



Annual Management Plan Progress Report 2022

October 10, 2023

A. Providing for the Most Efficient use of Groundwater [25, 26]

1. Groundwater Reporting

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

Performance Standards: Annually, the District will collect production reports on all properties containing non-exempt wells and calculate annual groundwater withdrawals for the District.

Action Taken: The District received production reports for 2021 from 2928 Groundwater Production Units. Annual groundwater withdrawals were calculated and published in the Hydrologic Report and presented to the Board at the June 14, 2022 board meeting.

Table 1. Annual groundwater production in acre-feet from 2018 to 2022

County	2018	2019	2020	2021	2022	Average
Dallam	349,900	303,200	342,700	339,500	372,900	341,640
Hartley	422,600	349,200	402,200	408,500	418,900	400,280
Moore	200,600	157,700	199,400	195,300	221,200	194,840
Sherman	312,000	255,400	328,400	326,300	369,300	318,280
Hansford	190,800	162,300	195,100	194,800	258,700	200,340
Hutchinson	75,500	68,400	79,400	79,100	100,600	80,600
Lipscomb	44,200	43,400	54,500	55,300	63,200	52,120
Ochiltree	95,500	81,800	105,200	99,200	138,700	104,080
GMA-West	1,285,100	1,065,500	1,272,700	1,269,600	1,382,300	1,255,040
GMA-East	406,000	355,900	434,200	428,400	561,200	437,140
Total	1,691,100	1,421,400	1,706,900	1,698,000	1,943,500	1,692,180

^[A] Average is an average of the last five years.

2. Well Registrations and Permitting

Management Objective: All exempt and non-exempt wells constructed within the jurisdiction of the District are required to be registered or permitted in accordance to the District's Rules.

Performance Standards: District staff will verify all wells within a Groundwater Production Unit(s) are registered or permitted in accordance with the District Rules during any site visits.

Action Taken: In 2022, the District inspected all Groundwater Production Units (GPUs) on which applications were made for new permits for non-exempt wells. New exempt wells were registered, and previously unregistered wells were discovered during inspections. The following table gives the results from permitting and inspecting wells in 2022.

Table 2: Permitting and inspecting wells

Permitting and Inspecting Wells			
Non-exempt Permits	GPUs Inspected	New Exempt Wells Registered	Unregistered Wells Discovered
402	918	137	15

3. *Conservation Demonstration and Education*

Management Objective: Provide support through the District's North Plains Water Conservation Center, demonstrations, and other District education programs to promote groundwater conservation.

Performance Standards: At least annually, conduct field days and/or other events to educate stakeholders regarding water use efficiency technologies and practices. The District will publish reports on the activities at the North Plains Water Conservation Center and other demonstrations and education programs.

Action Taken:

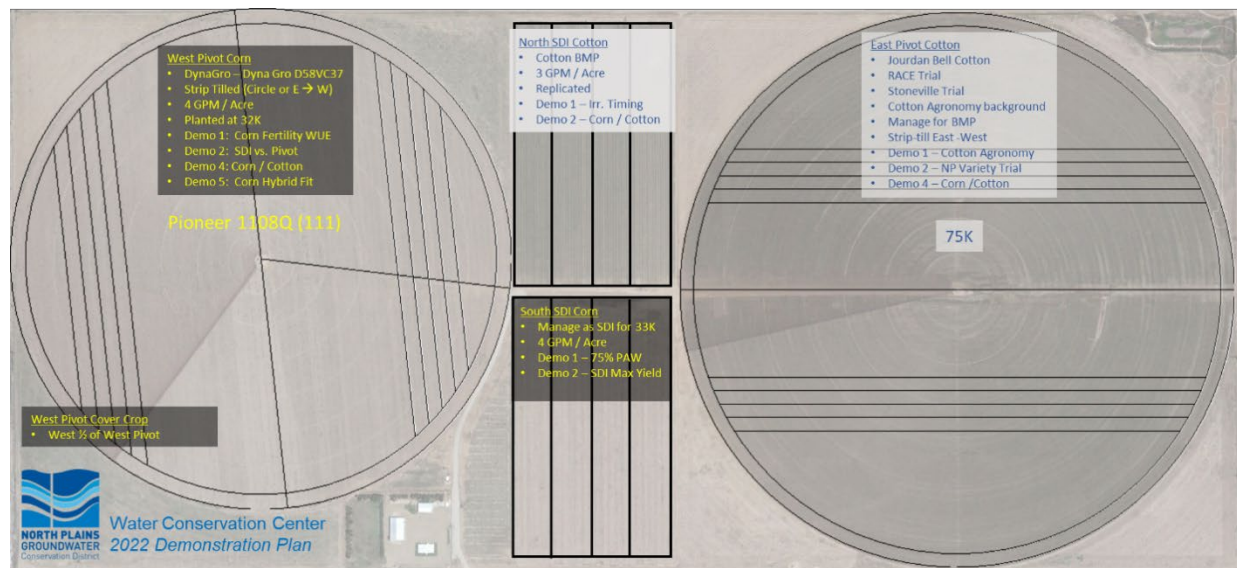
The Master Irrigator Program

The Master Irrigator is a 4-day interactive training program combining lecture and producer panel interaction to provide a fast track to adoption of irrigation conservation practices, tools and technologies. Ultimately the program helps growers be more efficient stewards of the area's groundwater resources.

