



High Plains Water District
www.hpwd.org

2023 Annual Report

High Plains Underground Water Conservation District No. 1
2930 Avenue Q
Lubbock, Texas 79411-2499

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High Plains Underground Water Conservation District No. 1

The District strives to conserve, preserve, and protect the groundwater resources of the Ogallala, Dockum, and Edwards-Trinity (High Plains) Aquifers within its 16-county service area.

HPWD consists of all of Bailey, Cochran, Hale, Lamb, Lubbock, Lynn, Parmer, and Swisher Counties, and parts of Armstrong, Castro, Crosby, Deaf Smith, Floyd, Hockley, Potter, and Randall Counties. The district's service area is approximately 11,850 square miles.

The purpose of HPWD, as required by Chapter 36 of the Texas Water Code, is to provide for conserving, preserving, protecting, recharging, and preventing the waste of underground water.

HPWD has developed its management philosophy and resulting management strategies to: 1) protect property rights; 2) utilize the best available science to balance the conservation and development of groundwater; and 3) meet the management goals and desired future conditions of aquifers of the District.

The HPWD Board of Directors adopted the original management plan on August 11, 1998. The plan was later amended on these dates:

- January 29, 2004
- February 10, 2010
- July 19, 2011
- August 12, 2014
- September 10, 2019

This document contains management goals, performance standards, and responses to the performance standards for FY 2023. **It is from October 1, 2022, to September 30, 2023.**

HPWD expresses its appreciation to its management and staff for their careful documentation of program data and assistance in compiling this annual report.

The High Plains Underground Water Conservation District No. 1 Board of Directors reviewed and approved this annual report at their December 12, 2023, regular meeting in Lubbock, TX.

BOARD OF DIRECTORS

Brandon Patschke	Member	Precinct One District Director	Lubbock, TX
Brad Heffington	Vice President	Precinct Two District Director	Littlefield, TX
Tony Beauchamp	Member	Precinct Three District Director	Lazbuddie, TX
Lynn Tate	President	Precinct Four District Director	Amarillo, TX
Ronnie Hopper	Secretary-Treasurer	Precinct Five District Director	Petersburg, TX

DISTRICT STAFF

Tammy Anderson	Accountant
Billy Barron	Field Technician Supervisor
Nathaniel Bibbs	Permit Assistant
Liz Casias	Administrative Assistant
Jason Coleman, P.E.	General Manager
Agatha Dettle	Executive Assistant
Ray Eads	Field Technician
Lance Epperson	Field Technician
Mark Hamilton	Field Technician
Jennifer McClendon	Education Coordinator
Vance Porter	Field Technician
Gray Sanders	IT/Permit Administrator
Robert Triggs	Field Technician
DJ Warrick	Field Technician

COUNTY ADVISORY COMMITTEES

A County Advisory Committee from each of the 16 counties is appointed to serve a one-year term by the District’s Board of Directors. The County Committees make recommendations for needed rule revisions and water conservation programs/activities to the Board. In addition, they serve as a liaison between the Board and residents of their local communities. To see a current list of County Committee Members, go to <https://map1.hpwd.org/precinctmap.html>.

MANAGER'S MESSAGE – Jason Coleman, P.E.

This annual report is a summary of the programs and activities conducted during the 2023 fiscal year.

Most of the content is related to the objectives contained in the district management plan. Chapter 36 of the Texas Water Code specifies the goals that a groundwater conservation district (GCD) must address in the management plan.

HPWD conducted all programs and activities for the 2023 fiscal year at a total cost of about \$2.8 million. About \$2.5 million of the district's revenue for FY2023 was property taxes.

All bills and monthly financial reports for the district are available on the HPWD website (www.hpwd.org). The public has access to the information presented during each board meeting using the "Transparency" link on the website.

HPWD promoted the registration of domestic water wells this year, and established relationships with well owners as a result. Our outreach for residential well owners continues to grow in familiarity as this program resumes.

