

**MINUTES OF THE APRIL 8, 2013
BOARD OF DIRECTORS MEETING OF
NORTH PLAINS GROUNDWATER CONSERVATION DISTRICT**

The Board of Directors of North Plains Groundwater Conservation District met in regular session April 8, 2013, at 9:30 a.m. in the Conference Room of the Hampton Inn, 2010 South Dumas Avenue, Dumas, Texas 79029. The following persons were present:

Members Present:

Gene Born; President
Daniel L. Krienke, Director;
Bob Zimmer, Secretary;
Phil Haaland, Director;
Harold Grall, Director;
Brian Bezner, Vice President; and,
Justin Crownover, Director.

Staff Present during part or all of the meeting:

Steve Walthour, General Manager;
Dale Hallmark, Assistant General Manager and Hydrologist;
Kirk Welch, Assistant General Manager/District Outreach;
Pauletta Rhoades, Finance and Administration Coordinator; and
Laura West, Production Monitoring Coordinator.

Others present during part or all of the meeting:

Casey Kimbrell;
Sabrina Leven;
Louis Leven;
Marisol Marquez;
Stella Knickerbocker;
Steve Ramos;
Amy Haschke;
Dillon Pool;
C. C. Sysmobaath;

Tom Moore;
F. Keith Good, District General Counsel; and,
Ellen Orr, Paralegal.

President Born declared a quorum present and called the meeting to order at 9:32 a.m.

Director Danny Krienke gave the invocation and President Born led the pledge.

President Born asked if there were persons present who desired to make public comment. No public comment was made.

Bob Zimmer moved to approve the Consent Agenda consisting of the approval of the Minutes of the Board Meeting of March 18, 2013; the un-audited District expenses presented to the Board from March 1, 2013 through March 31, 2013, including the General Manager's Expense and Activity Report; the approval of payment of professional services and out-of-pocket expenses to Lemon, Shearer, Phillips & Good, P.C. in the amount of \$9,507.87 for March 1, 2013, through March 31, 2013; the approval of the Moore County Contract for Tax Assessment and Collection Services for July 1, 2013 through June 30, 2014; and approval of the Sherman County Appraisal

District Budget for 2014 as proposed by the Sherman County Appraisal District Board. Harold Grall seconded the motion and it was approved by the majority vote of the Board with Justin Crownover abstaining from the vote.

Pauletta Rhoades administered the Oath of Office to Justin Crownover.

The General Manager informed the Board that every year the Board must review the annual contract for the plan year regarding the District's retirement account investment options, investment policy, fund performance, participant demographics, fund managers and asset charges through John Hancock Life Insurance Company for the plan year. For plan year 2012, the Board should review the following:

Contract statistics, participant details, asset allocation by investment category and by age group, plan services review, fiduciary warranty review, top ten investment options, allocation of contract assets by investment option, return and risk relative to peer group, investment returns and standard deviations, lifestyle performance, and asset charges and sub-account fees.

Marisol Marquez and Stella Knickerbocker, representatives of the John Hancock Life Insurance Company presented a review of the District's retirement account investment options, investment policy, fund performance, participant demographics, fund managers and asset charges to the Board.

The District's General Manager recommended that the District accept the investment options, investment policy, fund performance, participant demographics, fund managers and asset charges, for plan year 2012 as presented by the John Hancock Life Insurance Company.

Phil Haaland moved to accept the investment options, investment policy, fund performance, participant demographics, fund managers and asset charges, for plan year 2012 from John Hancock Life Insurance Company. Brian Bezner seconded the motion and it was unanimously approved by the Board.

In October 2012, the District proposed to adopt a new management plan that among other things would update the requirement to address Desired Future Conditions. The District conducted Stakeholders' Meetings for public comment and questions on the proposed Management Plan in Perryton, Texas at 7:00 p.m. on November 19th, 2012 and in Dalhart Texas at 7:00 p.m. on November 20th. The District conducted a public hearing concerning the District's intent to adopt a revised Management Plan on November 29, 2012. The purpose of these meetings was to provide interested members of the public the opportunity to appear and provide oral or written comments on the proposed revisions to the Management Plan. Written comments that indicated whether the comments were general and directed at all of the proposed revisions of the Management Plan, or whether they were directed at specific items in the proposed Management Plan were accepted in the District offices. Written comments and a transcript of the hearing were provided to the Board. In January 2012, District staff incorporated proposed amendments to the plan based on the hearings and submitted the Proposed Management Plan to the Texas Water Development Board for review. The TWDB responded with a list of required and suggested changes (list attached). District staff incorporated all the changes and returned the Proposed Revised Management Plan to the TWDB and received an email indicating the review was complete.

The general manager recommended that the Board amend the originally Proposed Management Plan, as set forth in Exhibit "A" attached hereto and incorporated herein for all purposes, and hold a public hearing on May 14, 2013 concerning the District's intent to adopt a revised Management Plan.

Danny Krienke moved that the Board amend the proposed management plan with revisions provided by the TWDB and order a public hearing on May 14, 2013 concerning the District's intent to adopt a Revised Management Plan, which will permit interested members of the public the opportunity to appear and provide oral or written comments on the proposed revisions to the Management Plan. Bob Zimmer seconded the motion and it was unanimously approved by the Board.

In March, the General Manager reviewed with the Board potential draft rules. The General Manager proposed the following rule making schedule to develop a proposed set of rules for public comment by the end of this calendar year:

Description	Board Meeting
Chapter 8 - Amendments to allowable annual production to achieve desired future conditions	April 8
Chapter 8 (Continued)/ Chapter 3 - Well classification, spacing and density	May 14
Chapter 7 - Pooled groundwater units	June 11
Chapter 4 - (Well construction and required equipment) and Chapter 5 (Water flow meters and alternative measuring method)	July 9
Chapter 6 - Allowable annual production and reporting /Chapter 2 -Applications, permits and registrations	August 13
Chapter 9 - Waste of groundwater /Chapter 10 -Deposits and fees/Administrative and Civil Procedures	September 10
Administrative and Civil Procedures (Cont)/Chapter 1 - General provisions, District jurisdiction, definitions.	October 8
Recap and propose rules to public.	November 12

The schedule set forth above is designed first to cover the Rule amendments and additions to the Allowable Annual Production to achieve the DFCs. In the draft of Chapter 8, the Desired Future Conditions for both the Ogallala and Dockum aquifers based on the Groundwater Management Area 1 joint planning process are articulated in Section 8.1. Those DFCs are as follows:

1. Ogallala Aquifer and Rita Blanca Aquifer Desired Future Conditions –

- A. Management Zone 1 - 40% volume in storage remaining in 50 years in Dallam, Hartley, Sherman and Moore Counties; and*
- B. Management Zone 2 - 50% volume in storage remaining in 50 years in Hansford, Hutchinson, Ochiltree and Lipscomb Counties.*

2. Dockum Aquifer Desired Future Conditions - the average decline in water levels will decline no more than 30 feet over the next 50 years.

These DFCs are reviewed every five years by GMA-1. Part of that review includes a run of the groundwater availability models for each of the aquifers. This means that the modeled available groundwater amount for the next fifty years is reset.

The draft of Section 8.2 sets out the conditions for reduction of an Allowable Annual Production Limit. Those conditions are contemplated as follows:

- 1. Potentiometric groundwater level declines at a greater rate than projected by groundwater availability modeling to achieve Desired Future Conditions in a Management Zone for three years;*
- 2. Average Annual Production in a Management Zone exceeds the average MAG Amount for the same three year period; and*
- 3. Annual Production in a Management Zone for the most recent year in the three year period exceeds the MAG for that year.*

These criteria contemplate that for any three consecutive years the reductions could be implemented. However, from initial stakeholder input and staff review, the General Manager recommended that the Board consider setting the three years as the first three years of each five-year GMA planning period with the reductions, if any, going in affect at the beginning of the next five-year cycle.

