



**Barton Springs  
Edwards Aquifer**  
CONSERVATION DISTRICT

**ANNUAL REPORT**

**FISCAL YEAR 2024**

Board-approved on December 12, 2024

**BOARD OF DIRECTORS**

**August 31, 2024**

Blayne Stansberry, President	Precinct 2	November 2014 - November 2026
Dan Pickens, Vice President	Precinct 1	November 2020 - November 2024
Christy Williams, Secretary	Precinct 4	November 2020 - November 2024
Lily Lucas, Director	Precinct 3	November 2021 - November 2024
Vanessa Puig-Williams, Director	Precinct 5	November 2022 - November 2026

# DISTRICT STAFF

August 31, 2024

## General Management Group

Timothy Loftus, Ph.D.

General Manager

## Administration Group

Hannah Riggs

Office Manager

## Aquifer Science Group

Jeff Watson, P.G.

Staff Hydrogeologist

Justin Camp

Senior Hydrogeologist Technician

## Communications and Outreach Group

Shay Hlavaty

Communications and Outreach Manager

## Regulatory Compliance Group

Erin Swanson

Regulatory Compliance Manager

Jacob Newton

Compliance Specialist

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## **1.0 BACKGROUND**

The Barton Springs-Edwards Aquifer Conservation District (District) Bylaws require the District Board President or the District General Manager to report on the status of the District and its programs annually to the Board and to the Texas Commission on Environmental Quality (TCEQ). This document is the Annual Report for Fiscal Year 2024, covering the period from September 1, 2023 to August 31, 2024.

According to District Bylaw 4-6, this report shall include:

- The status of the aquifer and the District's programs,
- A financial report to include the report of the annual audit and the security of any District investments,
- A review and evaluation of professional services rendered to the District,
- A status report of any capital projects of the District, and
- The evaluation of the District's long-range plans pursuant to §36.107 (now §36.1071) of the Texas Water Code (TWC).

This introductory section provides an overview of the District, and summarizes the mission and vision of the District and its Board-established critical success factors. Other major report sections that follow include a summary of the active programs in FY 2024; a recap of other specific information required by statute, including an assessment of performance in terms of objectives and performance standards identified in the prevailing Management Plan (MP); and a financial summary. The annual audit report conducted by an independent audit firm is included in its entirety as Appendix A. The Board's assessment of progress toward the MP's objectives by performance standards and the basis for that assessment are included as Appendix B.

### **1.1 General Information About the District**

The District was created in 1987 by the 70<sup>th</sup> Texas Legislature, under Senate Bill 988. Its statutory authorities include Chapter 52 (later revised to Chapter 36) of the TWC, applicable to all groundwater conservation districts (GCDs) in the state, and the District's enabling legislation, now codified as Chapter 8802, Special District Local Laws Code (SDLLC). The District's legislative mandate is to conserve, protect, and enhance the groundwater resources located within the District boundaries. The District has the power and authority to undertake various studies, assess fees on groundwater pumpage and transport, and to implement structural facilities and non-structural programs to achieve its statutory mandate. The District has rulemaking authority to implement its policies and procedures and to help ensure the management of groundwater resources. The District is not a taxing authority. Its only sources of income are groundwater production fees, including a water use fee supplement paid by the City of Austin (CoA); administrative processing fees; and occasional grants from various local, state, and federal programs for special projects.

Upon creation in 1987, the District's jurisdictional area encompassed approximately 255 square miles and was generally defined to include all the area within the Barton Springs segment of the Edwards Aquifer with an extended area to the east to incorporate the service areas of the Creedmoor-Maha Water Supply Corporation (WSC), Goforth Special Utility District (SUD), and Monarch Utilities. In this area, designated as the "Exclusive Territory," the District has authority over all groundwater resources. In 2015, the 84<sup>th</sup> Texas Legislature House Bill 3405 expanded the District's jurisdictional area to include the portion of Hays County located within the boundaries of the Edwards Aquifer Authority (EAA) excluding the overlapping area in the Plum Creek Conservation District (see Figure 1). The newly annexed area designated as "Shared Territory," excludes the Edwards Aquifer and includes all other aquifers, including the underlying Upper Trinity, Middle Trinity, and Lower Trinity aquifers (i.e., Trinity Aquifer). The District serves southern Travis County, central

and eastern Hays County, and portions of northwestern Caldwell County. The District's jurisdictional area including the Shared Territory encompasses approximately 420 square miles and includes both urban and rural areas.

Water from the Barton Springs segment of the Edwards Aquifer serves as the primary water source for public water supply, industrial, and commercial purposes in the District, and is a major source of high-quality base flow to the Colorado River via discharge through the Barton Springs complex. The Barton Springs complex provides the only known habitat for the listed endangered Barton Springs and Austin blind salamanders under the federal Endangered Species Act (ESA), requiring all activities that would or could adversely affect the species to represent optimal conservation efforts. The Trinity Aquifer, underlying the Edwards, is an important primary water resource in some parts of the District and is increasingly being developed as an alternative water supply to the oversubscribed Edwards Aquifer in both the Exclusive and Shared Territories. Some wells in the District also produce water from the Taylor and Austin Chalk formations as well as various alluvial deposits along river and stream banks.

A five-member Board of Directors (Board) governs the District. The Directors are elected in even-numbered years to staggered four-year terms from the five single-member precincts that comprise the District. As a result of legislation in 2011 and subsequent Board action in late FY 2011, director elections were moved from the May local elections date to the November general elections date.

In accordance with District Bylaws, the Board elects its officers for one-year terms in January of each year. At the time of this report, this has not yet taken place. The elected officers in January 2024 were Blayne Stansberry, President; Dan Pickens, Vice President; and Christy Williams, Secretary. As a local political subdivision of the State of Texas, all meetings of the Board are conducted in accordance with the Open Meetings Act, and the District's business is subject to the Texas Public Information Act.

## 1.2 District Mission and Vision Statements

The District Board has assessed and articulated not only the mission of the District but also its vision and overarching strategic purpose.

The mission of the District is largely mandated by and adapted from its enabling legislation and statutes:

*“The Barton Springs-Edwards Aquifer Conservation District, as the responsible public agency and authority, is committed to conserving, protecting, recharging, and preventing waste of groundwater and to preserving all aquifers within the District.”*

The vision of the District provides a succinct statement of the ultimate, continuing goal of the District, describing the standard by which it will execute its mission:

*“The Barton Springs-Edwards Aquifer Conservation District will excel in its operations and administration so that it is considered the model and standard for other groundwater districts.”*

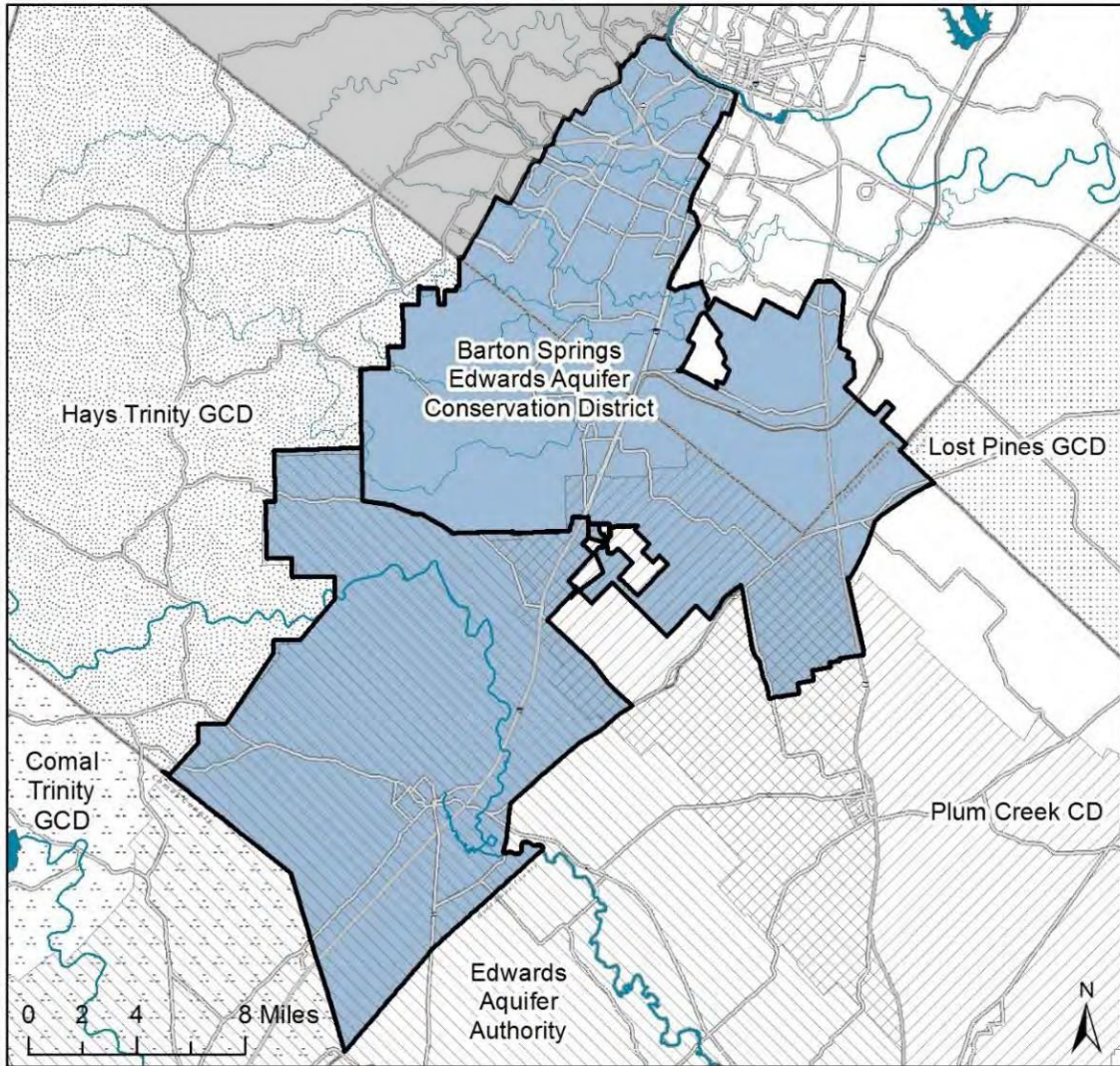
The overarching strategic purpose articulates more action-oriented direction consistent with the mission and vision:

*“We will manage the District aquifers to optimize the sustainable uses of groundwater in satisfying community interests.”*

## 1.3 District Critical Success Factors

The District has established a set of continuing “critical success factors” that flow from and are generally consistent with the goals and objectives of the MP. These critical success factors include:

- Providing sound science to support and form the basis of policy and tactical decisions made by the District that affect water supply users and endangered species habitats;
- Being highly efficient, accurate, and fair in administering staff activities related to all District programs;
- Developing and instituting an equitable and consistently administered regulatory program that is required to serve our mission;
- Becoming a respected and effective part of the state and local political landscape for water resource management and its stakeholder communities;
- Serving our permittees, stakeholders, and the public at large as a readily accessible source of first resort for reliable information about local water, groundwater, aquifer science, water use and conservation; and
- Providing the programmatic and resource basis for innovative, cost-effective solutions to augment the sustainable quantity of water in the District and to protect the quality of District waters required for various existing uses.



**Figure 1 - The District's territory including the expanded Shared Territory and the adjacent Groundwater Conservation Districts and their respective jurisdiction over aquifers.**



## **2.0 DISTRICT PROGRAM AREAS AND TEAM HIGHLIGHTS FOR FY 2024**

The District constitutes one collaborative team of seven staff members, including the General Manager, and a five-member, elected Board of Directors. Staff have various duties that are organized in practice by the following functional groups: General Management, Administrative, Regulatory Compliance, Aquifer Science, and Communications and Outreach. Each staff member reports to the General Manager including one staff member whose frontline supervisor is the Regulatory Compliance Manager. This structure, in terms of understanding and practical approach, is designed to foster collaboration and minimize or avoid siloing. Additionally, the District is supported by a part-time, on-site consultant who provides on-demand Human Resource services and also performs bookkeeping and payroll duties.

The GM meets with each group on a biweekly basis. Additionally, two all-staff meetings are conducted each month; one prior to and another following each Board meeting to ensure preparation and debriefing respectively. These discussions are complemented by other informal conversations that take place as needs arise. The District strives for and has achieved with each other a high-level of trust, communication, and productivity in service to each other and our collective mission.

This section of the report summarizes the operational groups that existed throughout FY 2024, and provides some highlights and notable achievements for each. Appendix B contains more information and details on the work undertaken by these groups in support of the various goals, objectives, and performance standards identified in the applicable 2022 District MP.

### **2.1 General Management Team**

Fiscal Year 2024 began with Dr. Timothy T. Loftus continuing as the District's GM. The GM also serves as the District's Chief Operating Officer and is responsible for the day-to-day business of the District. In addition to managing a staff of seven people and a part-time consultant who performs bookkeeping, payroll, and on-demand Human Resource services, the GM is an *ex-officio* member of all the other teams. The key areas of functional responsibilities for the GM include ensuring staff performance and development, programmatic planning and execution, stakeholder relationship development and cultivation, and financial administration of the District. The GM:

- Ensures that the policies and direction of the Board are implemented effectively, appropriately, and efficiently;
- Provides leadership both inside and outside the District organization in accomplishing the mission, vision, and goals of the District; and
- Serves as an advocate for the staff with the Board, and an advocate for the Board with the staff.

#### **In FY 2024, some highlights for the office of the GM:**

- **Cybersecurity Policy** – HB 3834 passed amending the Government Code to require the establishment of state verified cybersecurity training programs. The District established internal policy guidance on the requirements for board and staff cybersecurity training. Each year the District must verify and report the employee completion of the training, and periodically audit to ensure compliance. The Administration Team keeps certification records

and receipt of submission to the Texas Department of Information Resources (DIR). In the summer of 2024, staff completed the training. The training certificates are maintained by the Administration Team.

- **Legislative Session** – During FY 2024, the Texas Legislature was not in session, but conversations were had as necessary.
- **Regional and Joint Planning** –The GM continued to serve as the Coordinator of the Joint-Planning process. Meetings were held in October 2023, January, and April 2024. During the year, an Interlocal Agreement was executed between the six participating GCDs for the purpose of engaging with Collier Consulting as this planning round’s consultant. The Plum Creek Conservation District serves as the Administrative Coordinator for GMA 10 and manages the financial arrangement with the consultant whose scope-of-work was agreed to by all six participating GCDs.
- **Trinity Sustainable Yield Study and Planning** - In FY 2024, The District launched a well-impact analysis study utilizing the consulting services of LRE Water. Numerous discussions also took place about the next phase of in-house modeling. To that effect, a new master service agreement was executed with William R. Hutchison, Ph.D., P.E., P.G. in May to support the next phase of staff modeling efforts. A Trinity Sustainable Yield Committee was formed and met throughout the fiscal year to discuss ideas and needs as they relate to the District’s mission.
- **New Hires** – Ms. Hannah Riggs was hired on January 2, 2024, as the new Administrative Coordinator. Ms. Riggs duties were revised and updated to reflect evolving circumstances, and she was promoted to a newly created position, Office Manager, in June.
- **Litigation** – The District was not involved in any litigation matters during FY 2024.

