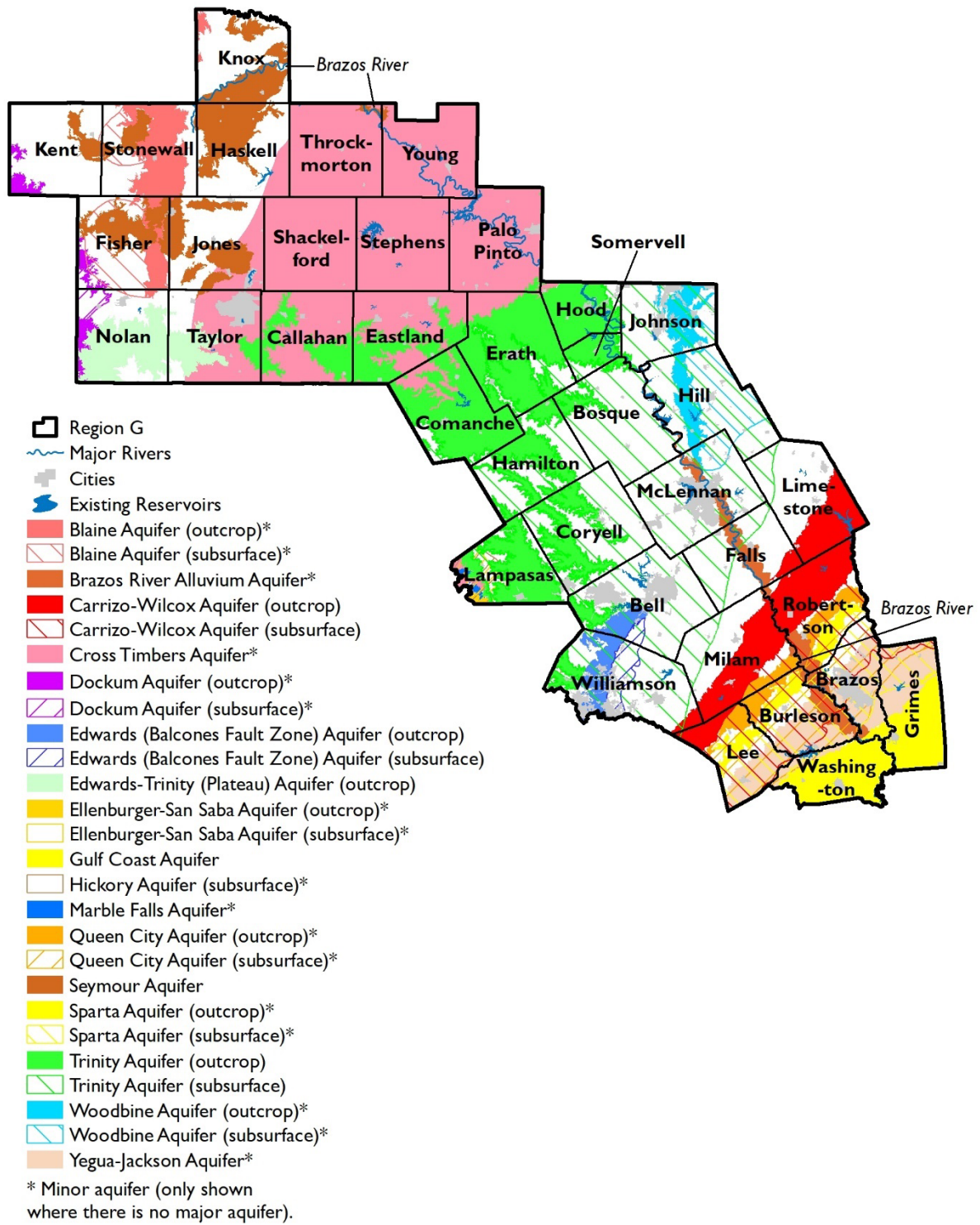
Regional water plans are funded by the Texas Legislature and developed every five years based on conditions that each region would face under a recurrence of a historical drought of record. The 16 regional water plans are developed by local representatives in a public, bottom-up process. The regional 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). About 90 percent of the region lies within the Brazos River Basin, with the Brazos River being the region's primary source of water. The Brazos River Alluvium, 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, Cedar Park, College Station, Killeen, Round Rock, Temple, and Waco. The 2021 Brazos G Regional Water Plan can be found on the TWDB website at <http://www.twdb.texas.gov/waterplanning/rwp/plans/2021/#region-g>.