The draft of Section 8.3 provides the method for reducing production. Section 8.3 contemplates that an Allowable Annual Production Limit shall be reduced as follows:

1. By August 1 of each year after Allowable Annual Production reports for a year the District shall publish notice of the conditions of the Aquifer. The notice shall contain the following:

- A. The total annual production amount for the Management Zone;*
- B. The total MAG amount for the year;*
- C. The difference in the total annual production and the MAG amount.*
- D. The percent difference of the total annual production to the MAG amount. Whether a reduction in the Allowable Annual Production may or may not be required.*
- E. If a reduction in the Allowable Annual Production is required then the District will additionally publish as follows:*
 - (1) The amount of any potential Allowable Annual Production Limit reduction based on the current annual production limit multiplied by the percent difference; and*
 - (2) The new Allowable Annual Production Limit for the management zone will go into effect four years after the first year and the Allowable Annual Production may:*
 - (a) Be the lesser of reduction calculated for the first year of the three years or reduction calculated for the three year average; and*
 - (b) Not be reduced if the third year production does not exceed the MAG for that year or the three year average does not exceed the average MAG.2.*

2. By August 1 of the year after the third year, the District will publish notice that beginning January 1 of the following year the Allowable Annual Production Limit shall be the lesser of:

- A. The Allowable Annual Production reduced by the average percent difference in the average MAG and the average annual production for the three years;*
- B. The Allowable Annual Production reduced by the percent difference in the MAG and the annual production for the trigger year; or*
- C. The Allowable Annual Production will not be reduced because the third year annual production is less than the MAG for that year.*

3. The new Allowable Annual Production will be rounded to the nearest tenth acre-foot per acre.

It was noted by the General Manager that if Chapter 8 is based on the GMA five-year planning cycle, then the steps to achieve the Desired Future Conditions may not have to be as extensive as this draft.

Danny Krienke moved to tie the set of District Rules to the Modeled Available Groundwater Cycle. Bob Zimmer seconded the motion and it was unanimously approved by the Board.

At 10:50 a.m. the Board recessed and at 11:01 the Board reconvened.

Phil Haaland moved to tie any Annual Allowable Groundwater Production reduction to the 10-year average of the Modeled Available Groundwater and production and for the Board to consider making any required reduction every five-years, beginning in 2015. Brian Bezner seconded the motion and it was unanimously approved by the Board.

Phil Haaland moved to drill a new Class A water supply well and 4 test holes at the North Plains Research Field and have the Ag Committee review production limits at the Research Field and make a recommendation to the Board about drilling an additional irrigation well at the Research Field. Brian Bezner seconded the motion and it was unanimously approved by the Board.

The General Manager reported that the 200-12 Program has ordered twenty-two AquaSpy soil moisture probes with the ability to re-install the probes after harvest to measure winter soil moisture and to get continuity from one season to the next. Better Harvest has also been given the locations of the fields to begin sampling. CropMetrics has been contracted to pull the EM38 sled over all fields that have not been surveyed. Pivotrak has also been given the locations of the fields and a request for quote has been issued for the install of flow meters, monitoring, and control. Randy is currently reading gypsum blocks from the previous season and starting to install new gypsum blocks where needed. This season may include the introduction of a new technology, Hydrobio. Hydrobio uses satellite imagery to schedule irrigation.

Texas AgriLife Extension met with staff regarding the EPIC demonstrations. After review of the previous year's contracts, Texas AgriLife Extension and the General Manager agree that the contract for 2013 would be a letter agreement with less funding going through College Station. The original contract contemplated the District paying through the contract meals, attendance fees and some travel by the agents. However, most agents have their own travel budget, the fees can be done as a direct payment to the agents and the meals seem to be managed when the District deals with the vendors directly. The District deals with equipment vendors directly. This year's EPIC project will consist of possibly six cooperators. Kristy Synatschk, JR Sprague, and Scott Strawn will be using the same cooperators as the previous season. An order for twelve soil moisture probes has been placed with AquaSpy.

The Texas Water Development Board (TWDB) is soliciting a Request for Applications (RFAs) for the state fiscal year 2013. The total amount of the grants to be awarded by the TWDB shall not exceed \$600,000 from the Agricultural Water Conservation Fund. Applications must be in response to one of the following three categories:

1. Agricultural irrigation water use measurement equipment

- Individual applications in this category are limited to \$100,000 in TWDB grant funds.
- Applications must identify an agricultural water conservation strategy from their applicable most recent regional water plan and/or the 2012 State Water Plan.
- Entities that received TWDB grants funds for irrigation metering projects in the past two years are not eligible for a 2013 metering grant in this category. The

intent is to attract new entities to participate in the TWDB voluntary irrigation metering program and/or bring back those entities that previously participated but are no longer involved in the program.

This Grant may include up to 100 percent of the costs associated with the purchase and installation of agricultural irrigation measurement devices, portable flow meters, telemetry, and weather monitoring accessories. Applicants will be responsible for all other costs including, but not limited to, maintenance, data collection, reporting services, and all other expenses for the duration of the contract. Water use data must be reported annually for each piece of equipment installed for a period of at least five full calendar year irrigation seasons following installation. These annual data reports are to include irrigated acreage, crop type, irrigation rate (inches per acre), total water use, county name, latitude/longitude coordinates, and annual rainfall totals by county and/or by rain gauge location. Annual water savings estimates and an explanation of the water savings calculation methodology resulting from use of the equipment must be reported along with the five-plus years of water use data.

2. Agricultural irrigation system improvements

- Individual applications in this category are limited to a maximum of \$250,000 in TWDB grant funds (plus required local match).
- Applications must identify an agricultural water conservation strategy from their applicable most recent regional water plan and/or the 2012 State Water Plan.
- Eligible applications must include at least a 50 percent local cost-share for all project expenses. Priority may be given to projects with the highest local cost-share percentages and/or leveraging of other sources of funding.

Projects to improve irrigation water deliveries and application efficiency will be considered on a cost-share basis. Potential scope of work for projects considered in this category includes:

- Replacement and/or upgrades of outdated systems with newer more efficient systems, such as:
- Canal to pipeline conversions
- Canal lining and other necessary maintenance to water distribution systems
- Assistance [provided from state agency or political subdivision] to farmers to convert to higher efficiency, water conserving irrigation systems. For example, converting from flood irrigation to center pivot, drip, or other appropriate water conserving irrigation systems.
- Implementation of centralized control systems, such as:
- Supervisory Control and Data Acquisition (SCADA) technology
- Telemetry
- Automated gates
- Other proven, innovative, cost-effective technologies and equipment that will improve irrigation water deliveries and water use efficiency leading to realization of actual water savings.

Applicants are required to report on a quarterly basis during the implementation phase, provide three annual water savings reports following implementation, and provide a draft and final report upon completion of the three full years of water savings reporting.

3. Feasibility and Assessment Study of Remote Sensing Technologies to Assist with Estimating Irrigation Water Use

- Individual applications in this category are limited to \$200,000 in TWDB grant funds (plus local match).
- Priority may be given to projects with the highest local cost-share percentages and/or leveraging of other sources of funding.

By consensus of the Board, the requests for applications for grant described above in items 1, 2 and 3 were delegated to the Ag Committee for its review and analysis and to report its recommendation back to the Board at the next Board Meeting.

Harold Grall departed the Board meeting at 11:36 a.m.

Laura West reported to the Board that District staff is in the process of entering 2602 production reports that the District mailed to producers back in December. District staff has entered approximately 800 reports into the database. District staff anticipates having all reports processed and entered by the middle of May. It was anticipated that within the next few weeks notices will be mailed to any person who has exceeded the Annual Allowable Production limitation in those 800 reports. Of all of the producers in the District, it was reported that only 2 persons had not submitted Production Reports for calendar year 2012.

The General Manager presented a report to the Board of the Bills which had been filed in the 83rd Legislative Session which may affect this District.

The General Manager reported to the Board that Stakeholders filed 97% of 2602 Production Reports for 2012. As of April 3rd, two reports have not been filed in the District offices. Letters were sent to Matt Wing Property ID#925 from Dallam County and Patti Vincent Property ID#2301 of Sherman County. Wells on Vincent Farms look unused but according to ARC Map GIS survey there is indication that a crop was grown on the property in 2012. Phone calls and messages were left for Matt Wing. Staff was unable to find a phone number for Patti Vincent.