### **2.1.1 Board and Staff Training, and Open Meetings Act:**

There were no Open Meetings Act violations in FY 2024.

The GM and staff engaged in a number of workshops and assessments under the general umbrella of team building. These exercises were facilitated by the Austin Alliance Group. The GM also participated in Leadership Training provided by the Austin Alliance Group and during FY 24.

## **2.2 Administration Group**

Hannah Riggs, Office Manager, Tina Cooper, consultant from Austin Alliance Group, and Dr. Timothy Loftus, General Manager, are the group members for administrative programs support.

The Administration Group is responsible for banking, accounting, timekeeping and payroll administration, records retention and management, facilities and vehicle fleet management, personnel and human resources administration, benefits administration, contracts administration, director compensation and reimbursement administration, state/federal grant administration, and monthly meter readings.

### **In FY 2024, some highlights for the Administration Group included:**

- Board and staff maintained their financial resources in a manner that maximizes liquidity while maintaining the greatest return on District fund balances by investing in securities or investment pools that operate in low risk investments and are backed by the state and/or federal government.
- Contracted for and participated in the independent annual financial audit, including the provision of all financial records, and preparation of the Management Discussion and Analysis. Year-end reports are submitted to the TCEQ and the State Pension Review Board (PRB), as required by law.
- Submitted a Request for Quotation (RFQ) for a new auditor and successfully secured an auditor for Fiscal Year 2024.
- Developed and monitored the District annual budgets. In FY 2024, there were two versions. The initial budget was brought before the Board in a public hearing held on June 11, 2024 where it was approved. The Board approved a budget revision on August 8, 2024.
- Administrative staff is responsible for proper maintenance, management, retention, and disposition of all District records; inventory of District property (asset management); and capital depreciation. Administration preserved and protected all public documents in accordance with state and federal laws, the adopted District Records Retention Schedule, and with the Texas State Library regulations; and maintained the District's reference material library.
- Implemented Gusto as our new time tracking software and transitioned to QuickBooks Online, the latest version of QuickBooks.
- Ensure the elections process is conducted and documented in accordance with applicable requirements and timelines.
- Ongoing maintenance and updates are being conducted for the Employee Policy Manual.

## 2.3 Aquifer Science Group

The Aquifer Science Group is involved in various internally- and externally-funded groundwater research and assessment programs. The group consists of Jeff Watson, P.G., Senior Hydrogeologist and Justin Camp, Senior Hydrogeologic Technician; and from time-to-time other staff members, including interns.

To protect and manage the groundwater resources of the District's aquifers, the District continued an active research program that is designed to better understand the hydrogeology and hydrodynamics of aquifers in the District, and to advise the Board on policy-related decisions.

In FY 2024, the Aquifer Science Group worked on many projects, developed new technical reports and memos, presented technical talks, published technical papers, and attended technical conferences including:

- Justin Camp and Jeff Watson conducted a potentiometric water level study in September 2023 and published study findings in a BSEACD Report of Investigations. The study provides a key dataset of Trinity water levels during drought which is currently being used in the District's modeling efforts and Well Impact Analysis project.
- Justin Camp and Jeff Watson collaborated in a multi-agency initiative, involving COA, USGS and Univ. of Texas, to gather an extensive dataset aimed at optimizing manual measurements downstream of Barton Springs on December 14, 2023. Justin Camp and Jeff Watson participated as members of the Technical Workgroup for the MoPac South Project. The project kickoff meeting occurred on May 8, 2024.
- Jeff Watson and Justin Camp led a project to drill two new Edwards monitoring wells in collaboration with City of Austin staff. One of the new wells is a multiport well just south of Barton Springs which will allow for comprehensive water level and water quality monitoring of the Barton Springs complex.
- Jeff Watson and Justin Camp attended the Texas Alliance of Groundwater Districts (TAGD) Groundwater Summit (August 20-23, 2024).
- Jeff Watson participated in a technical advisory committee for establishment of a new groundwater management zone in HTGCD called the Regional Recharge Zone.
- Jeff Watson led planning and project kick-off of Phase II of the Trinity Aquifer Sustainability Model (TAS), a numerical model developed to advance the District's Trinity Sustainable Yield policymaking efforts.
- Jeff Watson attended an online training session for PYTHON coding for groundwater modeling in December 2023.
- Jeff Watson attended the 2023 EDTalks Lecture series hosted by EAA on September 22, 2023. The lecture series covered the impacts of climate change on central Texas water resources.
- Jeff Watson attended the Texas Water Resource Network 2023 Fall meeting on December 8, 2023.
- Jeff Watson attended the TWDB Southern Trinity GAM Technical Stakeholder Committee meeting on August 16, 2024.

Presented technical information and studies to the public and students:

- Jeff Watson presented at Barton Springs University on September 19, 2023
- Jeff Watson was interviewed by local news stations regarding the declaration of District drought on January 22, 2024.
- Jeff Watson gave an interview to FOX7 on February 2 on drilling of the new Barton Springs Multiport Well.
- Justin Camp gave a presentation summarizing BSEACD's role in aquifer research and conservation to LASA students on February 2, 2024.
- Jeff Watson gave a presentation on careers in environmental sciences to University of Texas Environmental Science students on March 5, 2024.
- Justin Camp and Shay Hlavaty discussed GCDs and Central Texas aquifer science with the 1776 podcast on March 21, 2024.
- Justin Camp set up an informational booth presenting a miniature dynamic aquifer model and discussing Central Texas hydrogeology at The Woodcreek, TX Arbor Day on March 27, 2024.
- Jeff Watson co-led a field trip for the University of Texas Karst Hydrogeology Class on May 16, 2024.

**In FY 2024, other highlights for the Aquifer Science Group included:**

- Provided technical guidance and leadership in the Trinity Sustainable Yield Project, including assisting with issuing RFQs for consulting support, technical oversight of ongoing consulting projects, and providing technical advising to the Trinity Sustainable Yield subcommittee.
- Maintained a monitor well network of about 50 wells with instruments that collect hourly data. The District's HOBO weather station at the District office also collects hourly data and reports to an online dashboard accessible on the District website.
- The District routinely measures water levels in the eight multiport monitor wells that are completed in the Edwards and Trinity Aquifers.
- Determined and documented drought status, ensuring the District's monthly drought updates were accurately maintained and current..
- Maintained the Antioch Cave Recharge Enhancement Project as required by the District's Management Plan and HCP permit.
- Implemented an annual sampling program in cooperation with Magellan Pipeline Company related to the operation of the Longhorn Pipeline that transports crude oil through the District. On June 29, 2023, staff sampled about six springs and well sites for hydrocarbon contaminants as a screening test for BTEX and TPH.
- Provided technical evaluation of aquifer test plans and submitted hydrogeologic reports for non-exempt permit applications, evaluating proposed projects for their potential for unreasonable impacts.
- Collected water-quality data (major ions and isotopes) from 18 sample locations in cooperation with the TWDB.

- Held the annual meeting between CoA and District staff to discuss the status of their respective Habitat Conservation Plan (HCP) projects (December 12, 2023).
- District staff hosted the annual HCP Management Advisory Committee (MAC) meeting on to discuss the accomplishments of the District's HCP projects (February 7, 2024).

**Published Papers and District Documents:**

- Watson, J. A. and J. Camp, 2024, September 2023 Potentiometric Study of the Middle Trinity Aquifer, Central Texas, BSEACD Report of Investigations 2024-0220, February 2024.

## 2.4 Communications and Outreach Group

The Communications and Outreach department engages and informs well owners, permittees, stakeholders, and the general public about the District, aquifers in our territory, drought stages, and the importance of water conservation. The group focuses communications on increasing awareness of the District’s work, drought conditions, triggers, and status, water restrictions and conservation tips, ongoing aquifer research, and the state of the aquifers.

In FY 2024, highlights for the Communications and Outreach Group included:

- **Website Revamp**– A redesigned website for the District went live in February of 2024. Updates included improving the user experience, simplifying the back-end of the website for staff, and updating the brand, imagery, and voice of the organization. The website had not had a major update in over ten years. Here you can view the [before](#) and [after](#).
- **Social Media Growth**– Through improved content strategy and regular collaboration with other water-focused organizations, the District’s social media followers grew across all platforms (as seen below). Staff developed partnerships with other social media accounts, like Hike Austin, to expand reach. Additional tactics used include posting shorter videos, using high-quality and local photography, improved usage of hashtags, tagging partners when relevant, and including links to pages and articles on the District website.

Social Media Growth Across Fiscal Year 2023-2024				
Platform	Followers 8/23	Followers 8/24	Follower Growth	% Growth YOY
Facebook	1636	1958	332	20%
Instagram	327	1100	773	236%
Twitter	749	858	109	15%
LinkedIn	121	332	211	174%

- **Newsletters and Drought Update Emails Redesign** – The mass email strategy was overhauled in FY 2024. A new cadence for emails was implemented with newsletters being sent on a bi-monthly basis and Drought Updates being sent on the off months. Changes to the mass emails include consistent branding, new streamlined layout, restructured and simplified content for audiences, and original high-quality photography captured by staff. Growth of open rates, click rates, and subscribers are included below:

Newsletter Data: FY 2022/2023 vs. FY 2023/2024			
Year	Avg Open Rate %	Avg. Click Rate %	Newsletter Subscribers
FY 2022/ 2023	36%	5%	2324
FY 2023/ 2024	43%	8%	2360

- **Kent Butler Scholarship** – After the scholarship was cancelled in 2023, the District brought it back for 2024. In partnership with the Edwards Aquifer Research and Data Center, the District provided \$6,000 to fund six students (ages 9-14) to attend their five-day, overnight Aquatic Science Adventure Camp. Students submitted a one-page write up about what they hoped to learn at camp along with related artwork. Staff shared this opportunity with all the school districts in our territory including Wimberley, Austin, San Marcos, Hays, Eanes, and Del Valle. We received 32 applications of all ages. Artwork was displayed in the office and shared on social media.
- **Podcasts** – The District was featured on two podcasts this fiscal year. The [Format Podcast](#) hosted Justin Camp and Shay Hlavaty and included an in-depth conversation about local geology and hydrogeology, the status of the ongoing drought, and importance of water conservation. [Geo Trek](#) hosted Shay and discussed the differences between hydrological and meteorological drought, the District’s current drought status, and challenges in communicating to audiences about drought.
- **Outreach** – The District hosted and/or participated in eight outreach events this year and engaged with over 550 community members. Below are the names and summaries of the events Communications and Outreach was involved in.
  - 9/19/23 Barton Springs University – Educated 60 students and community members through a hands-on presentation about total dissolved solids, the District’s work, and the ongoing drought. Staff also presented on the geology of the Edwards Aquifer.
  - 11/15/23 Well Water Checkup – Partnered with Joel Pigg at the Texas Well Owner Network to host a Well Water Checkup at the office. Well owners picked up testing kits from the office and returned them. Staff then took them to Wimberley for TWON to test them. The District had 10 well owners who participated.
  - 1/30/24 Presentation at Liberal Arts and Science Academy (LASA) – Director Williams invited staff to present to high school students at LASA. Tim Loftus introduced the District and provided an overview of our work. Justin Camp presented on the hydrogeology of the area, the work that a hydrogeologist does, and the impacts of the ongoing drought on the aquifers. Shay Hlavaty supported the coordination and promotion of the event, creation of the presentation, and items to giveaway to students. It’s estimated that 175 students attended.
  - 4/2/24 Groundwater Symposium – The District collaborated with Texas State University to host an event all about groundwater, aquifer management, and conservation. 250 people registered for the event and 175 attended. Speakers included the general managers from Edwards Aquifer Authority, the District, and Hays Trinity Groundwater Conservation District along with additional professionals. 15 water-related organizations exhibited at the event to engage attendees in their work and water conservation.
  - 5/16/24 Managing Groundwater in a Changing Climate – Staff hosted an event for permittees and government officials in Buda. 20 attendees joined and heard about climate predictions for Central Texas from the Texas State Climatologist, Dr. Nielsen Gammon. Staff discussed the state of the aquifers, the work of our regulatory compliance group, and communications tools to inform end-users. Marisa Bruno from Hill Country Alliance also discussed additional available water conservation resources including harvesting rainwater and AC condensate.



- 6/6/24 Lady Bird Johnson Wildflower Center Nature Nights – Shay Hlavaty was invited by City of Austin Water Wildlands Conservation team to lead guests through caves on National Caves and Karst Day. While in the cave, Shay educated participants about how caves serve as recharge sites for aquifers, how the water at the Center flowed to Barton Springs, and the importance of continuously conserving water and preventing contamination. Shay spoke with 50+ participants and 300 people joined the event in total.
- 6/19-21/24 Groundwater to the Gulf – The District joined the Colorado River Alliance and their dozens of partners to provide water education resources to educators from across Texas. Almost 40 teachers attended, and the District led a portion about drought triggers and an activity using oranges to measure Barton Springs discharge.
- 7/10/24 Well Water Checkup – The District hosted another Well Water Checkup in partnership with the Texas Well Owner Network (TWON). 25 well owners dropped off samples to be tested and four attended a presentation led by Joel Pigg with TWON.
- Press Releases- The following press releases were shared with over 30 media contacts regarding drought conditions and aquifer science projects. This resulted in the District being featured in dozens of news articles and segments. These articles were also shared across District social media outlets for additional exposure.
  - 7/21/23 [District Foresees Unprecedented Transition to Stage IV Exceptional Drought](#)
  - 12/15/23 [District Declares Stage IV Drought](#)
  - 3/28/24 [Barton Springs Multiport Well](#)
- District News Articles – The District maintains a blog known as “District News” on the website. It includes Drought Updates, important notices regarding board meetings and public comment, and original District content about the history of the District, ongoing aquifer research, resources for well owners and permittees, drought communications, and more. These articles were also included in monthly newsletters and posted on District social media platforms. The articles written in FY 2024 are listed below.
  - 9/27/23 [Middle Trinity Synoptic](#)
  - 11/28/23 [Lovely Monitor Well: Past and Present](#)
  - 11/28/23 [5 Water Saving Tips for the Holidays](#)
  - 1/26/24 [Preparing for Winter Weather](#)
  - 6/3/24 [Well Water Checkup](#)
  - 6/20/24 [Travis County is Out of Drought. Why Isn't the District?](#)
  - 8/5/24 [Data Collection at the Barton Springs Multiport Monitoring Well](#)
  - 8/5/24 [Well Water Testing: Why it Matters](#)

## 2.5 Regulatory Compliance Team

The Regulatory Compliance Team consists of one Regulatory Compliance Managers and one Regulatory Compliance Specialist who are responsible for a wide range of District responsibilities including drought management, pumpage tracking/compliance assessment, rulemaking, rule and well construction standard interpretation, permitting, enforcement, well inspections, well pluggings, and drilling oversight. Erin Swanson serves as the Regulatory Compliance Manager; with Jacob Newton, Regulatory Compliance Specialist, completing the team. Regulatory Compliance Team members have also actively attended and participated in community outreach and regional development and planning groups, and served as District liaisons to local municipalities, political subdivisions, permittees, and licensed drillers and pump installers in the area.