HPWD conducted a Dockum Aquifer study in Randall County domestic wells in December 2022. With help from K-Ran Drilling, we studied the occurrence and quality of Dockum water quality, where housing developments rely on this source.

We celebrated the retirement of Permit Supervisor Juan Peña in December 2022. Juan served HPWD for over 16 years, and provided excellent customer service to our permit applicants.

The district worked throughout FY 2023 to develop an online portal for customer requests for water well applications. This convenience will help us expedite customer requests and is available 24 hours a day, seven days a week.

Your comments and questions about HPWD programs are always welcome. Please contact us at (806) 762-0181.

ANNUAL REPORT OF ATTAINMENT OF GOALS 2023

GOAL 1: PROVIDING THE MOST EFFICIENT USE OF GROUNDWATER

Management Objective 1.1 – Monitor Water Levels

Water level measurements are vital to the study of the aquifers within the High Plains Water District (HPWD). Field staff makes these measurements each winter, during which time most of the irrigation usage is at a minimum.

Performance Standards

1.1a Number of wells measured each year.

There were 1,368 wells measured. Of these, 1,276 are Ogallala Aquifer wells, 58 are Edwards-Trinity (High Plains) Aquifer wells, and 34 are Dockum Aquifer wells.

1.1b Number of wells District staff are unable to measure each year.

Approximately 22 Ogallala Aquifer and 1 Edwards Trinity wells were unmeasurable in 2023. Publishable measurements are not obtained when wells are in use, the well has been plugged, the well is winterized, or accessibility is prohibited by other circumstances.

1.1c Number of new wells added to the network of observation sites each year.

HPWD Field Staff added 11 new to the observation well network in 2023. There were 15 wells dropped from the observation well network in 2023.

1.1d Construct maps illustrating the yearly changes in water levels.

District staff updated the annual changes in depth-to-water and saturated thickness in wells within the district's observation well network. These data are available for online viewing at map.hpwd.org. Dockum Aquifer data are available for viewing at dockumstudy.hpwd.org

1.1e Maintain continuous water level monitoring transducers in at least 10 water wells.

There are 30 continuous water level monitoring transducers installed/maintained in wells within the district. Changes in telemetry equipment have presented problems maintaining uninterrupted data. All available data is presented on the HPWD interactive web map.

Management Objective 1.2 – Monitor Saturated Thickness

Saturated thickness represents the aquifer section where groundwater pumping occurs. Water users should be aware of changes in saturated thickness.

Performance Standards

- 1.2a Once per year, calculate saturated thickness for Ogallala and Edwards-Trinity (High Plains) water level observation wells that have a log of well construction.

County	Number of Observation Sites With Log of Construction	Average Saturated Thickness from Observation Wells
Armstrong	9	36
Bailey	73	64
Castro	86	52
Cochran	53	42
Crosby	20	82
Deaf Smith	85	59
Floyd	85	63
Hale	47	57
Hockley	72	39
Lamb	92	46
Lubbock	92	58
Lynn	59	48
Parmer	97	46
Potter	6	55
Randall	37	52
Swisher	53	43

- 1.2b Provide saturated thickness data via the District website.

The “Aquifer Info” tool on the [interactive map](#) provides estimates of saturated thickness in the Ogallala/ETHP Aquifer. The District has also created and provided a shaded contour map for the whole service area on its [website](#).

Management Objective 1.3 – Technical Field Services

The District is frequently asked to measure well capacities. A variety of tools are used by District staff for this service. These may include ultrasonic flow meters, e-lines, and other instruments.

Performance Standards

1.3a Number of flow tests performed by District staff each year.

1292 tests were conducted in 2023. This includes 1155 water wells and 137 irrigation systems. This includes Irrigation Assessment Program participants.

1.3b Number of flow tests performed by the public using the metering equipment loaned to water users.

HPWD loaned out flow meters two (2) times during the year. Multiple wells may have been monitored with these flow meters.

1.3c Number of water level measurements performed for individual well owners.

