Summary of the 2016 Lavaca (P) Regional Water Plan[1]

Texas' regional water plans

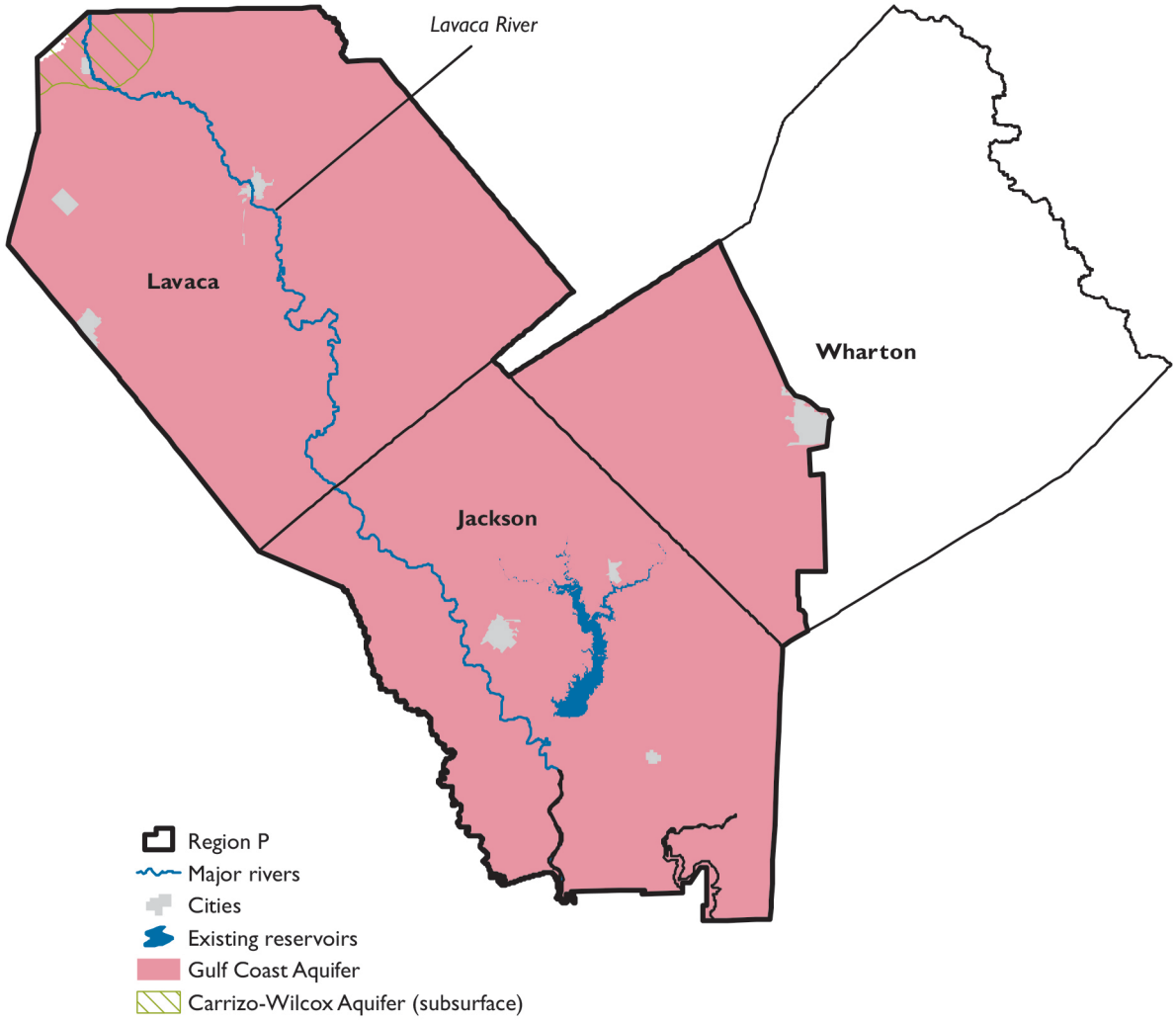
Regional water plans are funded by the Texas Legislature and developed every five years based on conditions that each region would face under a recurrence of a historical drought of record. The 16 regional water plans are developed by local representatives in a public, bottom-up process. The regional 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 Lavaca (P) Regional Water Planning Area includes all or parts of three counties (Figure P.1). The Lavaca Regional Water Planning Area is located along the southeastern Texas coast in the Lavaca, Lavaca-Guadalupe Coastal, and the Colorado-Lavaca coastal river basins. The region's grasslands are ideal for cattle grazing, and the productive soils and typically flat topography support the farming of rice, sorghums, corn, cotton, wheat, and hay. The economy of the region includes petroleum production and operation, varied manufacturing, agribusiness, and tourism associated with Lake Texana. Cities in the region include Edna, Ganado, Hallettsville, Moulton, Shiner, and Yoakum. The 2016 Lavaca (P) Regional Water Plan can be found on the TWDB website at http://www.twdb.texas.gov/waterplanning/rwp/plans/2016/#region-p

