Plateau Underground Water Conservation & Supply District
Groundwater Management Plan – 2024 to 2029

Plateau UWC&SD Board Approval Draft v1

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1.0 Introduction

1.1 Background and District Mission

The Plateau Underground Water Conservation & Supply District was created by Acts of the 59th Texas Legislature in 1965. The District was created to provide for the conservation, preservation, protection, recharge and prevention of waste of the underground water reservoirs located under the District, consistent with Article XVI, Section 59, of the Texas Constitution, and Chapter 36 of the Texas Water Code. The District strives to bring about conservation, preservation, and the efficient, beneficial and wise use of water for the benefit of the citizens and economy of the District through monitoring and protecting the quality of the groundwater. The District also strives to maintain groundwater ownership and rights of landowners as provided in Texas Water Code 36.002.

1.2 Time Period for This Plan

This plan becomes effective upon approval by the Texas Water Development Board and replaces the existing management plan adopted by the Board of Directors. The new plan remains in effect until a revised plan is approved. This plan will be reviewed and amended at least once every five years.

1.3 General Description of District

The District is governed by a Board of five Directors elected by local voters. Serving on the current Board are Steve Williams, Chairman, Kary Gibson, Vice-Chairman, John Ben Cawley, Secretary, Jerry Swift, and Kerry Joy. District rules have been in effect since 1992 which will effectuate the management plan. The District encompasses Schleicher County, Texas. Schleicher County's economy is based in agriculture with a significant contribution from the oil and gas industry.

1.4 Regional Cooperation and Coordination

In 1988, four groundwater conservation districts, Coke County UWCD, Glasscock County UWCD, Irion County WCD, and Sterling County UWCD signed an original Cooperative Agreement. More districts came in and signed this agreement, and in the fall of 1996, the original Cooperative Agreement was redrafted and the West Texas Regional Groundwater Alliance was created. The WTRGA now consists of seventeen locally created and locally funded groundwater conservation districts that encompass 29,800 square miles of West Texas. Due to the diversity of the region, each member district provides its own unique programs to best serve its constituents.

As shown in Figure 1, the following districts are currently members of the WTRGA: Coke County UWCD, Crockett County GCD, Glasscock GCD, Hill Country UWCD, Hickory UWCD, Irion County WCD, Kimble County GCD, Lipan-Kickapoo WCD, Lone Wolf GCD, Menard County UWD, Middle Pecos GCD, Permian Basin UWCD, Plateau UWC&SD, Santa Rita UWCD, Sterling County UWCD, Sutton County UWCD, and Wes-Tex GCD.

This Alliance was created because the local districts have a common objective to facilitate the conservation, preservation, and beneficial use of water and related resources. Local districts monitor

water-related activities of the state's largest industries, such as farming and ranching, oil and gas, and municipalities. The Alliance provides coordination essential to effect region wide planning in an area which has common water resource allocation problems that are unique to this part of Texas.