The Master Irrigator Program was held in the spring of 2022. The 2022 class graduated 17 participants, increasing the number of acres influenced by the Master Irrigator Program to approximately 370,000.

WCC Demonstrations for 2022

Figure 1: 2022 WCC Field plan for Corn and Cotton Rotation



2022 Irrigation Summary

Corn Plant Date: 19-20 May 2022

West Pivot: 27.2 Inches (4.3-inches pre-water, 6.4.-inches after September 1)

South SDI: 20.8 – 22.9 Inches

Cotton Plant Date: 13-14 May 2022

East Pivot: 14.3 Inches (3.9 Inches pre-water, 1.2-inches after September 1)

North SDI: 8.5 to 10.2 Inches

The irrigation applied during 2022 was higher than any of the previous 4 seasons. The season was difficult in terms of sustained heat and followed two consecutive very dry winters. There are a few items that should be discussed at length with the Ag Committee to better direct the farming approach going forward, especially in light of continued drought and conservation approaches.

The first topic is that of available water related to irrigation discipline. A new well was drilled, capacity was increased, and the volume of water applied on cotton increased. The timing of this application was early in the season (for cotton) when most cotton / corn farms would not have access to this water. Also, the East Pivot was retained at 4 GPM / Acre for the season due to increased capacity. Even with the best intentions, applying 3 GPM / Acre worth of water with 4 GPM / Acre capacity is difficult to regulate. That being said, the amount of water applied to the

East Pivot cotton was 14.3 acre-inches, which is exactly the same as would be applied via 90 continuous days at 3 GPM / Acre capacity.

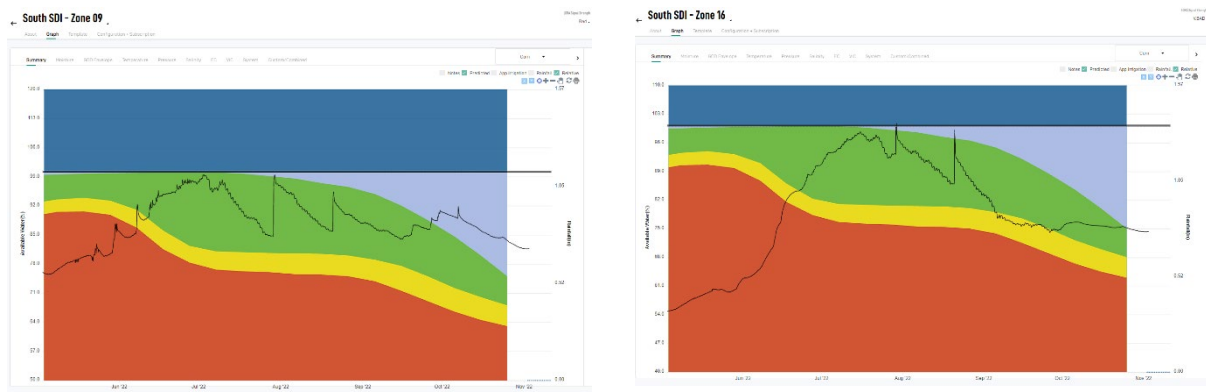
The second is the irrigation strategy employed at the end of the corn crop. Mid-August was very extreme weather and, despite having a full profile at the Critical Management point, the West Pivot corn was not able to keep up in August. A more thorough investigation of potential yield at the end of August could have been performed to better shape the irrigation strategy to finish the season. 6.4-inches were applied during September in the West Pivot. It is not likely that this additional water impacted yield.

Water use efficiency numbers are expected to be the lowest experienced at the Center in the Corn and Cotton rotation. It is expected that climate details will reveal increased understanding of the suppressed yields and help determine risk adverse strategies that are profitable and conserve water.

Figure 2: West Pivot GroGuru chart from the 2022 season. Notice the strong pull down during July and August. The last 3-5 irrigation events are debatable as to whether they are helpful to yield. An unseasonably warm September following a harsh August led to the unconventional irrigation termination strategy. Tracking this through the winter will help to understand if this water remains available to the subsequent cotton crop.



Figure 3: GroGuru South SDI summary chart from 2022. Zone 9 is the west edge and received 22.9-inches. Zone 16 is on the east edge and received 20.7-inches. The discrepancy in irrigation is related to the zone's physical location to the drip station and a linear decline of delivered water is witnessed from west to east. The interesting note is that the South SDI FieldView map indicates a significant improvement in yield in the east blocks and the Ceres Imaging chlorophyll maps indicate healthier plants, especially late in the season.



Cotton Harvest

The North SDI was harvested on November 7 and the East Pivot was harvested on 7-10 November. The East Pivot harvest began on the north side of the field in the RACE plots. All plots were harvested with Stan Spain's stripper / baler. Individual module weights and acres harvested were recorded to determine details from specific plots. Fiber samples were pulled from the modules for ginning at the Texas Tech Lab. Cotton harvested from each plot and the whole of the field were compiled and ginned at the Moore County Gin. The gross yields are as follows:

North SDI	2.25 Bales / Acre
East Pivot	2.6 Bales / Acre

Figure 4: Cotton during harvest in the North SDI Blocks. These blocks averaged 2.25 bales per acre.



