

CHAPTER 9

**IMPLEMENTATION AND
COMPARISON TO THE PREVIOUS
REGIONAL WATER PLAN**

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9 IMPLEMENTATION AND COMPARISON TO THE PREVIOUS REGIONAL WATER PLAN

Chapter ~~4~~9 provides a survey of the level of implementation and identified impediments to the development of previously (~~2016-2021~~Plan) recommended Water Management Strategies that have affected progress in meeting projected water-supply needs. To best appreciate the continued improvements to the Plateau Region water planning process, this Chapter offers a comparison of key components in the ~~2016~~2021 Plateau Region Water Plan to those in this current ~~2021~~2026 Plateau Region Water Plan. This Chapter also assesses the progress of the Plateau planning area in encouraging cooperation between water user groups for achieving economies of scale and otherwise incentivizing strategies that benefit the entire Region.

9.1 IMPLEMENTATION OF PREVIOUS REGIONAL WATER PLAN

Information needed to report on the level of implementation and identified impediments to the development of previously (~~2016-2021~~ *Plan*) recommended Water Management Strategies that have affected progress in meeting projected water-supply needs was collected through an emailed survey and follow-up messages were delivered one month after first delivery and in a subsequent message to the PWPG to encourage further responses. Additional methods that were considered for identifying projects that may potentially have been implemented include:

- Identification of Potentially Infeasible WMSs scope-of-work
- Tracking changes since the last Plan;
- Using TWDB funding records; and
- Using conservation implementation reports submitted to the TWDB.

A summary of the survey results is provided in Table 9-1.

Table 9-1. 2026 Plateau Region Strategy Implementation Survey

WMS or WMS Project Name	Database Online Decade	Related Sponsor Entity and/or Benefiting WUGs	Has Sponsor taken affirmative vote or action? (TWC 16.053(b)(10))	What is the status of the WMS project or WMS recommended in the 2022 SWPP?	If the project has not been started or no longer is being pursued, please explain why.	Project Impediment(s)	Other Project Impediments (not shown in Column G)	What funding type(s) are being used for the project?	Optional Comments
Reuse treated wastewater effluent for irrigation of public spaces [City of Bandera]	2030	City of Bandera	Yes	Started	N/A	N/A	N/A	State	
Promote, design & install rainwater harvesting systems on public buildings [City of Bandera]	2030	City of Bandera	Yes	Started	N/A	N/A	N/A	Unknown	
Additional Middle Trinity wells within City water infrastructure area [City of Bandera]	2020	City of Bandera	Yes	Started	N/A	N/A	N/A	State	
Surface water acquisition, treatment and ASR [City of Bandera]	2030	City of Bandera	Yes	Started	N/A	N/A	N/A	Unknown	
Public conservation education [Bandera County FWSD #1]	2020	Bandera County FWSD #1	Yes	Started	N/A	N/A	N/A	Private	
Additional groundwater well [Bandera County FWSD #1]	2020	Bandera County FWSD #1	Yes	Not Started	Timing of On-line Decade has Changed	Shift in Timeline	N/A	N/A	
Water loss audit & main-line repair [Bandera County-Other Bandera River Ranch #1]	2020	Bandera River Ranch #1	Yes	Started	N/A	N/A	N/A	Private	
Public conservation education [Bandera County-Other Lake Medina Shores]	2020	Lake Medina Shores	Yes	Started	N/A	N/A	N/A	Private	
Public conservation education [Bandera County-Other Medina WSC]	2020	Medina WSC	Yes	Started	N/A	N/A	N/A	Private	
Additional groundwater well [Bandera County-Other Medina WSC]	2020	Medina WSC	Yes	Started	N/A	N/A	N/A	Private	
Drought management (BCRAGD) [Bandera County-Other Nueces River Basin]	2020	BCRAGD	Yes	Started	N/A	N/A	N/A	Private	
Drought management (BCRAGD) [Bandera County-Other San Antonio River Basin]	2020	BCRAGD	Yes	Started	N/A	N/A	N/A	Private	
Water loss audit & main-line repair [Bandera County-Other Enchanted River Estates]	2020	Enchanted River Estates	Yes	Started	N/A	N/A	N/A	Private	
Irrigation Scheduling [Bandera County Irrigation]	2020	Bandera Irrigation	Yes	Started	N/A	N/A	N/A	Private	
Additional groundwater wells [Bandera County Irrigation]	2020	Bandera Irrigation	Yes	Not Started	Project Sponsor Not Identified	Project Sponsor Not Identified	N/A	Unknown	
Livestock conservation [Bandera County Livestock Nueces River Basin]	2020	Bandera Livestock	Yes	Not Started	Project Sponsor Not Identified	Project Sponsor Not Identified	N/A	Unknown	
Livestock conservation [Bandera County Livestock Guadalupe River Basin]	2020	Bandera Livestock	Yes	Not Started	Project Sponsor Not Identified	Project Sponsor Not Identified	N/A	Unknown	
Additional groundwater well [Bandera County Livestock Nueces River Basin]	2020	Bandera Livestock	Yes	Not Started	Project Sponsor Not Identified	Project Sponsor Not Identified	N/A	Unknown	
Additional groundwater well [Bandera County Livestock Guadalupe River Basin]	2020	Bandera Livestock	Yes	Not Started	Project Sponsor Not Identified	Project Sponsor Not Identified	N/A	Unknown	
Public conservation education [City of Rocksprings]	2020	City of Rocksprings	Yes	Started	N/A	N/A	N/A	Private	
Additional groundwater well [City of Rocksprings]	2021	City of Rocksprings	Yes	Started	N/A	N/A	N/A	Private	