Thirty-Three (33) Letters for seventy Five (75) 2012 late filed Production Reports were mailed out on March 28, 2013. The due date to pay the late filing fee or install water meters on all wells on the Property is June 1, 2013. The early filing option for next year was offered with full reimbursement of fee if paid by June 1, 2013, and if the Production Report is filed by January 15, 2014.

District personnel will now begin focusing on reading meters. In addition to reading meters, District staff will be working on the survey of wells in the PGMA areas over the summer. Well owners in the PGMA areas are required to report their water use for 2013 by March 1, 2014.

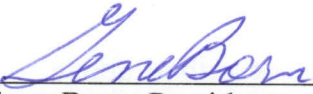
Steve Walthour reported to the Board that the District had solicited bids on a 60'x 100' equipment building for the Research Field. The purpose of the building is to store farm equipment. Bids will close on the facility at the research field in April. The General Manager recommended that this matter be delegated to the Ag Committee for its review and recommendation to the Board at the May Board Meeting.

District Directors reported to the Board regarding meetings and/or seminars attended, weather conditions and economic development in each Director's precinct.

Steve Walthour presented the General Manager's Report, including information concerning upcoming meetings and conferences and the General Manager's activity summary.

By consensus, the Board set its next regular Board meeting for May 14, 2013 at 9:30 a.m.

Phil Haaland moved to adjourn the meeting. Brian Bezner seconded the motion and it was unanimously approved by the Board. President Born declared the meeting adjourned at 12:08 p.m.


Gene Born, President


Bob Zimmer, Secretary



Management Plan

2013-2023

*Revised
2013*

NORTH PLAINS GROUNDWATER CONSERVATION DISTRICT

BOARD OF DIRECTORS

Gene Born – *President, Lipscomb County*
Brian Bezner – *Vice President, Dallam County*
Bob Zimmer – *Secretary, Hutchinson and Hansford Counties*
Wesley Spurlock – *Member, Sherman County*
Harold Grall – *Member, Moore County*
Daniel Krienke – *Member, Ochiltree County*
Phil Haaland – *Member, Hartley County*

DISTRICT STAFF

Steven D. Walthour, PG - *General Manager*

DISTRICT OFFICE

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TABLE OF CONTENTS

TABLE OF CONTENTS.....	3
SECTION I – DISTRICT MISSION STATEMENT	7
SECTION II – PURPOSE OF MANAGEMENT PLAN	7
A. Introduction.....	7
B. Groundwater Management Area Joint Planning.....	7
a. Ogallala Aquifer and Rita Blanca Aquifer Desired Future Conditions.....	8
b. Dockum Aquifer Desired Future Conditions	8
SECTION III – DISTRICT INFORMATION	9
A. Creation	9
B. Location and Extent.....	9
C. Background	10
D. Authority and Framework	11
E. General Geology and Hydrology	12
F. Local Aquifers	12
Ogallala aquifer.....	12
Dockum aquifer.....	12
Rita Blanca aquifer	12
SECTION IV - TECHNICAL DISTRICT INFORMATION REQUIRED BY TEXAS ADMINISTRATIVE CODE	13
A. Modeled Available Groundwater (MAG).....	13
B. Estimated Annual Groundwater Use	14
C. Estimated Annual Aquifer Recharge	15
D. Estimated Annual Aquifer Discharge to Springs, Lakes, Streams and Rivers	15
E. Estimated Aquifer Annual Flow Volume Into and Out of the District and Annual Flow Between Aquifers	16
F. Projected Surface Water Supply	17
G. Projected Total Water Demand.....	17
H. Estimated Water Supply Needs	18
SECTION V – PROJECTED WATER MANAGEMENT STRATEGIES.....	18

SECTION VI - METHODOLOGY TO TRACK DISTRICT PROGRESS IN ACHIEVING MANAGEMENT GOALS - 31 TAC § 356.5(a)(6)	20
VII - ACTIONS, PROCEDURES, PERFORMANCE, AND AVOIDANCE FOR DISTRICT IMPLEMENTATION OF MANAGEMENT PLAN - 11 TAC § 356.5 (a)(3): 31 TAC, § 356.5 (a)(4) / 36.1071(e)(2)	21
SECTION VIII – GROUNDWATER MANAGEMENT GOALS, METHODOLOGY, OBJECTIVES, AND PERFORMANCE STANDARDS	21
A. Management Goal: To Provide For The Most Efficient Use Of Groundwater (31TAC §356.5(A)(1))	21
B. Management Goal: Controlling And Preventing The Waste Of Groundwater (31TAC §356.5(A)(1)(B))	22
C. Management Goal: Controlling And Preventing Subsidence	22
D. Management Goal: Conjunctive Surface Water Management Issues	23
E. Management Goal: Natural Resource Issues That Impact The Use And Availability Of Groundwater And Which Are Impacted By The Use Of Groundwater	23
F. Management Goal: Addressing Drought Conditions	24
G. Management Goal: Water Conservation, Recharge Enhancement, Rainwater Harvesting, Precipitation Enhancement, Or Brush Control, Where Appropriate And Cost-Effective	24
H. Management Goal: Desired Future Conditions (DFC) Of The Groundwater Resources	26
I. Management Goal: Other Management Goals Included In The Plan By The District	27
SECTION IX – ACTION REQUIRED FOR PLAN APPROVAL	27
REFERENCES	28
APPENDICES	28
A. ALLEN, STEPHENS, 2012, ESTIMATED HISTORICAL WATER USE AND 2012 STATE WATER PLAN DATASET:	28
B. GAM RUN 12-003 REVISED : NORTH PLAINS GROUNDWATER CONSERVATION DISTRICT MANAGEMENT PLAN	28
C. DISTRICT COORDINATES THE DEVELOPMENT OF THIS MANAGEMENT PLAN WITH SURFACE WATER MANAGEMENT ENTITIES (31 TAC §356.6(a)(4).	29
D. DISTRICT COORDINATES THE DEVELOPMENT OF THIS PLAN WITH THE PANHANDLE REGIONAL PLANNING GROUP	29
E. GAM RUN 12-005 MAG: MODELED AVAILABLE GROUNDWATER FOR THE OGALLALA AQUIFER IN GROUNDWATER MANAGEMENT AREA 1	29
F. GAM RUN 10-019 MAG VERSION 2	29
G. CERTIFIED COPY OF THE DISTRICT’S RESOLUTION ADOPTING THE PLAN	29

H.	NOTICE OF HEARING – TEARSHEET AMARILLO GLOBE-NEWS NOVEMBER 6, 2012	29
I.	MINUTES FROM PUBLIC HEARING ON NOVEMBER 29, 2012	29
J.	CERTIFIED COPY OF COVER LETTER ATTACHED TO COPY SENT TO ALL SURFACE WATER MANAGEMENT ENTITIES.....	29

DRAFT

North Plains Groundwater Conservation District
Management Plan
Re-Adopted 2013

SECTION I – DISTRICT MISSION STATEMENT

The North Plains Groundwater Conservation District Board of Directors adopted the mission statement, "Maintaining our way of life through conservation, protection, and preservation of our groundwater resources."

SECTION II – PURPOSE OF MANAGEMENT PLAN

A. Introduction

The Texas Water Code requires the District to adopt a management plan that addresses the following management goals, as applicable:

- (1) Providing the most efficient use of groundwater;
- (2) Controlling and preventing waste of groundwater;
- (3) Controlling and preventing subsidence;
- (4) Addressing conjunctive surface water management issues;
- (5) Addressing natural resource issues;
- (6) Addressing drought conditions;
- (7) Addressing conservation, recharge enhancement, rainwater harvesting, precipitation enhancement, or brush control, where appropriate and cost-effective; and
- (8) Addressing the desired future conditions (DFC) adopted by the District under Section 36.108.

The 75th Texas Legislature in 1997 enacted Senate Bill 1 ("SB 1") to establish a comprehensive statewide water planning process. In particular, SB 1 contained provisions that required groundwater conservation districts to prepare management plans to identify the water supply resources and water demands that will shape the decisions of each district. SB 1 designed the management plans to include management goals for each district to manage and conserve the groundwater resources within their boundaries. The Texas Legislature enacted Senate Bill 2 ("SB 2") in 2001 and House Bill 1763 ("HB 1763") in 2005 to build on the planning requirements of SB 1 and to further clarify the actions necessary for districts to manage and conserve the groundwater resources of the State of Texas. North Plains Groundwater Conservation District's management plan satisfies the requirements of SB 1, SB 2, HB 1763, the statutory requirements of Chapter 36 of the Texas Water Code, and the administrative requirements of the TWDB rules.