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

Figure P.1 - Lavaca (P) regional water planning area



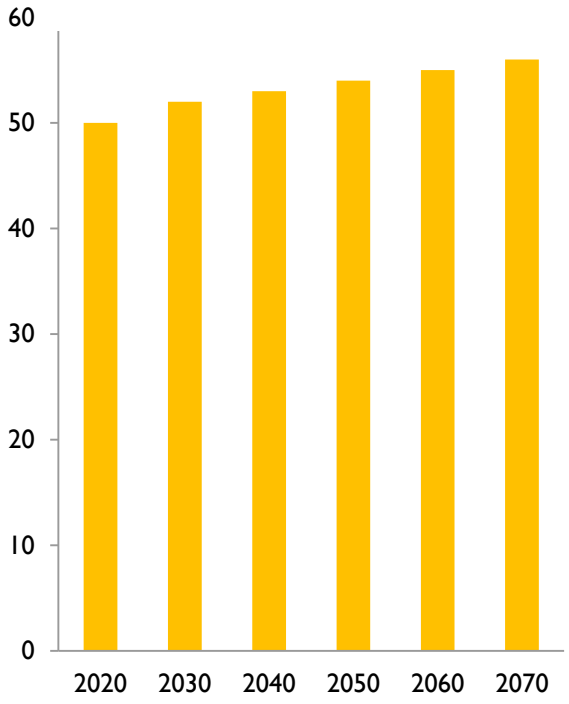
Plan highlights

- Additional supply needed in 2070—50,000 acre-feet per year
- Recommended water management strategy volume in 2070—63,000 acre-feet per year
- 11 recommended water management strategy projects with a total capital cost of $332 million
- Conservation accounts for 80 percent of 2070 strategy volumes
- On-farm irrigation conservation, which includes leveling farmland, installing moisture meters, and replacing canals with pipelines, accounts for the majority of strategy supplies in the Lavaca (P) Regional Water Plan

Population and water demands

Less than 1 percent of the state's 2020 population will reside in the Lavaca (P) Region. Between 2020 and 2070, the region's population is projected to increase approximately 10 percent (Table P.4, Figure P.2). By 2070, the total water demands for the region are projected to decrease 1 percent (Table P.4).

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



Existing water supplies

The Lavaca (P) Region has a variety of surface water and groundwater supply sources, with nearly all of the existing water supply in the region associated with groundwater (Table P.1, Figure P.3). The total water supply is projected to remain constant through 2070. (Table P.4).

Needs

Irrigation is the only water user group category projected to have needs in the Lavaca (P) Region, and those needs are projected to remain flat across the 50 year planning horizon. (Table P.4). In the event of drought, Region P is projected to have a total water supply need of 50,000 acre-feet from 2020 through 2070 (Table P.4).

Recommended water management strategies and cost

The Lavaca (P) Planning Group recommended a variety of water management strategies and projects that would provide more water than is required to meet future needs (Figures P.4 and P.5, Tables P.2 and P.3). In all, the 14 strategies and 11 projects would provide 63,000 acre-feet of additional water supply by the year 2070 at a total capital cost of $332 million.

Conservation

Conservation strategies represent 80 percent of the total volume of water associated with all recommended strategies in 2070. In addition to irrigation conservation, which accounts for the majority of water conservation strategies in Region P, municipal water conservation was recommended for the cities of El Campo, Hallettsville, Moulton, Shiner, and Yoakum.