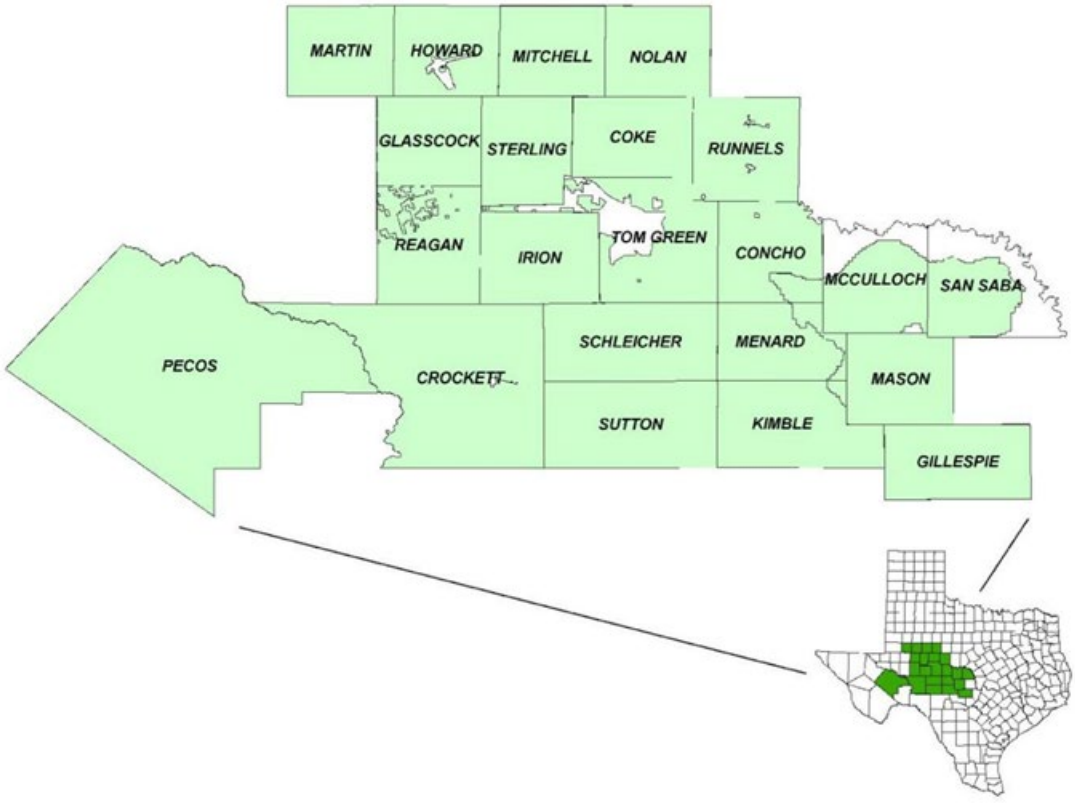

Figure 1. West Texas Regional Groundwater Alliance

2.0 District Information

2.1 Geographic Information

The District lies within the Edwards Plateau and consists of approximately 838,000 acres, and is covers the full extent of Schleicher County.

2.2 Groundwater Resources

The Edwards-Trinity (Plateau) aquifer underlies the Edwards Plateau east of the Pecos River and the Stockton Plateau west of the Pecos River, extending from the Hill Country of Central Texas to the Trans-Pecos region of West Texas, providing water to all or parts of 38 counties. The aquifer

consists of saturated sediments of lower Cretaceous age Trinity Group formations and overlying limestone and dolomites of the Comanche Peak, Edwards, and Georgetown formations.

The Edwards-Trinity (Plateau) aquifer is the fresh water source for Schleicher County and includes all rocks from the base of the Antlers to the top of the Georgetown Formation (Washita Group). Limestone is the predominant rock underlying the Edwards Plateau soils. The permeability of the limestone is not necessarily due to inter granular pore space as in sandstones, but more to joints, crevices, and solution openings that have been enlarged by solvent action of water charged with carbon dioxide.

Permian limestone contains fresh to slightly saline water in the area of the common corners of Kimble, Menard, Schleicher, and Sutton Counties. The Permian is overlain by the Edwards and associated limestone in this area and is recharged by water from the Cretaceous.

3.0 Technical Information Required by Texas Administrative Code

The information in this section is provided pursuant to statutes and rules as summarized in the TWDB Groundwater Conservation District Management Plan Checklist (dated December 6, 2012). The information is organized according to the order in the checklist.

3.1 Estimate of the Modeled Available Groundwater

The Desired Future Conditions for the aquifers located within the District boundaries and Groundwater Management Area 7 were adopted on Aug. 19, 2021. Texas Water Code 36.001 defines modeled available groundwater as "the amount of water that the executive administrator determines may be produced on an average annual basis to achieve a desired future condition established under Section 36.108".

The Lipan aquifer was classified by GMA 7 as not relevant for joint planning purposes in the Plateau UWC&SD.

The adopted DFCs for the Edwards-Trinity (Plateau) Aquifer in Schleicher County was as follows:

> ***Total net drawdown of the Edwards-Trinity (Plateau), Pecos Valley, and Trinity Aquifers not to exceed 8 feet in Schleicher County in 2070 as compared with 2010 aquifer levels.***

As developed in GAM Run 21-012 MAG (presented as Appendix A), the Modeled Available Groundwater for the Plateau UWC&SD is 8,034 AF/yr for all years from 2020 to 2070.