### In FY 2024, some highlights of the Regulatory Compliance Team included:

- Development Activities Over Recharge & Contributing Zones - The District continues to monitor for proposed Texas Pollutant Discharge Elimination System (TPDES) permits in the contributing and recharge zones of the Barton Springs segment of the Edwards Aquifer. The District continues to track legislation regarding wastewater discharges in the Edwards Aquifer Contributing Zone.
- DFC Planning – Staff actively collaborated in planning discussions with the other five GCDs that make up GMA 10. Members of GMA 10 are working with Collier Consulting during the current round of planning. Administrative matters – an Interlocal Agreement between the six GCDs and a contract with the consultant - and discussions of the factors required to be addressed, dominated the year. The GCDS are waiting on a new Southern Trinity GAM to be released to advance DFC-related discussions. .
- Trinity Sustainable Yield – Phase 2 of the in-house modeling effort got underway with the retention of a new consultant to assist with model review and guidance going forward. A new well-impact analysis project was launched and will provide key information as it relates to Trinity wells and aquifer levels. Early exploration of a Lower Trinity Aquifer study was conducted with proposal secured from two consultants, both of whom work under MSAs with the District. The Trinity Sustainable Yield Committee met more regularly to provide guidance to staff .
- Habitat Conservation Plan - On December 12, 2023, staff held the annual HCP ILA meeting with the CoA. The District and the CoA agreed to collaborate and coordinate on routine and planned communication and activities including flow/aquifer level measurements and monitoring, and regional issues.

Regulatory Compliance staff assisted in drafting the first U.S. Fish and Wildlife Service (USFWS) HCP Annual Report. Staff also held the third annual Management Advisory Committee (MAC) meeting since the issuance of the HCP on February 7th to provide an overview of the annual report and to solicit feedback. The FY 23 annual report was submitted to USFWS on February 26, 2024.

- Management Plan – The District’s 5-year Management Plan (MP), covering the period 2022 to 2027, was amended in FY 24 and approved by the TWDB on August 15, 2024. Staff continued to work towards achieving the MP goals. Progress with the MP during FY 23 was presented to the Board of Directors in December 2024.
- Database Development and Upgrade – In November of 2022, staff entered into a contract with LRE to develop a database. LRE and staff worked extensively and collaboratively throughout FY 2023 and the majority of the modules including a wells, permits, and a map were complete by the end of the fiscal year. Phase 1 of the project was completed in April of 2024. Phase 2 of the project began in May of 2024. In this phase, staff is working with LRE Water to design the user interface, transfer historic

administrative records from the old database, and incorporate water quality and water level data. LRE Water is also developing a field services app that will support data collection, field notes, and document uploads. LRE Water will also work with BSEACD staff on setting up permittees with their own user accounts and finish implementing the online registration functionality. Phase 2 is expected to be completed in December of 2024.

- External Communication and Coordination - Work groups and projects involving staff participation included:
  - Edwards Aquifer recharge and contributing zone development activity coordination
  - Regular meetings of the Regional Water Quality Protection Plan workgroup
  - TDLR - Well Construction Standards
  - TAGD – Legislative Subcommittees
  - TWCA – Groundwater Subcommittee
  - GMA 10
  - BRATWURST Technical Committee
- Implementation and Compliance of Existing Rules - Staff reviews permit compliance of each permittee, and monitors existing wells for compliance with the Rules, and Well Construction Standards. Through required meter readings reports, performing regular inspections of wells, and reviewing pumpage compliance at regular intervals, staff is able to ensure that permitted wells and well systems are operated as intended. Staff also maintains an open dialogue with permittees when compliance matters arise, and facilitate solutions through pre-enforcement discussions.
  - Inspections and Investigations - During FY 2024, staff conducted a number of inspections relating to the processing of permit applications. Staff completed a total of three inspections related to special investigations, twelve permittee site inspections, and well permit applications. Staff collected 25 water quality samples during routine permit inspections or from new well construction inspections. There were three formal enforcement actions initiated in FY 2024. All of these actions were for non-compliance of meeting monthly drought target volumes.

Barton Springs Pool Plume Event – An event occurred between December 18 - 20, 2018, where three separate, discrete, and visible discharges of turbidity from Barton Springs into Barton Springs Pool were observed. CoA staff worked with District staff to identify the likely source of turbidity as sediment produced from the drilling of boreholes for a geothermal system in the Barton Hills area about ¾ of mile (4,000 ft) SSW from Barton Springs. Once the source was identified, the CoA and the District worked together to develop additional drilling protocols within proximity to Barton Springs to minimize future turbidity plumes related to drilling activities.

In FY 2024, staff continued coordination with CoA staff to ensure drilling protocols developed in FY 2019 for the Risk Management Zone were followed to minimize future turbidity plumes related to drilling activities.

A summary of the inspections, investigations, and site visits conducted in FY 2024 is provided below.

Inspections/ Investigations/ Visits	FY 2022	FY 2023	FY 2024
<b>Exempt Well Inspections</b>	0	2	3
<b>Limited Production Permit Inspections</b>	3	4	7
<b>Individual Production Permit Inspections</b>	2	0	1
<b>Test Well Inspections</b>	0	0	0
<b>Plugging Inspections</b>	1	1	1
<b>Special Investigation Inspections</b>	1	1	3
<b>Other Permittee Meetings/Visits *</b>	6	20	14
<i>*Multiple meetings were held with some permittees.</i>			
<b>TOTAL</b>	<b>13</b>	<b>28</b>	<b>25</b>

- Meter Reporting - Monthly meter readings were collected from all individual permittees each month with the large majority reported in a timely manner. Permittees failing to submit timely reports were provided with notices of the District’s intent to collect meter readings. Most delinquent permittees were generally responsive once the notice was received. Meter readings not received after the notice was provided were collected, and a fee was assessed, in accordance with the Rules.

The annual meter reading requirement for all Limited Production Permits (LPPs) were due in September 2024. Email correspondence and notifications were provided to the nonexempt domestic users in an effort to ensure compliance; however, approximately 25% did not timely submit a meter reading.

- User Drought Contingency Plans, and User Conservation Plans (UDCPs and UCPs) - In FY 2019, staff worked with interns to update 136 permit records in order to incorporate updated drought planning documents into their records. According to the District MP, all permittees must update their UDCP and UCP plans at least every five years. Therefore, since all UDCPs were updated in FY 2019, in FY 2023 began working to update these templates and will work with permittees in FY 2024 to get these UDCPs updated.
- Right Sizing and Alternative Sources - After notice and an opportunity for a hearing, the Board may renew a permit with a reduced amount of the authorized production if the authorized withdrawal volume is no longer commensurate with reasonable non- speculative demand, or actual production from a well is substantially less than the authorized permit amount for multiple years without any rationale that reasonably relates to efforts to utilize alternative water supplies, conserve, or improve water use efficiency. Staff typically conducts an overpumpage analysis every few years and conducted the analysis in FY 2019, therefore staff did not conduct an overpumpage analysis in FY 2024.

The District has been actively encouraging alternative source projects to reduce the dependency on the aquifers during drought. Staff has collaborated with water suppliers on ASR projects in providing regulatory and technical guidance. The Ruby Ranch ASR project was approved and has been in operation since the summer of FY 2021 and the City of Buda project was approved in the summer of FY 2024.

- Drought Compliance - The District implements a drought management program that requires mandatory monthly pumpage curtailments during District-declared drought stages. The District began FY 2024 in Stage III Critical drought. The District declared Stage IIV Exceptional Drought on December 14, 2023 and remained in this stage until February 8, 2024 when the District declared Stage II Critical Drought once again. The District declared Stage II Alarm Drought on March 1, 2024 and the District remained in this stage until the end of FY 2024. The District has implemented all drought-related rules and curtailments in accordance with the District’s enforcement plan and drought management protocols. Drought enforcement measures were assessed for Stage III Critical Drought from the beginning of FY 2023 through-December 2023 with Stage IIV Exceptional enforcement measures being assessed for January and February of 2024, Stage III Critical measures again assessed in March of 2024 and Stage II Alarm measures assessed for the remainder of FY 2023. Monthly drought compliance reports for all individual permittees were provided to the Board each month of FY 2024 during District-declared drought, and those reports can be found on the drought management website pages.
- Well Registration - Staff processed and reviewed all well registrations, permit renewals, and applications for permits, permit amendments, and authorizations in accordance with the Rules, Well Construction Standards, and other District guidelines in accordance with specified procedural timeframes. All newly drilled or modified exempt and nonexempt wells were automatically registered at the time of application and were in compliance with District Rules, including Well Construction Standards.

During FY 2024, the District continued with an online registration system to receive well registration applications from well owners. The online registration system was implemented in June 2015 in response to recent annexation efforts associated with the passage of HB 3405. Staff received and processed one registration forms in FY 2024.

- Application Reviews - To ensure that all firm-yield production permits are evaluated with consideration given to the District’s demand-based and non-speculative permitting standards, staff completed comprehensive administrative and technical reviews of permit application requests. A summary of the number and type of applications processed and approved for authorizations, permits, and permit amendments including approved use types and commensurate permit volumes for production permits and amendments, is provided below.

A summary of the new wells drilled in FY 2024 is provided in the table below.

New Wells Drilled	FY 22	FY 23	FY 24
<b>New Exempt Wells</b>	5	6	4
<b>Limited Production Permits (Nonexempt Domestic Wells)</b>	8	10	9
<b>Individual Wells</b>	1	0	
<b>Test Wells</b>	0	0	0
<b>Replacement Wells</b>	0	0	0
<b>TOTAL</b>	14	16	16

A summary of the processed permit applications in FY 2024 is provided in the table below.

Processed Permit Applications	FY22	FY23	FY24
Minor Amendment	5	1	0
Major Amendments	0	0	0
New Exempt Well	11	8	4
Limited Production Permit (Nonexempt Domestic Wells)	10	19	7
Individual Production Permit	4	1	3
Individual Well Drilling Authorizations or Well Modification	0	0	4
Test Well	0	0	2
Well Plugging	9	5	3
Replacement Well	0	1	0
<b>TOTAL</b>	<b>39</b>	<b>35</b>	<b>23</b>

A summary of the individual production permits processed in FY 2024 is provided in the table below.

Annual Volume (gpy)	Production Permits Processed	Permit Type	Use Type	Aquifer
<b>788,400</b>	Jarica Investments, LLC	Historic Trinity	Commercial	Middle Trinity
<b>1,645,000</b>	Oak Haven Preserve	Historic Trinity	Commercial	Middle Trinity
<b>73,000</b>	PQ Holdings, LLC	Class A Conditional Edwards	Commercial	Edwards

### 2.5.1 Permit Summary:

A summary of the active individual production permits to date in FY 2024 is provided in the table below.

Active Individual Permits	FY 22	FY 23	FY 24
Conditional A Edwards	26	27	27
Conditional B Edwards	3	3	3
Conditional C Edwards	5	5	5
Conditional D Edwards	1	1	1
Historical Edwards	73	73	73
Historical Trinity	34	34	37
Historical Chalk or Alluvial	2	2	2
Transport Permits	2	2	2
<b>Total</b>	<b>143</b>	<b>147</b>	<b>149</b>

A summary of the active general permits to date in FY 2024 is provided in the table below.

Active General Permits	FY 22	FY 23	FY 24
Limited Production Permits (LPP)	183	194	203
Test Permits	0	0	0
Monitoring Permits	0	0	0
<b>Total</b>	<b>183</b>	<b>194</b>	<b>203</b>

## 2.5.2 Production Summary and Exempt Estimates:

Staff monitors annual withdrawals from all nonexempt wells through required monthly or annual meter reports to ensure that groundwater is used as efficiently as possible for beneficial use. A summary of the volume of aggregate groundwater withdrawals permitted and actually produced from permitted wells for each Management Zone is provided below.

A summary of the permitted production volumes for each Management Zone is provided below.

FY 2023 Permitted Pumpage by Management Zone			
Edwards MZs	Gallons	cfs	acre-feet
Historical (Individual)	2,309,082,596	9.79	7,086
Historical (LPP)	2,500,000	0.011	8
<b>Total Historical</b>	<b>2,311,582,596</b>	<b>9.80</b>	<b>7,094</b>
Conditional (Individual)	370,835,008	1.57	1,138
Conditional (LPP)	65,500,000	0.28	201
<b>Total Conditional</b>	<b>436,335,008</b>	<b>1.85</b>	<b>1,339</b>
<b>Total Edwards</b>	<b>2,747,917,604</b>	<b>11.65</b>	<b>8,433</b>
Trinity MZs	Gallons	cfs	acre-feet
Historical (Individual)	620,506,117	2.63	1,904
Historical (LPP)	33,500,000	0.14	103
<b>Total Trinity</b>	<b>654,006,117</b>	<b>2.77</b>	<b>2,007</b>
Other Aquifers MZs	Gallons	cfs	acre-feet
Historical (Individual)	2,500,000 gal	0.011	8
Historical (LPP)	0	0	0
<b>Total Other Aquifers</b>	<b>2,500,000</b>	<b>0.01</b>	<b>8</b>
<b>Total Permitted</b>	<b>3,404,423,721</b>	<b>14.43</b>	<b>10,448</b>

A summary of the actual versus permitted production volumes for each Management Zone is also provided below.

