

## AGENDA ITEM MEMO

**BOARD MEETING DATE:** January 19, 2021

**TO:** Board Members

**THROUGH:** Jeff Walker, Executive Administrator  
Ashley Harden, General Counsel  
Jessica Zuba, Deputy Executive Administrator, Water Supply & Infrastructure

**FROM:** Jean Devlin, Planner, Regional Water Planning  
Sarah Backhouse, Manager, Regional Water Planning

**SUBJECT:** Approval of the 2021 Region G Regional Water Plan

### ACTION REQUESTED

Consider approval of the 2021 Regional Water Plan (RWP) for the Brazos (Region G) Regional Water Planning Group (RWPG).

### BACKGROUND

In accordance with §16.051 of the Texas Water Code (TWC), the Texas Water Development Board (TWDB) is required to develop and adopt a comprehensive state water plan every five years that incorporates the RWPs developed and approved in accordance with TWC §16.053. RWPGs are required to submit their adopted RWPs to the TWDB for approval every five years pursuant to 31 Texas Administrative Code (TAC) §357.50.

In accordance with 31 TAC §357.50, the Board is required to consider approval of submitted RWPs and may approve a RWP only after it has determined that the RWP complies with statute and rules including TWC §16.053 and 31 TAC §355, §357, §358.

In accordance with TWC §16.053, the TWDB may approve a RWP only after it has determined that:

- all interregional conflicts involving the regional water planning area, if any, have been resolved;
- the plan includes water conservation practices and drought management measures; and
- the plan is consistent with long-term protection of the state's water resources, agricultural resources, and natural resources.

#### Our Mission

Leading the state's efforts in ensuring a secure water future for Texas and its citizens

#### Board Members

Peter M. Lake, Chairman | Kathleen Jackson, Board Member | Brooke T. Paup, Board Member

Jeff Walker, Executive Administrator

The Executive Administrator (EA) has conducted a review of the final adopted Region G 2021 RWP related to all applicable legal and contractual requirements, including the following key issues:

1. Determinations of whether the plans were developed according to the general provisions for planning included in statute, rule, and guidance.
2. Determination that there are no interregional conflicts associated with the plan.
3. Determination that environmental planning criteria, including consideration of environmental flow standards adopted by the Texas Commission on Environmental Quality, related to instream and bay and estuary inflows were followed appropriately in evaluations of water management strategies utilizing surface water.
4. Determination that existing and recommended water supplies could reasonably be expected to be available under a repeat of the historic drought of record.
5. Determination that impacts to agricultural resources and environmental factors were quantified.
6. Determination that cost estimates developed in the plan were prepared in general accordance with the provisions of the contract.
7. Determination that water conservation and drought management was considered as a means to meet all identified water needs.
8. Determination that all comments received by the regional water planning groups on the initially prepared plans from the TWDB have been satisfactorily addressed.
9. Determination that, in aggregate, the plan was found to meet the requirements related to:
  - a. consideration of a balance of economic, social, and ecological viability as well as consideration of the interests of the state and entities providing water.
  - b. providing for the orderly development, management, and conservation of water resources and preparation for and response to drought conditions in order that sufficient water will be available at a reasonable cost to ensure public health, safety, and welfare, and further economic development.
10. Determination that the plan is consistent with long-term protection of the state and regional water resources, agricultural resources, and natural resources.

Summary data of the projected population, existing supplies, demands, needs, and strategy supplies, as well as a summary of recommended water management strategies and projects are included as an attachment.

### **KEY ISSUES**

1. The total recommended water management strategy volume is approximately 119,000 acre-feet per year in 2020 and 492,000 acre-feet per year in 2070.
2. The recommended water management strategies in the 2021 Region G RWP meets 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 decreasing to approximately 144,000 acre-feet per year

associated with irrigation, mining, and steam-electric power uses in 2070. The non-municipal needs were generally left unmet by the planning group due to limited, economically feasible water supply options. The RWPG considers the steam-electric power needs to be overstated, as plants have either closed down or development of new plants abandoned since projections were developed. The municipal water needs are unmet due to the inability of the anticipated additional strategy supplies to be online by January 5, 2023. To address the unmet municipal needs, the plan recognizes that, in the event of drought conditions, drought management measures would be implemented by utilities as outlined in their individual Drought Contingency Plans and that these measures can prolong supply and reduce impacts to communities by limiting water use to only essential water uses. Therefore, public health, safety, and welfare is anticipated to be protected.