B. Groundwater Management Area Joint Planning

HB 1763 requires joint planning among districts that are in the same Groundwater Management Area (GMA). These districts must establish the DFCs of the aquifers within their respective GMAs every five years. Through this process, the districts are to consider the varying uses and

conditions of the aquifer within the management area that differ substantially from one geographic area to another. The District is entirely in GMA-1 which also includes Hemphill County Underground Water Conservation District, Panhandle Groundwater Conservation District, and part of High Plains Underground Water Conservation District. GMA-1 and the District adopted DFCs relative to the District's area during the joint process. Based on those DFCs, the Texas Water Development Board (TWDB) executive administrator provides each district with the modeled available groundwater (MAG) in the management area. The Texas Water Code requires the District's management plan to include the DFCs of the aquifers within the District's jurisdiction and the amount of the modeled available groundwater from such aquifers. Well owners within the District withdraw groundwater from three aquifers including the Ogallala aquifer that is located through the District, the Rita Blanca aquifer that is located in the northwest corner of Dallam County and possibly in the extreme west portion of Hartley County; and the Santa Rosa Formation of the Dockum aquifer that is located in all or part of Dallam, Hartley, Moore and Sherman Counties.

a. Ogallala Aquifer and Rita Blanca Aquifer Desired Future Conditions

The TWDB combined the Rita Blanca aquifer with the Ogallala aquifer in one GAM. GMA-1 Joint Planning Committee and the District adopted DFCs that combined Ogallala and Rita Blanca aquifers for the District as follows:

- 40% volume in storage remaining in 50 years in Dallam, Hartley, Sherman and Moore Counties; and
- 50% volume in storage remaining in 50 years in Hansford, Hutchinson, Ochiltree and Lipscomb Counties.

This management plan uses data generated by the TWDB from GAM RUN 12-003 REVISED (Appendix B) and GAM RUN 12-005 MAG for the Ogallala and Rita Blanca aquifers for planning purposes.

b. Dockum Aquifer Desired Future Conditions

GMA-1 Joint Planning Committee and the District adopted Dockum aquifer DFC for the District that the average decline in water levels will decline no more than 30 feet over the next 50 years.

This management plan uses data generated by the TWDB from GAM RUN 12-003 REVISED (Appendix B) and GAM RUN 10-019 MAG VERSION 2 for the Dockum aquifer for planning purposes.

SECTION III – DISTRICT INFORMATION

A. Creation

In 1949, the Texas Legislature authorized the creation of Underground Water Conservation Districts to perform certain prescribed duties, functions, and hold specific powers as set forth in Article 7880-3c, Texas Civil Statutes. The Legislature codified this portion of the Texas Civil Statutes into Chapter 52 of the Texas Water Code. Later, the Legislature amended the Texas Water Code and moved the statutes into Chapter 36.

B. Location and Extent

The District's jurisdiction is limited to the groundwater resources within a 7,335 square mile area that includes all of Dallam, Sherman, Hansford, Ochiltree, Lipscomb, and parts of Hartley, Moore and Hutchinson Counties. The District is located north of Amarillo and also north of the Canadian River.

Dallam	Sherman	Hansford	Ochiltree	Lipscomb
Hartley	Moore	Hutchinson		

Since the District does not cover all of Hartley, Hutchison, and Moore counties, data provided by the TWDB was used for all estimates related to demand based on a proportional area percentage. This percentage is derived by dividing the amount of acres or square miles covered by the District by the total number of acres or square miles contained within each county. The total county areas; the total county areas in the District; and the TWDB computation of the percentage of county areas within the District are as follows:

County	County Area (Sq. miles)	Area in District (Sq. miles)	Percent Area in District
Dallam	1,505	1,505	100.00
Hansford	907	907	100.00
Hartley	1,489	1,267	85.09
Hutchinson	911	266	29.20
Lipscomb	934	934	100.00
Moore	914	633	69.26
Ochiltree	907	907	100.00
Sherman	916	916	100.00
Totals	8,483	7,335	

Groundwater is the primary water supply source for an agricultural economy within the eight counties associated with the District. In 2006, the County Extension Program Councils' estimated the cash value of all crops and livestock within the region at \$1.257 billion. According to the 2010 US Census reports, the counties associated with the District have 81,854 residents. The census data does not reflect population changes related to probable population increases in the District associated with economic development of the dairy or the petroleum industries in the area.

The TWDB provided population projections for each of the counties in the PWPA 2011 Adopted Plan. The TWDB projected that the population in the counties associated with the District totaled 76,355 in 2000 and would grow to 93,655 by 2060. The following table reflects the TWDB projected population from the PWPA 2011 Adopted Water Plan for each of the counties associated with the District.

COUNTY	2000	2010	2020	2030	2040	2050	2060
Dallam	6,222	6,851	7,387	7,724	7,808	7,645	7,291
Hansford	5,369	5,699	6,148	6,532	6,948	7,191	7,406
Hartley	5,537	5,697	5,889	5,989	6,026	5,950	5,646
Hutchinson	23,857	24,320	24,655	24,311	23,513	22,209	21,087
Lipscomb	3,057	3,084	3,149	3,054	2,966	2,925	2,784
Moore	20,121	23,049	26,241	29,057	31,293	32,655	33,474
Ochiltree	9,006	9,685	10,440	11,001	11,380	11,566	11,803
Sherman	3,186	3,469	3,770	3,886	4,005	4,110	4,164
Total	76,355	81,854	87,679	91,554	93,939	94,251	93,655

Source: PWPA 2011 Adopted Plan

C. Background

The District is governed by a seven-member elected Board of Directors. Each Director is elected from a defined area within the District for a four-year term. The elections are held in May of each even-numbered year in accordance with Chapter 36 and the Texas Election Code. The District's Board elects officers after each Director election and these officers serve for two-year terms.

The Board of Directors hold regular meetings at the District office located at 603 East 1st Street, Dumas, Texas 79029.

The District's Board develops and adopts the rules and programs, establishes District practices, hires the general manager, sets the annual budget, and determines the tax rate needed to carry out the operations of the District. The Directors conduct themselves in a manner consistent with sound ethical and business practices; consider the public interest in conducting District business; avoid impropriety, or the appearance of impropriety, ensure and maintain public confidence in the District; and control and manage the affairs of the District lawfully, fairly, impartially, and without discrimination, and in accordance with the stated purposes of the District. In September 2005, the District's Board developed and adopted a document which sets forth North Plains Groundwater Conservation District's Director Policies.

The District employs a general manager to manage the administrative affairs of the District and who, in the absence of the secretary of the District's Board, may act as secretary to the District's Board and may attest on behalf of the District. The general manager performs all duties set forth in the District's Rules, personnel policies, and the job description of the District's general manager to the reasonable satisfaction of the District's Board of Directors. The general manager's duties specifically include the employment and supervision of the District's personnel, oversight of the District's financial matters, attendance of District Board and Board Committee meetings, and the submission of reports to the District's Board concerning all phases of the services and operations of the District. Further, the general manager's duties include the continued review and development of the District's Rules and the enforcement of the District's Rules. The general manager also performs any other duties which may be assigned to him by the District's Board from time to time.

The District maintains a qualified staff to assist water users in protecting, preserving, and conserving the aquifers. The Board of Directors bases its decisions on the best data available in order to treat all water users fairly and equally. The Board of Directors determines the programs and activities that the District shall undertake to provide the best possible service to the area. The District's Rules are enforced to protect the quality of the groundwater and to prevent the waste of this precious resource.

D. Authority and Framework

The District derives its authority to manage groundwater within the District by virtue of the powers granted and authorized pursuant to Section 59, Article XVI, Texas Constitution and TWC Chapter 36. The District, acting under such authority, assumes all of the rights and responsibilities of a groundwater conservation district specified in TWC Chapter 36.

The District's goal is to provide sound management of groundwater resources and make every effort to insure that an abundant supply of potable water will be available for many future generations.