¹ Planning numbers presented throughout this document and as compared to the 2022 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—478,000 acre-feet per year
- Recommended water management strategy volume in 2070—492,000 acre-feet per year
- 221 recommended water management strategy projects with a total capital cost of \$5.5 billion
- Conservation accounts for 27 percent of 2070 strategy volumes
- Seven new major and minor reservoirs recommended (Brushy Creek, Cedar Ridge, Coryell County Off-Channel Reservoir,* Groesbeck Off-Channel Reservoir, Lake Creek Reservoir (also known as Millers Creek Off-Channel Reservoir),* New Throckmorton, and Turkey Peak); sites indicated * also recommended for designation as unique reservoir sites

Population and water demands

Approximately 8 percent of the state's 2020 population were projected to 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 27 percent (Table G.4).

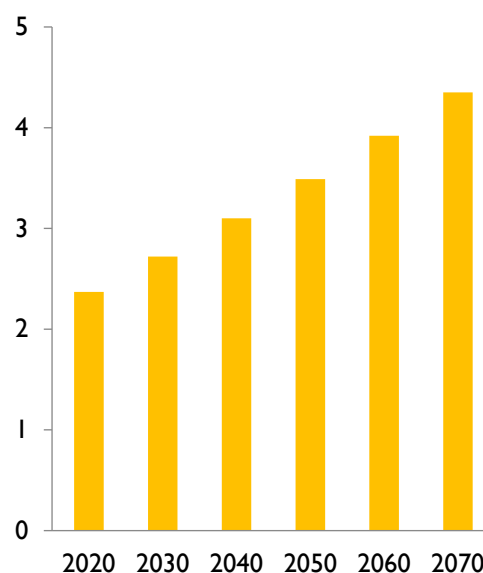
Existing water supplies

Over half of existing water supply in the Brazos G Region is associated with surface water (Table G.1, Figure G.3). By 2070, the total existing water supply is projected to decline 1 percent (Table G.4), due primarily to anticipated reservoir sedimentation.

Needs

On a region-wide basis, the Brazos G Region does not have enough water supplies to meet the demands of water users through 2070 (Table G.4). In the event of drought, the region is projected to have a total water supply need of 211,000 acre-feet in 2020, increasing to 478,000 acre-feet by 2070 (Table G.4).

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 526 strategies and 221 projects would provide 492,000 acre-feet of additional water supply by the year 2070 at a total capital cost of \$5.5 billion.

Recommended water management strategies meet all identified needs in the plan except for approximately 166,000 acre-feet per year associated with irrigation, manufacturing, mining, municipal, and steam-electric power uses in 2020. Unmet needs decrease to approximately 144,000 acre-feet per year in 2070 and are associated with irrigation, mining, and steam-electric power uses. The Region G plan demonstrated that municipal unmet needs would not pose a threat to public health, safety, and welfare in the event of a repeat of the drought of record. An unmet need does not prevent an associated entity from pursuing development of additional water supply.

Conservation

Conservation strategies represent 27 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. Water conservation was also recommended for irrigation, manufacturing, and mining water users with identified needs.