Table 9-1. (continued) 2026 Plateau Region Strategy Implementation Survey

WMS or WMS Project Name	Database Online Decade	Related Sponsor Entity and/or Benefiting WUGs	Has Sponsor taken affirmative vote or action? (TWC 16.053(h)(10))	What is the status of the WMS project or WMS recommended in the 2022 SWP?	If the project has not been started or no longer is being pursued, please explain why.	Project Impediment(s)	Other Project Impediments (not shown in Column G)	What funding type(s) are being used for the project?	Optional Comments
Additional well in the Nueces River Alluvium Aquifer & RO wellhead treatment [Edwards County-Other Barksdale WSC]	2020	Barksdale WSC	Yes	Started	N/A	N/A	N/A	State	TWDB Project #62937
Additional groundwater wells [Edwards County Mining Guadalupe River Basin]	2020	Edwards Mining	Yes	Started	Project Sponsor Not Identified	Project Sponsor Not Identified	N/A	Unknown	
Additional groundwater well [Edwards County Mining Colorado River Basin]	2020	Edwards Mining	Yes	Started	Project Sponsor Not Identified	Project Sponsor Not Identified	N/A	Unknown	
Additional groundwater well [Edwards County Mining Nueces River Basin]	2020	Edwards Mining	Yes	Started	Project Sponsor Not Identified	Project Sponsor Not Identified	N/A	Unknown	
Increase wastewater reuse [City of Kerrville]	2020	City of Kerrville	Yes	Not Started	Growth Driven	Shift in Timeline	N/A	Unknown	
Water loss audit & main-line repair [City of Kerrville]	2020	City of Kerrville	Yes	Started	N/A	N/A	N/A	Private	
Explore & develop new Ellenburger Aquifer well supply [City of Kerrville]	2020	City of Kerrville	Yes	Completed	N/A	N/A	N/A	Private	
Increased water treatment and ASR capacity [City of Kerrville]	2030	City of Kerrville	Yes	Started	N/A	N/A	N/A	Unknown	
Construction of an Ellenburger Aquifer water supply well [Kerr County-Other EKCRWSP]	2030	Kerr County-Other	Yes	Completed	N/A	N/A	N/A	Private	
Construction of off-channel surface water storage [Kerr County-Other EKCRWSP]	2030	Kerr County-Other	Yes	Not Started	New wastewater collection system project took priority	Shift in Timeline	N/A	N/A	
Construction of surface water treatment facilities & transmission line [Kerr County-Other EKCRWSP]	2030	Kerr County-Other	Yes	Not Started	New wastewater collection system project took priority	Shift in Timeline	N/A	Unknown	
Construction of ASR [Kerr County-Other EKCRWSP]	2030	Kerr County-Other	Yes	Not Started	New wastewater collection system project took priority	Shift in Timeline	N/A	Unknown	
Construction of Trinity Aquifer wellfield for dense, rural areas [Kerr County-Other EKCRWSP]	2030	Kerr County-Other	Yes	Not Started	New wastewater collection system project took priority	Shift in Timeline	N/A	Unknown	
Construction of desalination plant [Kerr County-Other EKCRWSP]	2030	Kerr County-Other	Yes	Not Started	New wastewater collection system project took priority	Shift in Timeline	N/A	Unknown	
Public conservation education [Kerr County-Other Center Point]	2020	Center Point	Yes	Started	N/A	N/A	N/A	Private	
Purchase water from EKCRWSP [Kerr County-Other Center Point]	2020	Center Point	Yes	Not Started	EKCRWSP is not yet online	Shift in Timeline	N/A	N/A	
Public conservation education [Kerr County-Other Center Point Taylor]	2020	Center Point	Yes	Started	N/A	N/A	N/A	Private	
Purchase water from EKCRWSP [Kerr County-Other Center Point Taylor]	2020	Center Point	Yes	Not Started	EKCRWSP is not yet online	Shift in Timeline	N/A	N/A	