FY 2024 Production from Individual Permittees		
Production Zone	Actual Production	Permitted Individual Production
Edwards	1,541,407,018	2,679,917,604
Trinity	241,368,460	621,294,517
Austin Chalk or Alluvial	2,400	2,500,000
<b>Total (Gallons)</b>	<b>1,782,777,878</b>	<b>3,303,712,121</b>
	(5471.09 ac ft)	(10,138.60 ac ft)



FY 2024 Production from Limited Production Permits		
Production Zone	Actual Production*	Permitted Limited Production
Edwards	14,221,928	68,000,000
Trinity	7,006,391	33,500,000
Austin Chalk or Alluvial	0	0
<b>Total (Gallons)</b>	<b>21,215,127</b>	<b>101,500,000</b>
	(65.11 ac ft)	(311.49 ac ft)
<i>*Actual production is a volume estimate calculation described in the findings and conclusions of the BSEACD Staff Report 2010. Average Annual exempt well production is approximately 104,573 gpy</i>		

A summary and description of the estimated exempt well production volumes for the Edwards and Trinity Management Zones is also provided below.

Edwards Aquifer – Estimated Exempt Wells Production		Trinity Aquifer – Estimated Exempt Wells Production	
Average Annual Volume per Exempt Well (gpy)	104,573	Average Annual Volume per Exempt Well (gpy)	104,573
Total Est Volume of Exempt Well Production (gpy) *	<b>106,141,595</b>	Total Est Volume of Exempt Well Production (gpy) *	<b>121,304,680</b>
<i>Est # of wells</i>	1015	<i>Est # of wells</i>	1160
<i>cfs</i>	0.45	<i>cfs</i>	0.51
<i>% of Permitted Edwards Production</i>	3.86%	<i>% of Permitted Trinity Production</i>	18.52%
<i>% of Actual Edwards Production</i>	6.00%	<i>% of Actual Trinity Production</i>	32.81%
<i>Permitted Edwards Production(gpy)</i>	2,747,917,604	<i>Permitted Trinity Production (gpy)</i>	654,794,517

\*2010 BSEACD Staff Report – Avg Exempt Well Use=104,573 gpy

\*2010 BSEACD Staff Report – Avg Exempt Well Use=104,573 gpy

### Edwards Aquifer Exempt Use Estimates

The most current estimate for Edwards exempt well production is described in a 2010 District report (Banda et al., 2010). The methodology findings are fully described and involve using GIS to count the total number of potential exempt water wells within the District, and determine how to add them to existing databases of wells. A volume of annual estimated production from exempt wells was based upon water-use profiles and metered data. The 2010 report findings conclude that the estimated production volumes for Edwards Exempt wells was 104,050,000 gal (0.44 cfs) and the estimated number of exempt wells was 995. This volume was approximately equal to 5% of the permitted volume at that time and was thought to be a proportion that could be applied going forward. However, considering that the current estimate of exempt Edwards wells is about 1015, the number, and therefore volumetric use of exempt Edwards is relatively constant, and substantiates the use of the 0.45 cfs.

## **Trinity Aquifer Exempt Use Estimates**

Very few exempt Trinity wells existed in the District prior to the HB 3405 annexation. After annexation of a large portion of Hays County, the total number of exempt Trinity wells within the District was largely unknown due to the complexity of geology, aquifer completion, and lack of available information. In 2019, staff developed a method to help estimate the number of exempt wells completed in the Trinity Aquifer in the District that focused on the annexation area. The results of the methodology are briefly described in the District Staff Report 2019 (Gary et al., 2019). The methodology estimates the number of exempt Trinity wells using GIS, and considers existing well completions, water service areas, geology, and County Appraisal District information. Considering meter data and average annual household use, the estimated production volumes for Trinity Exempt wells is about 1160 wells, the number, and therefore volumetric use is approximately 120,260,000 gal (0.51 cfs).

### **3.0 REQUIRED DATA AND INFORMATION**

The District Bylaws and MP require a number of specific items to be included in the Annual Report. This information is included in the following subsections of the Annual Report.

#### **3.1 Aquifer Status**

Fiscal Year 2024 (which began on September 1, 2023) started with the Austin/Hill Country area in a “Critical Drought” status due to an abnormally hot June, the hottest July on record, and persistently hot, dry conditions throughout August. The Austin region recorded forty-five consecutive days with temperatures at or above 100°F, surpassing the previous record of 27 days set in 2011. Total rainfall for the June-September period was 5.3 inches, a deficit of 6.5 inches compared to the historical average, further intensifying drought severity. October 2023 marked the one-year anniversary of the District’s declaration of “Critical Drought” status. Typically, the second-wettest month, with an average rainfall of 4.1 inches, October delivered an average of six inches across the District, providing some recharge and keeping Lovelady water levels and Barton Springs flow just above “Exceptional Drought” status.

Below-average rainfall continued in November, and by early December 2023, the water level at the Lovelady monitor well had dropped below its “Exceptional Drought” threshold. Consequently, on December 14, 2023, the District Board declared Stage IV “Exceptional Drought”—the first such declaration in the District’s 36-year history. As 2023 concluded, it was recorded as the hottest year on record. And with only April, June, and October yielding above-average rainfall, it was also the region’s 34th driest year on record.

The calendar year 2024 began with the fifth-highest January rainfall on record, totaling 6.6 inches. This precipitation significantly increased flow in the Blanco River and regional creeks, benefiting Barton Springs flow and Lovelady water levels. District monitoring wells and flow gauges for both the Edwards and Trinity aquifers recorded rising water levels. On February 8, in response to these gains, the District’s drought status was revised from “Exceptional Drought” back to “Critical Drought.”

From January to March, cumulative rainfall totaled 10.2 inches—2.7 inches above the historical average—characterizing the winter as “wetter than normal,” partly due to ongoing El Niño conditions (officially declared by NOAA on June 8, 2023). This early precipitation also raised Lovelady water levels above the threshold for the District to declare “Alarm Drought” on March 1, 2024.

Between April and June 2024, total recorded rainfall was 10.2 inches, just 0.8 inches below the historical average. April received 3.0 inches of rainfall, surpassing its historical average by over half an inch. May and June, typically the first and third wettest months in Central Texas, saw near-average rainfall with slight deficits of 0.3 inches and 1.1 inches, respectively. Despite these minor shortfalls in May and June, the cumulative rainfall was sufficient to sustain aquifer levels and spring flow above “Critical Drought” thresholds, promoting regional groundwater recharge.

Following a year of El Niño dominance, conditions transitioned to a neutral ENSO climate pattern—neither El Niño nor la Niña—during the summer, suggesting average summer rainfall. In July, typically the driest month in the region with an average of 2.1 inches, rainfall reached 5.3 inches, marking it as only the third month to exceed historical averages. Although this above-average rainfall in July did not substantially elevate aquifer levels at Lovelady or flow rates at Barton Springs, it helped stabilize and slow the typical seasonal decline.

During August and September, above-average temperatures combined with below-average rainfall—only 2.4 and 2.0 inches, respectively—resulted in decreasing water levels and spring flows across the District. This pattern intensified the effects of late-summer precipitation deficits. Due to low flows at Barton Springs and complications with the USGS real-time flow gauge, including the installation of boards in downstream pool spillways by City of Austin staff to raise pool levels and recent maintenance on the USGS stilling well, the District is utilizing bi-weekly manual measurements to establish a 10-day average for spring flow to help accurately track Barton Springs drought triggers/conditions.

October, typically the second wettest month with an average rainfall of 4.1 inches, recorded minimal precipitation, amounting to only 0.02 inches. This lack of rainfall contributed to further declines in aquifer levels and spring flows. On October 1, water levels at the Lovelady monitoring well fell below the Critical Drought” threshold, prompting the District to declare a state of “Critical Drought” on October 3.

To summarize, the Austin/Hill Country area has received an average of 27.6 inches of rainfall so far in 2024 (through October 31), which is 3.2 inches below the annual average. This marks an improvement from the 8-inch deficit in 2023 and 14 inches in 2022. However, as November approaches, the region will enter its 29th consecutive month of drought. Forecasts with neutral ENSO conditions suggest that rainfall for the rest of 2024 could bring totals closer to the annual average, though a below-average winter and spring are expected for 2025 with La Niña likely to develop by late fall. Conservation remains essential to help Central Texas navigate this ongoing drought period.

### **3.2 Grant Programs**

During FY 2024, the District secured a \$73,700 grant from the CoA’s Barton Springs Salamander Conservation Fund. These funds were applied to the new Zilker Park well near the Barton Springs pool whereby a newly installed, standard monitoring well was enhanced to be a multiport well with the installation of Westbay Instruments technology. The Zilker Park well along with another new well installed in Garrison Park were both paid for by OneOK, formerly Magellan Partners, per an updated Letter Agreement that Magellan entered into with the District. To supplement an existing ILA with the CoA, a new Memorandum of Understanding was created to address project details and add to the ongoing partnership between the CoA and the District.

### **3.3 Professional Services**

The District expended \$192,783 for professional services in FY 2024. This amount included legal fees of \$53,670 for general counsel support provided by Bickerstaff, Heath, Delgado & Acosta LLP of Austin.

Additional professional services for FY 2024 also reported in the above amount include the District’s third-party retirement plan administrator, The Standard, for \$33,515.

The District retained Montemayor Britton Bender PC for the FY 24 audit. The fee paid for these professional services was \$14,950.

The second year of a two-year engagement with SledgeLaw Group for legislative consulting services incurred a cost of \$12,000.

The District’s new database project continued to employ LRE Water and cost \$70,079 in FY 24. This expense followed an initial investment during FY 23 in the amount of \$81,000. During FY 24, the database became fully functional and Phase 2 with numerous enhancements got underway.

Lastly, the District paid the Plum Creek Conservation District (PCCD) \$8,569.00 for being the administrative coordinator for GMA 10. As a reminder, the District is one of six GCDs that participate in the GMA 10 joint planning effort. GMA 10 is working with Collier Consulting in this current fourth round of planning. The six GCDs entered into an Interlocal Agreement with the PCCD who manages the financial arrangement that GMA 10 has agreed to with the consultant.

These professional services do not include the contracted labor that comprises programmatic support to various group initiatives and that is budgeted as part of the individual group budgets.

### **3.4 Capital Projects**

There was one capital outlay over \$5,000 in FY 2024. The District replaced its 2009 Subaru Forester with a 2025 Subaru Forester for a cost of \$39,512 including trade-in.

### **3.5 Financial Report**

As authorized in the District Bylaws, the Board utilizes the Texas Treasury Safekeeping Trust Company (commonly referred to as “TexPool”) as a depository for its funds not required by its current operations. There are several built-in controls and safeguards in the TexPool account mechanisms. The District has established and maintains funds in three TexPool accounts to further minimize risk and to partition funds designated for certain potential uses. To facilitate payments and timely deposits, the District also maintains both checking and payroll accounts with Truist, which are FDIC-insured. Monies are moved electronically between these Truist accounts and the TexPool accounts, generally keeping funds not required by current operations in TexPool, and therefore the cash balances in the operating bank accounts as small as prudently feasible. The District has no additional monetary investments other than its cash fund accounts.

End-of-the-year cash and account balances and an independent assessment of financial controls will be found in the Annual Audit Report, included as Appendix A, upon completion of the financial audit.

## **3.6 Evaluation of District’s Long-Range Plan Pursuant To §36.1071**

### **3.6.1 Background**

TWC §36.1071 requires all GCDs to establish and maintain a long-range comprehensive plan for groundwater management in the District. This long-range plan is a five-year plan called the District Management Plan (MP). The MP must be reviewed, revised as necessary, readopted, and reapproved at least once every five years. The current plan was adopted by Board resolution in October of 2022, approved by the TWDB in December 2022, amended by Board resolution in August 2023, and approved by the TWDB in August 2024. Pursuant to the code provisions, all GCDs are required to assess progress quantitatively toward the objectives in their prevailing MP at least annually. This assessment is summarized in the following Section 3.6.2 and elaborated on in Appendix B of this Annual Report.

### **3.6.2 Board Evaluation of Goals, Objectives, and Progress Assessment**

Section 2.0 of this report highlights some activities for each of the operational teams. A more comprehensive and detailed listing of the activities of the District is included in Appendix B, which was prepared by staff to assist the Board's evaluation of the progress made in FY 2024 toward the goals, objectives, and performance standards identified in the prevailing District MP.

On December 12, 2024, the Board reviewed the information in Appendix B, discussed its conformance with the plan objectives and their subsidiary performance standards, and then took action to evaluate progress made by the District toward these strategic objectives, as specified in the metrics for each of the objectives. Following a proper motion and second, and discussion in a properly noticed Open Meeting, the Board unanimously approved the progress toward each and all objectives in FY 2024 as being satisfactory. The basis for that decision-making is included in this Annual Report as Appendix B.

**FY 2024**

**DRAFT**

**Appendix B**

**Assessment of Progress Toward  
Management Plan Goals and Objectives**

**To be Board-approved in December 2024**

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# **GOAL 1**

## **PROVIDING THE MOST EFFICIENT USE OF GROUNDWATER**

31 TAC 356.52(A)(1)(A)/TWC §36.1071(A)(1)

**Objective 1-1.** Provide and maintain on an ongoing basis a sound statutory, regulatory, financial, and policy framework for continued District operations and programmatic needs.

### Performance Standards

- A. Develop, implement, and revise, as necessary, the District Management Plan (MP) in accordance with state law and requirements. Each year the Board will evaluate progress towards satisfying the District goals. A summary of the Board evaluation and any updates or revisions to the MP will be provided in the Annual Report.

In FY 2024, the District amended MP by Board Resolution in August 2023. The amended plan was approved by the Texas Water Development Board (TWDB) on August 15, 2024. Updates reflected a new GAM run/report by the TWDB.

In order to achieve the goals, management objectives, and performance standards adopted in the MP, on December 14, 2023, the District's Board of Directors (Board) evaluated progress made, and approved the District's FY 2023 Annual Report and Appendix B (Assessment of Progress toward Management Plan Goals and Objectives). Appendix A (the annual financial audit) was also presented at the December 14, 2023 Board Meeting.

- B. Review and modify District Rules as warranted to provide and maintain a sound statutory basis for continued District operations, and to ensure consistency with both District authority and programmatic needs. A summary of any rule amendments adopted in the previous fiscal year will be included in the Annual Report.

During FY 2024, there were three consecutive public hearings held during which time the Board of Directors acted to amend, add, and/or repeal District Rules: October 12, November 9, and December 14, 2023.

**Objective 1-2.** Monitor aggregated use of various types of water wells in the District, as feasible and appropriate, to assess overall groundwater use and trends on a continuing basis.

### Performance Standard

Monitor annual withdrawals from all nonexempt wells through required monthly or annual meter reports to ensure that groundwater is used as efficiently as possible for beneficial use. A summary of the volume of aggregate groundwater withdrawals permitted and actually produced from permitted wells for each Management Zone (MZ) and permit type will be provided in the Annual Report.

A summary of the actual versus permitted production volumes for each MZ is also provided below.