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

Water supply source	2020	2070
Surface water		
Brazos River Authority Little River Lake/Reservoir System	155,000	167,000
Brazos River Authority Main Stem Lake/Reservoir System	134,000	105,000
Brazos Livestock Local Supply	47,000	47,000
Waco Lake/Reservoir	45,000	45,000
BRA System Operations Permit Supply	43,000	64,000
Brazos Run-of-River	27,000	26,000
Highland Lakes Lake/Reservoir System	27,000	28,000
Remaining surface water (sources providing less than 2% each)	106,000	94,000
Surface water total	585,000	575,000
Groundwater		
Brazos River Alluvium Aquifer	149,000	145,000
Carrizo-Wilcox Aquifer	113,000	114,000
Trinity Aquifer	100,000	100,000
Seymour Aquifer	77,000	75,000
Remaining groundwater (sources providing less than 2% each)	48,000	51,000
Groundwater total	487,000	484,000
Reuse	31,000	32,000
Region total	1,102,000	1,092,000

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

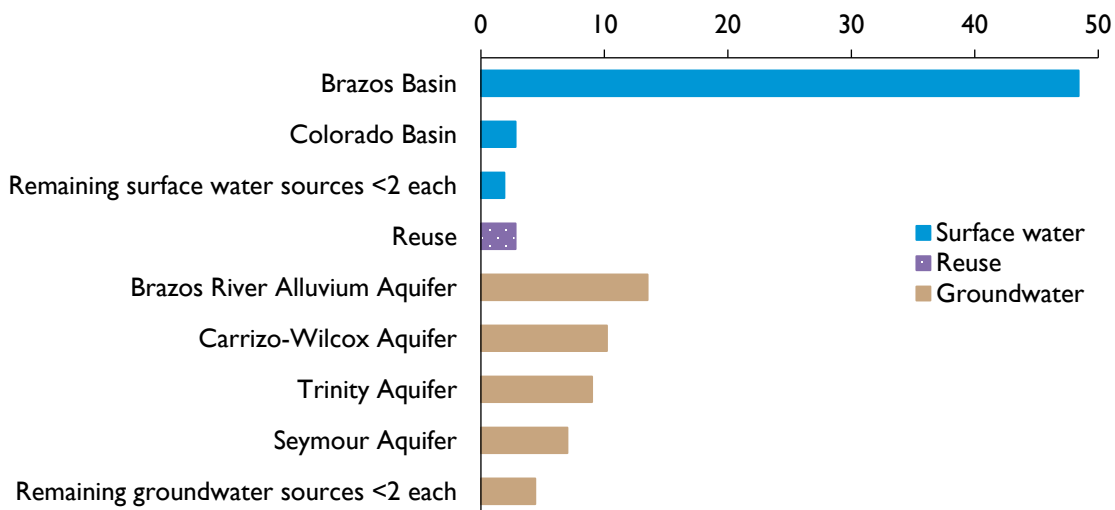


Table G.2 - Ten recommended water management strategy projects with largest capital cost

Recommended water management strategy project	Online Decade	Sponsor(s)	Associated capital cost
Lake Granger Augmentation-Phase 2-BRA	2020	Brazos River Authority	\$845,564,000
Williamson County Groundwater	2030	Brazos River Authority	\$415,016,000*
Brushy Creek RUA Water Supply	2020	Cedar Park; Round Rock; Liberty Hill; Leander	\$326,793,406
Lake Georgetown ASR	2040	Georgetown	\$306,276,000
Cedar Ridge Reservoir	2020	Abilene	\$283,646,000
NCTMWA Lake Creek Reservoir	2030	North Central Texas Municipal Water Authority	\$259,001,000
Lake Whitney Reallocation to Williamson County	2050	Brazos River Authority	\$253,824,000
Alcoa Property Supply	2050	Georgetown	\$241,689,000
Municipal Water Conservation - Georgetown	2030	Georgetown	\$162,839,000
Lake Granger ASR	2020	Brazos River Authority	\$116,431,000
Other recommended projects	various	211 various	\$2,274,764,654
Total capital cost			\$5,485,844,060

* Capital costs associated with the Williamson County Groundwater project have been corrected and may vary from those presented in the 2021 Region G Regional Water Plan.

