

Medina County Groundwater Conservation District Groundwater Management Plan

Adopted February 17, 2016



Board of Directors:
Scott Saathoff, President Pct. At Large
Curtis Boehme, Vice President Pct. 1
Robert J. Rothe, Secretary/Treasurer Pct. 3
Ted Outlaw, Director Pct. 4
John Persyn, Director Pct. 2

District Office Location:
1607 Ave. K
Hondo, TX 78861

General Manager:
David Caldwell

Phone: (830) 741-3162
Fax: (830) 741-3540
E-mail: gmmcgcd@att.net

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Contents

Medina County Groundwater conservation District Background	1
District Mission	1
About the District	1
Groundwater Resources of the District	2
Leona Gravel Aquifer	2
Management Plan Purpose	4
Time Period for the Plan	4
Guiding Principles	4
Actions, Procedures, Performance, and Avoidance for Plan Implementation	4
Methodology to Track District Progress in Achieving Management Goals	5
Technical Information Required by Texas Administrative Code	5
Estimated Modeled Available Groundwater in the District Based on the Desired Future Condition established under Section 36.108;	5
Amount of Groundwater Being Used Within the District on an Annual Basis	5
Annual Amount of Recharge from Precipitation to the Groundwater Resources within the District	5
Annual Volume of Water that Discharges from the Aquifer to Springs and Surface Water Bodies	5
Annual Volume of Flow into and out of the District within Each Aquifer and Between Aquifers in the District	5
Projected Surface Water Supply in the District	5
The Projected Total Demand for Water in the District	5
Water Supply Needs	5
Water Management Strategies	5
Management Goals	6

(1)	Providing the Most Efficient Use of Groundwater	6
(2)	Controlling and Preventing Waste of Groundwater	6
(3)	Controlling and Preventing Subsidence	6
(4)	Conjunctive Surface Water Management Issues	6
(5)	Natural Resource Issues	6
(6)	Drought Conditions	6
(7)	Conservation, Recharge Enhancement, Rainwater Harvesting, and Brush Control	6
(8)	Addressing the Desired Future Conditions	7
List of Appendices		8
	Appendix A	9
	Appendix B	10
	Appendix C	11
	Appendix D	12
	Appendix E	13
	Appendix F	14
	Appendix G	15
	Appendix H	16
	Appendix I	17

Medina County Groundwater conservation District Background

District Mission

The Medina County Groundwater Conservation District (GCD) strives to achieve conservation, preservation, and the efficient, beneficial, and wise use of water for the benefit of the citizens and economy of Medina County.

About the District

The District has the same boundaries as the County of Medina. The Medina County Commissioners Court originally created the District on July 17, 1989, following the petition process. Confirmation and election of permanent directors was held on November 11, 1989. The District was then validated by Act of the legislature under Section 59, Article 16, of the Texas Constitution. The District was validated by the 72nd Legislature in 1991, Senate Bill 1058.

The District Board of Directors is composed of five members elected to staggered four-year terms. Elections for Directors are held in November. A director is elected from each of the county precincts and one Director is elected from the County at-large. The Board of Directors holds regular monthly meetings at the District offices located at 1607 Ave. K, Hondo, Texas. Meetings of the Board of Directors are public meetings noticed and held in accordance with public meeting requirements.

Since the creation of the Edwards Aquifer Authority, the District's jurisdiction is limited to those aquifers other than the Edwards aquifer found in Medina County. The District revised its programs and rules to reflect these changes. The Edwards Aquifer continues to be the major source of water for the citizens of Medina County and therefore information, education, and coordination between the District and the Edwards Aquifer Authority remains a priority to the District Board of Directors.

With pumping limitations now in effect for the Edwards Aquifer, the other aquifers within Medina County are becoming a supplemental supply. The District anticipates demand increasing in these aquifers. Additional interest in aquifer storage and recovery projects also exists, as does the potential of transport of these groundwater resources outside the District boundaries.

The District is located in three Groundwater Management Areas (GMAs): 9, 10 and 13. Chapter 36 Texas Water Code requires the Medina County GCD to coordinate its management of groundwater with other GCDs in its GMAs. Medina County GCD is unique in that it is in three management areas requiring coordination with many other GCDs. Should the relevant GMA boundaries change, the District will adjust its coordination in accordance with that change.