Figure 5: Cotton harvest on the East Pivot on November 7. The East Pivot yielded an average of 2.6 bales per acre.



Corn Harvest

The South SDI was harvested on October 14 with a small plot on the southern border of the West Pivot to verify moisture. The remainder of the West Pivot was harvested the week of October 17. Yield distributions are being calculated at this point to separate blocks, hybrids, and cover crop details. The gross yields are as follows:

South SDI	197.8 Bushels / Acre
West Pivot	216 Bushels / Acre

Figure 6: South SDI Corn yield map provided by FieldView. The overall field yield is 197.8 bushels. Notice the large portion of Zones 14-16 indicate yields greater than 220 bushels / acre on the yield monitor. The note that will be evaluated is that these blocks received 20.8-inches of water, as compared to the 22.9-inches on the west side and 27.2-inches in the west pivot.

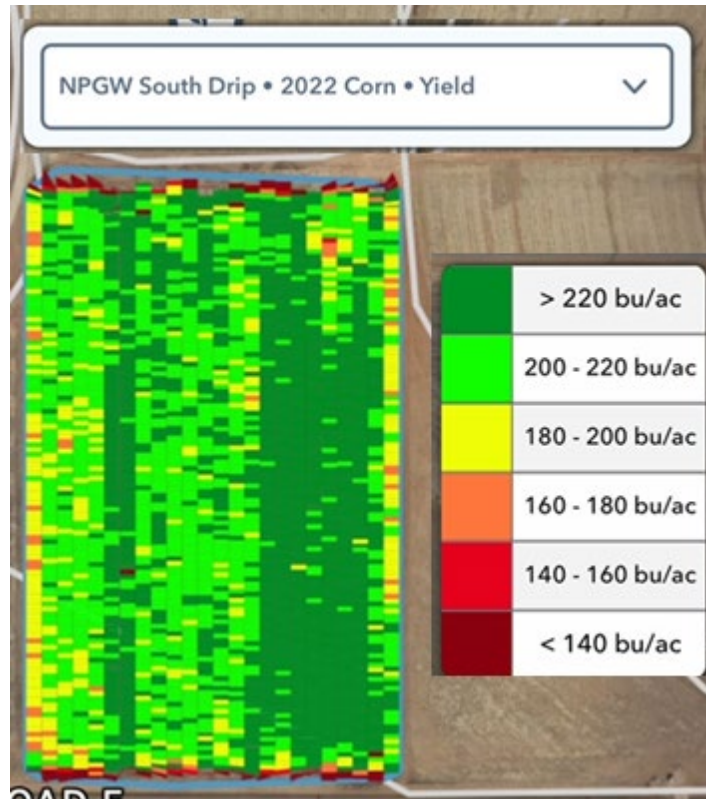


Figure 7: Ceres Imagery from August 24. This chlorophyll chart indicates plant health at a given point in time. Each field is its own section and the coloration is relative within the field. The red edges on the east pivot cotton indicate the kochia weed finally being controlled.

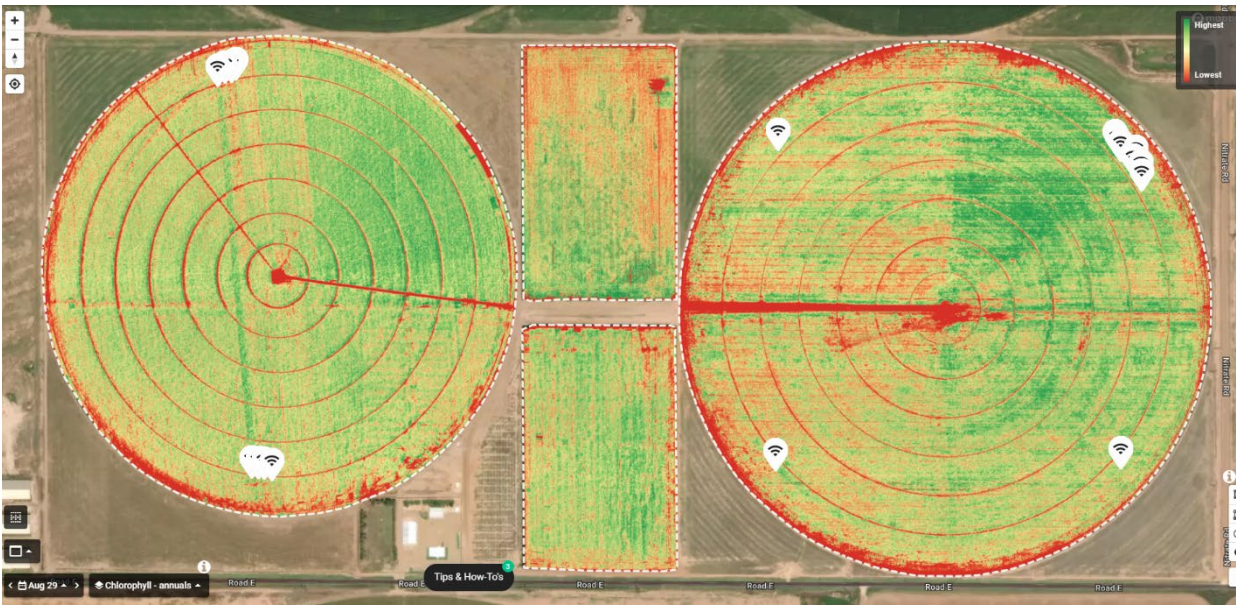


Figure 8: Ceres Imagery from September 5 indicating the water stress levels within the field. Notice the West Pivot is very cool / wet and really uniform. It is quite likely that irrigation termination could have safely occurred. If the west pivot temperature is compared to the east side of the South SDI, the visual difference is obvious. These SDI Zones essentially matched the pivot yield using 7-inches less irrigation water.