There were 1306 water level measurements made for individual well owners in Fiscal Year 2023. Of these, 373 were for the Irrigation Assessment Program. The remaining 933 measurements were for individual landowners/operators.

Management Objective 1.4 – Irrigation Assessment Program

Agricultural irrigation comprises the majority of groundwater usage within the District. For this reason, it is important that the District understand the patterns of usage on different crops. Using a network of cooperators, the District should monitor application amounts and crop types.

Performance Standards

1.4a Number of sites enrolled in the district's irrigation assessment program each year.

There are 124 sites covering 16,710 acres of land.

1.4b Document the types of crops being irrigated each year.

Corn, cotton, grain sorghum, forage sorghum, and wheat are the primary irrigated crops in 2023. There are also alfalfa, pumpkins, triticale, and sunflowers.

1.4c Document the irrigation methods being utilized each year.

There are currently 14,642 acres with pivot irrigation and 2,068 acres with subsurface drip irrigation enrolled in the Irrigation Assessment Program.

Management Objective 1.5 – Data Availability

The District should provide the best available hydrologic information to water users of the District. This information should be usable on a variety of platforms, such as electronic or print. Timeliness of delivery and ease of access are also critically important.

Performance Standards:

1.5a Once per year, summarize and describe new/improved data tools.

The annual observation wells and Aquifer info tool were updated to display the latest data.

1.5b Once per year, summarize and describe existing data tools.

The online map allows the public to view well locations and download associated documents. This includes permits, driller logs, and geophysical logs. The annual water level observation wells include a chart of tabular data, as well as a graphical representation of water levels and saturated thickness. The Well Spacing Guide allows users to estimate a desired drilling location based on the District's well spacing rules. The "Aquifer Info" tab allows persons to access a "virtual bore" for any location within the HPWD service area. This includes the saturated thickness of the aquifers and the depth and thickness of the formations.

1.5c Once per year, inventory all data tools available to the public.

Interactive map

- well permit applications
- drillers' logs
- well spacing guide
- aquifer information tool
- annual water level observations
- geophysical logs
- daily water level observations
- contours of saturated thickness, the base of aquifer elevation, and water table elevation

Dockum study map

- water quality tests
- flow tests
- depth to water
- geophysical logs
- drillers' logs
- permitted/registered well locations

Well yield calculator (predicted well yields based on declining water levels)

Management Objective 1.6 – Irrigation System Inventory

As groundwater availability changes, it is expected that the amount of irrigated acreage will change as well. Monitoring this change may be accomplished using remote imagery or other tools.

Performance Standards:

1.6a Once per year, document the number of irrigation systems within the District.

There are approximately 14,056 center pivot systems and 5,794 subsurface drip irrigation systems in operation within the district.

1.6b Once per year, calculate acreage covered by the irrigation systems.

There are approximately 2,250,058 irrigated acres within the district. This includes 1,791,640 acres irrigated with center pivots and 458,418 acres irrigated with subsurface drip irrigation.

GOAL 2: CONTROLLING AND PREVENTING WASTE OF GROUNDWATER

Management Objective 2.1 – Well Permitting and Well Completion

HPWD issues permits for water wells expected to produce 17.5 gallons per minute or more.

Performance Standards:

2.1a Number of water well permits issued by aquifers each year.

AQUIFER	2022	2023
Dockum Aquifer	78	101
Edwards-Trinity (High Plains) Aquifer	5	26
Ogallala Aquifer	1173	1173
TOTAL	1256	1300

2.1b Production categories of well permits issued.

DOCKUM AQUIFER		
Maximum Production	2022	2023
70 gallons per minute	1	2
165 gallons per minute	1	1
265 gallons per minute	4	12
500 gallons per minute	67	82
> 500 gallons per minute	5	4
TOTAL	78	101

OGALLALA/EDWARDS-TRINITY (HIGH PLAINS) AQUIFER		
Maximum Production	2022	2023
Under 17.5 gallons per minute	4	0
70 gallons per minute	270	374
165 gallons per minute	512	515
265 gallons per minute	213	169
390 gallons per minute	111	102
560 gallons per minute	65	39
800 gallons per minute	1	0
> 800 gallons per minute	2	0
TOTAL	1178	1199

Management Objective 2.2 – Open, Deteriorated, or Uncovered Wells

Open, deteriorated, or uncovered wells pose a threat to groundwater quality as well as human/animal safety. A staff member may discover such a well during routine fieldwork, or the office may receive notice of the same from a member of the public.