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

Water supply source	2020	2070
Surface water		
Colorado Run-Of-River	4,000	4,000
Remaining surface water sources providing less than 2% each	1,000	1,000
Surface water subtotal:	**5,000**	**5,000**
Groundwater		
Gulf Coast Aquifer	179,000	179,000
Groundwater subtotal:	**179,000**	**179,000**
Reuse	**0**	**0**
Region total	**184,000**	**184,000**

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

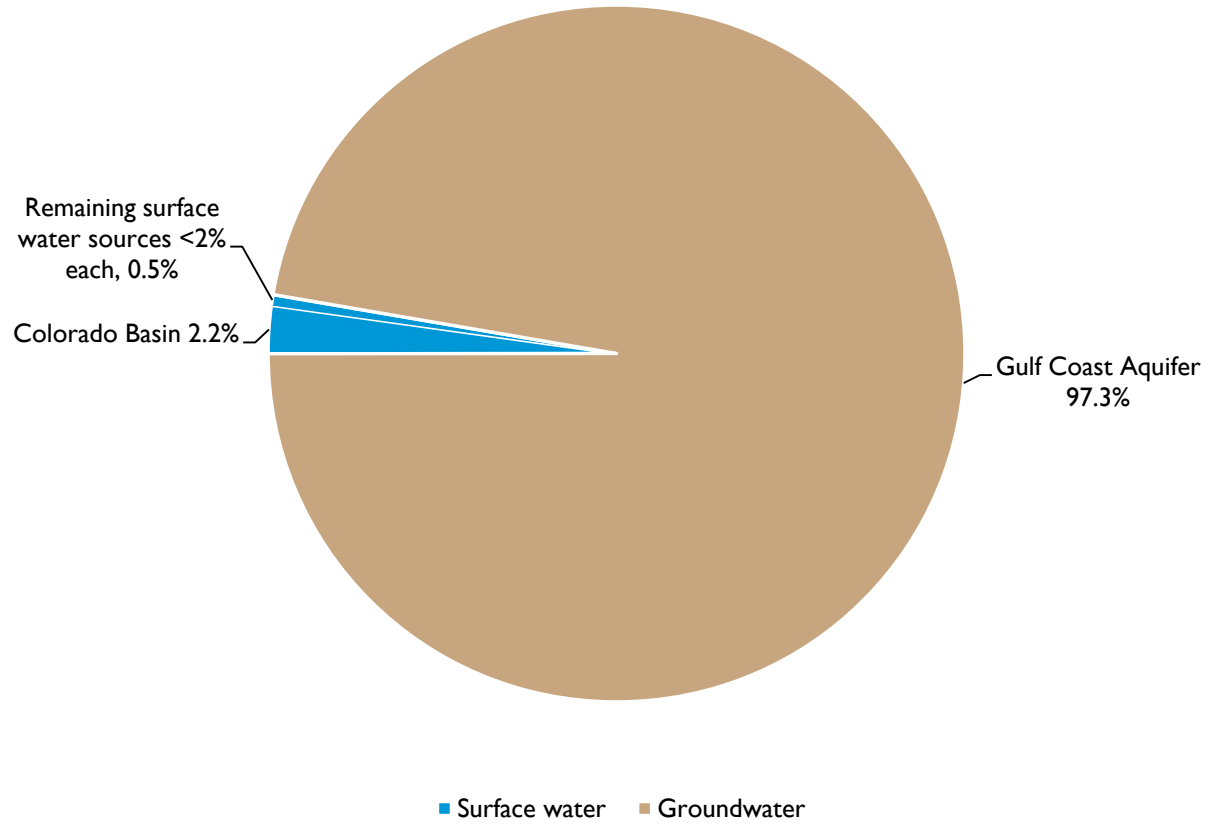


Table P.2 - Recommended water management strategy projects with an associated capital cost