3. The total capital cost of the 221 recommended projects in the 2021 Region G RWP is approximately \$9.1 billion.
4. Conservation accounts for 26.7 percent of 2070 strategy volumes.
5. Other surface water accounts for 33.7 percent of 2070 strategy volumes and groundwater development accounts for 12.9 percent of 2070 strategy volumes. Aquifer storage and recovery and new major reservoirs accounts for 7.3 percent and 7.2 percent, respectively.
6. The Region G RWPG formally adopted their final 2021 RWP on October 28, 2020.
7. The EA has reviewed the adopted 2021 Region G RWP and determined that the plan complies with statute and rules.
8. The EA has reviewed the 2021 Region G RWP for interregional conflicts and has found none.

### **RECOMMENDATION**

The EA recommends approval of the 2021 Region G RWP.

Attachment: Data Summary of the 2021 Region G RWP

## Region G 2021 Regional Water Plan Data Summary

**Table 1 - Population, existing water supplies, demands, needs, and strategies 2020-2070 (acre-feet per year)\***

	Decade	2020	2030	2040	2050	2060	2070
	<b>Population</b>	<b>2,371,000</b>	<b>2,721,000</b>	<b>3,097,000</b>	<b>3,495,000</b>	<b>3,918,000</b>	<b>4,351,000</b>
<b>Existing supplies</b>	Surface water	585,000	586,000	586,000	584,000	581,000	575,000
	Groundwater	487,000	482,000	481,000	482,000	486,000	484,000
	Reuse	31,000	31,000	31,000	31,000	31,000	32,000
	<b>Total water supplies</b>	<b>1,102,000</b>	<b>1,098,000</b>	<b>1,098,000</b>	<b>1,097,000</b>	<b>1,098,000</b>	<b>1,092,000</b>
<b>Demands</b>	Municipal Utility	381,000	432,000	482,000	538,000	589,000	643,000
	Municipal County-other	26,000	23,000	28,000	33,000	49,000	64,000
	Manufacturing	13,000	16,000	16,000	16,000	16,000	16,000
	Mining	62,000	66,000	59,000	58,000	59,000	61,000
	Irrigation	359,000	359,000	354,000	353,000	356,000	356,000
	Steam-electric	233,000	233,000	233,000	233,000	233,000	233,000
	Livestock	48,000	48,000	48,000	48,000	48,000	48,000
	<b>Total water demand</b>	<b>1,121,000</b>	<b>1,178,000</b>	<b>1,220,000</b>	<b>1,279,000</b>	<b>1,350,000</b>	<b>1,422,000</b>
<b>Needs</b>	Municipal Utility	27,000	63,000	104,000	153,000	196,000	250,000
	Municipal County-other	4,000	2,000	6,000	10,000	26,000	41,000
	Manufacturing	1,000	3,000	3,000	3,000	2,000	2,000
	Mining	30,000	32,000	29,000	30,000	31,000	33,000
	Irrigation	76,000	82,000	77,000	75,000	76,000	79,000
	Steam-electric	73,000	73,000	73,000	73,000	73,000	73,000
		<b>Total water needs</b>	<b>211,000</b>	<b>255,000</b>	<b>291,000</b>	<b>345,000</b>	<b>404,000</b>
<b>Strategy supplies</b>	Municipal Utility	74,000	225,000	279,000	310,000	342,000	374,000
	Municipal County-other	4,000	14,000	19,000	22,000	37,000	53,000
	Manufacturing	3,000	4,000	4,000	4,000	4,000	4,000
	Mining	19,000	20,000	19,000	18,000	18,000	18,000
	Irrigation	17,000	26,000	31,000	31,000	31,000	31,000
	Steam-electric	2,000	2,000	2,000	11,000	11,000	11,000
	Livestock	<500	<500	<500	<500	<500	<500
		<b>Total strategy supplies</b>	<b>119,000</b>	<b>291,000</b>	<b>353,000</b>	<b>396,000</b>	<b>443,000</b>

\* 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.