Performance Standards:

2.2a Number of open, uncovered or deteriorated wells reported each year. 17

2.2b Number of well caps provided to cover open wells each year. 4

2.2c Number of open, uncovered, deteriorated wells that were capped, closed, or repaired in accordance with district rules each year. 21

Management Objective 2.3 – Waste of Groundwater

Waste of groundwater is typically reported to the District office by a member of the public, but may also be discovered by a staff member conducting routine field work. Since waste is prohibited by state law, these reports are investigated by staff, and the corresponding well owner is notified of the wasteful practice.

Performance Standards:

2.3a Number of water waste reports investigated by district staff each year.

There was one report of waste in 2023. It was resolved with the owner’s cooperation.

2.3b Number of newsletter articles addressing water waste prevention each year.

MONTH	ARTICLE HEADLINE
October	Fall Conservation Tips
November	Holiday Conservation Tips
March	Know When to Water and When to Wait

April	Spring Into a Healthy Lawn
May	Save Money on Water-Efficient Products
May	Conserve Water in Your Yard
August	Are you Interested in Conserving Water?
September	WaterMyYard

GOAL 3: CONTROLLING AND PREVENTING SUBSIDENCE – Not Applicable

Using the TWDB subsidence predictor tool, we performed analysis for selected water level observation wells. The transient predictions ended at the year 2070. Minimum predicted subsidence values were about 0.15 feet, while the maximum predicted subsidence values were about 0.70 feet. We also reviewed the TWDB report, “Identification of the Vulnerability of the Major and Minor Aquifers of Texas to Subsidence with Regard to Groundwater Pumping.” The District concluded that this goal is not applicable to the operation of the District.

GOAL 4: CONJUNCTIVE SURFACE WATER MANAGEMENT ISSUES

Management Objective 4.1 – Coordination with Surface Water Management Agencies

There are very limited surface water resources in the District. Attending Regional Water Planning Group (RWPG) meetings within HPWD will ensure that the District stays current with issues that affect surface water agencies in the region.

Performance Standards:

4.1a Number of RWPG meetings attended by staff each year.

HPWD Staff attended five Region O meetings that occurred during FY 2023.

GOAL 5: NATURAL RESOURCE ISSUES

Management Objective 5.1 -- Monitor Water Quality

Water quality affects many different user groups within HPWD. The amount of total dissolved solids (TDS) in groundwater is of primary importance as a screening tool for assessing water quality. HPWD has several tools available for conducting this measurement.

Performance Standards:

5.1a Document the aquifer(s) being sampled.

The Dockum Aquifer was included in the Dockum Aquifer Study; the Edwards-Trinity (High Plains) Aquifer was included in the Edwards-Trinity (High Plains) Study; and the Ogallala Aquifer was included in the annual Irrigation Assessment Program.

5.1b Number of wells sampled each year.

AQUIFER	WATER SAMPLES TAKEN PER YEAR
Dockum Aquifer	90
Edwards-Trinity (High Plains) Aquifer	1
Ogallala Aquifer	150
Irrigation Systems	67
TOTAL	308

5.1c Document the type of sampling methods.

Water quality samples were gathered for analysis using grab samples at well sites. In addition, In-Situ Aqua TROLL transducers measured water levels, pressure, conductivity, and temperature.

