



Summary of the 2021 Coastal Bend (N) Regional Water Plan¹

Texas’ regional water plans

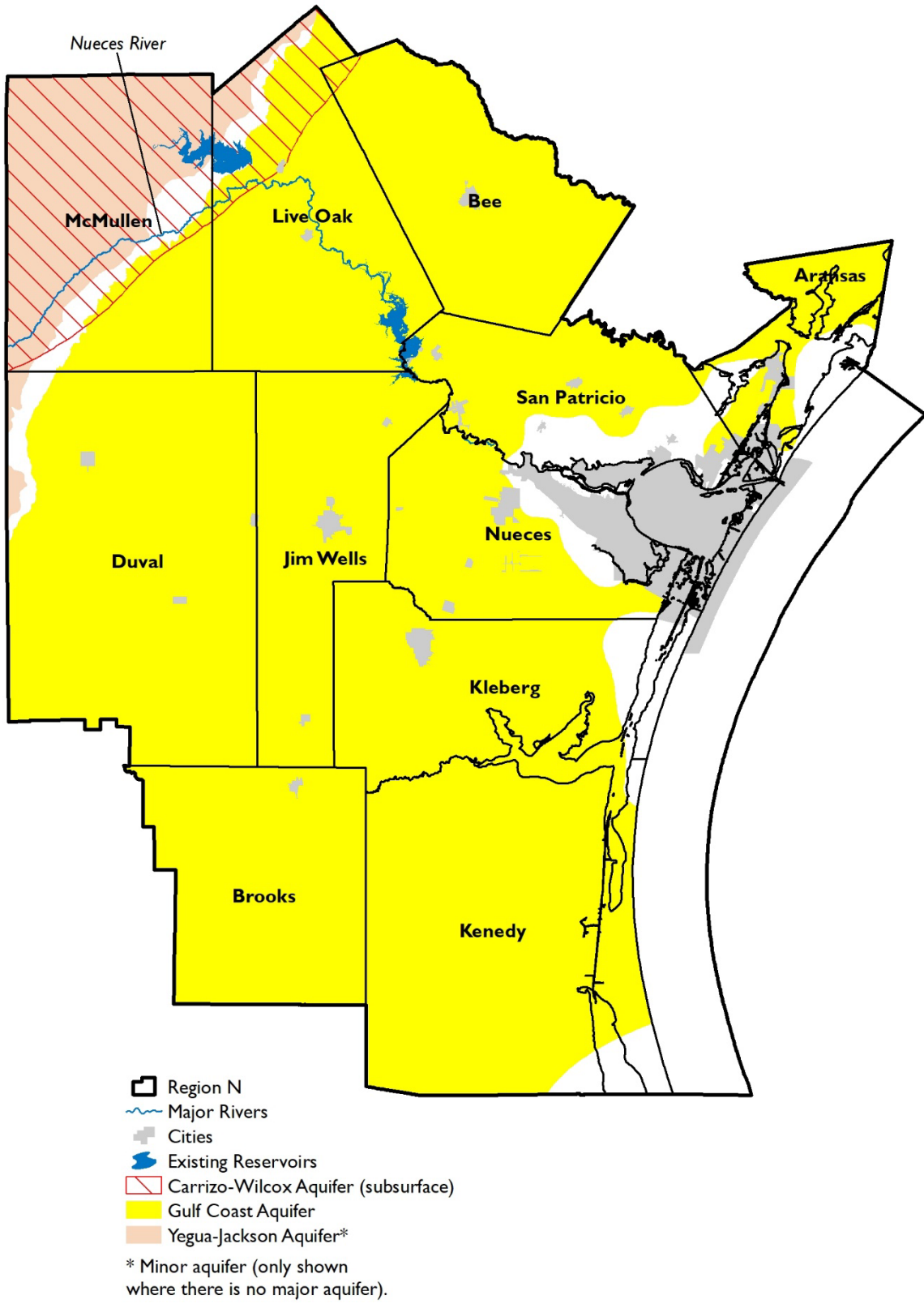
Regional water plans are funded by the Texas Legislature and developed every five years based on conditions that each region would face under a recurrence of a historical drought of record. The 16 regional water plans are developed by local representatives in a public, bottom-up process. The regional 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 Coastal Bend (N) Regional Water Planning Area includes all or parts of 11 counties, portions of the Nueces River Basin and its adjoining coastal basins, including the Nueces Estuary (Figure N.1). Most of the water supplies for the region are provided from surface water in the Choke Canyon/Lake Corpus Christi/Lake Texana/Mary Rhodes Pipeline Phase II system through the City of Corpus Christi, which is the region’s largest metropolitan area. The Gulf Coast Aquifer provides the largest supply of groundwater. The region’s economic activities include manufacturing, construction, agriculture, health care, real estate, mining, and oil and gas extraction. The 2021 Coastal Bend (N) Regional Water Plan can be found on the TWDB website at <http://www.twdb.texas.gov/waterplanning/rwp/plans/2021/#region-n>.