FY 2024 Production from Individual Permittees		
Production Zone	Actual Production	Permitted Individual Production
Edwards	1,541,407,018	2,679,917,604
Trinity	241,368,460	621,294,517
Austin Chalk or Alluvial	2,400	2,500,000
<b>Total (Gallons)</b>	<b>1,782,777,878</b>	<b>3,303,712,121</b>
	(5471.09 ac ft)	(10,138.60 ac ft)

FY 2024 Production from Limited Production Permits		
Production Zone	Actual Production*	Permitted Limited Production
Edwards	14,221,928	68,000,000
Trinity	7,006,391	33,500,000
Austin Chalk or Alluvial	0	0
<b>Total (Gallons)</b>	<b>21,215,127</b>	<b>101,500,000</b>
	(65.11 ac ft)	(311.49 ac ft)
<i>*Actual production is a volume estimate calculation described in the findings and conclusions of the BSEACD Staff Report 2010. Average Annual exempt well production is approximately 104,573 gpy</i>		

**Objective 1-3.** Evaluate quantitatively at least every five years the amount of groundwater withdrawn by exempt wells in the District to ensure an accurate accounting of total withdrawals in a water budget that includes both regulated and non-regulated withdrawals, so that appropriate groundwater management actions are taken.

Performance Standards

Provide an estimate of groundwater withdrawn by exempt wells in the District using Texas Department of Licensing and Regulation (TDLR) and TWDB databases, and District well records; and update the estimate every five years with the District’s MP updates.

This is a joint effort between the Aquifer Science, Communications and Outreach, and Regulatory Compliance groups.

In the interim years between MP updates, the most current estimates of exempt well withdrawals will be included in a summary of the volume of aggregate groundwater withdrawals permitted and actually produced from permitted wells for each MZ and permit type that will be provided in the annual report.

A summary table of the [estimated exempt well production volumes](#) for the Edwards and Trinity MZs is provided below.

**Edwards Aquifer –**

**Estimated Exempt Wells Production**

Average Annual Volume per Exempt Well (gpy)	104,573
Total Est Volume of Exempt Well Production (gpy) *	<b>106,141,595</b>
<i>Est # of wells</i>	1015
<i>cfs</i>	0.45
<i>% of Permitted Edwards Production</i>	3.86%
<i>% of Actual Edwards Production</i>	6.00%
<i>Permitted Edwards Production(gpy)</i>	<i>2,747,917,604</i>

\*2010 BSEACD Staff Report – Avg Exempt Well Use=104,573 gpy

**Trinity Aquifer –**

**Estimated Exempt Wells Production**

Average Annual Volume per Exempt Well (gpy)	104,573
Total Est Volume of Exempt Well Production (gpy) *	<b>121,304,680</b>
<i>Est # of wells</i>	1160
<i>cfs</i>	0.51
<i>% of Permitted Trinity Production</i>	18.52%
<i>% of Actual Trinity Production</i>	32.81%
<i>Permitted Trinity Production (gpy)</i>	<i>654,794,517</i>

\*2010 BSEACD Staff Report – Avg Exempt Well Use=104,573 gpy

**Objective 1-4.** Develop and maintain programs that inform and educate citizens of all ages about groundwater and springflow-related matters, which affect both water supplies and salamander ecology.

Performance Standards

Publicize District drought trigger status (Barton Springs ten-day average discharge and Lovelady Monitor Well water level) in monthly eNews bulletins and continuously on the District website.

Provide summaries of associated outreach and education programs, events, workshops, and meetings in the monthly group activity reports in the publicly available Board backup.

**Groundwater to the Gulf**

This annual, three-day, field-based educational program led by the Colorado River Alliance took place on June 11-13, 2024. It provides educators with water conservation-focused activities and curricula to use in the classroom and for public outreach. It's a great opportunity for science teachers to obtain

continuing education credits and for environmental educators to get hands-on activities and resources to use in outreach. Dozens of local water-related organizations assist with making this event a reality including Lower Colorado River Authority, City of Austin, Texas Parks and Wildlife, and more. The District led a session focused on springflow at Barton Springs. Staff discussed what the District is, what we do, and how our drought stages are determined. Participants then used oranges to measure springflow at Barking Springs. District staff also assisted with other educational segments and took photos that were used broadly amongst partners. Over 40 participants joined this year's Groundwater to the Gulf. This event was shared across the District's social media.

### **Barton Springs University**

The District participated in Save Our Springs' Barton Springs University on September 19, 2023. Shay Hlavaty and Jacob Newton led a hands-on activity educating participants about conductivity of water and the Edwards and Trinity aquifers. They also provided an overview of the District, our work, and the current drought stage. Jeff Watson presented on the hydrogeology of the Edwards Aquifer. It's estimated that 300 students attended Barton Springs University with dozens learning directly from District staff. This event was shared across District social media, in the monthly newsletter, and in a board report.

Beneath the Surface: Exploring Central Texas Aquifers and Sustainable Management Practices  
Director Williams asked the District to present at one of Liberal Arts and Science Academy's (LASA) Lunchtime Lectures. Tim Loftus provided an overview of the groundwater conservation district's and what our District does. Justin Camp provided information on what a career in hydrogeology entails, what conservation districts do, the deep interconnection between local surface and groundwater sources, drought triggers, and water conservation. You can view the presentation slides [here](#). There were approximately 125 students in attendance.

### **Barton Springs Multiport and Garrison Parks Monitor Well Communications**

The installation of the Barton Springs Multiport Monitor Well and the Garrison Park Monitor Well provided great opportunities to provide audiences information about groundwater and springflow, how we study and monitor these, and their impacts on water supplies and salamander ecology. Staff promoted communications about the drilling of the Zilker and Garrison parks monitoring wells before, during, and after the installation. Staff communicated directly with organizations such as Save Our Springs, Save Barton Creek Association, and the Zilker HOA months in advance to ensure relevant organizations and community members were aware of the upcoming project. This [press release](#) was shared with the media, on the District's website, and across social media outlets on January 11, 2024 and resulted in the following articles:

- Barton Springs-Edwards Aquifer Conservation District installing two monitoring wells at Garrison and Zilker parks – [Austin Monitor](#), 1/12/24
- New Austin monitoring wells to study aquifers, effects on endangered salamanders - [Community Impact](#), 1/18/24
- New Wells in Austin to Monitor Oxygen Levels for Endangered Species - [Austin Chronicle](#), 1/26/24
- Drilling underway on new monitoring well at Zilker Park – [Fox 7](#), 2/2/24
- Barton Springs Multiport Well: Importance, progress, and next steps – [BSEACD](#), 3/29/24
- Data Collection at the Barton Springs Multiport Monitoring Well - [BSEACD](#), 8/5/24

## Format Podcast

Justin Camp and Shay Hlavaty were interviewed for an episode of The Format Podcast, which has conversations with experts on a variety of topics to educate curious listeners. They discussed the formation of the geology of the Texas Hill Country, how the District regulates groundwater, the District's drought trigger methodology, and the importance of continuous conservation of water. The episode is available on all major podcast platforms and was promoted across all District social media platforms. A video of the conversation can be viewed [here](#).

## Relevant Articles on the Website

- [Middle Trinity Aquifer Synoptic, 9/27/23](#)
- [Lovelady Monitor Well – Past and Present, 11/28/23](#)

**Objective 1-5.** Ensure responsible and effective management of District finances such that the District has the near-term and long-term financial means to support its mission.

## Performance Standards

Receive a clean financial audit each year. A copy of the auditor's report will be included in the Annual Report (as Appendix A).

The Board expects to receive and approve the FY 2024 Annual Financial Audit report provided by the District's financial auditor at its Board Meeting on December 12, 2024. It will be included in the Annual Report as Appendix A.

Timely develop and approve fiscal-year budgets and amendments.

A FY 23 budget amendment was approved on September 14, 2023. During FY 2024, there were two FY 25 budget versions brought before the Board of Directors. The preliminary budget was presented in a properly-noticed public hearing held on June 11, 2024 where it was approved. The Board approved a final FY 25 Budget 1 on August 8, 2024.

**Objective 1-6.** Provide efficient administrative support and infrastructure, such that District operations are executed reliably and accurately, meet staff and local stakeholder needs, and conform to District policies and with federal and state requirements.

## Performance Standards

Maintain, retain, and control all District records in accordance with the Texas State Library and Archives Commission-approved District Records Retention Schedule to allow for safekeeping and efficient retrieval of any and all records, and annually audit records for effective management of use, maintenance, retention, preservation and disposal of the records' life cycle as required by the Local Government Code. A summary of records requests received under the Texas Public Information Act (PIA), any training provided to staff or directors, or any claims of violation of the PIA will be provided in the Annual Report under the General Management Group Highlights.

The Administration Group is responsible for proper maintenance, management, retention, and disposition of all District records; inventory of District property (asset management); and capital

depreciation. Administration preserved and protected all public documents in accordance with state and federal laws, the adopted District Records Retention Schedule, and with the Texas State Library regulations; and maintained the District's reference material library.

District records were maintained effectively, and there were no violations of the Public Information Act (PIA).

Two Texas PIA requests were handled with the support of specialized counsel provided by Bickerstaff Heath Delgado Acosta LLP and to the satisfaction of the requesting entity.

Develop, post, and distribute District Board agendas, meeting materials, and backup documentation in a timely and required manner; post select documents on the District website, and maintain official records, files, and minutes of Board meetings appropriately.

The Administration Group developed, posted, and distributed all materials and backup documentation for all 10 District Regular Meetings and one Special Called Meeting held in FY 2024. There were also seven Public Hearings. All meeting minutes were approved by the Board at a subsequent meeting. Administrative staff maintained the officials records of each meeting on the District's website and in the District's digital library.

**Objective 1-7.** Manage and coordinate electoral process for Board members.

#### Performance Standard

Ensure the elections process is conducted and documented in accordance with applicable requirements and timelines. Election documents will be maintained on file, and a summary of elections-related dates and activities will be provided in the Annual Report for years when elections occur.

The District holds elections no more often than every two years during even-numbered years, but during an odd-numbered fiscal year .

Three candidates filed for the November 5, 2024 (FY 25) election but were unopposed at the end of the filing deadline. The elections, therefore, were cancelled. Two candidates were running for reelection (precincts 3 and 4) and one candidate will be new (Precinct 1) since the incumbent chose not to run for reelection after one term.

## GOAL 2 CONTROLLING AND PREVENTING WASTE OF GROUNDWATER

31 TAC 356.52(A)(1)(B)/TWC §36.1071(A)(2))

**Objective 2-1.** Require all newly drilled exempt and nonexempt wells, and all plugged wells to be registered and to comply with applicable District Rules, including Well Construction Standards.

Performance Standard

A summary of the number and type of applications processed and approved for authorizations, permits, and permit amendments including approved use types and commensurate permit volumes for production permits and amendments will also be provided in the Annual Report.

To ensure that all firm-yield production permits are evaluated with consideration given to the District’s demand-based and nonspeculative permitting standards, staff completed comprehensive administrative and technical reviews of permit application requests. A summary of the number and type of applications processed and approved for authorizations, permits, and permit amendments, including approved use types and commensurate permit volumes for production permits and amendments, is provided below.

A summary of the [processed permitting applications](#) in FY 2024 is provided in the table below.

Processed Permit Applications	FY22	FY23	FY24
Minor Amendment	5	1	0
Major Amendments	0	0	0
New Exempt Well	11	8	4
Limited Production Permit (Nonexempt Domestic Wells)	10	19	7
Individual Production Permit	4	1	3
Individual Well Drilling Authorizations or Well Modification	0	0	4
Test Well or Aquifer Test	0	0	2
Well Plugging	9	5	3
Replacement Well	0	1	0
<b>TOTAL</b>	<b>39</b>	<b>35</b>	<b>23</b>

A summary of the [individual production permits processed](#) in FY 2024 is provided in the table below.

Annual Volume (gpy)	Production Permits Processed	Permit Type	Use Type	Aquifer
788,400	Jarica Investments, LLC	Historic Trinity	Commercial	Middle Trinity
1,645,000	Oak Haven Preserve	Historic Trinity	Commercial	Middle Trinity
73,000	PQ Holdings, LLC	Class A Conditional Edwards	Commercial	Edwards

**Objective 2-2.** Ensure permitted wells and well systems are operated as intended by requiring reporting of periodic meter readings, making periodic inspections of wells, and reviewing pumpage compliance at regular intervals that are meaningful with respect to the existing aquifer conditions.

Performance Standards

Inspect all new wells for compliance with the Rules, and Well Construction Standards, and provide a summary of the number and type of inspections or investigations in the Annual Report.

During FY 2024, staff conducted a number of inspections relating to the processing of permit applications. Staff completed a total of three inspections related to special investigations, twelve site permittee inspections and well permit applications. Staff collected 25 water quality samples during routine permit inspections or from new well construction inspections. There were three formal enforcement actions initiated in FY 2024. All three of these actions were for non-compliance of meeting monthly drought target volumes.

Inspections/ Investigations/ Visits	FY 2022	FY 2023	FY 2024
Exempt Well Inspections	0	2	3
Limited Production Permit Inspections	3	4	7
Individual Production Permit Inspections	2	0	1
Test Well Inspections	0	0	0
Plugging Inspections	1	1	1
Special Investigation Inspections	1	1	3
Other Permittee Meetings/Visits *	6	20	14
<i>*Multiple meetings were held with some permittees.</i>			
<b>TOTAL</b>	<b>13</b>	<b>28</b>	<b>25</b>



Provide a summary of the volume of aggregate groundwater withdrawals permitted and actually produced from permitted wells for each MZ and permit type in the Annual Report.

A summary of the actual versus permitted production volumes for each MZ is provided above in the Objective 1-2 Performance Standard update.

**Objective 2-3.** Provide leadership and technical assistance to government entities, organizations, and individuals affected by groundwater-utilizing land use activities, including support of or opposition to legislative initiatives or projects that are inconsistent with this objective.

#### Performance Standards

A. In even-numbered fiscal years, provide a summary of interim legislative activity and related District efforts in the Annual Report. In odd-numbered fiscal years, provide a legislative debrief to the Board on bills of interest to the District, and provide a summary in the Annual Report.

During FY 2024, the Texas State Legislature did meet.

B. Provide a summary of District activity related to other land use activities affecting groundwater in the Annual Report.

#### *Development Activities Over Recharge and Contributing Zones:*

No new development activities moved forward during the fiscal year.

The District continues to monitor as many proposed/new developments as possible and Texas Pollutant Discharge Elimination System (TPDES) permits in the contributing and recharge zones of the Barton Springs segment of the Edwards Aquifer. Furthermore, the District continues to track legislation regarding wastewater discharges in the Edwards Aquifer Contributing Zone.

**Objective 2-4.** Ensure all firm-yield production permits are evaluated with consideration given to the demand-based permitting standards including verification of beneficial use that is commensurate with reasonable non-speculative demand.