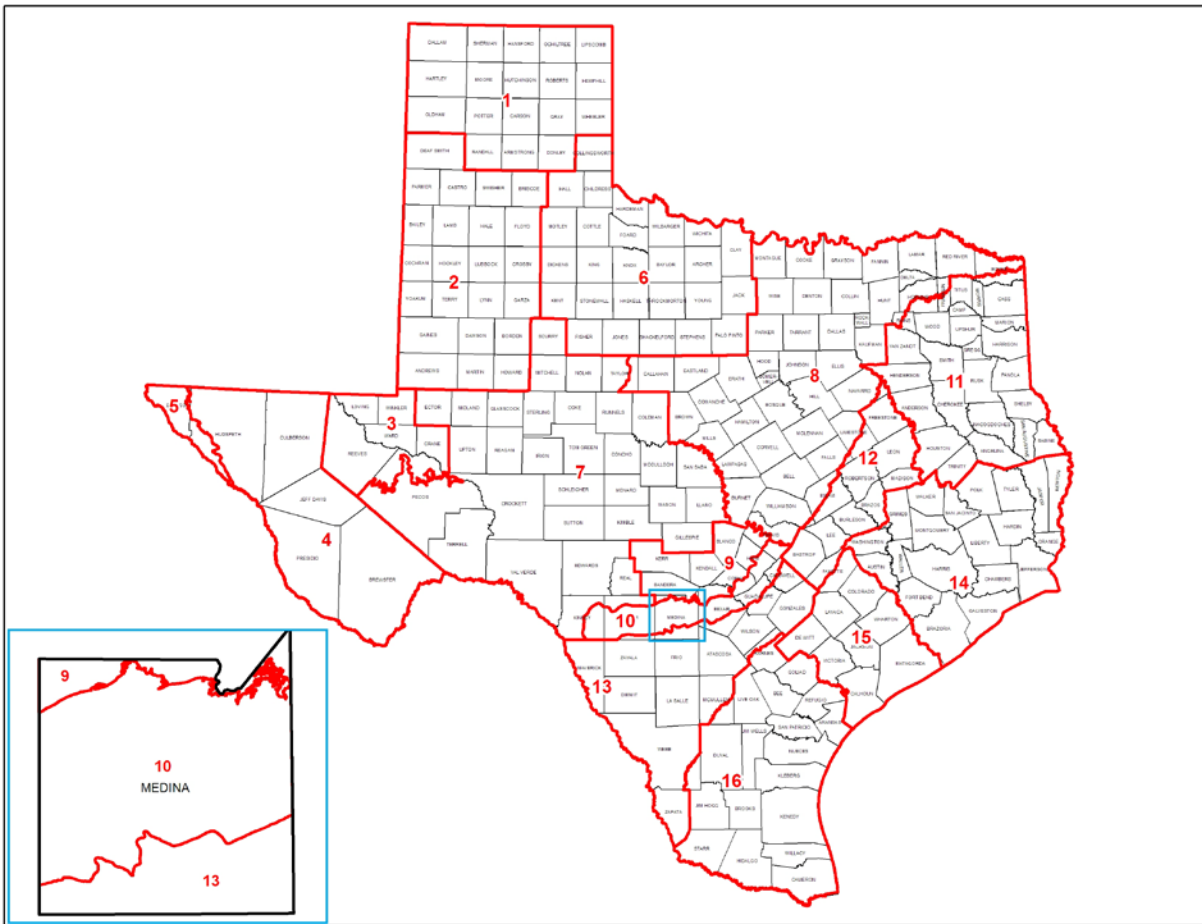


Figure 1. Groundwater Management Areas in Texas and Medina County

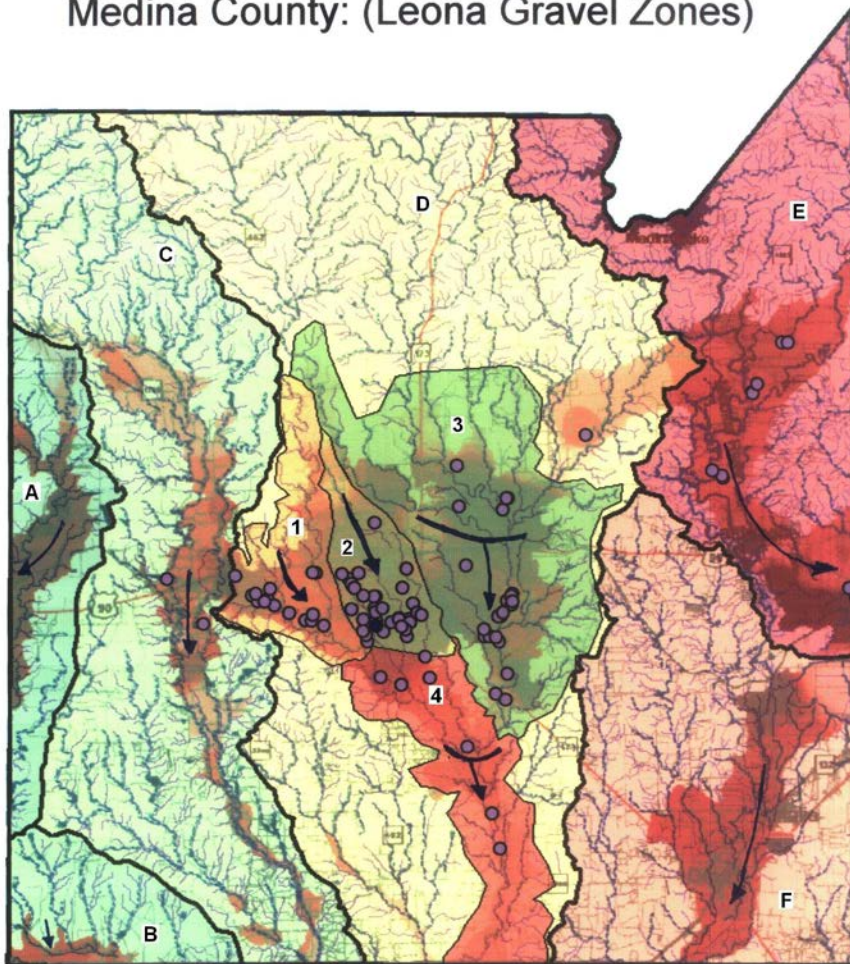
The District will coordinate with the GCDs and surface water management entities within Medina County by providing written notification via email or U.S. Postal Services when the Medina County GCD considers for revision and adoption by the Board of Directors the Groundwater Management Plan, Rules, and other policy related matters that impact the operation and management of the groundwater within Medina County. The other GCDs in the three GMAs, surface water management entities, and other interested parties are encouraged and invited to provide information and written or oral comments on issues of concern to them to the Medina County GCD Board of Directors. The District’s standard practices will be used for posting public notice as established by the Board of Directors and in accordance with the Texas Open Meeting Acts and related requirements for GCDs in Texas.

Groundwater Resources of the District

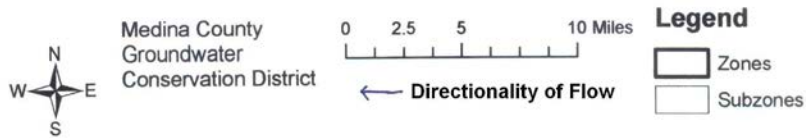
The Aquifers within the jurisdiction of the District include the Carrizo-Wilcox, Trinity, Glen Rose, Leona Gravel, and Anacacho. Additional information on these aquifers is available from TWDB’s Aquifers of Texas (Report 345, 1995). However, specific information on pumping, availability, and recharge are limited to the Carrizo-Wilcox and Trinity Aquifers. This plan, therefore, focuses on those aquifers.

Leona Gravel Aquifer

Medina County: (Leona Gravel Zones)



1:348,528