GOAL 6: DROUGHT CONDITIONS

Management Objective 6.1 – Ongoing and Relevant Drought Information

Every week on Thursdays, a drought map is published on social media. A link to current drought information is published monthly in the Cross Section newsletter. Drought awareness helps water users understand the level of conservation required to meet a particular need. The Texas Water Development Board (TWDB) has a very useful website for drought information, which is <http://www.waterdatafortexas.org/drought>

Performance Standards:

6.1a Number of drought-related articles provided to the public each year

HPWD provided 14 drought-related articles in the newsletter during FY 2023.

MONTH	ARTICLE HEADLINE
October	Weekly Drought Map
November	Weekly Drought Map
December	Weekly Drought Map
January	Weekly Drought Map
February	Drought Preparedness Council Biennial Report
February	Weekly Drought Map
March	Weekly Drought Map
April	Weekly Drought Map
May	Weekly Drought Map
June	Current Drought Map
July	Summer Heat in June
July	Current Drought Map
August	Current Drought Map
September	Current Drought Map

6.1b Number of rainfall maps provided to the public each year.

West Texas Mesonet Rainfall Totals, as well as historic rainfall data for both Amarillo and Lubbock, are available on the district’s website [here](#).

GOAL 7: CONSERVATION, RECHARGE ENHANCEMENT, RAINWATER HARVESTING, PRECIPITATION ENHANCEMENT, OR BRUSH CONTROL, WHERE APPROPRIATE AND COST-EFFECTIVE

Management Objective 7.1 – District Newsletter

HPWD will produce a newsletter (“*The Cross Section*”) and distribute it to area residents and other interested parties. Articles discussing methods to conserve and preserve groundwater quality and quantity will be included.

Performance Standards:

7.1a Once per year, document the number of newsletter subscribers.

There are about 2,300 electronic version subscribers at the end of Fiscal Year 2023.

7.1b Document the number of electronic/print newsletters produced each year.

There were 12 electronic issues distributed during the 2023 Fiscal Year.

7.1c Document the number of articles addressing conservation practices published each year.

There were 10 articles addressing conservation practices in Fiscal Year 2023.

MONTH	NEWSLETTER ARTICLE HEADLINE
October	Sign Up for the Irrigation Assessment Program
October	Fall Conservation Tips
November	Holiday Conservation Tips
February	Rainwater Harvesting
March	Know When to Water and When to Wait
April	Spring into a Healthy Lawn
May	Conserve Water in Your Yard
July	Are you Interested in Saving Rainwater?
August	Are you Interested in Conserving Water?
September	Save Water with WaterMyYard

Management Objective 7.2 – News Releases

HPWD will prepare news releases about water conservation practices and other relevant subjects for distribution to print media, electronic media, and other interested parties.

Performance Standards:

7.2a Number of news releases sent to media and other interested parties each year.

There were 7 news releases produced and distributed to the media in Fiscal Year 2023.

MONTH	NEWS RELEASE
November	HPWD Election Results Declared Official
December	HPWD Seeking Grant Applications
December	HPWD Grant Applications
January	HPWD Annual Water Level Measurements Starting
January	HPWD Grant Applications 2023
April	HPWD 2022-2023 Water Level Measurements
September	HPWD Board Lowers Tax Rate

7.2b Number of news releases addressing conservation practices each year.

There was one news release produced and distributed to the media in Fiscal Year 2023.

MONTH	NEWS RELEASE
April	HPWD 2022-2023 Water Level Measurements

Management Objective 7.3 – Radio Announcements

HPWD will distribute pre-recorded 60-second radio announcements about water conservation practices and other subjects to stations within the district.

Performance Standards:

7.3a Document the number of radio announcements produced each year.

One radio announcement was produced for the annual water level measurements beginning in January. That announcement was run approximately 260 times.

Management Objective 7.4 – Public Presentations

HPWD representatives will present information about water conservation practices, district programs and activities, and other subjects to civic clubs, professional organizations, and other interested parties.

Performance Standards:

7.4a Number of public presentations delivered each year.

HPWD Staff delivered 13 public presentations. (see 7.6b)

Management Objective 7.5 – Conservation Research

The District will seek opportunities to participate and partner with other groups conducting water conservation research and development.