Table 9-1. (continued) 2026 Plateau Region Strategy Implementation Survey

WMS or WMS Project Name	Database Online Decade	Related Sponsor Entity and/or Benefiting WUGs	Has Sponsor taken affirmative vote or action? (TWC 16.053(h)(10))	What is the status of the WMS project or WMS recommended in the 2022 SWP?	If the project has not been started or no longer is being pursued, please explain why.	Project Impediment(s)	Other Project Impediments (not shown in Column G)	What funding type(s) are being used for the project?	Optional Comments
Water loss audit & main-line repair [Kerr County-Other Verde Park Estates]	2020	Verde Park Estates	Yes	Started	N/A	N/A	N/A	Private	
Public conservation education [Kerr County-Other Nueces River Basin]	2020	Kerr County-Other	Yes	Started	N/A	N/A	N/A	Private	
Livestock conservation [Kerr County Livestock Colorado River Basin]	2020	Kerr County Livestock	Yes	Not Started	Project Sponsor Not Identified	Project Sponsor Not Identified	N/A	Unknown	
Livestock conservation [Kerr County Livestock Guadalupe River Basin]	2020	Kerr County Livestock	Yes	Not Started	Project Sponsor Not Identified	Project Sponsor Not Identified	N/A	Unknown	
Livestock conservation [Kerr County Livestock Nueces River Basin]	2020	Kerr County Livestock	Yes	Not Started	Project Sponsor Not Identified	Project Sponsor Not Identified	N/A	Unknown	
Livestock conservation [Kerr County Livestock San Antonio River Basin]	2020	Kerr County Livestock	Yes	Not Started	Project Sponsor Not Identified	Project Sponsor Not Identified	N/A	Unknown	
Additional groundwater wells [Kerr County Mining]	2020	Kerr County Mining	Yes	Not Started	Project Sponsor Not Identified	Project Sponsor Not Identified	N/A	Unknown	
Increase supply to Spofford with new water line [City of Brackettville]	2030	City of Brackettville	Yes	Not Started	Economic Feasibility / Financing	Economic Feasibility / Financing	N/A	N/A	
Increase storage facility [City of Brackettville]	2030	City of Brackettville	Yes	Not Started	Economic Feasibility / Financing	Economic Feasibility / Financing	N/A	N/A	
Water loss audit & main-line repair [Fort Clark Springs MUD]	2020	Fort Clark Springs MUD	Yes	Started	N/A	N/A	N/A	Private	
Increase storage facility [Fort Clark Springs MUD]	2020	Fort Clark Springs MUD	Yes	Not Started	Economic Feasibility / Financing	Economic Feasibility / Financing	N/A	N/A	
Public conservation education [City of Camp Wood]	2020	City of Camp Wood	Yes	Started	N/A	N/A	N/A	Private	
Additional groundwater wells [City of Camp Wood]	2020	City of Camp Wood	Yes	Started	N/A	N/A	N/A	State	
Additional groundwater well [City of Leakey]	2020	City of Leakey	Yes	Started	N/A	N/A	N/A	Unknown	
Develop interconnections between wells within the City [City of Leakey]	2030	City of Leakey	Yes	Started	N/A	N/A	N/A	Unknown	
Water loss audit & main-line repair [Real County-Other Real WSC]	2020	Real WSC	Yes	Started	N/A	N/A	N/A	Private	
Additional groundwater well [Real County-Other Oakmont Saddle Mountain WSC]	2020	Oakmont Saddle Mountain WSC	Yes	Not Started	Economic Feasibility / Financing	Economic Feasibility / Financing	N/A	N/A	
Water loss audit & main-line repair [City of Del Rio]	2020	City of Del Rio	Yes	Started	N/A	N/A	N/A	State	TWDB Project #61580
Additional groundwater well [City of Del Rio]	2020	City of Del Rio	Yes	Started	N/A	N/A	N/A	Unknown	