The dots on the depiction above are Leona gravel wells utilized for irrigation. The dark lines are ridgelines which separate the direction of runoff from rainfall (labeled zones A-F). The three areas encompassed by lighter lines are pools of Leona Gravel (labeled sub-zones 1-3) that seem to be separate from one another, but which join up in the fourth area south of them (labeled subzone 4). Interestingly, sub-zones 1 and 2 seem to have a very limited area where runoff recharges them.

The Leona Gravel Aquifer had been treated as one aquifer when it was in the desired future conditions process, but this treatment did not match up with the physical characteristics. As such, the Leona Gravel Aquifer in the District is managed locally. The Leona Gravel Aquifer did have a MAG, but given the physical separation between zones, and given actual pumping versus drawdown/recharge information and observations, the overall assumptions about the aquifer when developing the MAG seem insufficient as part of a management strategy. As such, the District needs to continue to study the aquifer and collect data in order to develop an understanding by which to generate a more sound management strategy.

Management Plan Purpose

Time Period for the Plan

This plan becomes effective upon adoption by the Board of Directors and will remain in effect for until a revised plan is approved by the Texas Water Development Board (TWDB) and adopted. The plan will be reviewed at least every five years.

Guiding Principles

The District recognizes that the groundwater resources of this region are of vital importance to the residents and that these resources must be managed effectively. A basic understanding of the aquifers and their hydrogeologic properties, as well as a quantification of resources is the foundation from which to build prudent planning measures. This management plan is intended as a tool to focus the programs and plans of the District.