E. General Geology and Hydrology

The Ogallala aquifer is the primary aquifer within the North Plains Groundwater Conservation District. The Ogallala formation unconformably overlies Permian, Triassic, Jurassic, and Cretaceous strata and consists primarily of heterogeneous sequences of coarse-grained sand and gravel in the lower part, grading upward into fine clay, silt, and sand. Water-bearing areas of the Ogallala formation are hydraulically connected except where the Canadian River has partially or totally eroded through the formation to separate the North and South Plains. Water-bearing units of Cretaceous and Jurassic ages combine to form the Rita Blanca aquifer in the western part of Dallam and Hartley Counties. Underlying these aquifers and much of the Ogallala are Triassic (Dockum aquifer) and Permian formations. Some hydraulic continuity occurs between the Ogallala formation and the underlying Cretaceous, Triassic, and Permian formations in many areas of the High Plains. For the purposes of this document, the Ogallala aquifer will be considered to consist of the saturated sediments of the Ogallala formation and any underlying, potable water-bearing units hydraulically connected with it.

F. Local Aquifers

Ogallala aquifer

The Ogallala aquifer is present in all counties in the District and is the region's largest source of water. The Ogallala aquifer consists of Tertiary-age alluvial fan, fluvial, lacustrine, and eolian deposits derived from erosion of the Rocky Mountains. The Ogallala unconformably overlies Permian, Triassic, and other Mesozoic formations and in turn may be covered by Quaternary fluvial, lacustrine, and eolian deposits.

Dockum aquifer

The Dockum is a minor aquifer that underlies the Ogallala aquifer and extends laterally into parts of West Texas and New Mexico. The primary water-bearing zone in the Dockum Group, commonly called the "Santa Rosa", consists of up to 700 feet of sand and conglomerate interbedded with layers of silt and shale. Domestic use of the Dockum occurs in Oldham, Potter, and Randall Counties. According to the TWDB's **GAM RUN 12-003 REVISED** (Appendix B) recharge to the Dockum aquifer from precipitation within the NPGCD is minimal. The non-District counties, Oldham and Potter are the main sources of recharge in the PWPA and according to the TWDB's **GAM RUN 12-003 REVISED** there is very little to no leakage into the Dockum from the overlying Ogallala formation.

Rita Blanca aquifer

The Rita Blanca is a minor aquifer that underlies the Ogallala formation and extends into New Mexico, Oklahoma, and Colorado. The portion of the aquifer which underlies the PWPA is located in western Dallam and Hartley Counties. Groundwater in the Rita Blanca occurs in sand and gravel formations of the Cretaceous and Jurassic Age. The Romeroville Sandstone of the Dakota Group yields small quantities of water, whereas the Cretaceous Mesa Rica and Lytle Sandstones yield small to large quantities of water.

Small quantities of groundwater are also located in the Jurassic Exeter Sandstone and sandy sections of the Morrison formation.

Groundwater supplies from the Rita Blanca were incorporated into the Ogallala Model and these supplies are included in the Ogallala availability numbers.

SECTION IV - TECHNICAL DISTRICT INFORMATION REQUIRED BY TEXAS ADMINISTRATIVE CODE

A. Modeled Available Groundwater (MAG) (31 TAC §356.5(a)(5)(A), §36.1071(e)(3)(A))

The District uses groundwater availability modeling (GAM) along with information collected by the District and other resources during management planning. The Texas Water Development Board executive administrator provided GAM RUN 12-003 REVISED Report that uses results from GAMs of the northern portion of the Ogallala aquifer, which includes the Rita Blanca aquifer, and the Dockum aquifer. Additionally, the District used TWDB GAM RUN 12-005 MAG for the northern portion of the Ogallala aquifer including the Rita Blanca, and TWDB GAM Run 10-019 MAG Version 2 for the Dockum aquifer that were based on the District's adopted DFCs. The tables below are developed from those GAM Runs.

County	Year					
	2010	2020	2030	2040	2050	2060
Dallam*	404,607	352,474	309,076	270,317	234,813	203,491
Hansford	284,588	262,271	240,502	218,405	197,454	177,536
Hartley	424,813	368,430	319,149	276,075	238,186	205,137
Hutchinson	61,306	58,383	50,723	44,360	39,048	34,580
Lipscomb	290,510	283,794	273,836	256,406	237,765	219,100
Moore	193,001	186,154	162,142	137,321	114,658	95,490
Ochiltree	269,463	246,475	224,578	203,704	183,227	164,265
Sherman	322,683	300,908	263,747	229,122	197,480	169,172
Total	2,250,971	2,058,889	1,843,753	1,635,710	1,442,631	1,268,771

Ogallala and Rita Blanca aquifer MAG's (GAM RUN 12-005 MAG) by decade within the District divided by area in acre-feet per year (see Appendix E).

*The county value for Dallam County is representative of the district, since the remainder of Dallam County was annexed into the district after the MAG report was issued.

Area	Year					
	2010	2020	2030	2040	2050	2060
Dallam, Hartley, Moore and Sherman Counties	1,345,104	1,207,966	1,054,114	912,835	785,137	673,290
Hansford, Hutchison, Lipscomb and Ochiltree Counties	905,867	850,923	789,639	722,875	657,494	595,481
Total	2,250,971	2,058,889	1,843,753	1,635,710	1,442,631	1,268,771

Dockum aquifer MAG (GAM Run 10-019 MAG Version 2) Addendum pumping and average drawdown for the lower portion of the Dockum aquifer for the 30-foot average drawdown scenario by decade for each county that is either all or part in the District in acre-feet per year (see Appendix F).

County	Year					
	2010	2020	2030	2040	2050	2060
Dallam	4,034	4,034	4,034	4,034	4,034	4,034
Hartley	3,567	3,567	3,567	3,567	3,567	3,567
Moore	5,395	5,395	5,395	5,395	5,395	5,395
Sherman	591	591	591	591	591	591
Total	13,587	13,587	13,587	13,587	13,587	13,587

B. Estimated Annual Groundwater Use (31 TAC §356.5(a)(5)(B), §36.1071(e)(3)(B))

According to the TWDB Historical Water Use Survey (WUS) 1,493,132 acre feet of groundwater was used in the District in 2009 and **1,283,832 acre feet in 2010**. Average annual groundwater use is not expected to change significantly over the next five years.

The TWDB estimated historical groundwater use in the District for most years from 1974 through 2010 (see Appendix A). According to TWDB data, groundwater used in the District ranged from 1,033,067 acre-feet to 1,852,067 acre-feet annually.

The TWDB table summarizing groundwater use for each county for the period 1974-2010 is included in the District's Management Plan that data is located in Appendix A.

The table below summarizes by county groundwater production volumes in acre-feet reported to the District for the period 2006-2011. This annual production is reported in accordance with the District's Rules www.northplainsgcd.org/downloads/category/5-district-documents.html.

COUNTY	Year					
	2006	2007	2008	2009	2010	2011
DALLAM	264,900	269,600	314,000	317,100	296,800	369,400

HANSFORD	110,200	106,500	142,700	152,700	130,000	233,700
HARTLEY	286,200	312,400	364,600	387,300	364,900	485,400
HUTCHINSON	36,700	34,900	52,800	53,900	41,900	73,700
LIPSCOMB	28,900	32,700	30,800	30,200	34,200	51,200
MOORE	149,100	148,000	191,400	200,100	169,300	267,500
OCHILTREE	66,800	53,700	75,500	65,800	61,800	109,600
SHERMAN	208,400	220,100	275,100	284,100	250,700	396,800
TOTALS	1,151,200	1,177,900	1,446,900	1,491,200	1,349,600	1,987,300

The table below summarizes by area groundwater production volumes in acre-feet reported to the District for the period 2006-2011. The production numbers are grouped by counties sharing the same desired future condition; 40/50 for the western counties of Dallam, Hartley, Moore and Sherman, and 50/50 for the eastern counties of Hansford, Hutchinson, Lipscomb and Ochiltree. Despite the District being divided into two management areas having slightly different DFC's the District is currently managed as one area.