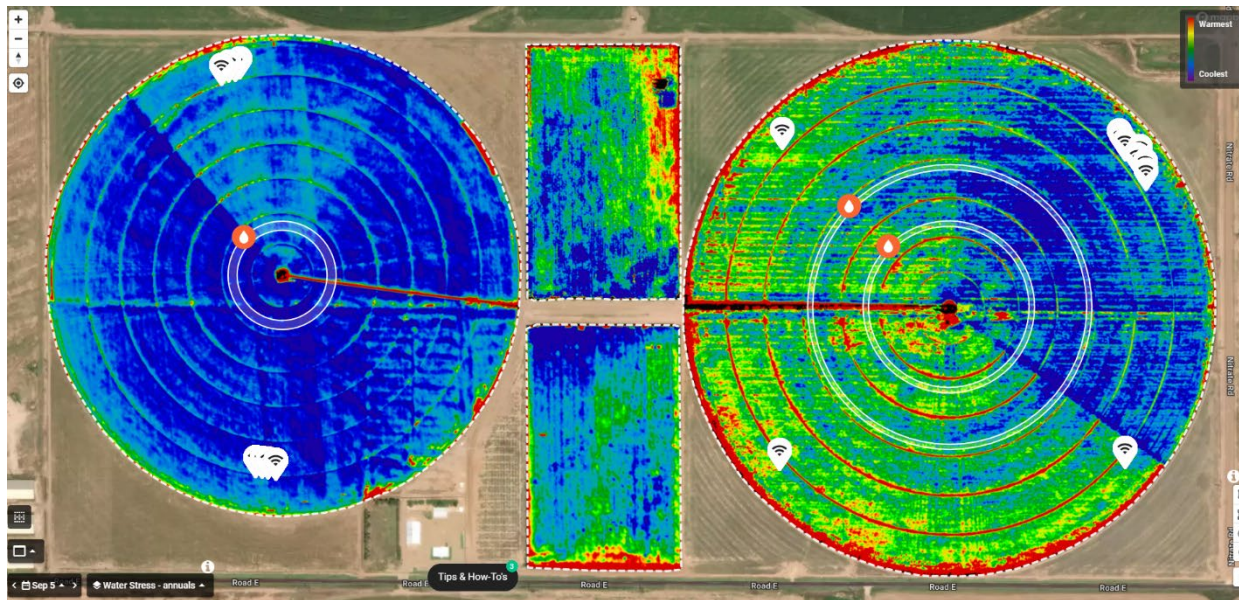
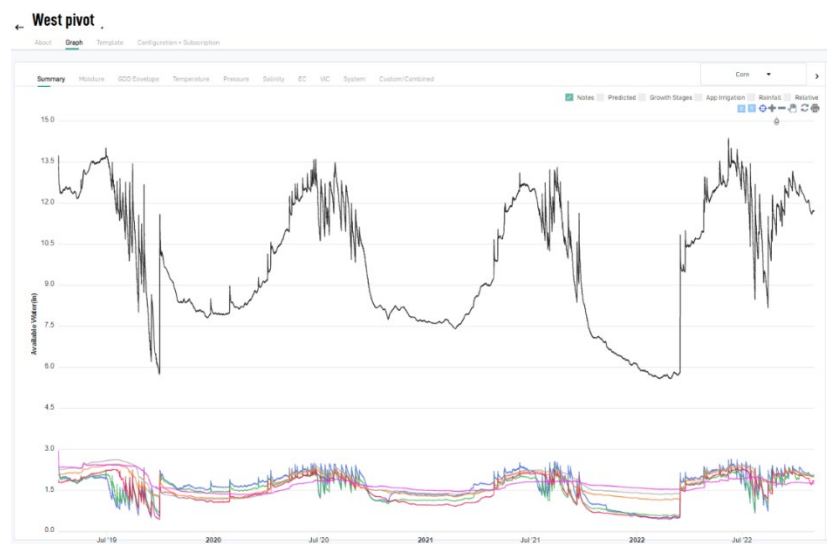


Figure 9: GroGuru moisture chart in the West Pivot. This sensor was installed in 2019 and shows continuous logging through the 2022 crop. Notice how severe the last two winters have been, especially 2021-2022 following a cotton crop. Also note the ending level in 2022 compared to all previous years.



4. *Financial Assistance*

Management Objective: The District will encourage the adoption of technologies that promote efficient use of groundwater and conserve water by providing the means to purchase the technology.

Performance Standards: At least annually, the District will seek financial assistance for stakeholders regarding conservation equipment and practices.