#### Performance Standard

A summary of the number and type of applications processed and approved for authorizations, permits, and permit amendments including approved use types and commensurate permit volumes for production permits and amendments will be provided in the Annual Report.

To ensure that all firm-yield production permits are evaluated with consideration given to the District's demand-based and nonspeculative permitting standards, staff completed comprehensive administrative and technical reviews of permit application requests. A summary of the number and type of applications processed and approved for authorizations, permits, and permit amendments including approved use types and commensurate permit volumes for production permits and amendments is provided below.

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Test Well or Aquifer Test	0	0	2
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<b>1,645,000</b>	Oak Haven Preserve	Historic Trinity	Commercial	Middle Trinity
<b>73,000</b>	PQ Holdings, LLC	Class A Conditional Edwards	Commercial	Edwards

# **GOAL 3**

## **ADDRESSING CONJUNCTIVE SURFACE WATER MANAGEMENT ISSUES**

31 TAC 356.52(A)(1)(D)/TWC §36.1071(A)(4)

**Objective 3-1.** Assess the physical and institutional availability of existing regional surface water and alternative groundwater supplies, and the feasibility of those sources as viable supplemental or substitute supplies for District groundwater users.

### Performance Standard

A summary of District activity related to this objective will be provided in the Annual Report.

Identify available alternative water resources and supplies that may facilitate source substitution and reduce demand on the Edwards Aquifer while increasing regional water supplies; and evaluate feasibility by considering available/proposed infrastructure, financial factors, logistical/engineering factors, and potential secondary impacts (development density/intensity or recharge water quality).

Staff worked cooperatively with the Ruby Ranch Water Supply Corporation (RRWSC) and their consultants to monitor water quality, water levels and water chemistry sampling and meter accounting of injection and extraction phases of their aquifer storage and recovery (ASR) operation (the 4<sup>th</sup> in Texas). The District also worked cooperatively with the TCEQ Underground Injection Control (UIC) Permits Section to assist in permit provisions. RRWSC is currently authorized to inject 15,000,000 and recover 12,300,000 gallons over a one-year period. In FY 2020, RRWSC was given a Conditional D permit for Edwards groundwater to inject into the Trinity Aquifer. In FY 2021, RRWSC began their first Conditional D permitted ASR recovery in September 2020 and from June-August 2021, with a total of 3,117,700 gallons recovered from Trinity formations. Water-quality data collected by RRWSC was shared with the District and evaluated by Aquifer Science staff.

Lessons learned from the RRWSC ASR project were applied to the District's second, and larger ASR permit, which was issued to The City of Buda in FY 2024. Staff will continue to collect and evaluate hydrogeologic data to better understand how the Trinity Aquifer responds to permitted ASR operations over longer timeframes, and thus increase our understanding of the feasibility of ASR projects as a strategy to reduce demand on the Edwards Aquifer and increase regional supplies.

### Ruby Ranch ASR Status Report

**Objective 3-2.** Encourage and assist District permittees to diversify their water supplies by assessing the feasibility of alternative water supplies and fostering arrangements with currently available alternative water suppliers.

### Performance Standard

A summary of District activity related to this objective will be provided in the Annual Report.

Identify available alternative water resources and supplies that may facilitate source substitution and reduce demand on the Edwards Aquifer, while increasing regional water supplies; and evaluate feasibility

by considering available/proposed infrastructure, financial factors, logistical/engineering factors, and potential secondary impacts (development density/intensity or recharge water quality).

From FY 2021-2023 Staff worked with the City of Buda to facilitate development and testing of a Middle Trinity ASR test well. Aquifer science staff cooperated with staff and consultants with the City of Buda to collect comprehensive data during multiple ASR injection and recovery cycles. Data was evaluated to quantify aquifer impacts and ensure the feasibility of the project. In FY 2024, after completion of the multi-year pilot project, the City of Buda applied for and was granted an ASR permit by the District and the Buda ASR system is now operational. Staff will continue to collect and evaluate hydrogeologic data to better understand how the Trinity Aquifer responds to permitted ASR injection and withdrawal operations over longer timeframes, and thus increase our understanding of the feasibility of ASR projects as an alternate water supply strategy for District permittees.

In FY 2024 Aquifer Science group continued to collect and evaluate water level and water chemistry data collected from the Lower Trinity Aquifer, to assess the viability of the Lower Trinity Aquifer as an alternative supply for District Permittees. Currently the District maintains two Lower Trinity monitoring wells. One of these monitoring wells is the Bliss Spillar Lower Trinity production well, the District's second Lower Trinity non-exempt permit which was issued in FY 2023. Data collected from this well will provide valuable insight on how the Lower Trinity responds to production over time.

**Objective 3-3.** Demonstrate the importance of the relationship between surface water and groundwater, and the need for implementing prudent conjunctive use through educational programs with permittees and public outreach programs.

#### Performance Standards

Provide summaries of associated outreach and education programs, events, workshops, and meetings in the monthly group activity reports in the publicly-available Board backup.

#### **Groundwater Symposium**

The Groundwater Symposium took place on April 2, 2024 at Texas State University. This event was led by the District in collaboration with staff in the Geography and Environmental Studies Department and the Office of Sustainability at TXST. The purpose of this event was to bring university students and the general public together to learn about local aquifers and water conservation and meet professionals who manage groundwater resources regionally. Demands on the Edwards and Trinity aquifers continue to increase in the face of a growing population and drier climate. It's important for community members and future conservation professionals to understand how groundwater is managed, the challenges this resource faces, and how groundwater regulatory bodies are preparing for a changing climate. The Groundwater Symposium sold out of the 250 free tickets that were available. Approximately 175 participants attended the event. The Groundwater Symposium was shared broadly across the District's social media platforms and website and was promoted by participating partners. Speakers included:

- Dylan Baddour - Texas Correspondent at InsideClimate News
- Dr. Mario Garza & Maria Rocha - Elders from the Miakan-Garza Band of the Coahuiltecan People
- Dr. Robert Mace - Executive Director of The Meadows Center for Water and the Environment
- Vanessa Puig-Williams - Director, Texas Water Program at Environmental Defense Fund

- Dr. Tim Loftus - General Manager at the Barton Springs-Edwards Aquifer Conservation District
- Charlie Flatten - General Manager at the Hays Trinity Groundwater Conservation District
- Roland Ruiz - General Manager at the Edwards Aquifer Authority

### **GeoTrek Podcast**

Shay Hlavaty spoke on this podcast focused on hurricanes and natural disasters during the Texas Groundwater Summit. She discussed challenges she faces with communicating the hydrological drought when the area was out of meteorological drought at the time. She also emphasized that the District was still in Stage II Alarm Drought at the time, nearing Stage III Critical Drought, and that conservation of groundwater resources is always essential. This podcast was promoted on the District's social media outlets and can be accessed [here](#).

### **Nature Night**

Staff were invited by City of Austin Water Wildland Conservation to assist with one of Lady Bird Johnson Wildflower Center's Nature Nights. This took place on June 6, 2024, from 5-9pm and was open to the public with an emphasis on education for kids. Since the event took place on National Caves and Karst Day, it focused on caves and fossils and allowed participants to enter two caves on the Wildflower Center's property. Shay Hlavaty was stationed in one of the caves where she educated attendees about the District, groundwater, water conservation, how the caves serve as recharge sites for the Edwards Aquifer and that the water ends up at Barton Springs. Approximately 200 people attended this Nature Night. This event was shared across District's social media channels and in the newsletter. Additional information about it can be viewed [here](#).

**Objective 3-4.** Actively participate in the regional water planning process to provide input into policies, planning elements, and activities that affect the aquifers managed by the District.

### Performance Standard

Regularly attend regional water planning group meetings, and annually report on meetings attended.

In FY 2024, staff attended meetings of the Lower Colorado Regional Water Planning Group (Region K) and reported on any key updates at the Board Meetings. The GM and the alternate served as the Groundwater Management Area (GMA) 10 representatives through August 31, 2024 and continue to serve as liaisons. Region K Meetings attended are:

October 42, 2023  
 February 13, 2024  
 April 17, 2024  
 July 10, 2024

**GOAL 4**  
**ADDRESSING NATURAL RESOURCE ISSUES WHICH IMPACT**  
**THE USE AND AVAILABILITY OF GROUNDWATER, AND WHICH**  
**ARE IMPACTED BY THE USE OF GROUNDWATER**

31 TAC 356.52 (A)(1)(E)/TWC §36.1071(A)(5)

**Objective 4-1.** Assess ambient conditions in District aquifers on a recurring basis by (1) sampling and collecting groundwater data from selected wells and springs monthly, (2) conducting scientific investigations as indicated by new data and models to better determine groundwater availability for the District aquifers, and (3) conducting studies as warranted to help increase understanding of the aquifers and, to the extent feasible, detect possible threats to water quality and evaluate their consequences.

Performance Standards

Review water-level and water-quality data that are maintained by the District and/or TWDB, or other agencies, on a regular basis.

Staff visits approximately 50 monitor wells quarterly, in addition to numerous other wells throughout the year, including eight multiport monitor wells. Data is collected and organized into individual spreadsheets and databases. Staff also regularly samples wells and springs for detailed geochemical analyses as a cooperator for the TWDB (8 sites in FY 2024). All data has been compiled in the TWDB database that is publicly available.

Improve existing analytical or numerical models or work with other organizations on analytical or numerical models that can be applied to the aquifers in the District.

Staff provided key technical support in the development of a conceptual model for the aquifers of the Blanco River watershed. That report (<https://bseacd.org/uploads/Martin-et-al.-2019-BRAAT.pdf>) was published at the end of FY 2019.

In FY 2024 staff attended technical advisory stakeholder meetings for the TWDB Southern Trinity Groundwater Availability Model, currently under construction and scheduled for completion in the middle of calendar year 2025. Staff continue to work with the TWDB to share data for model inputs and provide technical review of the model when solicited.

Aquifer Science staff began development of the Trinity Aquifer Sustainability Model (TAS) in FY 2020. The TAS (formerly referred to as the “In-house Model”) domain covers parts of Travis, Hays, Blanco, and Comal counties. A steady-state version of the model was completed in late 2020. In FY 2021-2022, staff worked to transition the model from steady-state to transient state. Transient models are substantially more complex than steady-state and allow for simulation of the aquifer system under changing conditions such as prolonged drought and/or increases in localized or regional pumping. In FY 2023, the first phase of TAS modeling was completed, and a comprehensive report was published on the District website detailing model parameters and summarizing preliminary modeling results. This report can be found at the following link:

[Trinity Aquifer Sustainability Model](#)

In FY 2024, staff kicked off the second phase of TAS modeling, called "TAS Phase II". In TAS Phase II the model will be further improved and refined to provide a tool which can help provide technical answers for key policy questions emerging related to management of the Trinity Aquifers. Once completed, the TAS will provide a valuable tool which will allow policy makers and stakeholders to evaluate the potential impacts of management decisions on the Trinity Aquifer. In addition, development of the TAS has been a valuable training exercise for Aquifer Science staff, who are now better equipped to evaluate and interact with other groundwater models which are currently under development (the new TWDB Southern Trinity Groundwater Availability Model).

No significant changes in water-quality data were observed during FY 2024. Aquifer conditions began with a status of Critical Drought in September 2023 due to a previously very dry spring and summer. Below-average rainfall continued in November, and by early December 2023, the water level at the Lovelady monitor well had dropped below its "Exceptional Drought" threshold. Consequently, on December 14, 2023, the District Board declared Stage IV "Exceptional Drought"—the first such declaration in the District's 36-year history. A wetter-than-average winter caused water levels to rise, prompting the District to raise the drought status to "Critical Drought" on February 8, 2024. After further recharge, the status was elevated again to "Alarm Drought." However, by August, water levels and spring flow began to decline. The Lovelady well dropped below its Critical Drought threshold, leading the District to re-declare a "Critical Drought" on October 3, which remains in effect as of November 2024.

**Objective 4-2.** Evaluate site-specific hydrogeologic data from applicable production permits to assess potential impact of withdrawals to groundwater quantity and quality, public health and welfare, contribution to waste, and unreasonable well interference.

#### Performance Standard

This involves evaluations of certain production permit applications for the potential to cause unreasonable impacts as defined by District rule. To evaluate the potential for unreasonable impacts, staff will (1) perform a technical evaluation of the application, aquifer test, and hydrogeological report; (2) use best available science and analytical tools to estimate amount of drawdown from pumping and influence on other water resources; and (3) recommend proposed permit conditions to the Board for avoiding unreasonable impacts if warranted.

The Staff continues to collect and evaluate data in the southwestern portion of the District where the Trinity Aquifer is under the influence of significant non-exempt and exempt pumping. Continued monitoring of these and other locations will be critical for evaluating the Trinity Aquifer's response to pumping and drought within the District, and to what extent large pumping centers have the potential to cause unreasonable impacts. Staff continue to work with permit applicants and their consultants to plan and execute aquifer tests that meet the District's high standards for test design and data quality, and ensure that submitted hydrogeologic reports provide adequate data to perform evaluations for unreasonable impacts.

In FY 2024, a well impact analysis project was begun to evaluate all known exempt wells within the District for their susceptibility to unreasonable impacts. Once completed, the datasets and analyses produced by the well impact analysis will be valuable tools for evaluating future Trinity permits for the potential for unreasonable impacts. The well impact analysis project was subcontracted to LRE Water and final deliverables are expected by the end of calendar year 2025.

As indicated above, development of numerical models is underway to assist in the evaluations of potential unreasonable impacts from pumping from the large capacity wellfields and from other pumping and drought scenarios.

**Objective 4-3.** Implement separate MZs and, as warranted, different management strategies to address more effectively the groundwater management needs for the various aquifers in the District.

Performance Standards

Increase the understanding of District aquifers by assessing aquifer conditions, logging wells, and collecting water quality data. A summary of the number of water quality samples performed will be provided in the Annual Report.

To increase the understanding of District aquifers and water level conditions, staff collected groundwater data from selected wells and performs field assessments such as logging wells and collecting water quality samples.

- The Aquifer Science Group collected 14 samples from sample sites including wells and springs from the Edwards and Trinity Aquifers for major ions and isotopes.
- The Regulatory Compliance Group collected 11 water quality samples during routine permit inspections or from new well construction inspections.

A summary of the volume of aggregate groundwater withdrawals permitted and actually produced from permitted wells for each MZ and permit type is provided in the Annual Report.

To ensure that all firm-yield production permits are evaluated with consideration given to the District’s demand-based and non-speculative permitting standards, staff completed comprehensive administrative and technical reviews of permit application requests. A summary of the number and type of applications processed and approved for authorizations, permits, and permit amendments including approved use types and commensurate permit volumes for production permits and amendments is provided below.