Table 9-1. (continued) 2026 Plateau Region Strategy Implementation Survey

WMS or WMS Project Name	Database Online Decade	Related Sponsor Entity and/or Benefiting WUGs	Has Sponsor taken affirmative vote or action? (TWC 16.053(h)(10))	What is the status of the WMS project or WMS recommended in the 2022 SWP?	If the project has not been started or no longer is being pursued, please explain why.	Project Impediment(s)	Other Project Impediments (not shown in Column G)	What funding type(s) are being used for the project?	Optional Comments
Water treatment plant expansion [City of Del Rio]	2030	City of Del Rio	Yes	Not Started	Wastewater treatment plant improvements took priority	Shift in Timeline	N/A	State	TWDB Project #73785 & #73786
Develop a wastewater reuse program [City of Del Rio]	2030	City of Del Rio	Yes	Not Started	Wastewater treatment plant improvements took priority	Shift in Timeline	N/A	Unknown	
Purchase water from Del Rio Utilities [Laughlin AFB]	2020	Laughlin AFB	Yes	Not Started	Growth Driven	Shift in Timeline	N/A	Unknown	
Water loss audit & main-line repair [Val Verde County-Other Val Verde County WCID Comstock]	2020	Val Verde County WCID Comstock	Yes	Started	N/A	N/A	N/A	Private	
Water loss audit & main-line repair [Val Verde County-Other San Pedro Canyon Upper Subdivision]	2020	San Pedro Canyon Upper Subdivision	Yes	Started	N/A	N/A	N/A	Private	
Water loss audit & main-line repair [Val Verde County-Other Tierra Del Lago]	2020	Tierra Del Lago	Yes	Started	N/A	N/A	N/A	Private	
Additional groundwater wells [Val Verde County Mining]	2020	Val Verde County Mining	Yes	Not Started	Project Sponsor Not Identified	Project Sponsor Not Identified	N/A	Unknown	

9.2 RWPA'S PROGRESS IN ACHIEVING ECONOMIES OF SCALE

As a result of statutory requirements from HB 807 (86th Legislative Session) the planning rules (31 TAC §357.45(b)) require that each region must include an assessment of the region's efforts to encourage cooperation between WUGs for the purpose of achieving economies of scale and incentivizing WMSs that benefit the entire region. This assessment of regionalization shall include: (1) the number of recommended WMSs in the previously adopted and current RWPs that serve more than one WUG, (2) the number of recommended WMSs in the previously adopted RWP that serve more than one WUG and have been implemented since the previously adopted RWP, and (3) a description of efforts the RWPG has made to encourage WMSs and WMSPs that serve more than one WUG, and that benefit the entire region.

According to the TWDB's data, there are currently no WMSs in the previously adopted and/or current RWP that serve more than one WUG. However, the PWPG recognizes and encourages efforts related to the coordination of developing water management strategies between WUGs where it makes sense. This community-based development is liked by the planning group because it fosters the following key strategies: (1) ensures water solutions are not only practical but also culturally and socially appropriate, (2) embraces the uniqueness of each communities' resources and challenges, advocating for water solutions tailored to specific needs, (3) active community participation instills a sense of ownership and responsibility towards water resources and (4) provides an emphasis on knowledge transfer and helps to empower local communities in becoming good stewards of the water resources.

The PWPG will continue to look for ways to develop shared water management strategies in this *Plan* and for all future regional water plans.

9.3 COMPARISON TO PREVIOUS PLAN

The following section includes a summary that shows how the *2021 Water Plan* differs from the *2016 Water Plan*. Comparisons include:

- Water demand projections;
- Drought of record and the hydrologic and modeling assumptions on which plans are based;
- Water availability at the source;
- Existing water supplies of WUGs;
- WUG and WWP needs;
- Recommended and alternative water management strategies; and
- Any other aspects of the plans that the PWPG chooses to compare.

9.3.1 Water Demand Projections

Table 9-2 provides a comparison between ~~2016~~*2021* and ~~2021~~*2026* Plan water demand projections by county, while Table 9-3 compares water demand projections by water-use category. The overall increase in water demand in the 2026 Plan is mostly the result of significantly higher irrigation use projections.

~~The more populated counties show slight increases in demand, while rural counties show a slight decrease. The largest percentage change between the two Plans is in Kinney County where a significant decrease in irrigation demand in the 2021 Plan results in a county total demand decrease of 38 percent.~~

Table 9-1. Water Demand Projections Comparison by County (Acre-Feet per Year)

County	Plan	2030	2040	2050	2060	2070	2080
Bandera	2021	4,007	4,330	4,493	4,553	4,601	4,629
	2026	4,627	4,669	4,725	4,782	4,838	4,896
Edwards	2021	1,092	1,082	1,073	1,071	1,071	1,071
	2026	1,037	990	953	930	909	886
Kerr	2021	9,659	9,780	9,827	9,926	10,054	10,166
	2026	14,776	15,268	15,644	16,242	16,847	17,425
Kinney	2021	5,227	5,218	5,204	5,201	5,199	5,199
	2026	8,299	8,227	8,182	8,153	8,126	8,097
Real	2021	881	866	853	848	847	847
	2026	1,091	1,013	951	903	856	807
Val Verde	2021	16,471	17,452	18,394	19,361	20,306	21,243
	2026	21,150	21,188	21,260	21,310	21,360	21,411
Total	2021	37,337	38,728	39,844	40,960	42,078	43,155
	2026	50,980	51,355	51,715	52,320	52,936	53,522