Table G.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
Brushy Creek RUA - Existing Contracts	522,000	4	36,000
Municipal Water Conservation - Georgetown	364,000	1	29,000
Storage Reallocation of Lake Whitney	296,000	1	26,000
Irrigation Water Conservation	na	20	19,000
Trinity Aquifer Development	228,000	24	19,000
Alcoa Property Supply	465,000	2	18,000
Cedar Ridge Reservoir	167,000	9	14,000
Lake Granger Augmentation - Ph 2	719,000	22	13,000
Municipal Water Conservation - Temple	154,000	1	12,000
Municipal Water Conservation - Waco	179,000	1	12,000
Other recommended strategies	na	441	293,000
Total annual water volume			492,000

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 G.4 - Population, existing 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	585,000	586,000	586,000	584,000	581,000	575,000	-2%
	Groundwater	487,000	482,000	481,000	482,000	486,000	484,000	-1%
	Reuse	31,000	31,000	31,000	31,000	31,000	32,000	3%
	Total water supplies	1,102,000	1,098,000	1,098,000	1,097,000	1,098,000	1,092,000	-1%
Demands	Municipal	381,000	432,000	482,000	538,000	589,000	643,000	69%
	County-other	26,000	23,000	28,000	33,000	49,000	64,000	146%
	Manufacturing	13,000	16,000	16,000	16,000	16,000	16,000	23%
	Mining	62,000	66,000	59,000	58,000	59,000	61,000	-2%
	Irrigation	359,000	359,000	354,000	353,000	356,000	356,000	-1%
	Steam-electric	233,000	233,000	233,000	233,000	233,000	233,000	0%
	Livestock	48,000	48,000	48,000	48,000	48,000	48,000	0%
	Total water demand	1,121,000	1,178,000	1,220,000	1,279,000	1,350,000	1,422,000	27%
Needs	Municipal	27,000	63,000	104,000	153,000	196,000	250,000	826%
	County-other	4,000	2,000	6,000	10,000	26,000	41,000	925%
	Manufacturing	1,000	3,000	3,000	3,000	2,000	2,000	100%
	Mining	30,000	32,000	29,000	30,000	31,000	33,000	10%
	Irrigation	76,000	82,000	77,000	75,000	76,000	79,000	4%
	Steam-electric	73,000	73,000	73,000	73,000	73,000	73,000	0%
	Livestock	<500	<500	<500	<500	<500	<500	0%
	Total water needs	211,000	255,000	291,000	345,000	404,000	478,000	127%
Strategy supplies	Municipal	74,000	225,000	279,000	310,000	342,000	374,000	405%
	County-other	4,000	14,000	19,000	22,000	37,000	53,000	1225%
	Manufacturing	3,000	4,000	4,000	4,000	4,000	4,000	33%
	Mining	19,000	20,000	19,000	18,000	18,000	18,000	-5%
	Irrigation	17,000	26,000	31,000	31,000	31,000	31,000	82%
	Steam-electric	2,000	2,000	2,000	11,000	11,000	11,000	450%
	Livestock	<500	<500	<500	<500	<500	<500	0%
	Total strategy supplies	119,000	291,000	353,000	396,000	443,000	492,000	313%