Actions, Procedures, Performance, and Avoidance for Plan Implementation

In consideration of developing or implementing District rules, the District will take into account the need to afford each owner of groundwater in a common, subsurface reservoir a fair share. 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 making a determination to deny a permit or limit groundwater withdrawals, the District will consider the public benefit against individual hardship after considering all appropriate testimony.

The District will use the Management Plan to guide the District in its efforts to preserve and protect the groundwater resources of Medina County and for determining the direction and priority of district activities. Operations of the District, agreements entered into by the District and planning efforts in which the District may participate will be consistent with the provisions of this plan.

Medina County GCD will implement the provisions of this management plan through the application of rules consistent with the management plan, using it as a guide to its principles and policies. Rules adopted by the District shall comply with Chapter 36 of the Texas Water Code and the provisions of this management plan. Promulgation and enforcement of the rules will be based on the best technical evidence available to the District. The District may amend the rules as necessary to insure the best management practices of the groundwater in the District and/or to comply with changes to Chapter 36 of the Texas Water Code. A copy of the District rules are available at the following website address:
<http://www.medinagwcd.org/information.htm>.

The District will seek cooperation from municipalities, water supply companies, irrigators, and all other users of groundwater pumped in Medina County in the implementation of this plan and the management of groundwater supplies within the District. Medina County GCD also will seek to cooperate and coordinate with state and regional water planning authorities and agencies and adjacent groundwater conservation districts. Medina County GCD is committed to work and plan cooperatively with other GCDs in GMAs the GCD is a part of, currently GMA 9, GMA 10, and GMA 13. While managing the supply of groundwater within the district, Medina County GCD will account for the desired future conditions and modeled available groundwater derived from the planning process of GMAs the GCD are part of.

The District may amend the District rules as necessary to comply with changes to Chapter 36 of the Texas Water Code and to insure the best management practices of the groundwater in the District. The implementation of the rules of the District will be based on the best available scientific and technical data, and on fair and reasonable evaluation.

Methodology to Track District Progress in Achieving Management Goals

The General Manager of the District will prepare and present an annual report to the Board of Directors evaluating the impact of the District’s activities on its goals, management objectives, and performance standards. The Annual Report will be presented 180 days following the completion of the District’s fiscal year.

Technical Information Required by Texas Administrative Code

Estimated Modeled Available Groundwater in the District Based on the Desired Future Condition established under Section 36.108;

(in acre feet, per year)	MAG GMA 9	MAG GMA 10	MAG GMA 13	MAG Sum
Trinity	2,500	5,369		7,869
Leona Gravel		16,382	5,635	22,017
Carrizo-Wilcox			2,568	2,568
Totals	2,500	21,751	8,203	32,454

Please refer to Appendix A, Appendix B, Appendix C, Appendix D, and Appendix E

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

Please refer to Appendix G

Annual Amount of Recharge from Precipitation to the Groundwater Resources within the District

Please refer to Appendix F

Annual Volume of Water that Discharges from the Aquifer to Springs and Surface Water Bodies

Please refer to Appendix F

Annual Volume of Flow into and out of the District within Each Aquifer and Between Aquifers in the District

Please refer to Appendix F

Projected Surface Water Supply in the District

Please refer to Appendix G

The Projected Total Demand for Water in the District

Please refer to Appendix G

Water Supply Needs

Please refer to Appendix G

Water Management Strategies

Please refer to Appendix G

Management Goals

(1) Providing the Most Efficient Use of Groundwater

- a. Objective: Develop and maintain a Water Well Permitting Program for tracking all permits authorizing water well operation and groundwater production.
- b. Performance Standard: Each year, after receiving all relevant Annual Use Surveys administered by the district, the District will summarize groundwater production from Operating Permits approved by Medina County GCD.

(2) Controlling and Preventing Waste of Groundwater

- a. Objective: Develop and maintain a Groundwater Conservation Education Program
- b. Performance Standard: Each year the District will summarize within the annual report the educational activities the District engages in which portend to controlling and preventing waste of groundwater.

(3) Controlling and Preventing Subsidence

- a. This goal is not applicable to the Medina County Groundwater Conservation District.

(4) Conjunctive Surface Water Management Issues

- a. Objective: Participate in the regional water planning process by attending at least one South Central Texas Regional Water Planning Group (Region L) meeting.
- b. Performance Standard: Report annually to the Board the attendees, dates and the number of meetings attended.