**Table 2 - Ten recommended water management strategies with largest supply volume**

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

**Table 3 - Ten recommended water management strategy projects with largest capital cost**

Recommended water management strategy project	Online decade	Sponsor(s)	Capital Cost
Williamson County Groundwater	2030	Brazos River Authority	\$4,015,016,000
Lake Granger Augmentation-Phase 2-BRA	2020	Cedar Park; Round Rock; Liberty Hill; Leander	\$845,564,000
Brushy Creek RUA Water Supply	2020	Georgetown	\$326,793,406
Lake Georgetown ASR	2040	Abilene	\$306,276,000
Cedar Ridge Reservoir	2020	North Central Texas Municipal Water Authority	\$283,646,000
NCTMWA Lake Creek Reservoir	2030	Brazos River Authority	\$259,001,000
Lake Whitney Reallocation to Williamson County	2050	Georgetown	\$253,824,000
Alcoa Property Supply	2050	Georgetown	\$241,689,000
Municipal Water Conservation - Georgetown	2030	Brazos River Authority	\$162,839,000
Lake Granger ASR	2020	Salt Fork Water Quality Corporation	\$116,431,000
<i>Other recommended projects</i>	<i>various</i>	<i>211 various</i>	<i>\$2,274,764,654</i>
<b>Total capital cost</b>			<b>\$9,085,844,060</b>

**Table 4 - Unmet water needs by water user group type 2020-2070 (acre-feet per year)**

Water User Group Category	2020	2030	2040	2050	2060	2070
Irrigation	60,658	60,905	51,670	50,726	51,243	53,673
Livestock	0	0	0	0	0	0
Manufacturing	123	0	0	0	0	0
Mining	15,958	16,105	15,573	16,398	17,295	18,631
Municipal County-Other	254	0	0	0	0	0
Municipal Utility	16,828	0	0	0	0	0
Steam Electric Power	71,761	71,157	71,253	71,349	71,445	71,541
<b>Total unmet needs</b>	<b>165,582</b>	<b>148,167</b>	<b>138,496</b>	<b>138,473</b>	<b>139,983</b>	<b>143,845</b>

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**BOARD MEETING DATE:** January 19, 2021

**TO:** Board Members

**THROUGH:** Jeff Walker, Executive Administrator  
Ashley Harden, General Counsel  
Jessica Zuba, Deputy Executive Administrator, Water Supply & Infrastructure

**FROM:** Jean Devlin, Planner, Regional Water Planning  
Sarah Backhouse, Manager, Regional Water Planning

**SUBJECT:** Approval of the 2021 Region O Regional Water Plan

### **ACTION REQUESTED**

Consider approval of the 2021 Regional Water Plan (RWP) for the Llano Estacado (Region O) Regional Water Planning Group (RWPG).

### **BACKGROUND**

In accordance with §16.051 of the Texas Water Code (TWC), the Texas Water Development Board (TWDB) is required to develop and adopt a comprehensive state water plan every five years that incorporates the RWPs developed and approved in accordance with TWC §16.053. RWPGs are required to submit their adopted RWPs to the TWDB for approval every five years pursuant to 31 Texas Administrative Code (TAC) §357.50.

In accordance with 31 TAC §357.50, the Board is required to consider approval of submitted RWPs and may approve a RWP only after it has determined that the RWP complies with statute and rules including TWC §16.053 and 31 TAC §355, §357, §358.

In accordance with TWC §16.053, the TWDB may approve a RWP only after it has determined that:

- all interregional conflicts involving the regional water planning area, if any, have been resolved;
- the plan includes water conservation practices and drought management measures; and
- the plan is consistent with long-term protection of the state's water resources, agricultural resources, and natural resources.