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

Figure N.1 - Coastal Bend (N) regional water planning area



Plan highlights

- Additional supply needed in 2070—49,000 acre-feet per year
- Recommended water management strategy volume in 2070—282,000 acre-feet per year
- 64 recommended water management strategy projects with a total capital cost of \$3.3 billion
- Conservation accounts for 13 percent of 2070 strategy volumes
- Seawater desalination accounts for 64 percent, groundwater desalination accounts for 9 percent, and aquifer storage and recovery accounts for 5 percent of 2070 recommended strategy volumes.

Population and water demands

Approximately 2 percent of the state’s 2020 population were projected to reside in the Coastal Bend (N) Region. Between 2020 and 2070, the region’s population is projected to increase 21 percent (Table N.4, Figure N.2). By 2070, the total water demands for the region are projected to increase 9 percent (Table N.4).

Existing water supplies

The Coastal Bend (N) Region has a variety of surface water and groundwater supply sources, with nearly three-quarters of the 2020 existing water supply in the region associated with surface water (Table N.1, Figure N.3). By 2070, the total existing water supply is projected to decrease 5 percent (Table N.4). This projected decrease in supply is due primarily to anticipated drought conditions and reservoir sedimentation.

Needs

On a region-wide basis, Region N has water supply deficits from 2020 through 2070, with the majority of needs associated with manufacturing (Table N.4). In the event of drought, Region N is projected to have a total water supply need of 49,000 acre-feet in 2070 (Table N.4).

Recommended water management strategies and cost

The Coastal Bend (N) 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 N.4 and N.5, Tables N.2 and N.3). In all, the 83 strategies and 64 projects would provide 282,000 acre-feet of additional water supply by the year 2070 at a total capital cost of \$3.3 billion. Recommended water management strategies meet all identified needs in the plan.

Conservation

Conservation strategies represent about 13 percent of the total volume of water associated with all recommended strategies in 2070. Municipal water conservation (5-year and 10-year goals) was recommended for every municipal water user group with water use greater than 140 gallons per capita per day. Irrigation, manufacturing, and mining water user groups with identified needs were recommended to reduce water use by 15 percent by 2070.

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

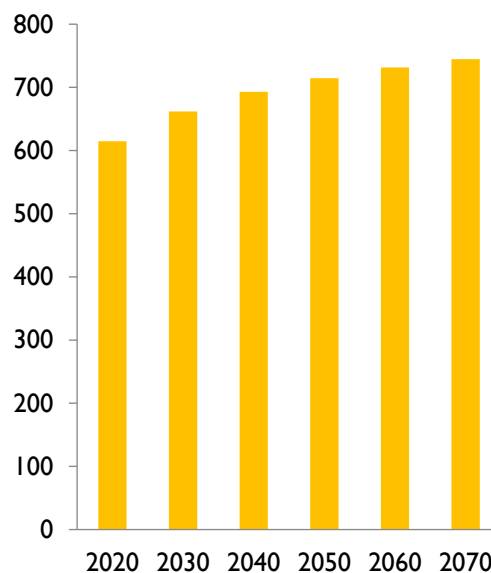


Table N.1 - Existing water supplies for 2020 and 2070 (acre-feet per year)