3.2 Estimate of the Amount of Groundwater Being Used Within District on an Annual Basis

Please refer to Appendix B: Estimated Historical Use and 2022 State Water Plan Datasets, Plateau Underground Water Conservation And Supply District, dated December 5, 2023.

3.3 Estimate of the Annual Amount of Recharge from Precipitation

Please refer to Appendix C: GAM Run 23-023, Plateau Underground Water Conservation & Supply District Management Plan, dated December 14, 2023.

3.4 Estimate of the Annual Volume of Water That Discharges to Springs and Surface Water Bodies

Please refer to Appendix C: GAM Run 23-023, Plateau Underground Water Conservation & Supply District Management Plan, dated December 14, 2023.

3.5 Estimate of the Annual Volume of Flow into the District, out of the District, and between Aquifers

Please refer to Appendix C: GAM Run 23-023, Plateau Underground Water Conservation & Supply District Management Plan, dated December 14, 2023.

3.6 Estimate of the Projected Surface Water Supply within the District

Please refer to Appendix B: Estimated Historical Use and 2022 State Water Plan Datasets, Plateau Underground Water Conservation And Supply District, dated December 5, 2023. These estimates show the only surface water supplies are for livestock (17 AF/yr from the Colorado River Basin and 6 AF/yr from the Rio Grande Basin).

3.7 Estimate of the Projected Total Demand for Water within District

Please refer to Appendix B: Estimated Historical Use and 2022 State Water Plan Datasets, Plateau Underground Water Conservation And Supply District, dated December 5, 2023. These estimates were updated to reflect plumbing code savings found in Regional and State Water Plans. The sum of total demands are declining (3,730 AF/yr in 2020 to 3,307 AF/yr in 2070). The most significant use that is expected to decline is “mining”, which includes water use for oil and gas.

3.8 Water Supply Needs

Please refer to Appendix B: Estimated Historical Use and 2022 State Water Plan Datasets, Plateau Underground Water Conservation And Supply District, dated December 5, 2023. These estimates show that for all nine categories listed, there is neither a projected need nor a projected surplus (all values are zero).

3.9 Water Management Strategies

Please refer to B: Estimated Historical Use and 2022 State Water Plan Datasets, Plateau Underground Water Conservation And Supply District, dated December 5, 2023.

Page 7 of the Appendix B includes seven specific groundwater-related water management strategies for Schleicher County:

- Demand reduction in Eldorado (municipal conservation) of 6 AF/yr
- Demand reduction in the Colorado River Basin through irrigation conservation of 58 AF/yr in 2020, increasing to 70 AF/yr in 2070
- Weather modification in the Colorado River Basin that would increase supplies by 176 AF/yr
- Demand reduction in the Rio Grande Basin through irrigation conservation of 33 AF/yr in 2020, increasing to 39 AF/yr in 2070
- Weather modification in the Rio Grande Basin that would increase supplies by 99 AF/yr
- Demand reduction for mining in the Colorado River Basin of 19 AF/yr in 2020 that would decrease to 4 AF/yr in 2070.
- Demand reduction for mining in the Rio Grande Basin of 7 AF/yr in 2020 that would decrease to 2 AF/yr in 2070.

These specific water management strategies were considered and included in the overall preparation of this management plan.

3.10 How the District Will Manage Groundwater Supplies

The District manages groundwater in order to conserve the resource while seeking to maintain the economic viability of all resource user groups, public and private. In consideration of the economic and cultural activities occurring within the District, the District will identify and engage in such activities and practices that could result in a reduction of groundwater use. An observation network shall be maintained in order to monitor changing quality and storage conditions of groundwater supplies within the District. The District will employ all technical resources at its disposal to evaluate the resources available within the District and to determine the effectiveness of management or conservation measures.