Action Taken: The District applied for and received \$300,000 from the Texas Water Development Board to fund the Meter Reimbursement Program through the 2023 program year. The District continued to provide the following financial assistance programs through 2022:

- NPGCD Irrigation Meter Reimbursement – the district allocated \$100,000 and used it to reimburse eligible irrigators up to half the cost of flow meters.
- TWDB Irrigation Meter Reimbursement – reimbursed eligible irrigators up to half the cost of flow meters.
- TWDB Master Irrigator – funds were available to reimburse up to half the cost of certain approved conservation equipment for graduates of the Master Irrigator Program.

5. *Technical Assistance*

Management Objective: The District will assist stakeholders in collecting information and knowledge about practices and technologies that promote efficient use of groundwater.

Performance Standards: The District will provide technical assistance to stakeholders when requested, and the information is beneficial for the efficient use of groundwater.

Action Taken: In 2022, District contract agriculture engineer, Nich Kenny, assisted graduates of the Master Irrigator program and others with the proper installation and operation of irrigation equipment to maximize performance and efficiency of the practices. In addition, the District received inquiries for groundwater-related technical assistance and provided information to help users conserve water. Technical services performed by the District included flow tests and water quality testing. The District also

partnered with the United States Department of Agriculture – Natural Resources Conservation Service to inspect Variable Frequency Drives which allow for more control over electric irrigation motors. Finally, the District worked with the United States Geological Survey on a water quality investigation to provide a water quality base line of information and that information is available to the public upon request.

B. Controlling and Preventing the Waste of Groundwater [27, 28]

Management Objective: Control and prevent the waste of groundwater as defined by state law.

Performance Standards: The District will pursue any reported violations of the District’s rules concerning groundwater waste.

Action Taken: The District received five water waste reports in 2022. All instances were investigated with corrective measures taken by the property owner or lessee. No issues were taken before the board of directors.

C. Controlling and Preventing Subsidence [29, 30]

Controlling and preventing subsidence has historically not been considered as challenging in the High Plains Aquifer System compared to other aquifer systems in Texas.

Action Taken: District staff reviewed the TWDB report on subsidence; “Final Report: Identification of the Vulnerability of the Major and Minor Aquifers of Texas to Subsidence with regard to Groundwater Pumping, TWDB Contract Number 1648302062. The report lists the Ogallala aquifer with a high risk of subsidence and states, “Subsidence Risk is high with high subsidence risk in large areas of the aquifer”.

The report lists the Dockum, Rita Blanca and Ogallala aquifers with a medium risk of subsidence and states, “subsidence potential exists but is not generally significant outside of hotspots within each aquifer”.

Considering the extent of the study and due to the depth of the water and the nature of the geology within the District, extensive subsidence is unlikely and the District’s Board of Directors, upon recommendation from qualified staff, have determined that this goal is not applicable to the District.

D. Addressing Conjunctive Surface Water Management Issues [31, 32]

Management Objective: Address conjunctive water use issues with organizations that have relevant authority or jurisdiction.

Performance Standard: Annually, the District’s representatives will attend at least 75% of Region A: Panhandle Regional Water Planning Group’s meetings. To further address conjunctive water use issues, the District will submit a copy of its management plan to The Canadian River Municipal Water Authority, Palo Duro Water District, and Red River Authority for their consideration and review.

Action Taken: The District submitted a copy of its management plan to the Canadian River Municipal Water Authority, Palo Duro Water District, and Red River Authority for their consideration and review on December 16, 2022.

Panhandle Water Planning Group (Region A) Agriculture Sub-Committee held a scheduled public meeting on Tuesday, November 1, 2022, at 10:30 AM at the Panhandle Regional Planning Commission and via Go-To Meeting. Steve Walthour, General Manager (Committee Chair) and Daniel Krienke, District Board Member (GMA-1 District Representative) participated in the meeting. The committee considered livestock, irrigation and mining water demand analyses and water use projections.

The Region A Panhandle Water Planning Group held a scheduled public meeting on Tuesday, November 1, 2022, at 1:30 PM at the Panhandle Regional Planning Commission and via Go-To Meeting and Teleconference. Steve Walthour, General Manager (Committee Chair) and Daniel Krienke, District Board Member (GMA-1 District Representative) participated in the meeting. Mr. Krienke presented a report for GMA#1. Mr. Walthour presented a report from the Agriculture Subcommittee.

The Region A Panhandle Water Planning Group Agriculture Committee held a joint interregional planning meeting with Region O Llano Estacado Planning Group Agriculture Committee on September 27, 2022 at 11:00 am at the Panhandle Regional Planning Commission. Steve Walthour, General Manager (Committee Chair) and Daniel Krienke, District Board Member (GMA-1 District Representative) participated in the meeting. The joint committee discussed the draft 2026 TWDB Livestock Water Demands, Methodology and Proposed Water Use Projections.

The Region A Panhandle Water Planning Group Agriculture Committee held a joint interregional planning meeting with Region O Llano Estacado Planning Group Agriculture Committee on May 18, 2022, 11:00 am at the Panhandle Regional Planning Commission. Steve Walthour, General Manager (Committee Chair) and Daniel Krienke, District Board Member (GMA-1 District Representative) participated in the meeting. The joint committee discussed livestock demand timeline, draft 2026 TWDB Livestock Water Demands, Methodology and Proposed Water Use Projections.