Table 9-3. Water Demand Projections Comparison by Water-User Category (Acre-Foot/Year)

Water Use Category	Plan	2030	2040	2050	2060	2070	2080
Municipal	2021	19,340	20,045	20,672	21,380	22,062	22,724
	2026	24,651	24,874	25,081	25,481	25,888	26,272
County-Other	2021	6,635	7,234	7,692	8,134	8,592	9,018
	2026	8,087	8,230	8,372	8,568	8,769	8,962
Manufacturing	2021	20	21	21	21	21	21
	2026	37	38	39	40	41	42
Mining	2021	355	418	448	14	392	380
	2026	312	320	330	338	345	353
Livestock	2021	2,182	2,182	2,182	2,182	2,182	2,182
	2026	2,655	2,655	2,655	2,655	2,655	2,655
Irrigation	2021	8,805	8,805	8,805	8,805	8,805	8,805
	2026	15,238	15,238	15,238	15,238	15,238	15,238

9.3.2 Drought of Record and Hydrologic and Modeling Assumptions

The drought of record consideration for water supply analysis for both the ~~2016-2021~~ and ~~2021-2026~~ Plans is the drought of the 1950s. However, the ~~2016-2026~~ Plan ~~does recognized~~recognize that the current drought conditions, as particularly witnessed in the summer of 2011 and 2022 were having a significant impact on local water supply sources. Surface water availability for both the ~~2016-2021~~ and ~~2021-2026~~ Plans is based on Run 3 of the TCEQ Water Availability Models (WAMs) for the five river basins within the Plateau Region.

Groundwater availability in the ~~2016-2021~~ and ~~2021-2026~~ Plans is based on the Modeled Available Groundwater (MAG) volumes that may be produced on an average annual basis to achieve a Desired Future Condition (DFC) as adopted by Groundwater Management Areas (GMAs) (per Texas Water Code 36.001). Aquifers recognized in both Plans that are not included in the GMA-MAG process are termed “non-relevant” and “other aquifer”. Groundwater availability for these sources is calculated by modeling or standard geohydrologic methods.

9.3.3 Source Water Availability

Total water supply from the source ~~increased-decreased~~ from ~~169,608-196,946~~ acre-feet per year in the ~~2016-2021~~ Plan to ~~194,942-194,827~~ acre-feet per year in the ~~2021-2026~~ Plan, with groundwater ~~and surface water volumes increasing-both decreasing slightly due to changes in the models. by 17.5 percent and surface water increasing by 5.4 percent.~~ A Source Data Comparison table is provided in the Executive summary of this Plan.

9.3.4 Existing Water Supplies of WUGs

A WUG Data Comparison Table is provided in the Executive Summary of this Plan which compares ~~2016-2021~~ Plan and ~~2021-2026~~ Plan water supplies available to cities and general water-use categories based on the current infrastructure ability of each to obtain water supplies. These abilities primarily include existing infrastructure, water-rights limitations, and groundwater conservation district permit limitations.

9.3.5 WUG and WWP Needs

Water-supply needs occur when a WUG’s projected water demand exceeds its supply availability. Table 9-4 and Table 9-5 compare entities in the ~~2016~~2021 Plan and ~~2021~~2026 Plan that are projected to experience a water-supply need at some decade in the next 50-years. The dramatic difference between WUG needs in the two Plans is primarily the result of the decreased ~~supply source availability population and water demand projections~~ shown in the ~~2021~~2026 Plan. Kinney County does not have any water supply shortages within the 2026 Plan.

Table 9-4. 2021 WUG and MWP Needs (Acre-Feet per Year)