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Jeff Walker, Executive Administrator

The Executive Administrator (EA) has conducted a review of the final adopted Region O 2021 RWP related to all applicable legal and contractual requirements, including the following key issues:

1. Determinations of whether the plans were developed according to the general provisions for planning included in statute, rule, and guidance.
2. Determination that there are no interregional conflicts associated with the plan.
3. Determination that environmental planning criteria, including consideration of environmental flow standards adopted by the Texas Commission on Environmental Quality, related to instream and bay and estuary inflows were followed appropriately in evaluations of water management strategies utilizing surface water.
4. Determination that existing and recommended water supplies could reasonably be expected to be available under a repeat of the historic drought of record.
5. Determination that impacts to agricultural resources and environmental factors were quantified.
6. Determination that cost estimates developed in the plan were prepared in general accordance with the provisions of the contract.
7. Determination that water conservation and drought management was considered as a means to meet all identified water needs.
8. Determination that all comments received by the regional water planning groups on the initially prepared plans from the TWDB have been satisfactorily addressed.
9. Determination that, in aggregate, the plan was found to meet the requirements related to:
  - a. consideration of a balance of economic, social, and ecological viability as well as consideration of the interests of the state and entities providing water.
  - b. providing for the orderly development, management, and conservation of water resources and preparation for and response to drought conditions in order that sufficient water will be available at a reasonable cost to ensure public health, safety, and welfare, and further economic development.
10. Determination that the plan is consistent with long-term protection of the state and regional water resources, agricultural resources, and natural resources.

Summary data of the projected population, existing supplies, demands, needs, and strategy supplies, as well as a summary of recommended water management strategies and projects are included as an attachment.

### **KEY ISSUES**

1. The total recommended water management strategy volume is approximately 119,000 acre-feet per year in 2020 and 242,000 acre-feet per year in 2070.
2. The recommended water management strategies in the 2021 Region O RWP meets all identified needs in the plan except for approximately 634,000 acre-feet per year associated with irrigation and livestock uses in 2020 increasing to approximately 1,299,000 acre-feet per year associated with irrigation and livestock uses in 2070.

These needs were left unmet by the planning group due to limited, economically feasible water supply options.

3. The total capital cost of the 26 recommended projects in the 2021 Region O RWP is approximately \$808 million.
4. Conservation accounts for 64 percent of 2070 strategy volumes, with irrigation conservation accounting for 63.3 percent.
5. Groundwater development accounts for 20 percent of 2070 strategy volumes, while aquifer storage and recovery and new major reservoirs accounts for approximately 5.5 percent and 5 percent in 2070, respectively.
6. The Region O RWPG formally adopted their final 2021 RWP on September 10, 2020.
7. The EA has reviewed the adopted 2021 Region O RWP and determined that the plan complies with statute and rules.
8. The EA has reviewed the 2021 Region O RWP for interregional conflicts and has found none.

**RECOMMENDATION**

The EA recommends approval of the 2021 Region O RWP.