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Test Well or Aquifer Test	0	0	2
Well Plugging	9	5	3
Replacement Well	0	1	0
<b>TOTAL</b>	<b>39</b>	<b>35</b>	<b>23</b>



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1,645,000	Oak Haven Preserve	Historic Trinity	Commercial	Middle Trinity
73,000	PQ Holdings, LLC	Class A Conditional Edwards	Commercial	Edwards

**Objective 4-4.** Actively participate in the joint planning processes for the relevant aquifers in the District to establish and refine desired future conditions (DFCs) that protect the aquifers and the Covered Species of the District Habitat Conservation Plan (HCP).

Performance Standard

Attend at least 75% of the GMA (groundwater management area) meetings, and annually report on meetings attended, GMA decisions on DFCs, and other relevant GMA business.

Staff attended 100% of the GMA 10 meetings that were held in FY 2024: October 16, 2023, January 22 2024; April 15, 2024. The GMA discussions included the following topics:

- GMA 10 members finalized an Interlocal Agreement that designated the Plum Creek Conservation District as the Administrative Coordinator to engage in a contract with Collier Consulting.
- Working through the DFC planning schedule with the consultant.

**Objective 4-5.** Implement the measures of the Habitat Conservation Plan (HCP) and Incidental Take Permit (ITP) from the United States Fish and Wildlife Service (USFWS) for the Covered Species and covered activity to support the biological goals and objectives of the HCP.

Performance Standard

Prior to ITP permit issuance, a progress report summarizing activities related to the USFWS review of the ITP application will be provided in the Annual Report. Upon ITP issuance, the HCP annual report documenting the District’s activities and compliance with ITP permit requirements will be incorporated into the Annual Report by reference.

The USFWS approved the District’s HCP in July 2018, and published the Record of Decision and the final Environmental Impact Statement (EIS). On September 20, 2018, the USFWS issued a 20-year ITP. On April 11, 2019, the Board approved an Interlocal Agreement (ILA) between the District and the City of Austin (CoA) to collaborate and coordinate on routine and planned activities relative to each entity’s respective HCP.

The District and the CoA meet annually to discuss their efforts, independent and joint, related to the HCP. The first annual meeting to discuss their respective HCP-related activities was held on December 10, 2019.

The second annual meeting was held via Zoom during the pandemic on December 16, 2020. The third meeting was held on December 6, 2021 and a fourth meeting was held on December 12, 2022. The fifth meeting was conducted on December 12, 2023.

On February 7, 2023, a meeting was held with the District HCP Management Advisory Committee (MAC) to discuss the District's HCP-related activities for FY 2023. On February 26, 2024, the fifth HCP/ITP Annual Report was submitted to the USFWS.

## **GOAL 5 ADDRESSING DROUGHT CONDITIONS**

### **31 TAC 356.52 (A)(1)(F)/TWC §36.1071(A)(6)**

**Objective 5-1.** Adopt and keep updated a science-based drought trigger methodology, and frequently monitor drought stages on the basis of actual aquifer conditions, and declare drought conditions as determined by analyzing data from the District’s defined drought triggers and from existing and such other new drought-declaration factors, especially the prevailing dissolved oxygen (DO) concentration trends at the spring outlets, as warranted.

#### Performance Standards

During periods of District-declared drought, prepare a drought chart at least monthly to report the stage of drought and the conditions that indicate that stage of drought. During periods of non-drought, prepare the drought charts at least once every three months.

Staff monitored the District’s two drought trigger sites: flow measured at/near the Barton Springs Pool and water levels measured at the Lovelady monitor well; plus numerous other indicators of drought conditions relating to the Edwards Aquifer. The District contracts with the United States Geological Survey (USGS) for the Lovelady Well to maintain equipment, collect, and host as real-time data on their website. The CoA contracts with the USGS to maintain the data for Barton Springs.

Barton Springs flow monitoring during persistent drought conditions in FY 2024 presented measurement challenges. Multiple drought stage declarations (3) within an eleven-month period (December 2023 – October 2024) required several manual measurements to verify flow conditions. Pool maintenance activities, coupled with USGS gauge maintenance, introduced significant uncertainty in the USGS real-time gauge readings. To validate discharge measurements as spring flow approached newer drought thresholds, staff conducted manual flow measurements in collaboration with CoA and USGS. This supplemental data collection ensured optimal measurement accuracy for making drought decisions.

Staff frequently verified water-level values measured by the equipment at the Lovelady monitor well (which has recorded data since 1949) and verified discharge measurements made at Barton Springs. During periods of District-declared drought, and preceding potential drought, staff provided updated reports of aquifer conditions at each Board meeting. Data from Trinity monitor wells were also collected and evaluated at these times.

In 2018, staff evaluated the current drought trigger methodology as it relates to the Middle Trinity Aquifer. Results were published in a memo and found that the District’s established Edwards Aquifer triggers are indeed representative of drought conditions, regardless of the aquifer. In FY 2024, staff continued to monitor Trinity Aquifer water-level drops in response to the ongoing drought and evaluate whether the established Edwards drought triggers are still representative of Trinity Aquifer conditions. To date, the established triggers appear to be adequate. Staff will continue to evaluate Trinity Aquifer water levels as drought conditions persist. If Trinity Aquifer behavior deviates significantly from the Edwards, a reevaluation of established drought triggers may be warranted.

A summary of the drought indicator conditions and any declared drought stages and duration will be provided in the Annual Report.

**Objective 5-2.** Implement a drought management program that step-wise curtails freshwater Edwards Aquifer use to at least 50% by volume of 2014 authorized aggregate monthly use during Extreme Drought, and that designs/uses other programs that provide an incentive for additional curtailments where possible. For all other aquifers, implement a drought management program that requires mandatory monthly pumpage curtailments during District-declared drought stages.

#### Performance Standard

During District-declared drought, enforce compliance with drought management rules to achieve overall monthly pumpage curtailments within 10% of the aggregate curtailment goal of the prevailing drought stage. A monthly drought compliance report for all individual permittees will be provided to the Board during District-declared drought, and a summary will be included in the Annual Report.

The District implements a drought management program that requires mandatory monthly pumpage curtailments during District-declared drought stages. The District began FY 2024 in Stage III Critical drought. The District declared Stage IIV Exceptional Drought on December 14, 2023 and remained in this stage until February 8, 2024 when the District declared Stage II Critical Drought once again. The District declared Stage II Alarm Drought on March 1, 2024 and the District remained in this stage until the end of FY 2024. The District has implemented all drought-related rules and curtailments in accordance with the District's enforcement plan and drought management protocols. Drought enforcement measures were assessed for Stage III Critical Drought from the beginning of FY 2023 through December 2023 with Stage IIV Exceptional enforcement measures being assessed for January and February of 2024, Stage III Critical measures again assessed in March of 2024 and Stage II Alarm measures assessed for the remainder of FY 2023. Monthly drought compliance reports for all individual permittees were provided to the Board each month of FY 2024 during District-declared drought, and those reports can be found on the drought management website pages.

**Objective 5-3.** Inform and educate permittees and other well owners about the significance of declared drought stages and the severity of drought and encourage practices and behaviors that reduce water use by a stage-appropriate amount.

#### Performance Standards

During District-declared drought, publicize declared drought stages and associated demand reduction targets in monthly eNews bulletins and continuously on the District website.

A summary of drought and water conservation related newsletter articles, press releases, and drought updates sent to Press, Permittees, Well Owners and eNews subscribers will be provided in the Annual Report.

#### **Newsletter and Drought Update Emails**

Throughout the fiscal year, newsletters were sent on a bi-monthly basis to the District's more than 2300 newsletter subscribers. Newsletters include drought information, aquifer research, and information on upcoming events. For additional exposure, newsletters were shared on the website as a slide on the home page and posted across all social media outlets.

Every month the District is in drought, we write a Drought Update article to keep audiences informed. Drought Updates include information on monthly rainfall, Barton Springs flow, Lovelady monitor well groundwater levels, Upper and Middle Trinity, and Highland Lakes along with water conservation tips. Drought Updates are included in the bi-monthly newsletter, and on the off months, the Drought Update is sent out as a standalone email. All of the Drought Updates were shared on the website in the District News portion of the homepage. Drought Updates were posted across all District social media channels.

FY 2024 Newsletters and Drought Updates can be viewed below:

- 10/2023 - [September and October Newsletter](#)
- 11/2023 - [October Drought Update](#)
- 12/2023 - [November and December Newsletter](#)
- 01/2024 - [December Drought Update](#)
- 02/2024 - [January and February Newsletter](#)
- 03/2024 - [February Drought Update](#)
- 04/2024 - [March and April Newsletter](#)
- 05/2024 - [April Drought Update](#)
- 06/2024 - [May and June Newsletter](#)
- 07/2024 - [June Drought Update](#)
- 08/2024 - [July and August Newsletter](#)

#### **Relevant Articles on District Website**

In the District News portion of the website, articles were shared providing insight on the ongoing drought, the status of the aquifers, and ways to actively conserve water. Some of these articles are “Messages from the General Manager”, which are shared quarterly and include drought insight from Tim Loftus. These articles were shared across the District’s social media platforms and newsletters/Drought Updates.

- [Message from the General Manager – September 2023](#)
- [5 Water-saving Tips for the Holidays, 11/28/23](#)
- [Message from the General Manger – January 2024](#)
- [Preparing for Winter Weather, 1/26/24](#)
- [Message from the General Manager, May 2024](#)
- [Travis County is Out of Drought. Why isn’t the District?, 6/20/24](#)

#### **Drought Press Releases, Articles, and Emails**

Amongst the historic dry and hot conditions of 2023 and declaration of Stage IV Exceptional Drought, the District received extensive press coverage in FY 2024. Staff shared press releases with 25+ media contacts state-wide and fostered close working relationships specifically with staff at KXAN, FOX7, and InsideClimate News. Below you can view the drought-focused emails sent to permittees and newsletter subscribers, press releases shared with media contacts and on the District website, and the resulting news articles and segments that were published online and/or in print.

- Press Release: District Foresees Unprecedented Transition to Stage IV Exceptional Drought – [BSEACD, 7/21/23](#)
- Before and after photos show dire conditions at popular swimming hole Jacob’s Well – [KSAT, 8/2/23](#)
- How much of the Colorado should we leave up to Elon Musk’s discretion? - [Austin Chronicle, 8/11/23](#)
- Barton Springs, Jacob’s Well swimming hole faces danger from Texas drought – [Austin-American Statesman, 8/14/23](#)

- Dry springs in Central Texas warn of water shortage ahead - Inside Climate News and picked up by [Texas Standard](#), [Texas Tribune](#), 8/16/23
- Barton Springs-Edwards Aquifer update – [Fox 7](#), 8/24/23
- Kyle officials request water from San Marcos – [KVUE](#), 8/30/23
- Press Release: District Declares Stage IV Drought – [BSEACD](#), 12/15/23
- District Email: District Declares Stage IV Drought – [BSEACD](#), 12/15/23
- For first time ever, ‘exceptional drought’ declared by Barton Springs-Edwards Aquifer Conservation District - [KXAN](#), 12/15/23
- Barton springs-Edwards Aquifer Conservation district declares Stage 4 exceptional drought – [Fox7](#), 12/15/23
- Barton Springs Edward Aquifer Conservation District declares Stage 4 Exceptional Drought – [Community Impact](#), 12/15/23
- ‘Exceptional drought’ declared for first time by Austin-area aquifer district – [KVUE](#), 12/15/23

2024

- Conservation district declares historic Stage IV Drought - [Hays Free Press](#), 1/3/24
- Texas Weather: Will forecasted rain put a dent in drought? – [Fox 7](#), 1/22/24
- Another hot dry summer may push water supplies in parts of Texas to the brink – [Inside Climate News/Texas Tribune](#), 1/22/4
- Rain fails to boost Lake Travis but will likely help aquifer levels – [KXAN](#), 1/22/4
- Will this week’s rainfall make an impact on severe drought? - [KEYE](#), 1/22/24
- District Email: District Moves Up to Stage III Drought – [BSEACD](#), 2/13/24
- Bout with Drought - [Austin Chronicle](#), 2/16/24
- Barton Springs-Edwards Aquifer Conservation District enters Stage 2 drought restrictions – [KVUE](#), 3/1/24
- Conservation district has good news on drought level – [Austin Monitor](#), 3/5/24
- District Email: Drought Update - District Moves Up to Stage II Drought – [BSEACD](#), 3/28/24
- It’s gonna be a long hot summer again - [Austin Chronicle](#), 5/24/24
- Is Austin going to run out of water? - [Austin Monthly](#), May 2024

## Website

With the website’s redesign in FY 2024, existing drought pages have been updated and revamped to make information more accessible for viewers. Drought information can be found in the following locations:

- [District homepage](#)- This page displays the drought trigger chart with up-to-date data for both Lovelady monitor well groundwater levels and Barton Springs flow. By clicking on the drought chart, viewers are directed to the Drought Status page where USGS gauges for each determinant can be seen.
- Navigation bar- The tab on the far right displays the current drought stage, making it apparent to viewers we’re still in drought.
- Homepage slide- While in drought, one of the slides on the homepage states the District’s current drought status and links to either a press release or relevant drought resources.
- Page updates- Content and layouts were updated on the [Drought Information and Resources](#) and [Drought Status](#) pages on the website to make it easier for viewers to navigate, locate, and share important information.

**Objective 5-4.** Assist and, where feasible, incentivize individual freshwater Edwards Aquifer historic-production permittees in developing drought planning strategies to comply with drought rules, including (1) pumping curtailments by drought stage to at least 50% of the 2014 authorized use during Extreme Drought, (2) “right-sizing” authorized use over the long term to reconcile actual water demands and permitted levels, and (3) as necessary and with appropriate conditions, source substitution with alternative supplies.

#### Performance Standards

Require an updated User Conservation Plan and User Drought Contingency Plan (UCP/UDCP) from Permittees within one year of each five-year MP Adoption.

In FY 2024, the Regulatory Compliance Group began working to update 150 permit records in order to incorporate updated drought planning documents into their records. According to the District MP, all permittees must update their UDCP and UCP plans at least every five years. Therefore, since all UDCPs were updated in FY 2019, staff is working to finalize these updates that began in FY2024.

Provide a summary of any activity related to permit right sizing or source substitution with alternative supplies that may reduce demand on the freshwater Edwards Aquifer in the Annual Report.

After notice and an opportunity for a hearing, the Board may renew a permit with a reduced amount of the authorized production if the authorized withdrawal volume is no longer commensurate with reasonable non- speculative demand, or actual production from a well is substantially less than the authorized permit amount for multiple years without any rationale that reasonably relates to efforts to utilize alternative water supplies, conserve, or improve water use efficiency. Staff typically conducts an overpumpage analysis every few years, and conducted the analysis in FY 2019, therefore staff did not conduct an overpumpage analysis in FY 2024.