County	WUG/MWP	Source Basin	2020	2030	2040	2050	2060	2070
Bandera	Livestock	Guadalupe	2	2	2	2	2	2
	Livestock	Nueces	3	3	3	3	3	3
	Bandera County FWSD 1	San Antonio	66	83	92	96	99	100
	County-Other Bandera River Ranch 1	San Antonio	28	39	44	46	48	49
	County-Other Lake Medina Shores	San Antonio	196	225	239	244	248	251
	County-Other Medina WSC	San Antonio	35	46	51	53	54	55
	Irrigation	San Antonio	75	75	75	75	75	75
Edwards	Mining	Colorado	12	12	12	12	12	12
	Rocksprings	Nueces	98	96	94	94	94	94
	Mining	Nueces	16	16	16	16	16	16
	Mining	Rio Grande	31	31	31	31	31	31
Kerr	Mining	Colorado	11	12	15	16	17	19
	Livestock	Colorado	119	119	119	119	119	119
	County-Other Center Point	Guadalupe	3	3	3	3	3	4
	County-Other Center Point Taylor System	Guadalupe	2	2	3	3	4	5
	Livestock	Guadalupe	173	173	173	173	173	173
	County-Other	Nueces	1	1	1	1	1	1
	Livestock	Nueces	6	6	6	6	6	6
	Livestock	San Antonio	27	27	27	27	27	27
Kinney	Livestock	Nueces	27	27	27	27	27	27
Real	Camp Wood	Nueces	143	139	136	135	135	135
Val Verde	Del Rio Utilities Commission	Rio Grande	4,423	4,918	5,419	5,995	6,598	7,191
	Laughlin Air Force Base	Rio Grande	87	183	284	346	345	345
	County-Other	Rio Grande					12	377
	Mining	Rio Grande	151	210	220	184	153	132

Table 9-5. 2026 WUG and MWP Needs (Acre-Feet per Year)

County	WUG/MWP	Source Basin	2030	2040	2050	2060	2070	2080
Bandera	Livestock	Nueces	20	20	20	20	20	20
	Irrigation	San Antonio	157	157	157	157	157	157
Edwards	Rocksprings	Nueces	66	53	42	36	30	23
	Mining	Nueces	8	8	8	8	8	8
	Livestock	Nueces	53	53	53	53	53	53
	Irrigation	Rio Grande	15	15	15	15	15	15
Kerr	County-Other	Colorado	79	83	86	91	96	101
	Livestock	Colorado	28	28	28	28	28	28
	Irrigation	Colorado	97	97	97	97	97	97
	Kerrville	Guadalupe	1,445	1,780	2,032	2,435	2,842	3,231
	Kerrville South Water	Guadalupe	70	88	103	126	150	173
	Mining	Guadalupe	75	75	75	75	75	75
	Livestock	San Antonio	41	41	41	41	41	41
	Irrigation	San Antonio	3	3	3	3	3	3
Real	Camp Wood	Nueces	147	124	106	92	78	64
	Manufacturing	Nueces	2	2	2	2	2	2
Val Verde	Del Rio Utilities	Rio Grande	5,516	5,524	5,556	5,587	5,618	5,649
	Mining	Rio Grande	0	6	15	23	30	38

9.3.6 Recommended Water Management Strategies and Projects

A total of 67 water management strategies (Table 9-6) for 35 WUGs were recommended in the *2016-2021 Plan*, with a total capital cost of \$230,456,000. ~~The 2026 Plan contains a total of 60 recommended and four alternate strategies/projects (Table 9-7) for 39 WUGs with a total capital cost of X. As a result of more WUGs projecting a water supply need (Table 11-3) in the 2021 Plan, a total of 67 strategies (Table 11-5) for 35 WUGs were recommended with a total capital cost of \$230,456,000. Tables 9-8 and 9-9 provide a similar comparison between strategy projects in the 2016 and 2021 Plans. The 2016 Plan contains 57 projects for 25 WUGs, while the 2021 Plan contains 52 projects for 29 WUGs. The principal change in the two Plans centers around how the 2021 Plan designates the Eastern Kerr County Regional Water Supply Project as a single strategy with multiple project components.~~

Table 9-6. 2021 Summary of Recommended Water Management Strategies

County	Water User Group	Strategy	Strategy ID	Strategy Supply (Acre-Feet Per Year)						Total Capital Cost
				2020	2030	2040	2050	2060	2070	
Bandera	City of Bandera	Reuse treated wastewater effluent for irrigation of public spaces	J-1	0	310	310	310	310	310	\$1,496,000
		Promote, design & install rainwater harvesting systems on public buildings	J-2	0	1	1	1	1	1	\$56,000
		Additional Lower Trinity well and lay necessary pipeline ALTERNATE	J-3	0	403	403	403	403	403	\$3,298,000
		Additional Middle Trinity wells within City water infrastructure area	J-4	161	161	161	161	161	161	\$625,000
		Surface water acquisition, treatment and ASR	J-5	0	1,500	1,500	1,500	1,500	1,500	\$34,188,000
	*Bandera County FWSD #1	Public conservation education	J-6	2	2	2	2	2	2	\$0
		Additional groundwater well	J-7	100	100	100	100	100	100	\$990,000
	*Bandera County Other - Bandera River Ranch #1	Water loss audit and main-line repair for	J-8	4	4	4	4	4	4	\$902,000
	*Bandera County Other - Lake Medina Shores	Public conservation education	J-9	3	3	3	3	3	3	\$0
		Additional groundwater wells ALTERNATE	J-10	251	251	251	251	251	251	\$1,477,000
	*Bandera County Other - Medina WSC	Public conservation education	J-11	1	1	1	1	1	1	\$0
		Additional groundwater well	J-12	55	55	55	55	55	55	\$1,417,000
	Bandera County Other	Drought management (BCRAGD)	J-14	441	491	516	525	533	537	\$0
	Bandera County Other - Volunteer Fire Dept.	Additional groundwater wells to provide emergency supply ALTERNATE	J-16	189	189	189	189	189	189	\$4,280,000
	Bandera County Other - Enchanted River Estates	Water loss audit and main-line repair	J-17	1	1	1	1	1	1	\$117,000
	Bandera County Other	Drought management (BCRAGD)	J-18	23	26	27	28	28	28	\$0
*Bandera County Irrigation	Irrigation scheduling	J-20	36	36	36	36	36	36	\$0	
	Additional groundwater wells	J-21	75	75	75	75	75	75	\$291,000	