The Panhandle Water Planning Group (Region A) held a scheduled public meeting on Tuesday, April 7th, 2022, at 1:30 PM at the Panhandle Regional Planning Commission and via Go-To Meeting and Teleconference. Steve Walthour, General Manager (Committee Chair) and Daniel Krienke, District Board Member (GMA-1 District Representative) participated in the meeting.

E. Addressing Natural Resource Issues that Impact the Use and Availability of Groundwater and which are Impacted by the Use of Groundwater [33, 34]

1. Aquifer Monitoring

Management Objective: Monitor aquifer characteristics that affect utilization and availability of groundwater and which are affected by the use of groundwater through District programs by maintaining a network of monitor wells.

Performance Standards:

- i. District staff will periodically collect and analyze water samples from appropriate monitor wells.

Action Taken: United States Geological Survey collected the last water samples from 16 monitor wells across the District in 2020. No samples were taken in 2022. Additional samples will be analyzed in 2023.

- ii. District staff will perform water quality analyses for select constituents for well owners upon request.

Action Taken: In 2022, water samples were analyzed from 15 private wells upon request, compared to 17 in 2021. Water quality results were reported in aggregate in the 2022-23 Hydrologic Report.

- iii. Annually, District staff will summarize their water quality activities and make the information available to the Board of Directors and the public.

Action Taken: Water quality activities were published in the annual Hydrologic Report and were presented to Board of Directors for approval on October 10, 2023. The information is available in the District office and on the District website.

Table 4: Typical mineral analyses from wells within the District.

Parameter	Units	2020 Number of Analyses	2020 Average Analysis Result	2021 Number of Analyses	2021 Average Analysis Result	2022 Number of Analyses	2022 Average Analysis Result
Sulfate	mg/l	21	77.85	17	52.78	15	27.33
Nitrate	mg/l	21	1.83	17	3.04	15	1.186
Total Iron	mg/l	21	0.04	17	14.84	15	0.05
Chlorides	mg/l	21	51	17	19.28	15	33
Fluoride	mg/l	21	1.32	17	1.13	15	5.386
Total Hardness	mg/l	21	256.91	17	231.74	15	188.466

- iv. District staff will collect aquifer water level measurements annually.

Action Taken: Water levels for select District wells were measured in January and February and reported in the annual Hydrologic Report.

Table 5: Depth to water by county

Dallam	Hartley	Sherman	Moore	Hansford	Hutchinson	Ochiltree	Lipscomb
292 ft.	371 ft.	323 ft.	361 ft.	303 ft.	347 ft.	335 ft.	161 ft.

- v. Annually, 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.

Action Taken: Groundwater level declines and average depth to water are calculated and published in the annual Hydrologic Report.

Table 6: 2022 Average depth to water and comparisons of average decline in select District water level monitor wells

County	Avg. Depth to Water (Feet)	2023 Avg. Well Decline (Feet)	2022 Avg. Well Decline (Feet)	Current 5-Year Avg. Well Decline (Feet)	Previous 5-Year Avg. Well Decline (Feet)	Current 10-Year Avg. Well Decline (Feet)	Previous 10-Year Avg. Well Decline (Feet)
Dallam	292	2.65	2.63	2.58	2.75	2.66	2.77
Hansford	303	1.79	1.77	1.73	1.67	1.70	1.59
Hartley	371	3.06	3.08	3.11	3.20	3.14	3.54
Hutchinson	347	1.64	1.63	1.61	1.50	1.53	1.55
Lipscomb	161	0.95	0.95	0.95	0.94	0.95	0.91
Moore	361	2.34	2.20	2.17	2.28	2.19	2.04
Ochiltree	335	1.46	1.41	1.40	1.34	1.38	1.34
Sherman	323	2.69	2.68	2.63	2.50	2.53	2.44
District-wide	311.6	2.07	2.04	2.02	2.02	2.01	2.02

- vi. At least on a two-year cycle, District staff will summarize or update aquifer saturated material information and make the information available to the Board and the public.

Action Taken: The District calculates saturated thicknesses every other year and using District monitor well data. The next scheduled update will be in the Summer of 2025.

Table 7: 2022-2023 Estimated average aquifer thickness by county (District area only).

Dallam	Hartley	Sherman	Moore	Hansford	Hutchinson	Ochiltree	Lipscomb
158 ft.	144 ft.	142 ft.	139 ft.	193 ft.	155 ft.	172 ft.	202 ft.

2. Deteriorated Wells

Management Objective: Investigate and address deteriorated wells that may pose a threat to water quality.

Performance Standard: District staff will pursue repair or plugging of deteriorated wells.

Action Taken: In 2022, District staff inspected 821 wells. District staff observed 4 deteriorated wells as defined by the Chapter 4 of the District Rules. District staff observed 98 wells that contained casing in good condition but did not meet the following conditions: 1) The well has been capped with a covering that is not easily removed. 2) If

a cap is present it must be capable of sustaining weight of at least 400 pounds. 3) The well is sealed to prevent the pollution of groundwater.

Regarding the 98 wells observed not properly capped, the District staff installed 70 temporary caps that met the District's requirements and instructed the owners in writing as to how to bring these wells into full permanent compliance. Well owners have permanently capped 98 of these wells according to District rules.