Performance Standards:

7.5a Once per year, document the number of water conservation research projects in which the District participates.

PROJECT	AWARDED
Development of Stress-Tolerant Hi-A Sweet Corn for High-Value Crop Production	\$31,000
Plant-Based Polymers as Effective Treatment Agents in Removal of Pharmaceutical Water from Groundwater Sources	\$28,386
Assessing the Effectiveness of Playa Lake Restoration on the Texas High Plains	\$22,943
Sustainable Rainfed Cropping Systems	\$10,000
Ogallala Commons Education Outreach for Playa and Aquifer Conservation	\$11,000

7.5b Number of newsletter articles describing the research projects each year.

MONTH	NEWSLETTER ARTICLE HEADLINE
April	Research & Demonstration Grant Funding Approved
May	Stewarding Our Aquifer Field Day
June	Hockley County Playa Field Day
August	Summer Education Events: 4H Water Ambassadors

Management Objective 7.6 – Public Information

District staff will provide general water conservation information at suitable venues within the District each year. This may include exhibits at farm shows and information tables with publications at other meetings.

Performance Standards:

7.6a Document venues at which water conservation information is provided. (See table below)

7.6b Estimate the attendance at each venue. (See table below)

DATE	VENUE	ATTENDANCE	PRESENTER(S)
10/4/2022	Whiteface Playa Festival	65	S. Brady, B. Barron, T. Rankin
10/17/2022	Lubbock Water Advisory Commission	15	J. Coleman
10/17/2022	TALL Program	35	J. Coleman
10/26/2022	West Texas Golf Course Supt. Association	27	B. Barron, S. Brady
11/29/2022	Amarillo Farm & Ranch Show	100	S. Brady, B. Barron, J. Leibbrandt, DJ Warrick, M. Bolton, J. McClendon
2/22/2023	Cochran Local Work Group Meeting	25	S. Brady
3/6/2023	Plainview Area Retired School Personnel Assn.	15	B. Barron, S. Brady
4/27/2023	West Texas County Judges & Commissioners	33	J. Coleman
5/12/2023	Kids, Kows & More	100	B. Barron, S. Brady
6/15/2023	4H Water Ambassadors	30	B. Barron, J. Coleman, J. McClendon
7/17/2023	YALL Ag Tour	30	B. Barron, M. Hamilton
8/8/2023	Farwell Rotary Club	25	J. Coleman
8/29/2023	Randall County Ag Day	52	J. Coleman

Management Objective 7.7 – Youth Education

The District will provide water conservation education to youth within its service area.

Performance Standards:

7.7a Document the number of presentations and youth reached once per year

HPWD Education and Outreach staff gave four presentations that reached an estimated 225 students during Fiscal Year 2023.

Management Objective 7.8 – HPWD Website

The District will provide information about groundwater availability, water conservation, and other subjects on its website.

Performance Standards:

7.8a Document annual website traffic using an analytical program.

According to Squarespace Analytics, the HPWD website received 53,400 views during Fiscal Year 2023.

The top pages that users visited are as follows: 1) Home Page; 2) Interactive Maps; 3) Reports 4) Contact Us; 5) Who We Are; 6) Aquifers; 7) Know Before You Buy; and 8) Well Permitting. The interactive map at map.hpwd.org received 10,371 views during Fiscal Year 2023.

GOAL 8: RECHARGE ENHANCEMENT

Management Objective 8.1 – Research and Demonstration Opportunities

Since the District’s creation, HPWD has committed many resources to recharge enhancement studies and demonstrations. Recharge wells and enhanced recharge structures are just several examples of this past work. As managed aquifer research (MAR) technologies evolve, we expect additional research and demonstration opportunities. HPWD may encourage work in this area through its policy of research and demonstration proposals.

Performance Standards:

8.1a Number of research/demonstration MAR proposals received by HPWD each year.

Two projects were received:

- Ogallala Recharge Water Quality Bench Test and System Siting
- Assessing the Effectiveness of Playa Lake Restoration on the Texas High Plains

8.1b Number of research/demonstration MAR proposals funded by HPWD each year.