Table 9-6. (continued) 2021 Summary of Recommended and Alternate Water Management Strategies

County	Water User Group	Strategy	Strategy ID	Strategy Supply (Acre-Feet Per Year)						Total Capital Cost
				2020	2030	2040	2050	2060	2070	
Bandera	*Bandera County Livestock	Livestock conservation	J-22	1	1	1	1	1	1	\$0
		Additional groundwater well	J-23	2	2	2	2	2	2	\$135,000
		Livestock conservation	J-24	1	1	1	1	1	1	\$0
		Additional groundwater well	J-25	3	3	3	3	3	3	\$126,000
Edwards	City of Rocksprings	Public conservation education	J-26	1	1	1	1	1	1	\$0
		Additional groundwater well	J-27	121	121	121	121	121	121	\$681,000
	Edwards County Other (Barksdale WSC)	Additional well in the Nueces River Alluvium Aquifer and RO wellhead treatment	J-28	54	54	54	54	54	54	\$178,000
		*Edwards County Mining	Additional groundwater well	J-31	16	16	16	16	16	16
	Additional groundwater well		J-33	12	12	12	12	12	12	\$73,000
	Additional groundwater wells		J-35	31	31	31	31	31	31	\$132,000
Kerr	*City of Kerrville	Increase wastewater reuse	J-36	2,500	2,500	2,500	2,500	2,500	2,500	\$12,570,000
		Water loss audit and main-line repair	J-37	134	134	134	134	134	134	\$12,636,000
		Explore and develop new Ellenburger Aquifer well supply	J-39	1,156	1,156	1,156	1,156	1,156	1,156	\$14,493,000
		Increased water treatment and ASR capacity	J-41	0	3,360	3,360	3,360	3,360	3,360	\$15,393,000
	Kerr County Other -Eastern Kerr County Regional Water Supply Project	Project 1. Construction of an Ellenburger Aquifer water supply well	J-45	0	108	108	108	108	108	\$652,000
		Project 2. Construction of off-channel surface water storage		0	1,121	1,121	1,121	1,121	1,121	\$25,231,000
		Project 2. Construction of surface water treatment facilities and transmission lines		0	1,121	1,121	1,121	1,121	1,121	\$22,829,000
		Project 3. Construction of ASR facility		0	1,124	1,124	1,124	1,124	1,124	\$1,461,000

Table 9-6. (continued) 2021 Summary of Recommended and Alternate Water Management Strategies

County	Water User Group	Strategy	Strategy ID	Strategy Supply (Acre-Feet Per Year)						Total Capital Cost
				2020	2030	2040	2050	2060	2070	
Kerr	Kerr County Other -Eastern Kerr County Regional Water Supply Project	Project 4. Construction of Trinity Aquifer wellfield for dense, rural areas	J-45	0	860	860	860	860	860	\$8,367,000
		Project 4. Construction of desalination plant								\$21,162,000
	Kerr County Other - *Center Point	Public conservation education	J-54	1	1	1	1	1	1	\$0
		Purchase water from EKCRWSP	J-46	11	11	11	11	11	11	\$0
	Kerr County Other - *Center Point Taylor System	Public conservation education	J-55	1	1	1	1	1	1	\$0
		Purchase water from EKCRWSP	J-47	43	43	43	43	43	43	\$0
	Kerr County Other - Verde Park Estates	Water loss audit and main-line repair	J-42	1	1	1	1	1	1	\$155,000
	*Kerr County Other	Public conservation education	J-43	1	1	1	1	1	1	\$0
	*Kerr County Livestock	Livestock conservation	J-56	24	24	24	24	24	24	\$0
		Additional groundwater wells ALTERNATE	J-57	119	119	119	119	119	119	\$985,000
		Livestock conservation	J-58	35	35	35	35	35	35	\$0
		Additional groundwater wells ALTERNATE	J-59	173	173	173	173	173	173	\$370,000
		Livestock conservation	J-60	5	5	5	5	5	5	\$0
		Additional groundwater well ALTERNATE	J-61	27	27	27	27	27	27	\$79,000
		Livestock conservation	J-62	1	1	1	1	1	1	\$0
*Kerr County Mining	Additional groundwater well ALTERNATE	J-63	6	6	6	6	6	6	\$66,000	
	Additional groundwater wells	J-65	19	19	19	19	19	19	\$197,000	
Kinney	City of Brackettville	Increase supply to Spofford with new water line	J-66	0	3	3	3	3	3	\$4,271,000
		Increase storage facility	J-67	0	3	3	3	3	3	\$1,272,000
	Fort Clark Springs MUD	Water loss audit and main-line repair	J-68	79	79	79	79	79	79	\$1,531,000