Water supply source	2020	2070
Surface water		
Corpus Christi-Choke Canyon Lake/Reservoir System	109,000	98,000
Colorado Run-of-River	35,000	35,000
Texana Lake/Reservoir	31,000	31,000
Remaining surface water (sources providing less than 2% each)	3,000	3,000
Surface water total	178,000	167,000
Groundwater		
Gulf Coast Aquifer System	56,000	57,000
Remaining groundwater (sources providing less than 2% each)	4,000	1,000
Groundwater total	60,000	58,000
Reuse		
	2,000	2,000
Region total	240,000	227,000

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

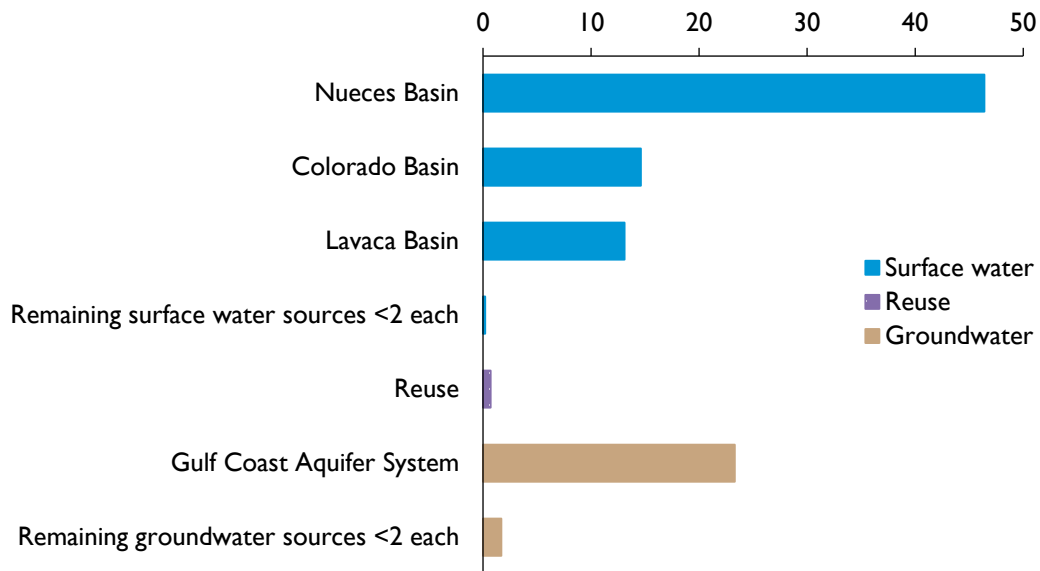


Table N.2 - Ten recommended water management strategy projects with largest capital cost

Recommended water management strategy project	Online Decade	Sponsor(s)	Associated capital cost
Port of Corpus Christi Authority Seawater Desalination - Harbor Island	2030	Port of Corpus Christi Authority	\$802,807,000
Poseidon Regional Seawater Desalination Project at Ingleside	2030	Poseidon Water	\$724,984,000
Port of Corpus Christi Authority Seawater Desalination - La Quinta Channel	2030	Port of Corpus Christi Authority	\$457,732,000
City of Corpus Christi Seawater Desalination (La Quinta)	2030	Corpus Christi	\$420,372,000
City of Corpus Christi Seawater Desalination (Inner Harbor)	2030	Corpus Christi	\$236,693,000
Evangeline/Laguna Treated Groundwater Project	2030	San Patricio MWD; Corpus Christi	\$157,550,000
Regional Industrial Wastewater Reuse Plan (SPMWD)	2030	San Patricio MWD	\$115,502,000
City of Corpus Christi ASR	2030	Corpus Christi	\$90,199,000
O.N. Stevens WTP Improvements	2020	Corpus Christi	\$68,212,000
Municipal Conservation - Corpus Christi	2030	Corpus Christi	\$53,940,000
<i>Other recommended projects</i>	<i>various</i>	<i>54 various</i>	<i>\$148,504,317</i>
Total capital cost			\$3,276,495,317