One project was funded:

- Assessing the Effectiveness of Playa Lake Restoration on the Texas High Plains

GOAL 9: RAINWATER HARVESTING

The District will promote awareness of this conservation practice to residents of the District.

Performance Standards:

9.1a Number of public presentations dedicated to rainwater harvesting each year.

HPWD staff gave three public presentations dedicated to rainwater harvesting. In addition, rainwater harvesting was mentioned during other presentations given by HPWD staff during the year.

9.1b Number of articles or publications written regarding rainwater harvesting each year.

MONTH	ARTICLE HEADLINE
February	Rainwater Harvesting and El Nino News
July	Are You Interested in Harvesting Rainwater?

9.1c Number of rainwater harvesting devices distributed to the public each year.

Following a promotional newsletter article, HPWD gave away ten rain barrels and 12 rain chains in July 2023.

GOAL 10: PRECIPITATION ENHANCEMENT – Not Applicable

During the years 1997-2002, HPWD conducted a weather modification (“precipitation enhancement”) program. In late 2002, residents of the District voiced much opposition to this program, and several county commissioners’ courts adopted resolutions against the continuation of the program. The program was subsequently terminated by the HPWD board, and this goal is not applicable.

GOAL 11: BRUSH CONTROL – Not Applicable

Existing programs administered by the U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) are addressing this issue. This activity is not cost-effective and applicable for the District at this time. Therefore, the goal is not applicable to the operation of the District.

GOAL 12: DESIRED FUTURE CONDITIONS OF THE AQUIFERS

Management Objective 12.1 – Calculate Average Yearly Water Level Change

The District’s currently adopted desired future conditions (DFCs) were developed using an average yearly water level change within the GMAs. Each winter, HPWD and other GCDs obtain water level measurements to determine the change from the previous year.

Performance Standards:

12.1a Number of wells included in the calculation.

HPWD and the other groundwater conservation districts in GMA #2 collectively had 1,423 wells measured in both 2022 and 2023. A well must be measured in both years in order to calculate the yearly change.

12.1b Calculated average water level change.

The calculated average water level change was -0.61 ft across GMA #2. This is from the Ogallala/Edwards-Trinity (High Plains) data.

12.1c Compare total cumulative change to the adopted DFC.

The total cumulative change was a decline of -7.41 feet. This compares to the adopted DFC of -11.1 feet.

Management Objective 12.2 – Estimating Annual Usage

Calculating annual groundwater use is necessary for monitoring progress toward achieving the desired future conditions. Although a regional groundwater model provides an estimate of usage to meet that goal, a more specific local estimate may increase our understanding of the usage and corresponding changes in volume.

Performance Standards:

12.2a Estimate total usage within the district using reported data and irrigation estimates.

Irrigation usage accounts for 98% or more of the total annual usage within HPWD. Reported data is submitted by water users from a variety of different water user groups. These include beef feed yards, dairies, municipalities, school districts, and irrigated producers. Data obtained from the cooperators in the HPWD Irrigation Assessment Program is also very helpful.

Estimated 2022 Irrigation Water Usage — 1,500,000 acre-feet.

Estimated 2023 Irrigation Water Usage — data collection still in progress

12.2b Compare estimated annual usage to data from the High Plains Aquifer System (HPAS) Groundwater Availability Model (GAM)

After adopting desired future conditions for relevant aquifers, each groundwater conservation district (GCD) is given a Modeled Available Groundwater (MAG) report. This data is supplied by the Texas Water Development Board. HPWD is part of Groundwater Management Areas 1 & 2, and consequently has MAG reports for both parts of the District.

Ogallala/Edwards-Trinity (High Plains) Aquifers

Total MAG for 2023 — 1,930,141 acre-feet.

Dockum Aquifer

Total MAG for 2023 — 28,107 acre-feet.

A LOOK BACK AT FISCAL YEAR 2023



2023
YEAR
IN REVIEW