Recommended water management strategy project	Online decade	Sponsor(s)	Associated capital cost
Aquifer Storage and Recovery	2020	Lavaca Navidad River Authority	$130,169,000
Lavaca Off-Channel Reservoir	2020	Lavaca Navidad River Authority	$123,213,000
LNRA Desalination	2020	Lavaca Navidad River Authority	$31,393,000
Irrigation Conservation - Tailwater Recovery	2020	Irrigation, Wharton	$22,561,000
Irrigation Conservation - On Farm	2020	Irrigation, Wharton	$20,833,000
Reuse	2020	El Campo	$3,272,000
Municipal Conservation - El Campo	2020	El Campo	$244,000
Municipal Conservation - Yoakum	2020	Yoakum	$86,000
Municipal Conservation - Hallettsville	2020	Hallettsville	$62,000
Municipal Conservation - Shiner	2020	Shiner	$50,000
Municipal Conservation - Moulton	2020	Heart of Texas Water Suppliers LLC	$21,000
		Total capital cost	**$331,904,000**

Table P.3 - Recommended water management strategies

Recommended water management strategy name	Population served by strategy*	Number of water user groups served	Supply in acre-feet per year in 2070
Irrigation Conservation - On Farm	na	1	41,000
Local Off-Channel Reservoir - Wharton County (Lane City)	na	1	12,000
Irrigation Conservation - Tailwater Recovery	na	1	8,000
Municipal Conservation - El Campo	14,000	1	0
Drought Management	32,000	7	0
Municipal Conservation - Hallettsville	3,000	1	0
Municipal Conservation - Shiner	2,000	1	0
Municipal Conservation - Yoakum	4,000	1	0
Municipal Conservation - Moulton	1,000	1	0
	Total annual water volume		**61,000**

** Multiple strategies may serve portions of the same population*

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

	Decade	2020	2030	2040	2050	2060	2070	change
	Population	**50,000**	**52,000**	**53,000**	**54,000**	**55,000**	**56,000**	***12%***
Existing supplies	Surface water	5,000	5,000	5,000	5,000	5,000	5,000	***0%***
	Groundwater	179,000	179,000	179,000	179,000	179,000	179,000	***0%***
	Total water supplies	184,000	184,000	184,000	184,000	184,000	184,000	***0%***
Demands	Municipal	5,000	5,000	5,000	5,000	5,000	6,000	***20%***
	County-other	3,000	3,000	2,000	3,000	3,000	3,000	***0%***
	Manufacturing	1,000	1,000	1,000	1,000	2,000	2,000	***100%***
	Mining	3,000	2,000	1,000	1,000	1,000	<500	***-100%***
	Irrigation	218,000	218,000	218,000	218,000	218,000	218,000	***0%***
	Livestock	4,000	4,000	4,000	4,000	4,000	4,000	***0%***
	Total water demand	**234,000**	**233,000**	**233,000**	**232,000**	**232,000**	**232,000**	***-1%***
Needs	Irrigation	50,000	50,000	50,000	50,000	50,000	50,000	***0%***
	Total water needs	**50,000**	**50,000**	**50,000**	**50,000**	**50,000**	**50,000**	***0%***
Strategy supplies	Municipal	1,000	1,000	1,000	1,000	1,000	1,000	***0%***
	Irrigation	62,000	62,000	62,000	62,000	62,000	62,000	***0%***
	Total strategy supplies	**62,000**	**62,000**	**63,000**	**63,000**	**63,000**	**63,000**	***2%***