Table N.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
Port of Corpus Christi Authority Seawater Desalination - Harbor Island	na	2	56,000
Poseidon Regional Seawater Desalination Project at Ingleside	na	1	56,000
Port of Corpus Christi Authority Seawater Desalination - La Quinta Channel	na	1	34,000
Evangeline/Laguna Treated Groundwater Project	na	2	23,000
City of Corpus Christi Seawater Desalination (La Quinta)	na	1	22,000
Manufacturing Water Conservation	na	5	15,000
City of Corpus Christi ASR	na	1	15,000
City of Corpus Christi Seawater Desalination (Inner Harbor)	405,000	2	11,000
Municipal Conservation - Corpus Christi	405,000	1	11,000
Regional Industrial Wastewater Reuse Plan (SPMWD)	na	1	5,000
<i>Other recommended strategies</i>	<i>na</i>	<i>66</i>	<i>35,000</i>
Total annual water volume			282,000

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

	Decade	2020	2030	2040	2050	2060	2070	Change
	Population	615,000	662,000	693,000	715,000	731,000	745,000	21%
Existing supplies	Surface water	178,000	176,000	174,000	172,000	170,000	167,000	-6%
	Groundwater	60,000	61,000	61,000	60,000	59,000	58,000	-3%
	Reuse	2,000	2,000	2,000	2,000	2,000	2,000	0%
	Total water supplies	240,000	239,000	237,000	233,000	230,000	227,000	-5%
Demands	Municipal	107,000	112,000	115,000	118,000	120,000	122,000	14%
	County-other	9,000	9,000	9,000	9,000	10,000	10,000	11%
	Manufacturing	89,000	98,000	98,000	98,000	98,000	98,000	10%
	Mining	9,000	10,000	10,000	7,000	6,000	5,000	-44%
	Irrigation	30,000	30,000	30,000	30,000	30,000	30,000	0%
	Steam-electric	4,000	4,000	4,000	4,000	4,000	4,000	0%
	Livestock	6,000	6,000	6,000	6,000	6,000	6,000	0%
	Total water demand	253,000	270,000	273,000	273,000	275,000	276,000	9%
Needs	Municipal	5,000	5,000	5,000	5,000	5,000	5,000	0%
	County-other	6,000	6,000	6,000	6,000	6,000	6,000	0%
	Manufacturing	1,000	17,000	22,000	26,000	30,000	34,000	3300%
	Mining	2,000	2,000	2,000	2,000	2,000	2,000	0%
	Irrigation	1,000	1,000	1,000	1,000	1,000	1,000	0%
	Total water needs	15,000	31,000	36,000	40,000	45,000	49,000	227%
Strategy supplies	Municipal	7,000	21,000	29,000	31,000	32,000	33,000	371%
	County-other	7,000	7,000	7,000	7,000	7,000	7,000	0%
	Manufacturing	5,000	221,000	224,000	226,000	231,000	234,000	4580%
	Mining	3,000	3,000	3,000	3,000	3,000	3,000	0%
	Irrigation	2,000	3,000	3,000	4,000	4,000	5,000	150%
	Total strategy supplies	24,000	255,000	266,000	271,000	278,000	282,000	1075%