AREA	Year					
	2006	2007	2008	2009	2010	2011
Dallam, Hartley, Moore and Sherman Counties	908,600	950,100	1,145,100	1,188,600	1,081,700	1,519,100
Hansford, Hutchinson, Lipscomb and Ochiltree Counties	242,600	227,800	301,800	302,600	267,900	468,200
Total	1,151,200	1,177,900	1,446,900	1,491,200	1,349,600	1,987,300

C. Estimated Annual Aquifer Recharge
(31 TAC §356.5(a)(5)(C), §36.1071(e)(3)(C))

According to the TWDB GAM RUN 12-003 REVISED, the total annual Ogallala aquifer recharge is 88,988 acre-feet from precipitation within the District. The TWDB data is presented in Appendix B. The total annual Dockum aquifer recharge is 56 acre-feet from precipitation within the District.

D. Estimated Annual Aquifer Discharge to Springs, Lakes, Streams and Rivers
(31 TAC §356.5(a)(5)(D), §36.1071(e)(3)(D))

According to the TWDB GAM RUN 12-003 REVISED, the total estimated annual volume of water that discharges from the Ogallala aquifer to springs and any surface water body including lakes, streams, and rivers is 31,294 acre-feet. The Dockum aquifer currently has no discharge to springs and any other surface water bodies. The TWDB data is presented in Appendix B.

E. Estimated Aquifer Annual Flow Volume Into and Out of the District and Annual Flow Between Aquifers

(31 TAC §356.5(a)(5)(E), §36.1071(e)(3)(E))

According to the GAM RUN 12-003 REVISED (see Appendix B), the estimated annual Ogallala aquifer flow volume into and flow out of the District as well as the annual volume of flow between the Ogallala aquifer and other aquifers in the District is expressed in acre-feet as follows:

Management Plan requirement	Aquifer or confining unit	Results
Estimated annual amount of recharge from precipitation to the District	Ogallala aquifer	88,988
Estimated annual volume of water that discharges from the aquifer to springs and any surface water body including lakes, streams, and rivers	Ogallala aquifer	31,294
Estimated annual volume of flow into the District within each aquifer in the District	Ogallala aquifer	43,548
Estimated annual volume of flow out of the District within each aquifer in the District	Ogallala aquifer	42,012
Estimated net annual volume of flow between each aquifer in the District*	From Ogallala aquifer into the Dockum aquifer	Not Applicable

*The Groundwater Availability Model for the Dockum Aquifer estimates the flow from the Ogallala Aquifer to the Dockum Aquifer averages 6,895 acre-feet per year; however, the model report for the Dockum Aquifer indicates the model was not designed to precisely model this parameter.

According to the TWDB GAM RUN 12-003 REVISED, the estimated annual Dockum aquifer flow volume into and flow out of the District as well as the annual volume of flow between the Dockum aquifer and other aquifers in the District is expressed in acre-feet as follows:

Management Plan requirement	Aquifer	Results
Estimated annual amount of recharge from precipitation to the District	Dockum aquifer	56

Management Plan requirement	Aquifer	Results
Estimated annual volume of water that discharges from the aquifer to springs and any surface water body including lakes, streams, and rivers	Dockum aquifer	0
Estimated annual volume of flow into the District within each aquifer in the District	Dockum aquifer	4,209
Estimated annual volume of flow out of the District within each aquifer in the District	Dockum aquifer	2,313
Estimated net annual volume of flow between each aquifer in the District*	From Ogallala aquifer into the Dockum aquifer	Not Applicable

*The Groundwater Availability Model for the Dockum Aquifer estimates the flow from the Ogallala Aquifer to the Dockum Aquifer averages 6,895 acre-feet per year; however, the model report for the Dockum Aquifer indicates the model was not designed to precisely model this parameter.

F. Projected Surface Water Supply (31 TAC §356.5(a)(5)(F), §36.1071(e)(3)(F))

According to the 2012 State Water Plan estimates of each county associated with the District, the projected surface water supply amounts in acre-feet are as follows:

County	2010	2020	2030	2040	2050	2060
Dallam	741	741	741	741	741	741
Hansford	2,486	2,486	2,486	2,486	2,486	2,486
Hartley	1,422	1,422	1,422	1,422	1,422	1,422
Hutchinson	529	693	693	693	693	693
Lipscomb	723	723	723	723	723	723
Moore	756	756	756	756	756	756
Ochiltree	2,506	2,506	2,506	2,506	2,506	2,506
Sherman	731	731	731	731	731	731
Total	9,894	10,058	10,058	10,058	10,058	10,058

Source: TWDB 2012 State Water Plan

Projected surface water supplies have been collected and reported by the TWDB through the 2012 State Water Plan and included in the District's Management Plan and that data is located in Appendix A.

G. Projected Total Water Demand (31 TAC §356.5(a)(5)(G), §36.1071(e)(3)(G))

According to the 2012 State Water Plan and based on the TWDB estimated land area and the District estimates based on the percent of each county within the District, the projected total water demand in acre-feet is as follows:

County	2010	2020	2030	2040	2050	2060
Dallam	297,251	289,813	281,566	267,509	238,974	210,433

Hansford	136,267	120,959	117,814	112,359	101,031	89,735
Hartley	251,839	242,446	235,786	224,363	200,970	177,598
Hutchinson	24,392	24,041	24,073	23,771	22,711	21,930
Lipscomb	20,033	18,647	18,053	17,039	15,296	13,574
Moore	126,050	118,120	116,010	111,712	101,978	92,397
Ochiltree	67,502	58,768	57,332	54,722	49,489	44,303
Sherman	226,168	207,035	201,290	190,136	171,361	151,320
Total	1,149,502	1,079,829	1,051,924	1,001,611	901,810	801,290

Source: TWDB 2012 State Water Plan

Projected water demands have been collected and broken down by the TWDB through the 2012 State Water Plan and included in the District's Management Plan located in Appendix A.

H. Estimated Water Supply Needs (31 TAC §356.5(a)(7), §36.1071(e)(4))

According to the 2012 State Water Plan, the estimated water supply needs in acre-feet are as follows:

County	2010	2020	2030	2040	2050	2060
Dallam	-132,889	-140,984	-148,630	-149,134	-133,737	-117,396
Hansford	-150	-1,082	-1,989	-5,441	-4,241	-2,823
Hartley	-181,732	-180,523	-183,457	-179,983	-161,368	-142,079
Hutchinson	-15,008	-12,175	-11,716	-11,081	-8,318	-6,921
Lipscomb	0	0	0	0	0	0
Moore	-52,565	-49,376	-55,206	-58,984	-55,463	-51,341
Ochiltree	0	0	0	0	0	0
Sherman	-72,532	-69,367	-79,690	-82,955	-77,118	-69,190

Source: TWDB 2012 State Water Plan

Projected water supply needs have been collected and broken down by the TWDB through the 2012 State Water Plan and included in the District's Management Plan located in Appendix A.

SECTION V – PROJECTED WATER MANAGEMENT STRATEGIES

(31 TAC §356.5(a)(7), §36.1071(e)(4))

To meet the long-term water supply needs of the District, the **2012 State Water Plan recommends four water management strategies (see Appendix A)**. Those management strategies and the county that they would be applicable to are as follows:

Management Strategy	Dallam	Hansford	Hartley	Hutchinson	Lipscomb	Moore	Ochiltree	Sherman
Drill Additional Groundwater Wells	•	•		•		•	•	
Irrigation Conservation	•	•	•	•	•	•	•	•
Municipal Conservation	•	•		•		•	•	
Voluntary Transfer from Other Users				•		•		

Source: TWDB 2012 State Water Plan

Drilling Additional Groundwater Wells – Drilling additional wells is listed as a management strategy for Manufacturing Water User Group (WUG) in Hutchinson County.

Irrigation Conservation – Irrigation conservation is an agricultural water conservation strategy recommended in all eight counties and is the water management strategy that will have the greatest impact in meeting water needs. Irrigation conservation includes:

- 1) Irrigation water use management strategies particularly with advanced irrigation systems, such as irrigation scheduling, volumetric measurement of water use, crop residue management, conservation tillage, and on-farm irrigation audits;
- 2) Land management systems, including furrow dikes, land leveling, conversion from irrigated to dry land farming, and brush control/management;
- 3) On-farm delivery systems, such as lining of farm ditches, low pressure center pivot sprinkler systems, drip/micro irrigation systems, surge flow irrigation, and linear movement sprinkler systems;
- 4) Water delivery systems, including lining of irrigation canals and replacing lateral canals with pipelines;
- 5) Miscellaneous systems, such as water recovery and reuse; and
- 6) Water conservation technologies for other agricultural sectors, including CAFOs, food processing operations, slaughter facilities, etc. and alternative energy production.