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

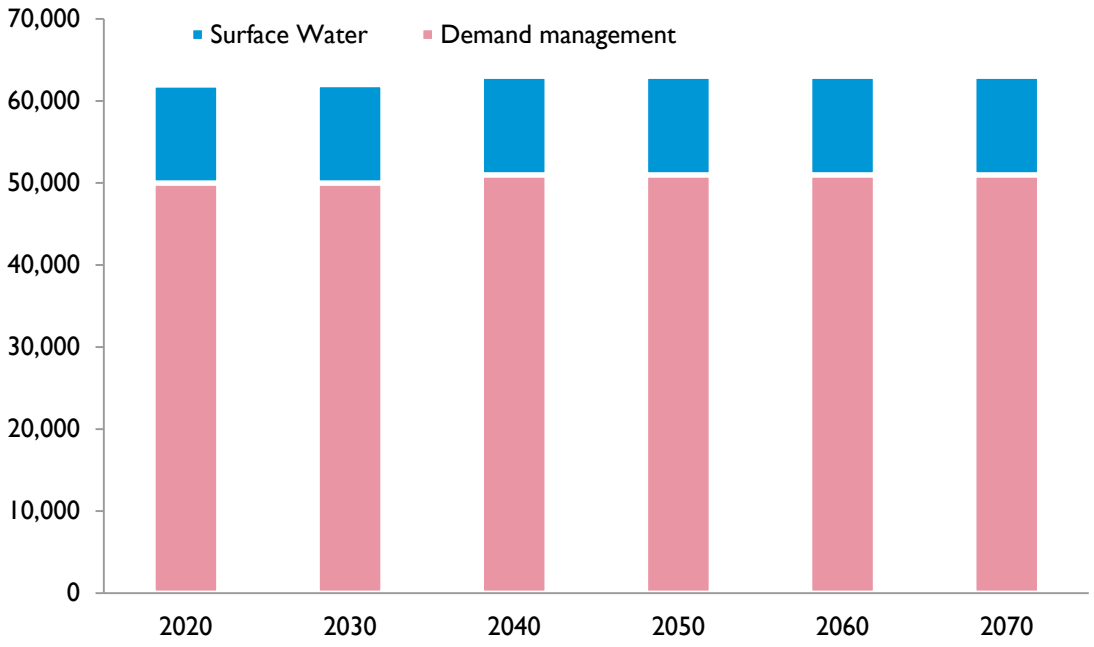
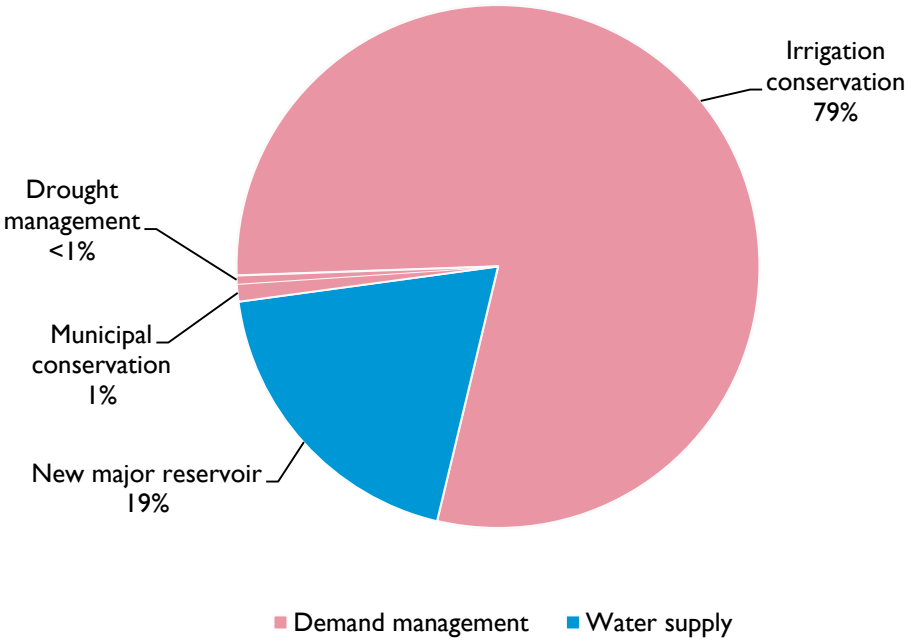