Table 9-6. (continued) 2021 Summary of Recommended and Alternate Water Management Strategies

County	Water User Group	Strategy	Strategy ID	Strategy Supply (Acre-Feet Per Year)						Total Capital Cost
				2020	2030	2040	2050	2060	2070	
Kinney	Fort Clark Springs MUD	Increase storage facility	J-69	0	620	620	620	620	620	\$1,501,000
Real	*City of Camp Wood	Public conservation education	J-72	1	1	1	1	1	1	\$0
		Additional groundwater wells	J-73	143	143	143	143	143	143	\$1,709,000
	City of Leakey	Additional groundwater well	J-75	91	91	91	91	91	91	\$189,000
		Develop interconnections between wells within the City	J-76	0	81	81	81	81	81	\$202,000
	Real County Other - Real WSC	Water loss audit and main-line repair	J-77	2	2	2	2	2	2	\$482,000
	Real County Other - Oakmont Saddle Mountain WSC	Additional groundwater well	J-79	54	54	54	54	54	54	\$417,000
Val Verde	*City of Del Rio	Water loss audit and main-line repair	J-80	12	12	12	12	12	12	\$5,672,000
		Additional groundwater well	J-81	7,191	7,191	7,191	7,191	7,191	7,191	\$12,695,000
		Water treatment plant expansion	J-82	0	943	943	943	943	943	\$8,646,000
		Develop a wastewater reuse program	J-83	0	3,092	3,092	3,092	3,092	3,092	\$2,846,000
	Laughlin Air Force Base	Purchase water from City of Del Rio	J-87	87	183	284	346	345	345	\$0
	Val Verde County Other - Val Verde County WCID Comstock	Water loss audit and main-line repair	J-84	1	1	1	1	1	1	\$406,000
	Val Verde County Other - San Pedro Canyon Upper Subdivision	Water loss audit and main-line repair	J-85	7	7	7	7	7	7	\$142,000
	Val Verde County Other - Tierra Del Lago	Water loss audit and main-line repair	J-86	4	4	4	4	4	4	\$146,000
*Val Verde County Mining	Additional groundwater wells	J-89	242	242	242	242	242	242	\$1,096,000	

Table 9-7. 2026 Summary of Recommended Water Management Projects

9.4 PROGRESS OF REGIONALIZATION

Five of the six counties that comprise the Plateau Region are highly rural with each county containing only one or two communities of significant size. Generally, these rural communities are totally self-supportive without need or justification for regional / shared water supply projects.

The *2026 Plateau Region Water Plan* projects only a limited amount of water-supply shortage for the rural Guadalupe River Basin portion of Kerr County at large; however, it is recognized that a greater percentage of the rural population is concentrated in the eastern portion of the county (see Chapter 2, Figure 2-3). Population growth in eastern Kerr County continues to increase, creating genuine concerns pertaining to the water availability needed to meet these growing demands.

To meet this anticipated need, the Kerr County Commissioners' Court (KCCC) in partnership with the Upper Guadalupe River Authority (UGRA) has plans to develop the Eastern Kerr County Regional Water Supply Project (EKCRWSP) to provide for conjunctive use of surface water and groundwater in high density growth areas of eastern Kerr County outside of the area serviced by the City of Kerrville. The EKCRWSP includes both water and wastewater facilities and will draw on several proposed strategies to tap multiple water-supply sources (see Chapter 5, Strategy J-32).

Regionalization thus plays a key role in moving both surface water and groundwater supplies to the numerous end-users in the County. This *2026 Plateau Region Water Plan* continues to support regionalization by recognizing that future water supplies can best be shared in this high-growth community through cooperative management.