The agricultural water conservation strategies recommended by the PWPG also include the use of the North Plains Evapotranspiration Network to schedule irrigation, irrigation equipment efficiency improvements, implementation of conservation tillage methods and precipitation enhancement. The District disagrees with the strategy of using the PET Network because the funding for the Network was discontinued (the program is now inactive) after the PWPG included the strategy.

Municipal Conservation – Municipal conservation management strategies are recommended by the PWPG for Dallam, Hartley, Moore and Sherman Counties. The municipal conservation measures considered include the implementation of water efficient clothes washers for current populations, education and public awareness programs, reduction of unaccounted for water through water audits and system maintenance, and water rate structures that discourage water waste.

Voluntary Transfer from Other Users - Voluntary transfer of water or water rights from other users is recommended by the 2012 State Water Plan as a management strategy for the livestock users group.

According to the 2012 State Water Plan, if the above listed management strategies are fully implemented, the water savings in acre-feet is as follows:

County	2010	2020	2030	2040	2050	2060
Dallam	0	59,532	108,738	121,823	123,220	123,219
Hansford	0	24,818	46,569	52,523	53,260	53,260
Hartley	0	53,755	98,786	110,553	111,772	111,772
Hutchinson	200	10,903	18,480	20,384	21,600	21,595
Lipscomb	0	2,279	2,360	2,506	2,587	2,668
Moore	700	33,843	63,444	73,475	75,388	75,677
Ochiltree	0	17,321	18,012	19,171	20,414	21,658
Sherman	0	41,128	77,102	86,803	87,896	87,896
TOTAL	900	243,579	433,491	487,238	496,137	497,745

Source: TWDB 2012 State Water Plan

SECTION VI - METHODOLOGY TO TRACK DISTRICT PROGRESS IN ACHIEVING MANAGEMENT GOALS - 31 TAC § 356.5(a)(6)

The District General Manager and staff will produce an annual report for the District Board of Directors each year for the purpose of providing information on the progress of District activities and programs. The report will specifically contain status updates on the management goals, objectives and standards as presented in this management plan. This report will be presented to the District's Board of Directors in a timely manner, taking into consideration seasonal workloads and events, such as legislative sessions. The District will continue to enforce its rules to conserve, preserve, protect, and prevent the waste of the groundwater resources under its jurisdiction. The District's Board periodically reviews the District's Rules and makes revisions as needed to manage the groundwater resources within the District pursuant to TWC Chapter 36. The District's

Board will consider all groundwater uses and needs and will develop rules which are fair and impartial to implement this management plan. A copy of the most current annual report will be available for public review on the District website at www.northplainsgcd.org and at the District office.

VII - ACTIONS, PROCEDURES, PERFORMANCE, AND AVOIDANCE FOR DISTRICT IMPLEMENTATION OF MANAGEMENT PLAN - 11 TAC § 356.5 (a)(3): 31 TAC, § 356.5 (a)(4) / 36.1071(e)(2)

This management plan, as required by Chapter 36 of the Texas Water Code, explains the goals, objectives and standards that will be used to conserve, protect and preserve the groundwater in the District. The District will implement and utilize the provisions of this management plan for determining the direction or priority for all District activities. District operations, all agreements entered into by the District, and any additional planning efforts in which the District may participate will be consistent with the provisions of this plan. The District shall attempt to treat all citizens fairly. The District, as needed, shall seek the cooperation of state, regional, and local water management entities in the implementation of this plan and/or management of groundwater supplies within the District. A current copy of the District Rules is located on the District's website www.northplainsgcd.org. The Rules of the District, with substantial input and feedback from stakeholders, have been created in accordance with Chapter 36 of the Texas Water Code for the purpose of successfully implementing the management plan. The rules are strictly and fairly enforced. 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 of the groundwater within the District. The rules govern the management strategies of the District including, but not limited to: well permitting, well spacing, production reporting, annual allowable production and groundwater conservation reserve. The District executes its responsibilities with transparency and stakeholder involvement as a priority, exceeding the legal requirements for notice and hearing on meetings and other District activities. All District documents are made available to the public pursuant to the Texas Information Act.

SECTION VIII – GROUNDWATER MANAGEMENT GOALS, METHODOLOGY, OBJECTIVES, AND PERFORMANCE STANDARDS

**A. Management Goal: To Provide For The Most Efficient Use Of Groundwater
(31TAC §356.5(A)(1))**

A.1. Management Objective:

Calculate total annual groundwater withdrawals through water use reporting by all producing water right owners that have a well capable of producing more than 25,000 gallons of groundwater a day.

A.1. Performance Standards:

Annually the District will collect production reports on all properties containing non-exempt wells and calculate annual groundwater withdrawals for the District. A summary will be presented to the Board of Directors each year.

A.2. Management Objective:

Provide support through the District's North Plains Research Field to promote research into drought tolerant crops, efficient water management strategies and other research promoting water use efficiencies.

A.2. Performance Standards:

Annually the District will summarize its activities at the North Plains Research Field to be presented to the Board of Directors.

**B. Management Goal: Controlling And Preventing The Waste Of Groundwater
(31TAC §356.5(A)(1)(B))**

B.1. Management Objective:

Control and prevent the waste of groundwater as defined by the TWC through the enforcement of District "Waste" rules.

B.1. Performance Standards:

Annually the District will summarize enforcement of "Waste" rule violations and report to the Board of Directors.

**C. Management Goal: Controlling And Preventing Subsidence
(31TAC §356.5(A)(1)(C))**

Due to the depth to water and the nature of the geology of the aquifer within the District, subsidence is unlikely and the District's Board of Directors, upon recommendation from the staff, has determined that this goal is not applicable to the District.

**D. Management Goal: Conjunctive Surface Water Management Issues
(31TAC §356.5(A)(1)(D))**

Following notice and hearing, the District coordinates the development of this management plan with surface water management entities as required by 31 TAC §356.6(a)(4). Documentation regarding this coordination effort is located in Appendix C. The District also coordinates the development of this plan with the Panhandle Regional Planning group, as referenced in Appendix D.

D. 1. Management Objective: – Each year, the District will participate in the regional planning process by attending at least 75 percent of the Region A – Panhandle Regional Water Planning Group meetings to encourage the development of surface water supplies to meet the needs of water user groups in the District.

D. 1. Performance Standard: – The summary of attendance of a District representative at Region A- Panhandle Regional Water Planning Group meetings will be reported to the District Board of Directors.

**E. Management Goal: Natural Resource Issues That Impact The Use And Availability Of Groundwater And Which Are Impacted By The Use Of Groundwater
(31TAC §356.5(A)(1)(E))**

The District has determined that the current natural resource issues that may impact the use and availability of groundwater within the District are water quality issues and declining water tables.

E.1. Management Objective:

Monitor aquifer characteristics that impact the use and availability of groundwater and which are impacted by the use of groundwater through District programs by maintaining a network of water quality and water level monitor wells.

E.1. Performance Standards:

- A. District staff will collect and analyze water samples from appropriate monitor wells periodically but not less often than once every five years.
- B. District staff will perform water quality analyses for select constituents for District well owners upon request.
- C. District staff will summarize their water quality activities and make the information available to the Board of Directors and the public annually.
- D. District staff will collect aquifer water level measurements annually.

E. District staff will summarize groundwater level declines and average depth to water and make the information available to the Board of Directors and the public annually.

F. District staff will summarize or update aquifer saturated material information and make the information available to the Board of Directors and the public at least every two years.

E.2. Management Objective:

Investigate and address deteriorated wells that may cause a threat to water quality.

E.2. Performance Standard:

A. District staff will pursue repair or plugging of deteriorated wells.

B. District staff will summarize the deteriorated well activities and make the information available to the Board of Directors and the public annually.