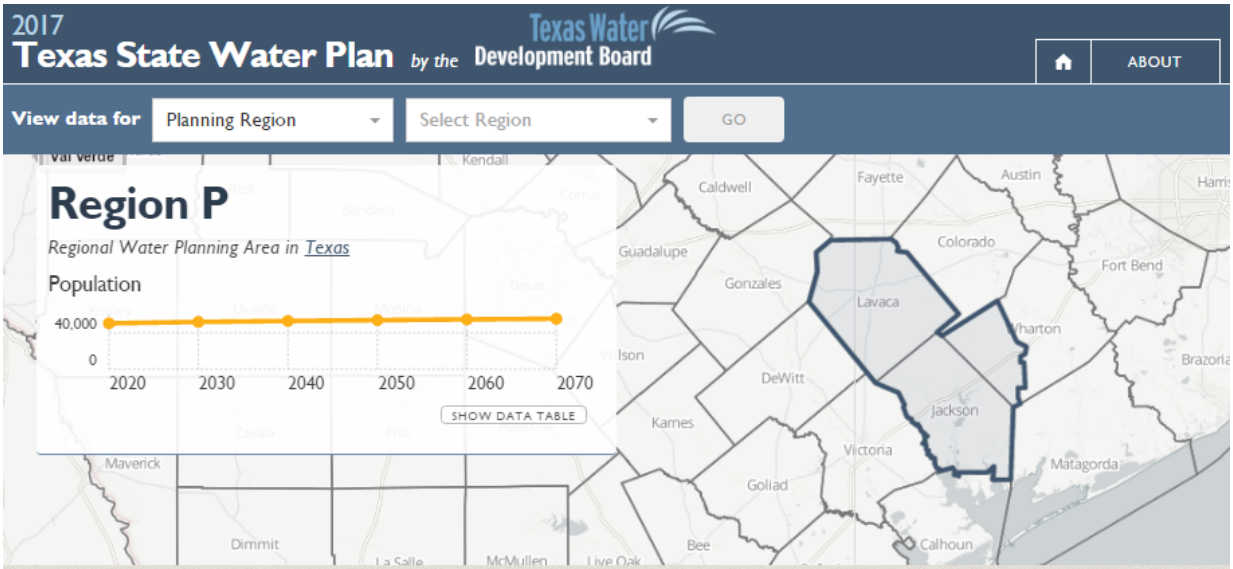
Figure P.5 - Share of recommended water management strategies by strategy type in 2070



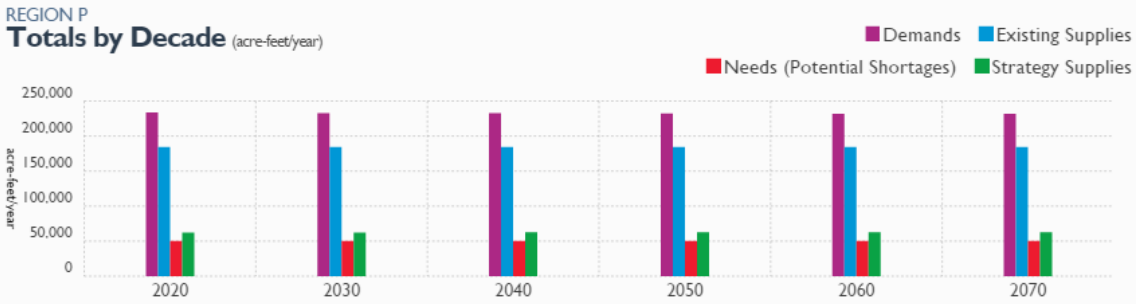
Lavaca (P) voting planning group members (2012 – 2016)

Harrison Stafford II, counties (Chair); Calvin Bonzer, small business; Tommy Brandenberger, industry; Patrick Brzozowski, river authorities; John Butschek, municipalities; Gerald Clark, agriculture; Roy Griffin, electric-generating utilities; Neal Hudgins, groundwater management areas; Rodney Jahn, small business; Lester Little, agriculture; Jack Maloney, municipalities; Robert Martin, agriculture; Phillip Miller, counties; Richard Ottis, industry; Edward Pustka, counties; L.G. Raun, agriculture; Robert Shoemate, environment; Michael Skalicky, water districts; Philip Spenrath, counties; David Wagner, public; Ed Weinheimer, small business

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



The Lavaca (Region P) Regional Water Planning Area is composed of Jackson and Lavaca counties and Precinct Three of Wharton County, including the entire City of El Campo. Other cities in the region include Edna, Yoakum, and Hallettsville. Most of the region lies in the Lavaca River Basin, with the Lavaca and Navidad Rivers being its primary source of surface water. Groundwater from the Gulf Coast Aquifer supplies most of the water for the planning area. The largest economic sector in the region is agribusiness, while manufacturing, oil and gas production, and mineral production also contribute to the region's economy. The 2016 Lavaca (P) Regional Water Plan can be found on the TWDB Web site at http://www.twdb.texas.gov/waterplanning/rwp/plans/2016/#region-p



	2020	2030	2040	2050	2060	2070
Demands	233,596	232,971	232,531	232,167	231,820	231,778
Existing Supplies	184,331	184,331	184,331	184,331	184,331	184,331
Needs (Potential Shortages)	50,285	50,285	50,285	50,285	50,285	50,285
Strategy Supplies	62,300	62,411	62,530	62,694	62,675	62,762

Texas Water Development Board

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