3. *Aquifer Information*

Management Objective: The District will provide easy access to public information available about the aquifers and wells within the District's jurisdiction.

Performance Standards: The District will maintain a web-based application for providing information about the groundwater resources in the region.

Action Taken: The public can view a variety of maps and publications related to District groundwater resources on the District's website at www.northplainsgcd.org. The subpage for Aquifer Data & Maps had the highest number of visitors in 2021, with 2,210 page views.

F. *Addressing Drought Conditions* [35, 36]

North Plains Groundwater Conservation District lies in an area of the State of Texas that has a year-round, semi-arid climate. The area experiences generally dry conditions year-round compared to other areas of the state. The District works to educate the public about methods to conserve water all year, but particularly during dry periods.

1. *Current Drought Conditions*

Management Objective: Provide information about the current drought conditions in the area.

Performance Standards: Maintain information about the current drought conditions on the District's website.

Action Taken: The District links the weekly drought monitor published by the National Drought Mitigation Center at University of Nebraska – Lincoln on the website at www.northplainsgcd.org.

2. *Conservation Education*

Management Objective: Provide stakeholders with information and tools to conserve during dry and peak use periods.

Performance Standards: Annually, the District will conduct water conservation communications and education activities.

Action Taken: Drought conditions and water conservation tips were communicated through the District's social media accounts, newsletters and website during 2022.

G. Conservation, Recharge Enhancement, Rainwater Harvesting, Precipitation Enhancement, and Brush Control, Where Appropriate and Cost-Effective [37, 38]

1. Conservation

a) Groundwater Conservation Reserve Program

Management Objective: Provide program allowing permitted well owners that timely report their groundwater production to retain any unused allowable annual production for future years, promoting the conservation of groundwater.

Performance Standards: Annually, District staff will report to permitted well owners the well owner's conservation reserve.

Action Taken: The District reported cumulative and available groundwater conservation reserve to each non-exempt well owner, or the well owner's agent, as part of 2022 Annual Allowable Production reporting forms emailed or mailed by November 30, 2022 for production year 2022.

b) Conservation Education

Management Objective: Conduct conservation education activities to encourage water conservation and create informed and educated citizens who will be dedicated stewards of their resources.

Performance Standards: Annually, the District will disseminate groundwater conservation and waste prevention information through a variety of media, activities, and events.

Action Taken: The District used traditional and social media to communicate conservation messages in 2022.

-The district newsletter was distributed to approximately 2000 people via email and another 1000 through traditional mail.

-The Ag Water Update radio series continued in 2022, bringing timely water management and conservation information to listeners to four radio stations across the district.

-The Cotton and Conservation educational video series marked its fourth year of bringing cotton production best practices to the growers of the North Plains and

beyond. Texas A&M AgriLife/Research personnel provide the content for the videos clips that are made available on the District website and on Youtube.

-Live grower education continued in 2022 with a Turn Row presentation at the North Plains Water Conservation Center Demonstration Farm. The event, featuring district agricultural engineer, Nich Kenny and Texas A&M AgriLife agronomist, Jourdan Bell, Ph.D., covered the demonstrations conducted at the North Plains Water Conservation Center.

District conservation outreach activities

Date	Event	Attendance
January 10	Pioneer Crop Meeting, Dalhart – District Projects and Master Irrigator	50
January 11	Pioneer Crop Meeting, Dumas – District Projects and Master Irrigator	75
January 12	Pioneer Crop Meeting, Stratford – District Projects and Master Irrigator	50
January 13	Pioneer Crop Meeting, Spearman – District Projects and Master Irrigator	115
January 21	GMDA, San Antonio – “Ogallala Water Resources”	Not available
February 16	North Plains Elec. Coop - “Ogallala Water Resources”	Not available
March-April	Master Irrigator – intensive irrigation conservation class for agricultural producers, taught by experts	20
April 19	6 th Grade Class Presentation – Water Conservation	20
May 17	Dalhart Chamber - “Our Water Future and Groundwater Status”	Not available
May 17	Dalhart Water Festival	132
May 18	Perryton Water Festival	163
May 19	Dumas Water Festival	170
May 20	Dumas Water Festival	144

June 8	Sandy Land GCD - “Ogallala Water Resources”	Not available
June 16	4H2O Ambassador Tour – WCC – Jourdan Bell, Ph.D., Stan Spain, Harold Grall	25
July 13	Dumas Rotary Club – “Our Water Future and Groundwater Status”	25
August 4-6	XIT Rodeo and Reunion - Staff volunteered to run drinks stands and distributed Conservation Kits	Not available
August 18	Staff gave away free tea and distributed Conservation Kits	Not available
August 25	Panhandle Regional Planning Commission - “Ogallala Water Resources”	30
September 28	Channel 7 Amarillo - Panhandle Runs on Water Segment with Nich Kenny	Not available
September 29	North Plains WCC – Turnrow Meeting on Demos	8
November 9	Channel 7 Amarillo – Panhandle Runs on Water Segment	Not available
November 15	Farm Bureau Ag Days – Dumas, edible aquifer presentation to fourth graders	360
November 16	Texas A&M AgriLife Extension – taught 8 th graders by playing the Wateria trivia/Bingo game	300
November 29-1	Amarillo Farm and Ranch Show – Amarillo Civic Center – Staff outreach and Master Irrigator promo	Not available

c) Conservation Rule Compliance

Management Objective: Monitor and enforce compliance to District Rules

Performance Standards: The District staff will report the enforcement to the Board as needed.