The District has adopted rules to manage groundwater withdrawals by means of spacing and production limits. The District may deny a well construction permit or limit groundwater withdrawals in accordance with the guidelines stated in the rules of the District. In deciding to approve or deny a permit or limit groundwater withdrawals, the District will consider public benefit against individual hardship after considering all appropriate testimony. The relevant factors to be considered in deciding to deny a permit or limit groundwater withdrawals include: the purpose of District rules, legal rights, equitable distribution of resource, and economic hardship to both individual surface owners and surrounding community.

3.11 Actions, Procedures, Performance, and Avoidance

The District will implement the provisions of this plan and will utilize the provisions of this plan as a guidepost for determining the direction or priority for all District activities. All operations of the District and all agreements entered into by the District will be consistent with this plan.

The District has adopted and will amend as necessary rules relating to the permitting of wells and the production of groundwater. The rules adopted by the District shall be pursuant to TWC Chapter 36 and the provisions of this plan. All rules will be adhered to and enforced. The promulgation and

enforcement of the rules will be based on the best technical evidence available. The current version of the rules is dated June 23, 2016, and is attached as Appendix D. The rules can be downloaded from the Plateau UWC&SD website:

https://www.plateauuwcsd.com/storage/UserFileFolder/plateaurules2016_(1).pdf

The District shall treat all citizens equally. Citizens may apply to the District for discretion in enforcement of the rules on grounds of adverse economic effect or unique local character. In granting discretion to any rule, the Board shall consider the potential for adverse effect on adjacent landowners. The exercise of said discretion by the Board shall not be construed as limiting the power of the Board. The District will seek cooperation in the implementation of this plan and the management of groundwater supplies within the District.

In an effort to recognize all potential contamination sources, the District will work to promote capping and plugging of abandoned water wells. The District will also coordinate efforts with the Railroad Commission in identifying abandoned oil and gas wells that pose potential threats to the integrity of the groundwater.

The methodology that the District will use to track its progress on an annual basis in achieving its management goals will be as follows: The District manager will prepare and present an annual report to the Board of Directors on District performance in regard to achieving management goals and objectives. The annual report will be maintained at the District office.

3.12 Evidence that the Plan was Adopted after Notice and Hearing

To be added after adoption and included as Appendix E.

3.13 Evidence that District Coordinated with Regional Surface Water Management Entities Following Notice and Hearing

There are no surface water management entities in the District, so this requirement is not applicable.

3.14 Site-Specific Information

Not Applicable

4.0 Management Goals

The General Manager of the District will prepare and submit an annual report ("Annual Report") to the Board of the District. The Annual Report will include an update on the District's performance in regard to achieving management goals and objectives. The General Manager of the District will present the Annual Report within ninety (90) days following the completion of the District's fiscal year audit, beginning with the fiscal year that starts October 1. Upon adoption, the Board will keep a copy of the Annual Report on file, for public inspection, at the District's offices.

4.1 Providing the most efficient use of groundwater

4.1.1 Public Education and Outreach

Objective: The District realizes the importance of public education of groundwater use and conservation practices. Public education will consist of education articles and speaking engagements.

Performance Standard: Each year, the District will publish at least one educational article identifying conservation practices for the efficient use of groundwater and keep a copy at the District office for a period of three (3) years. Each year, the District will respond to invitations to speak on groundwater topics to at least one group and keep a copy of the materials used in the speaking engagement at the District office for a period of three (3) years.

4.1.2 Well Registration and Permitting

Objective: According to District Rules, wells within the District are required to be registered and/or permitted. As part of daily operations, wells will be registered with the District upon notification by well drillers or landowners. The District will permit all wells after determination by District personnel that all well construction criteria have been met. Upon request by the Board, District personnel shall evaluate total water usage on the requested section(s) including permitted wells and exempt wells.

Performance Standard: Number of wells registered annually will be reported in the annual report to the District Board. Number of wells permitted annually will be reported in the annual report to the District Board. Number of evaluations of water usage performed will be reported in the annual report to the District Board.