**F. Management Goal: Addressing Drought Conditions
(31TAC §356.5(A)(1)(F))**

North Plains Groundwater Conservation District lies in an area of the state of Texas that has a year-round semi-arid climate. Semi-drought conditions are experienced year round, and the District works to educate the public about methods to conserve water all year, but particularly during dry periods.

F.1. Management Objective:

Provide residential stakeholders with information and tools to conserve during dry and peak use periods.

F.1. Performance Standards:

Annually, the District will conduct water conservation communications and education activities. These activities will be summarized annually and presented to the Board of Directors.

**G. Management Goal: Water Conservation, Recharge Enhancement, Rainwater Harvesting, Precipitation Enhancement, Or Brush Control, Where Appropriate And Cost-Effective
(31TAC §356.5(A)(1)(G))**

G.1. Water Conservation

G.1a. Management Objective:

Support research and field demonstrations to foster adoption of agriculture water conservation technologies and practices.

G.1a. Performance Standards:

Annually the District will summarize the projects results to be presented to the Board of Directors.

G.1b. Management Objective:

Conduct conservation education activities to encourage water conservation (prevention of waste) and create informed and educated citizens who will be dedicated stewards of their resources.

G.1b. Performance Standards:

Annually the District will disseminate groundwater conservation and waste prevention information through a variety of media, activities and events. Activities will target agricultural, residential and young stakeholders. A summary of educational activities will be presented to the Board of Directors each year.

G.2. Recharge Enhancement

The District has limited surface water resources to effectuate enhanced recharge through diversion or infiltration of surface water. The District explored recharge enhancement through its precipitation enhancement program. The District discontinued its funding for the precipitation enhancement program in 2006. The District could not quantify if, and to what extent, the program positively affected precipitation and subsequent recharge in the District. Therefore, recharge enhancement through surface water diversion or infiltration, or through precipitation enhancement could not be proven to be effective for the District. The District has determined that this objective is not applicable at this time.

G.3. Rainwater Harvesting

G.3. Management Objective:

Provide public information regarding Rainwater Harvesting.

G.3. Performance Standards:

The District's activities in rainwater harvesting education will be summarized annually and presented to the Board of Directors.

G.4. Precipitation Enhancement

The District discontinued its funding for precipitation enhancement program in 2007. The District could not quantify if, and to what extent, the program positively affected precipitation, or groundwater declines. Therefore, precipitation enhancement could not be proven to be cost-effective for the District. The District has determined that this objective is not applicable at this time.

G.5. Brush Control

G.5. Management Objective:

Provide public information regarding Brush Control

G.5. Performance Standards:

Maintain brush control literature in the District offices. The District's activities in addressing brush control education will be summarized annually and presented to the Board of Directors.

H. Management Goal: Desired Future Conditions (DFC) Of The Groundwater Resources (31TAC§356.5(A)(1)(H))

H.1. Management Objective:

Revise District Rules to achieve Desired Future Conditions of the Ogallala, Rita Blanca and Dockum aquifers.

H.1. Performance Standards:

The District will update its rules within one year of adoption of this management plan.

Annually the District will review its rules and conservation programs to determine if they are achieving the DFCs.

H.2. Management Objective:

Monitor the condition of the aquifers and status of groundwater production compared to the adopted DFCs.

H.2. Performance Standards:

Annually review groundwater production information, GAMs, and water level measurements to characterize aquifer conditions compared to the DFCs and report findings to the Board of Directors.

H.3. Management Objective:

Joint plan with other Groundwater Conservation Districts to achieve DFCs.

H.3. Performance Standards:

At least annually report the joint planning committee activities to the Board of Directors.

H.4. Management Objective:

Manage groundwater withdrawal amounts based on an allowable production limitation in order to achieve DFCs.

H.4. Performance Standards:

Annually the District will summarize the previous year's allowable production compliance. Each year the compliance results will be presented to the Board of Directors.

I. Management Goal: Other Management Goals Included In The Plan By The District

No other management goals are listed at this time.

SECTION IX – ACTION REQUIRED FOR PLAN APPROVAL

The District's Board of Directors adopted this groundwater management plan by resolution on _____. This Plan is in effect on _____ and will remain in effect until _____, 2023 unless amended by the District's Board.

Any amendments to the groundwater management plan shall be developed by the District using the District's best available data and forwarded to the PWPG for use in their planning process.

REFERENCES

Allen, Stephen, 2012, Estimated Historical Water Use and 2012 State Water Plan Dataset: North Plains Groundwater Conservation District, Texas Water Development Board Report, 22p.

Jigmond, Marius, 2012, Modeled Available Groundwater for the Ogallala Aquifer in Groundwater Management Area 1: Texas Water Development Board, **GAM RUN 12-005 MAG** Report, 26p. Location: http://www.twdb.state.tx.us/groundwater/management_areas/gma1.asp

Kohlrenken, William, 2012, North Plains Groundwater Conservation District Management Plan: Texas Water Development Board, **GAM RUN 12-003 REVISED** Report, 12 p. Location: http://www.twdb.state.tx.us/groundwater/management_areas/gma1.asp

Oliver, Wade, 2011, Modeled Available Groundwater for the Dockum Aquifer in Groundwater Management Area 1: Texas Water Development Board, **GAM Run 10-019 MAG Version 2** Report, 12 p. Location: http://www.twdb.state.tx.us/groundwater/management_areas/gma1.asp

North Plains Groundwater Conservation District, 2008, Groundwater Management Plan: 59 p. location: <http://www.northplainsgcd.org/downloads/category/5-district-documents.html>

North Plains Groundwater Conservation District, 2012, Permitting and Production Reporting Database, digital file. Location: North Plains Groundwater Conservation District, 603 East First Street Dumas Texas 79029.

Texas Water Development Board, Regional Water Management Plan, Region A – Regional Water Planning Group. Location: <http://www.twdb.state.tx.us/waterplanning/rwp/plans/2011/>

Rules of the North Plains Groundwater Conservation District, as amended. Location: <http://www.northplainsgcd.org/downloads/category/5-district-documents.html>

2012 State Water Plan

Location: <http://www.twdb.state.tx.us/waterplanning/swp/2012/>

APPENDICES

A. ALLEN, STEPHENS, 2012, ESTIMATED HISTORICAL WATER USE AND 2012 STATE WATER PLAN DATASET:

North Plains Groundwater Conservation District, Texas Water Development Board Report, 22p

B. GAM RUN 12-003 REVISED : NORTH PLAINS GROUNDWATER CONSERVATION DISTRICT MANAGEMENT PLAN

by William Kohlrenken

Texas Water Development Board

Groundwater Resources Division
Groundwater Availability Modeling Section
(512) 463-8279 July 2, 2012

- C. DISTRICT COORDINATES THE DEVELOPMENT OF THIS MANAGEMENT PLAN WITH SURFACE WATER MANAGEMENT ENTITIES (31 TAC §356.6(a)(4).**
- D. DISTRICT COORDINATES THE DEVELOPMENT OF THIS PLAN WITH THE PANHANDLE REGIONAL PLANNING GROUP.**
- E. GAM RUN 12-005 MAG: MODELED AVAILABLE GROUNDWATER FOR THE OGALLALA AQUIFER IN GROUNDWATER MANAGEMENT AREA 1**
by Marius Jigmond
Texas Water Development Board
Groundwater Resources Division
Groundwater Availability Modeling Section
(512) 463-8499 August 21, 2012
- F. GAM RUN 10-019 MAG VERSION 2**
by Wade Oliver
Texas Water Development Board
Groundwater Resources Division
Groundwater Availability Modeling Section
(512) 463-3132 August 30, 2011
- G. CERTIFIED COPY OF THE DISTRICT'S RESOLUTION ADOPTING THE PLAN**
- H. NOTICE OF HEARING – TEARSHEET AMARILLO GLOBE-NEWS NOVEMBER 6, 2012**
- I. MINUTES FROM PUBLIC HEARING ON NOVEMBER 29, 2012**
- J. CERTIFIED COPY OF COVER LETTER ATTACHED TO COPY SENT TO ALL SURFACE WATER MANAGEMENT ENTITIES**

DRAFT