Attachment: Data Summary of the 2021 Region O RWP



## Region O 2021 Regional Water Plan Data Summary

**Table 1 - Population, existing water supplies, demands, needs, and strategies 2020–2070 (acre-feet per year)\***

	Decade	2020	2030	2040	2050	2060	2070
	<b>Population</b>	<b>540,000</b>	<b>594,000</b>	<b>646,000</b>	<b>698,000</b>	<b>751,000</b>	<b>802,000</b>
<b>Existing supplies</b>	Surface water	20,000	20,000	20,000	21,000	21,000	21,000
	Groundwater	2,886,000	2,009,000	1,484,000	1,200,000	1,046,000	957,000
	Reuse	45,000	39,000	39,000	37,000	37,000	37,000
	<b>Total water supplies</b>	<b>2,952,000</b>	<b>2,068,000</b>	<b>1,543,000</b>	<b>1,258,000</b>	<b>1,103,000</b>	<b>1,014,000</b>
<b>Demands</b>	Municipal Utility	82,000	89,000	95,000	101,000	108,000	114,000
	Municipal County-other	13,000	13,000	13,000	15,000	17,000	19,000
	Manufacturing	11,000	12,000	12,000	12,000	12,000	12,000
	Mining	17,000	18,000	17,000	14,000	12,000	11,000
	Irrigation	3,183,000	3,183,000	2,720,000	2,446,000	2,300,000	2,216,000
	Steam-electric	21,000	21,000	21,000	21,000	21,000	21,000
	Livestock	42,000	46,000	49,000	53,000	56,000	60,000
	<b>Total water demand</b>	<b>3,368,000</b>	<b>3,382,000</b>	<b>2,928,000</b>	<b>2,663,000</b>	<b>2,527,000</b>	<b>2,453,000</b>
<b>Needs</b>	Municipal Utility	4,000	9,000	15,000	21,000	29,000	35,000
	Municipal County-other	0	<500	<500	1,000	1,000	2,000
	Manufacturing	5,000	6,000	6,000	6,000	6,000	6,000
	Mining	10,000	11,000	10,000	8,000	7,000	6,000
	Irrigation	706,000	1,440,000	1,451,000	1,446,000	1,446,000	1,445,000
	Livestock	<500	<500	1,000	2,000	4,000	5,000
	<b>Total water needs</b>	<b>726,000</b>	<b>1,467,000</b>	<b>1,483,000</b>	<b>1,485,000</b>	<b>1,493,000</b>	<b>1,500,000</b>
	<b>Strategy supplies</b>	Municipal Utility	6,000	21,000	39,000	45,000	59,000
Municipal County-other		<500	2,000	2,000	2,000	2,000	2,000
Manufacturing		7,000	8,000	8,000	8,000	8,000	8,000
Mining		11,000	12,000	12,000	12,000	12,000	12,000
Irrigation		95,000	158,000	188,000	169,000	159,000	153,000
<b>Total strategy supplies</b>		<b>119,000</b>	<b>199,000</b>	<b>249,000</b>	<b>236,000</b>	<b>239,000</b>	<b>242,000</b>

\* 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.

**Table 2 - Ten recommended water management strategies with largest supply volume**

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
Gaines County Irrigation Water Conservation	na	1	20,000
Hale County Irrigation Water Conservation	na	1	16,000
Castro County Irrigation Water Conservation	na	1	16,000
Expand Capacity CRMWA II	483,000	8	15,000
Lamb County Irrigation Water Conservation	na	1	14,000
Parmer County Irrigation Water Conservation	na	1	12,000
Lubbock County - Lubbock Jim Bertram Lake 7	404,000	1	12,000
Lubbock County - Lubbock CRMWA Aquifer Storage and Recovery	404,000	1	11,000
Terry County Irrigation Water Conservation	na	1	9,000
Deaf Smith County Irrigation Water Conservation	na	1	8,000
<i>Other recommended strategies</i>	<i>na</i>	<i>97</i>	<i>109,000</i>

**Table 3 - Ten recommended water management strategy projects with largest capital cost**

<b>Recommended water management strategy project</b>	<b>Online decade</b>	<b>Sponsor(s)</b>	<b>Capital Cost</b>
Lubbock County - Lubbock Jim Bertram Lake 7	2040	Lubbock	\$251,043,000
Lubbock County - Lubbock Direct Potable Reuse to North Water Treatment Plant	2070	Lubbock	\$125,890,000
Lubbock County - Lubbock CRMWA Aquifer Storage and Recovery	2060	Lubbock	\$103,917,000
Lubbock County - Lubbock Lake Alan Henry Phase 2	2030	Lubbock	\$103,152,000
Lubbock County - Lubbock Bailey County Well Field Capacity Maintenance	2020	Lubbock	\$94,704,000
Gaines County - Seminole Local Groundwater Development	2020	Seminole	\$42,649,000
Lubbock County - Mining Additional Groundwater Development	2020	Mining (Lubbock)	\$18,678,000
Lubbock County - Wolfforth Local Groundwater Development	2040	Wolfforth	\$13,961,000
Plainview Reuse	2040	Plainview	\$10,349,000
Hale County - Manufacturing Additional Groundwater Development	2020	Manufacturing (Hale)	\$8,932,000
<i>Other recommended projects</i>	<i>various</i>	<i>16 various</i>	<i>\$34,551,000</i>
<b>Total capital cost</b>			<b>\$807,826,000</b>