4.1.3 Region F Meetings

Objective: The District is included in Region F Regional Planning Group. Each year that District will actively participate in Region F Regional Planning personnel, and serve on the Region F RWPG Board, any committee, or office.

Performance Standard: The District shall attend at least 50% of meetings and report the number of meetings attended in the annual report to the District Board.

4.1.4 West Texas Regional Groundwater Alliance Meetings

Objective: The District has entered into a Cooperative Management Agreement with the West Texas Regional Groundwater Alliance. The purpose of the WTRGA is to facilitate the conservation, preservation, protection, and most efficient use of groundwater.

Performance Standard: Each year, the District will attend at least 50% of WTRGA meetings and report the number of meeting attended in the annual report to the District Board.

4.1.5 Groundwater Quality Sampling

Objective: A water quality baseline will be established for the District through a monitor well program of approximately sixty wells.

Performance Standard: At least 33% of these wells will be sampled each year. All test results will be entered into the database and a copy mailed to landowners. An annual summary of samples and landowner reports will be included in the annual report to the District Board.

4.1.6 Field Laboratory Services

Objective: As a service to water well owners within the District, a field lab service for water analysis is available. The availability of this service will be described in a newspaper article. The District will continue to perform water quality analysis for residents of the District upon request.

Performance Standard: At least one article will be published advertising the availability of water analysis service performed by the District each year. The number of water quality analyses requested and performed and the published article will be included in the annual report to the District Board.

4.2 Controlling and preventing waste of groundwater

4.2.1 Wasteful Practices Education

Objective: Each year the District will identify and respond to reports of wasteful practices within five working days and provide public information in the form of a newspaper article.

Performance Standard: Each year at least one article will be published on wasteful practices. The article and the number of reported wasteful practices identified and responded to each year will be reported in the annual report to the District Board.

4.3 Controlling and preventing subsidence

The subsidence tool developed by the Texas Water Development Board was used to assess the potential for subsidence in the Edwards-Trinity (Plateau) Aquifer in the District using the default values provided. The tool can be accessed at:

http://www.twdb.texas.gov/groundwater/models/research/subsidence/subsidence.asp

The tool provides a numeric total weighted risk factor that ranges from 0 (low risk) to 10 (high risk). The results of applying the default values from the tool yield that the score for the Edwards-Trinity (Plateau) Aquifer is 2.97:

Based on applying the tool and the geologic setting, this management goal is not applicable to the District due to the low risk of subsidence in Schleicher County.

4.4 Addressing conjunctive surface water management issues

All surface water impoundments located within the District are used to supply water for livestock consumption. There are no surface water management entities with surface water storage located within the District. This management goal is not applicable to the operations of the District.

4.5 Addressing natural resource issues that impact the use and availability of groundwater and which are impacted by the use of groundwater

The definition of "natural resources" issues from the Texas Administrative Code, Chapter 356 – Natural Resource Issues":

> *"Issues related to environmental and other concerns that may be affected by a district's groundwater management plan and rules, such as impacts to endangered species, soils, oil and gas production, mining, air and water quality degradation, agriculture, and plant and animal life."*

The District has no documented occurrences of endangered or threatened species dependent on groundwater. Other issues related to air, water, and soil are not present. Oil and gas operations are present in Schleicher County. The following rules of the Plateau UWC&SD (Appendix D) highlight natural resource issues as defined above that potentially occur in the Plateau UWC&SD:

- Rule 28(d): Wells encountering undesirable water
- Rule 28(g): Well plugging and capping
- Rule 29: Reporting Undesirable water

Objective: The District will maintain files on all instances of well completions in undesirable water as required by Rule 28(d), maintain all reports of well plugging required in Rule 28(g), and maintain reports of undesirable water reported to the District.

Performance Standard: These summaries will be provided as an agenda item at the next meeting of the District Board. In addition, all reports for the year will be included in the annual report to the District Board.

4.6 Addressing drought conditions

Objective: The District will monitor the Palmer Drought Severity Index by Texas Climatic Divisions at least once a month by downloading the PDSI map at:

http://waterdatafortexas.org/drought/

Performance Standard: The monthly PDSI maps will be included as an agenda item at all Board meetings. All maps will be included in the annual report to the District Board as wells as the number of times notifications were sent to public water suppliers.