Action Taken: In **2022**, District well owners filed 2928 Annual Groundwater Production Reports for 2021. 2899 Groundwater Production Units reported groundwater use within the Annual Allowable Production limit in a timely

manner. Of the 29 who exceeded groundwater withdrawal limits, 23 were administratively resolved.

Table 9: 2021 Annual Production Reporting Compliance

2021 Annual Production Reporting Compliance			
Complied with District Rules	Exceeded Groundwater Production Limits	Admin. Resolved	Completed Mitigation Action
2899	29	23	0

A compliance matter is only considered an enforcement action if administrative remedies have been exhausted and the person is required to appear before the Board of Directors.

d) Recharge Enhancement

The District has limited surface water resources to achieve enhanced recharge through diversion or infiltration of surface water. The District explored recharge enhancement through its precipitation enhancement program, and the District discontinued funding for the program in 2006. The District could not quantify if, or to what extent, the program positively affected recharge or groundwater use in the District. The Board of Directors determined recharge enhancement through surface water diversion, infiltration, or precipitation enhancement is not currently viable or practical. For this management plan, this goal is not applicable to the District.

2. Rainwater Harvesting

Management Objective: The District promotes rainwater harvesting by maintaining rainwater harvesting information at the District Office and provides literature about its benefits at a public meeting held at least once annually.

Performance Standards: Annually District staff will report to the Board of Directors the number of people who attended the rainwater harvesting meetings.

Action Taken: No rainwater harvesting meeting was held in 2022.

3. Precipitation Enhancement

The District discontinued its funding for the precipitation enhancement program in 2006. The District could not quantify if, or to what extent, the program positively affected recharge or groundwater use. The Board of Directors determined that precipitation enhancement is not currently viable or practical. For this management plan, this goal is not applicable to the District.

4. Brush Control

The District has a semi-arid climate, has very little surface water, experiences low annual rainfall and has a depth to groundwater exceeding 300 feet. Considering the District's low rainfall, depth to groundwater and lack of surface water resources; brush control as a form of recharge enhancement or groundwater conservation is not practicable or effective. The District has determined that brush control is not a viable groundwater conservation goal for this area and is therefore not applicable.

H. Addressing the Desired Future Conditions [39, 40]

1. Compare DFCs to Aquifers' Conditions

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

Performance Standards: Annually review groundwater production information, GAMs, and water level measurements to characterize aquifer conditions compared to the DFCs.

Action Taken: The Board reviewed groundwater production information, GAMs, and water level measurements to characterize aquifer conditions compared to the DFCs on Tuesday, June 14, 2022 at the North Plains Water Conservation Center.

Table 10: 2022 Production Compared to Modeled Available Groundwater 16-029

County	2020 MAG	2022 Production	2022 Percent Difference between MAG & Production	Average Production 2018-2022	Average Percent Difference between MAG and Production 2018-2022
Dallam	401,663	372,900	-7.71%	341,640	-17.57%
Hartley	409,187	418,900	2.32%	400,280	-2.23%
Moore	219,654	221,200	0.70%	194,840	-12.74%
Sherman	398,183	369,300	-7.82%	318,280	-25.10%
Hansford	275,016	258,700	-6.31%	200,340	-37.27%
Hutchinson	62,803	100,600	37.57%	80,600	22.08%
Lipscomb	266,809	63,200	-322.17%	52,120	-411.91%
Ochiltree	243,778	138,700	-75.76%	104,080	-134.22%
GMA-West	1,428,687	1,382,300	-3.36%	1,255,040	-13.84%
GMA-East	848,406	561,200	-51.18%	437,140	-94.08%
Total	2,277,093	1,943,500	-17.16%	1,692,180	-34.57%

2. Joint Planning

Management Objective: The District will participate in the joint planning process of the Groundwater Management Area 1 with other groundwater conservation districts.

Performance Standards: A District representative will participate in each GMA-1 joint planning meeting.

Action Taken: The Groundwater Management Area Number 1 (GMA #1) met at 10:00 am Friday August 26, 2022 at the Panhandle Regional Planning Commission and via Go-To Meeting and Teleconference. The following North Plains GCD representatives were in attendance: Bob Zimmer, Joint Planning Committee Chairman; Danny Krienke, Representative to Region A, and Steve Walthour, General Manager. The Joint Planning Committee reviewed general GMA-1 business and received reports from the district representatives and Texas Water Development Board.

3. Allowable Production Limitation

Management Objective: Manage groundwater withdrawal amounts based on allowable production limits to achieve DFCs.

Performance Standards: The Board of Directors will review groundwater withdrawal amounts annually, and may modify annual allowable groundwater production limits consistent with its Rules to achieve the DFCs and preservation of the groundwater resources in the region.

Action Taken: The Board of Directors reviewed annual groundwater withdrawal on Tuesday, June 14, 2022. The Board determined it was not necessary to modify production limits.

I. Other Management Goals Included in The Plan by The District

No other management goals are listed at this time.