(5) Natural Resource Issues

- a. Objective: Develop and maintain a Well Monitoring Program.
- b. Performance Standard: Each year, the District will summarize within the annual report the monitoring activities including the number of wells monitored.

(6) Drought Conditions

- a. Objective: Drought can impact the availability of groundwater, and so must be considered in both long and short term availability strategies.
- b. Performance Standard: Each month, the District will download the updated National Oceanic and Atmospheric Administration (NOAA) U.S. Seasonal Drought Outlook map and check for periodic updates, as well as the Palmer Drought Severity Index (PDSI).

(7) Conservation, Recharge Enhancement, Rainwater Harvesting, and Brush Control

- a. Objective (Conservation): The District will submit at least one article regarding water conservation for publication each year to at least one newspaper of general circulation in Medina County.
- b. Performance Standard (Conservation): A copy of the article submitted will be included in the Annual Report given to the Board of Directors
- c. Objective (Recharge enhancement): The district will investigate methods for enhancing recharge.
- d. Performance Standard (Recharge enhancement): At least annually, the Board will be presented with information on potential recharge enhancement opportunities.
- e. Objective (Rainwater Harvesting): The District will provide information on rainwater harvesting each year.
- f. Performance Standard (Rainwater Harvesting): Each year the District will summarize within the annual report all efforts made in promoting rainwater harvesting including providing educational links to the district website and any other educational avenues.
- g. Objective (Precipitation Enhancement): Goals related to Precipitation Enhancement are not applicable to Medina County GCD.

- h. Performance Standard (Precipitation Enhancement): Goals related to Precipitation Enhancement are not applicable to Medina County GCD.
- i. Objective (Brush Control): The District will evaluate the State Brush Control Plan as it is revised from time to time at least once each year to determine whether projects within the District will increase the groundwater resources of the District.
- j. Performance Standard (Brush Control): Upon review of a newly revised State Brush Control Plan, the District's Annual Report will include a copy of the most recent brush control information pertaining to the District.

(8) Addressing the Desired Future Conditions

- a. Objective: The District will monitor water levels and evaluate whether the average change in water levels is in conformance with the DFC's adopted by the District. The District will estimate the total annual groundwater production for each aquifer based on water use reports, estimated exempt use and other relevant information and compare these production estimates to the MAG's.
- b. Performance Standard: Each year the District will summarize within the annual report the monitoring activities including the number of wells monitored and the average annual change of water levels and compare them to the DFC's. The District will also record the estimated annual production from each aquifer and compare these amounts to the MAG. These production amounts will also be reported in the annual report.

List of Appendices

- Appendix A - GTA Aquifer Assessment 10-07 MAG Leona Gravel Aquifer in Medina County Modeled Available Groundwater estimates, GMA 10
- Appendix B - Aquifer Assessment 10-41 MAG: Aquifer Assessment for the Leona Gravel, GMA 13
- Appendix C - Report GAM Run 10-050 MAG Version 2 Trinity aquifer, GMA 9
- Appendix D - GTA Aquifer Assessment 10-29 MAG Trinity Aquifer, GMA 10
- Appendix E - GAM Run 10-012 MAG: Modeled Available Groundwater for the Carrizo-Wilcox, Queen City, and Sparta Aquifers, GMA 13
- Appendix F - GAM Run 15-002: Medina County Groundwater Conservation District Management Plan
- Appendix G - Estimated Historical Water Use and 2012 State Water Plan Datasets: Medina County Groundwater Conservation District
- Appendix H - Water Management Strategies from the 2012 State water Plan, Chapter 7
- Appendix I - Additional Documentation

Appendix A
GTA Aquifer Assessment 10-07 MAG Leona Gravel Aquifer in Medina County Modeled Available
Groundwater estimates, GMA 10

Appendix B
Aquifer Assessment 10-41 MAG: Aquifer Assessment for the Leona Gravel, GMA 13

Appendix C
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Appendix D
GTA Aquifer Assessment 10-29 MAG Trinity Aquifer, GMA 10

Appendix E
GAM Run 10-012 MAG: Modeled Available Groundwater for the Carrizo-Wilcox, Queen City, and Sparta Aquifers, GMA 13

Appendix F
GAM Run 15-002: Medina County Groundwater Conservation District Management Plan

Appendix G
Estimated Historical Water Use and 2012 State Water Plan Datasets: Medina County Groundwater Conservation District

Appendix H
Water Management Strategies from the 2012 State water Plan, Chapter 7

Appendix I
Additional Documentation