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

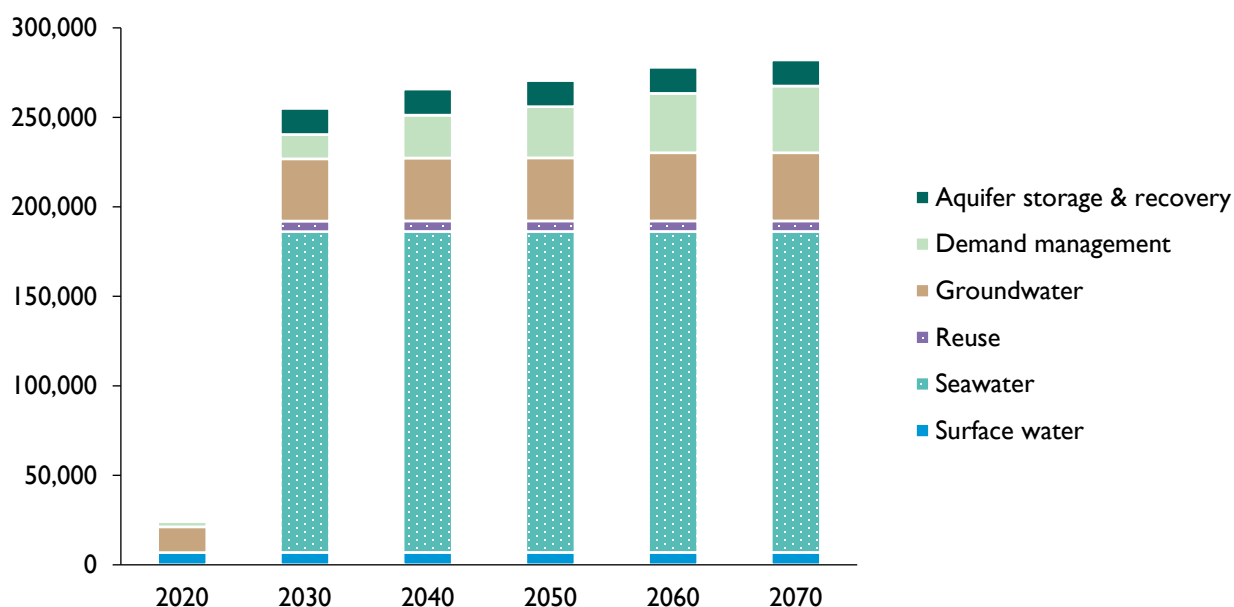
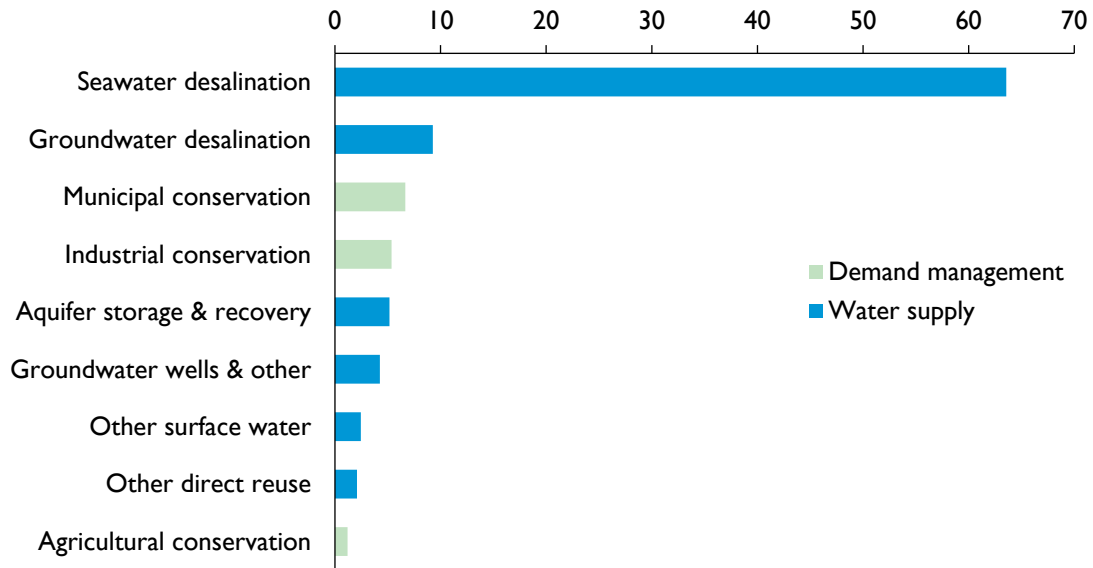