4.7 Addressing conservation, recharge enhancement, rainwater harvesting, precipitation enhancement, and brush control where appropriate and cost effective

4.7.1 Addressing Conservation

Objective: The District personnel will meet with Eldorado personnel at least once annually to discuss water usage and conservation techniques implemented including the information contained in the TWDB conservation page: http://www.twdb.texas.gov/conservation/BMPs/index.asp

Performance Standard: A summary of the annual meeting with Eldorado personnel to discuss water usage and conservation techniques implemented will be included in the annual report to the Board.

4.7.2 Addressing Recharge Enhancement

This management goal is not applicable to the District due to lack of available surface water of acceptable quality and cost effectiveness.

4.7.3 Addressing Rainwater Harvesting

This management goal is not applicable to the District due to cost effectiveness.

4.7.4 Addressing Precipitation Enhancement

Objective: Precipitation enhancement can result in reduced groundwater pumping for all users, potential increase in runoff, increased productivity of crops and rangeland, and potentially increases recharge and spring flow. The Plateau UWC&SD has been a member of the West Texas Weather Modification Association (Figure 2) since the initial season of 1996. The average rainfall for the District is 19.0 in/yr and 11.2 inches from May to September when weather modification activities occur.

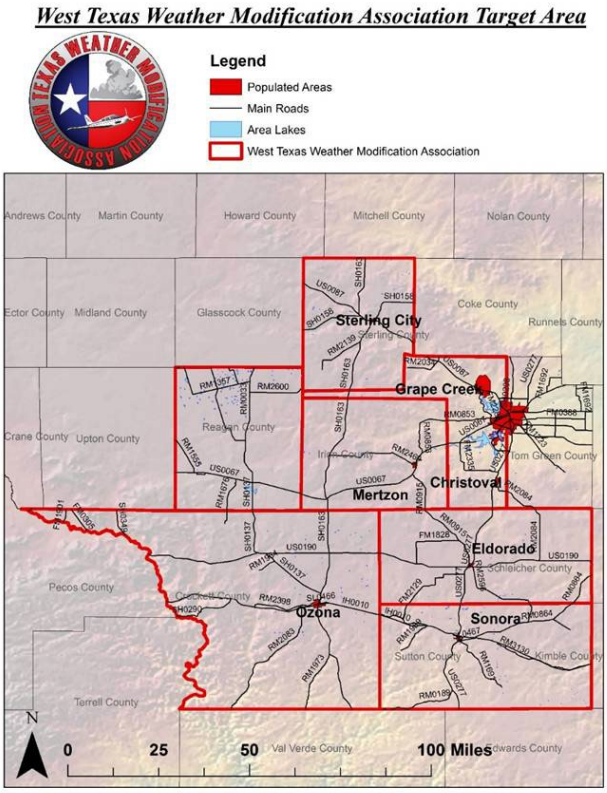

Figure 2. Area covered by West Texas Weather Modification Association

Performance Standard: A summary of precipitation enhancement activities will be included in the annual report to the Board. This summary report will include at least one newspaper article per year on the program, the number of flight paths each year, and monthly rainfall data.

4.7.5 Addressing Brush Control

This management goal is not applicable to the District because the objective is not cost effective due to the sparse nature of the vegetation in the District and the fact that much of the recharge to the District's aquifers are outside the boundaries of the District.

4.8 Addressing the desired future conditions

Objective: To address the desired future conditions adopted by GMA 7, the District will measure water levels in at least 25 monitor wells in the District at least 5 times per year and evaluate whether the average change in water levels conforms with the DFCs adopted by the District. The District will estimate total annual groundwater production based on water use reports, estimated exempt use, and other relevant information and compare these production estimates to the MAG.

Performance Standard: To record the water level data and average annual change in water levels and compare to the DFCs, and to include this information in the District's Annual Report. Also, to record the total estimated annual production and compare this to the MAG and include this information in the District's Annual Report.