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

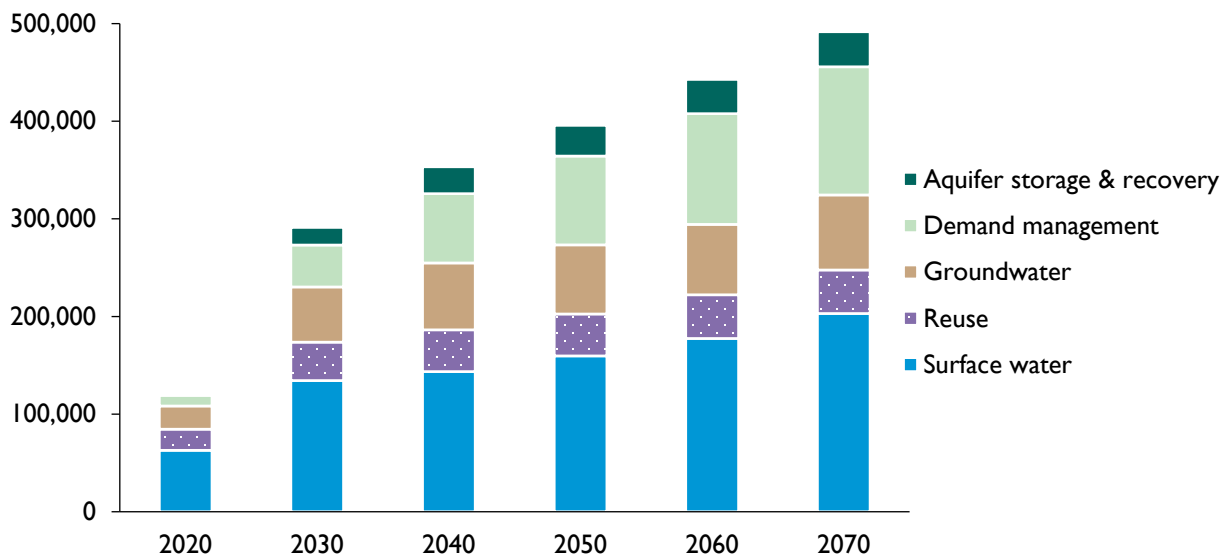
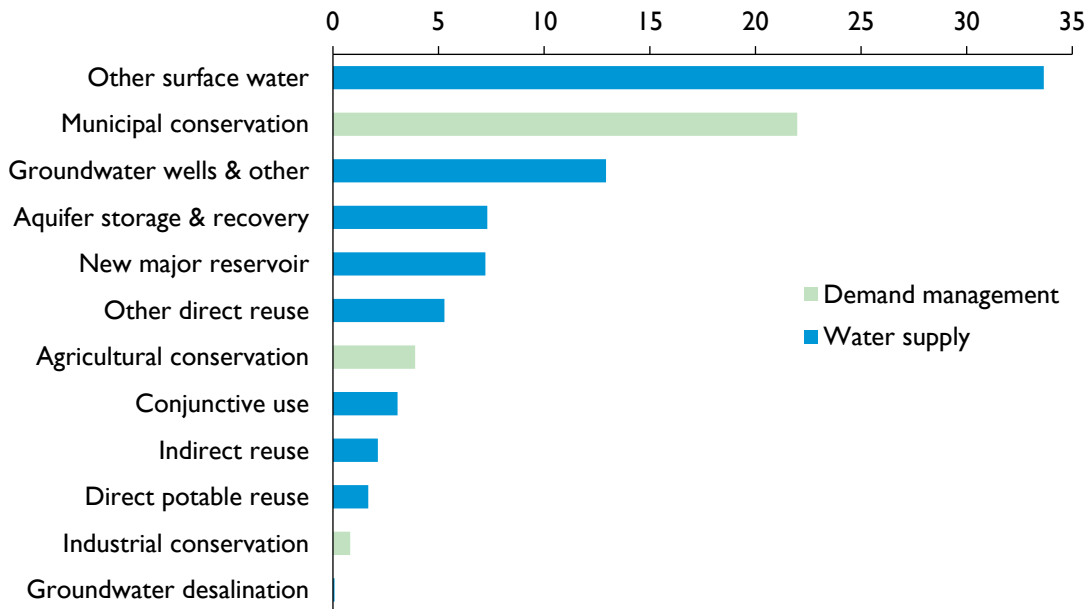