**Table 4 - Unmet water needs by water user group type 2020-2070 (acre-feet per year)**

<b>Water User Group Category</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>	<b>2070</b>
Irrigation	634,241	1,301,696	1,268,331	1,279,354	1,288,343	1,293,414
Livestock	112	122	844	2,041	3,689	5,442
Manufacturing	0	0	0	0	0	0
Mining	0	0	0	0	0	0
Municipal County-Other	0	0	0	0	0	0
Municipal Utility	0	0	0	0	0	0
Steam Electric Power	0	0	0	0	0	0
<b>Total unmet needs</b>	<b>634,353</b>	<b>1,301,818</b>	<b>1,269,175</b>	<b>1,281,395</b>	<b>1,292,032</b>	<b>1,298,856</b>

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**BOARD MEETING DATE:** January 19, 2021

**TO:** Board Members

**THROUGH:** Jeff Walker, Executive Administrator  
Ashley Harden, General Counsel  
Jessica Zuba, Deputy Executive Administrator, Water Supply & Infrastructure

**FROM:** Jean Devlin, Planner, Regional Water Planning  
Sarah Backhouse, Manager, Regional Water Planning

**SUBJECT:** Approval of the 2021 Region P Regional Water Plan

### **ACTION REQUESTED**

Consider approval of the 2021 Regional Water Plan (RWP) for the Lavaca (Region P) Regional Water Planning Group (RWPG).

### **BACKGROUND**

In accordance with §16.051 of the Texas Water Code (TWC), the Texas Water Development Board (TWDB) is required to develop and adopt a comprehensive state water plan every five years that incorporates the RWPs developed and approved in accordance with TWC §16.053. RWPGs are required to submit their adopted RWPs to the TWDB for approval every five years pursuant to 31 Texas Administrative Code (TAC) §357.50.

In accordance with 31 TAC §357.50, the Board is required to consider approval of submitted RWPs and may approve a RWP only after it has determined that the RWP complies with statute and rules including TWC §16.053 and 31 TAC §355, §357, §358.

In accordance with TWC §16.053, the TWDB may approve a RWP only after it has determined that:

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3. Determination that environmental planning criteria, including consideration of environmental flow standards adopted by the Texas Commission on Environmental Quality, related to instream and bay and estuary inflows were followed appropriately in evaluations of water management strategies utilizing surface water.
4. Determination that existing and recommended water supplies could reasonably be expected to be available under a repeat of the historic drought of record.
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9. Determination that, in aggregate, the plan was found to meet the requirements related to:
  - a. consideration of a balance of economic, social, and ecological viability as well as consideration of the interests of the state and entities providing water.
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10. Determination that the plan is consistent with long-term protection of the state and regional water resources, agricultural resources, and natural resources.

Summary data of the projected population, existing supplies, demands, needs, and strategy supplies, as well as a summary of recommended water management strategies and projects are included as an attachment.

### **KEY ISSUES**

1. The total recommended water management strategy volume is approximately 16,000 acre-feet per year in 2020 and 17,000 acre-feet per year in 2070.
2. The recommended water management strategies in the 2021 Region P RWP meet all identified water needs in the plan.
3. The total capital cost of the 12 recommended projects in the 2021 Region P RWP is approximately \$423 million.

4. Conservation accounts for 98 percent of 2070 strategy volumes, with irrigation conservation accounting for 87.8 percent.
5. The Region P RWPG formally adopted their final 2021 RWP on October 19, 2020.
6. The EA has reviewed the adopted 2021 Region P RWP and determined that the plan complies with statute and rules.
7. The EA has reviewed the 2021 Region P RWP for interregional conflicts and has found none.

**RECOMMENDATION**

The EA recommends approval of the 2021 Region P RWP.