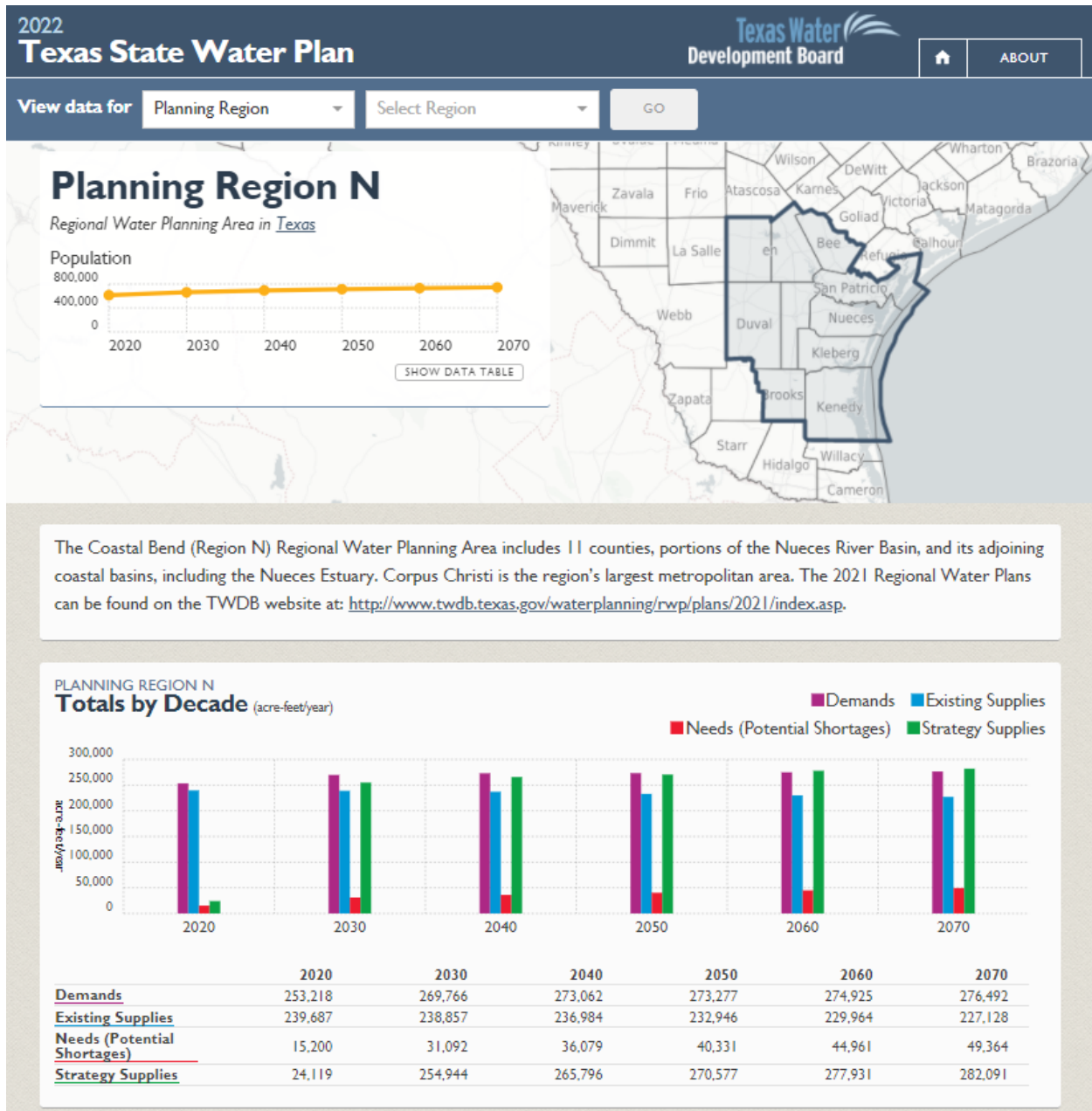
Figure N.5 - Share of recommended water management strategies by strategy type in 2070 (percent)



Coastal Bend (N) voting planning group members (2017–2021)

Scott Bledsoe, water districts (Co-Chair); Carola Serrato, water utilities (Co-Chair); Joe Almaraz, industries; Chuck Burns, agriculture; John Burris, other; Teresa Carillo, environment; Carl Crull, other; Bill Dove, small business; Lavoyger Durham, counties; Gary Eddins, electric generating utilities; Andy Garza, groundwater management areas; Bill Hennings, other; Pancho Hubert, small business; Lindsey Koenig, public; Robert Kunkel, industries; Martin Ornelas, public; Barbara Reaves, municipalities; Thomas Reding, Jr., river authorities; Charles Ring, agriculture; Donna Rosson, public; Mark Scott, municipalities; Lonnie Stewart, groundwater management areas; William Stockton, counties; Mark Sugarek, groundwater management areas; and Jace Tunnell, environment.

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



Texas Water Development Board
1700 North Congress Avenue,
Austin, Texas 78701
512-463-7847
www.twdb.texas.gov