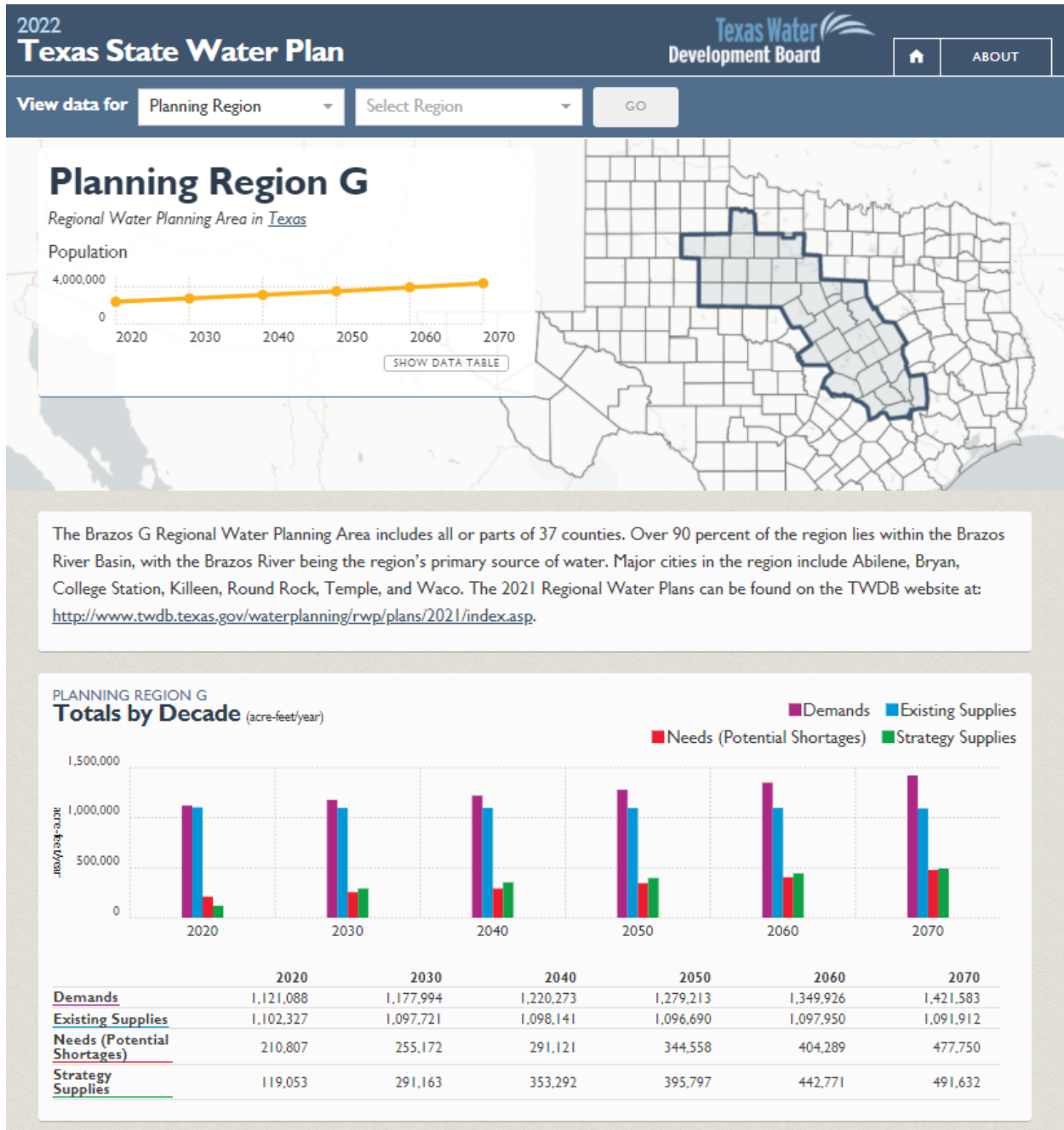
Figure G.5 - Share of recommended water management strategies by strategy type in 2070 (percent)



Brazos G voting planning group members (2017–2021)

Wayne Wilson, agriculture (Chair); Dirk Aaron, groundwater management areas; Dale Adams, groundwater management areas; Charles Beseda, water utilities; David Blackburn, counties; Jim Briggs, municipalities; Tim Brown, counties; David Collinsworth, river authorities; Joe Cooper, water districts; Alva Cox, municipalities; Luci Dunn, environment; Scott Felton, counties; Travis Floyd, counties; Phil Ford, river authorities; Zach Holland, groundwater management areas; Kelly Kinard, water districts; Mike McGuire, groundwater management areas; Gary Myers, counties; Gary Newman, public; Tommy O'Brien, municipalities; Judy Parker, groundwater management areas; Gail Peek, small business; Gary Spicer, electric generating utilities; Dale Spurgin, agriculture; Wiley Stem, municipalities; Mike Sutherland, counties; Terrill Tomacek, industries; Kevin Wagner, environment; Kenny Weldon, municipalities; and Gary Westbrook, groundwater management areas.

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



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