Attachment: Data Summary of the 2021 Region P RWP

## Region P 2021 Regional Water Plan Data Summary

**Table 1 - Population, existing water supplies, demands, needs, and strategies 2020–2070 (acre-feet per year)\***

	Decade	2020	2030	2040	2050	2060	2070
	<b>Population</b>	<b>50,000</b>	<b>52,000</b>	<b>53,000</b>	<b>54,000</b>	<b>55,000</b>	<b>56,000</b>
<b>Existing supplies</b>	Surface water	27,000	27,000	27,000	27,000	27,000	27,000
	Groundwater	174,000	174,000	174,000	174,000	174,000	174,000
	<b>Total water supplies</b>	<b>201,000</b>	<b>201,000</b>	<b>201,000</b>	<b>201,000</b>	<b>201,000</b>	<b>201,000</b>
<b>Demands</b>	Municipal Utility	6,000	6,000	6,000	6,000	6,000	6,000
	Municipal County-other	2,000	2,000	2,000	2,000	2,000	2,000
	Manufacturing	12,000	12,000	12,000	12,000	12,000	12,000
	Mining	3,000	2,000	1,000	1,000	1,000	<500
	Irrigation	176,000	176,000	176,000	176,000	176,000	176,000
	Steam-electric	2,000	2,000	2,000	2,000	2,000	2,000
	Livestock	6,000	6,000	6,000	6,000	6,000	6,000
	<b>Total water demand</b>	<b>206,000</b>	<b>206,000</b>	<b>205,000</b>	<b>205,000</b>	<b>204,000</b>	<b>204,000</b>
<b>Needs</b>	Irrigation	8,000	8,000	8,000	8,000	8,000	8,000
	<b>Total water needs</b>	<b>8,000</b>	<b>8,000</b>	<b>8,000</b>	<b>8,000</b>	<b>8,000</b>	<b>8,000</b>
<b>Strategy supplies</b>	Municipal Utility	<500	1,000	1,000	1,000	1,000	1,000
	Manufacturing	0	1,000	1,000	1,000	1,000	1,000
	Irrigation	15,000	15,000	15,000	15,000	15,000	15,000
	<b>Total strategy supplies</b>	<b>16,000</b>	<b>17,000</b>	<b>17,000</b>	<b>17,000</b>	<b>17,000</b>	<b>17,000</b>

\* 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.

**Table 2 - Ten recommended water management strategies with largest supply volume**

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
Irrigation Conservation	na	1	15,000
Conservation for Manufacturing	na	3	1,000
Municipal Conservation	25,000	6	1,000
Drought Management - Municipal	33,000	8	<500
<i>Other recommended strategies</i>	<i>na</i>	<i>na</i>	<i>na</i>

**Table 3 - Ten recommended water management strategy projects with largest capital cost**

Recommended water management strategy project	Online decade	Sponsor(s)	Capital Cost
Lavaca Off-Channel Reservoir - Phase 2	2040	Lavaca Navidad River Authority	\$289,977,000
LNRA Desalination	2040	Lavaca Navidad River Authority	\$49,900,000
Lavaca Off-Channel Reservoir - Phase 1	2030	Lavaca Navidad River Authority	\$41,781,000
Irrigation Conservation - Tailwater Recovery	2020	Irrigation (Wharton)	\$19,092,000
Reuse	2030	El Campo	\$7,881,000
Irrigation Conservation - On Farm	2020	Irrigation (Wharton)	\$7,239,000
Municipal Conservation - El Campo	2030	El Campo	\$3,671,000
Municipal Conservation - Hallettsville	2030	Hallettsville	\$1,502,000
Municipal Conservation - Shiner	2030	Shiner	\$810,000
Municipal Conservation - Moulton	2030	Moulton	\$410,000
<i>Other recommended projects</i>	<i>various</i>	<i>2 various</i>	<i>\$494,984</i>
<b>Total capital cost</b>			<b>\$422,757,984</b>

**Table 4 - Unmet water needs by water user group type 2020-2070 (acre-feet per year)**

Water User Group Category	2020	2030	2040	2050	2060	2070
Irrigation	0	0	0	0	0	0
Livestock	0	0	0	0	0	0
Manufacturing	0	0	0	0	0	0
Mining	0	0	0	0	0	0
Municipal County-Other	0	0	0	0	0	0
Municipal Utility	0	0	0	0	0	0
Steam Electric Power	0	0	0	0	0	0
<b>Total unmet needs</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>