The District has been actively encouraging alternative source projects to reduce the dependency on the aquifers during drought. Staff has collaborated with water suppliers on ASR projects in providing regulatory and technical guidance. . The Ruby Ranch ASR project was approved and has been in operation since the summer of FY 2021 and the City of Buda ASR project was approved in the summer of FY 2024.

**Objective 5-5.** Implement a Conservation Permit that is held by the District and accumulates and preserves withdrawals from the freshwater Edwards Aquifer that were previously authorized with historic-use status and that is retired or otherwise additionally curtailed during severe drought, for use as ecological flow at Barton Springs during Extreme Drought and thereby increase springflow for a given set of hydrologic conditions.

Performance Standard

A summary of the volume of aggregate groundwater withdrawals permitted and actually produced from permitted wells for each Management Zone and permit type including the volume reserved in the freshwater Edwards Conservation Permit for ecological flows will be provided in the Annual Report.

A summary of the actual versus permitted production volumes for each MZ is provided in Objective 1-2. The amount of Historic Use groundwater (i.e., permitted fresh Edwards volume) that has been retired (i.e., held under the District's Conservation Permit) and placed into the Ecological Flow Reserve since 2009 is 82,305,124 gallons or 0.35 cfs. Ecological Flow Reserve is a protected volume and not subject to further permitting. Additionally, 1,200,000 gallons per year of Historical Trinity Aquifer permitted water has been retired; no Fresh Edwards/Conditional A permitted water has been retired.



## **GOAL 6**

### **ADDRESSING CONSERVATION AND RAINWATER HARVESTING WHERE APPROPRIATE AND COST-EFFECTIVE**

31TAC 356.52 (a)(1)(G)/TWC §36.1071(a)(7)

**Objective 6-1.** Develop and maintain programs that inform, educate, and support District permittees in their efforts to educate their end-user customers about water conservation and its benefits, and about drought-period temporary demand reduction measures.

#### Performance Standards

A summary of efforts to assist permittees in developing drought and conservation messaging strategies will be provided in the Annual Report.

Publicize declared drought stages and associated demand reduction targets monthly in eNews bulletins and continuously on the District website.

#### **Outreach Event for Permittees: Managing Groundwater in a Changing Climate**

The District hosted an event for permittees on May 16, 2024, at Buda City Hall. The purpose of this event was to provide in-depth information for permittees and government officials about the ongoing drought, District drought status and triggers, state of the aquifers, and available resources. It was also an opportunity for permittees to directly engage with District staff and ask questions in-person. The slide deck for the presentation can be viewed [here](#). The event had 20 attendees—two of which were city council members. The event page and additional details can be viewed [here](#). Below is a list of the speakers at the event along with video recordings of each of their presentations.

- [Chapter 1: Introduction & Climate Outlook](#) | Dr. Tim Loftus & Dr. John Neilsen-Gammon, Texas State Climatologist
- [Chapter 2: Ongoing Drought Update for the Edwards and Trinity Aquifers](#) | Jeff Watson
- [Chapter 3: Water Allocations and Restrictions: Why we have them](#) | Jacob Newton
- [Chapter 4: Communications Toolkit](#) | Shay Hlavaty
- [Chapter 5: Solutions and Resources During “Drying” Times”](#) | Marisa Bruno, Water Program Manager at Hill Country Alliance

Staff created a [communications toolkit](#) for permittees to use to inform their customers/end-users about the District, our relationship with their water supplier, where their water comes from, and the impact water conservation can have. This toolkit includes a series of templates that permittees can share as an email, social media post, newsletter insert, and/or mailed letter. The purpose of it is to increase end-users understanding of their groundwater resources and increased water conservation amongst the ongoing drought.

## Permittee Communications

District staff actively worked with permittees throughout the fiscal year to keep them informed about the drought status and assist them with educating their end-users. Below are specific ways we contacted and/or worked with permittees over FY 2024.

### Creedmoor Maha WSC

- District staff collaborated with Matthew Pickle at CMWSC to coordinate an outreach event to inform customers about the effects of Stage IV. The event was to take place on September 12, 2023. The organizations worked together to create informational content, plan the event, and design bill inserts to recruit attendees. Since the District did not cross the Stage IV threshold, CMWSC decided to hold off on the event for the time being.
- Staff revisited the possibility of hosting a Stage IV outreach event on February 22, but it was cancelled because of the large amounts of rain the District received in late January, resulting in a move to Stage III Drought.

### City of Austin/ Austin Water

- District staff reached out to Kevin Kluge, Water Conservation Manager with the City of Austin, on 8/7/23 before the city declared Stage 2 drought.
- Staff offered to host a joint event about water conservation and drought conditions, but no response has been received.

### City of Buda

- District staff attended the City of Buda's Quarterly Townhall Meeting on 9/21/23 at 6pm to share the status of the aquifer, drought conditions, and ongoing District aquifer science work with attendees.

### Slaughter Creek Acres WSC

- Mike Dorsey, Board President at SCAWSC, asked District staff for additional information on the reasoning for permit reclassification.
- [This document](#) was sent to him so he could share it at their next board meeting.

### Aqua Texas

- Staff met with permittee to discuss informational communications campaign with end-users. The communication materials discussed would explain what the District is, reasoning for curtailments, and ways for customers to reduce water consumption. After several efforts to reach out, Aqua Texas did not follow up to complete the project.

## Articles

These articles are located in the District News portion of the website. They each provide insight into how permittees and their

- [Preparing for Winter Weather](#)
- [Well Water Checkup](#)
- [Well Water Testing: Why it Matters](#)

**Objective 6-2.** Encourage use of conservation-oriented rate structures by water utility permittees to discourage egregious water demand by individual end-users during declared drought.

#### Performance Standard

On an annual basis, the District will provide an informational resource or reference document to all public water supply permittees to serve as resources related to conservation best management strategies and conservation-oriented rate structures.

#### **Webpage**

A page was developed and added to the District website. It explains what a conservation-based rate structure is, why they're valuable, and includes several relevant resources for permittees. It can be viewed [here](#) or under the "Aquifer Science and Conservation" tab on the website.

**Objective 6-3.** Develop and maintain programs that educate and inform District groundwater users and constituents of all ages about water conservation practices and the use of alternate water sources such as rainwater harvesting, gray water, and condensate reuse.

#### Performance Standard

Summarize water conservation related newsletter articles, press releases, and events in the Annual Report. Summary will describe the preparation and dissemination of materials shared with District groundwater users and area residents that inform them about water conservation and alternate water sources.

#### **Outreach**

The District prioritizes discussing drought stages and water conservation in every outreach event it participates in. All the FY 2024 outreach events have been described previously in this Annual Report. Below is a list of these events along with the goal and objective under which they are mentioned

- Groundwater to the Gulf, 1-4
- Barton Springs University, 1-4
- Beneath the Surface: Exploring Central Texas Aquifers and Sustainable Management Practices, 1-4
- Format Podcast, 1-4
- Groundwater Symposium, 3-3
- Geo Trek Podcast, 3-3
- Nature Night, 3-3

#### **Webpage**

A [water conservation page](#) was updated on the District's website and includes several tips and resources for viewers. This can be located under the "Drought" tab on the website.

#### **Newsletters and Drought Updates**

- Every newsletter includes a Drought Update, and each Drought Update includes a call for conservation amongst all community members in and outside of the District.
- Starting in the May 2023 Drought Update, drought tips were included each month to provide actions people could take to conserve water. These tips are also posted across social media outlets.
- See Objective 5-3 for a list of links to Drought Update and newsletter emails.

## **GOAL 7**

### **ADDRESSING RECHARGE ENHANCEMENT WHERE APPROPRIATE AND COST-EFFECTIVE**

31TAC 356.52 (A)(1)(G)/TWC §36.1071(A)(7)

**Objective 7-1.** Improve recharge to the freshwater Edwards Aquifer by conducting studies and, as feasible and allowed by law, physically altering (cleaning, enlarging, protecting, diverting surface water) discrete recharge features that will lead to an increase in recharge and water in storage beyond what otherwise would exist naturally.

#### Performance Standard

Maintaining the functionality of the Antioch system will be the principal method for enhancing recharge to the freshwater Edwards Aquifer. Additional activities may be excavating sinkholes and caves within the District. A summary of all recharge improvement activities will be provided in the Annual Report.

Antioch Cave is a recharge feature on District property that is capable of contributing a significant amount of water to the Edwards Aquifer when Onion Creek is flowing. A vault constructed over the cave entrance, and automated valves allow for clean creek water to enter the cave, and contaminated stormwater to be kept out. This system was maintained by staff in FY 2024 so that the amount of clean creek water entering the cave was maximized. A regular reporting item has been added to the GM Report special topics list to provide a monthly oral update on these and other Aquifer Science activities, and satisfies this reporting requirement.

The operational equipment and hardware at Antioch Cave to improve the operation and performance of the BMP are fully functional and in good working order. In-situ equipment is collecting water-quality readings every 15 minutes and reporting to an organized database via telemetry.

**Objective 7-2.** Conduct technical investigations and, as feasible, assist water-supply providers in implementing engineered enhancements to regional supply strategies, including desalination, ASR, effluent reclamation and re-use, and recharge enhancement of surface water (including floodwater) to increase the options for water-supply substitution and reduce dependence on the Aquifer.

#### Performance Standard

Assess progress toward enhancing regional water supplies.

In FY 2024, the District worked with other entities in the area, such as the City of Buda and RRWSC, to evaluate the potential for the Trinity Aquifers as reservoirs for ASR facilities. See above section: Objective 3-2 for a summary of staff's work with Buda WSC on their ASR pilot testing program.

# GOAL 8 – ADDRESSING THE DESIRED FUTURE CONDITIONS OF THE GROUNDWATER RESOURCES

31TAC (A)(1)(H)/TWC §36.1071(A)(8)

**Objective 8-1. Freshwater Edwards Aquifer All-Conditions DFC:** Adopt rules that restrict, to the greatest extent practicable, the total amount of groundwater authorized to be withdrawn annually from the Aquifer to an amount that will not substantially accelerate the onset of drought conditions in the Aquifer; this is established as a running seven-year average springflow at Barton Springs of no less than 49.7 cfs during average recharge conditions.

## Performance Standards

A. A summary of the volume of aggregate groundwater withdrawals permitted and actually produced from permitted wells for each MZ and permit type will be provided in the Annual Report.

A summary of the actual versus permitted production volumes for each MZ is provided in Objective 1-2.

B. Upon ITP issuance, the HCP annual report documenting the District's activities and compliance with ITP permit requirements will be incorporated into the Annual Report by reference.

The USFWS issued the District's ITP in September 2018. The District submitted its fifth annual report to USFWS on February 26, 2024.

C. Upon ITP issuance, compile a summary of aquifer data including: 1) the frequency and duration of District-declared drought, 2) levels of the Aquifer as measured by springflow and indicator wells (including temporal and spatial variations), and 3) total annual and daily discharge from Barton Springs will be provided in the Annual Report.

FY 2024 began with the District in Critical Stage III drought and remained that way until December 14, 2023 when the Board declared Exceptional Stage IV drought, effective January 1, 2024. The move to Stage IV was historic and resulted in the irrevocable conversion of 16 Class A permits to Class B. Stage IV lasted just one month as the drought situation improved and allowed a return to Critical Stage III the following month of February. The District moved to Alarm Stage II drought on March 1, 2024 and ended the fiscal year in that same stage of drought on August 31, 2024.

Discharge at Barton Springs was 17.1 cfs on September 1, 2023 and 21.9 cfs on August 31, 2024; an increase in flow of 4.8 cfs. The depth to water level (feet below land surface) at the Lovelady monitoring well began the fiscal year at 195.06 feet and ended the fiscal year at 188.77, an increase (i.e., improvement) of 6.29 feet.

**Objective 8-2. Freshwater Edwards Aquifer Extreme Drought DFC:** Adopt rules that restrict, to the greatest extent practicable and as legally possible, the total amount of groundwater withdrawn monthly from the aquifer during Extreme Drought conditions in order to minimize take and avoid jeopardy of the Covered Species as a result of the Covered Activities, as established by the best science available. This is established as a limitation on actual withdrawals from the aquifer to a total of no more than 5.2 cfs on an

average annual (curtailed) basis during Extreme Drought, which will produce a minimum springflow of not less than 6.5 cfs during a recurrence of the drought of record (DOR).

#### Performance Standards

- A. A summary of the volume of aggregate groundwater withdrawals permitted and actually produced from permitted wells for each MZ and permit type will be provided in the Annual Report.

A summary of the actual versus permitted production volumes for each MZ is provided above in Objective 1-2.

- B. Upon ITP issuance, the HCP annual report documenting the District's activities and compliance with ITP permit requirements, will be incorporated into the Annual Report by reference.

The USFWS issued the District's ITP in September 2018. The District submitted its fifth annual report to USFWS on February 26, 2024.

- C. Upon ITP issuance, compile a summary of aquifer data including: 1) the frequency and duration of District-declared drought, 2) levels of the Aquifer as measured by springflow and indicator wells (including temporal and spatial variations), and 3) total annual and daily discharge from Barton Springs will be provided in the Annual Report.

Please see Objective 8-1 above.

**Objective 8-3.** Implement appropriate rules and measures to ensure compliance with District-adopted DFCs for each relevant aquifer or aquifer subdivision in the District.

#### Performance Standard

Develop and implement a cost-effective method for evaluating and demonstrating compliance with the DFCs of the relevant aquifers in the District, in collaboration with other GCDs in the GMAs. Prior to method implementation, provide a summary of activities related to method development in the Annual Report. Once developed, provide a summary of data for each District-adopted DFC for each relevant aquifer indicating aquifer conditions relative to the DFC, and provide in the Annual Report.

For the Trinity Aquifer in GMA 10, to determine compliance with the Trinity Aquifer DFC, the data must show that the average regional well drawdown does not exceed 25 feet during average recharge conditions including exempt and nonexempt use. GMA 10 is without a means to monitor "average regional drawdown across the planning area. The District made progress in FY 2023 with an in-house numerical model that will help to inform drawdown (within the District) under a variety of conditions.

Phase 2 of the modeling effort got underway in FY 24 the work is ongoing with the aim of developing a more useful (to the District) DFC for the Middle Trinity Aquifer. Any change from the status quo will, of course, require agreement among the participating GCDs in GMA 10 and approval by the Texas Water Development Board.

As reported last year, the average daily springflow at Barton Springs over the time period of September 1, 2014 to August 31, 2021 was 77 cfs. For the fiscal year 2022 just ended and the seven years beginning September 1, 2015, the average daily springflow declined 2 cfs to 75 cfs. Precipitation during the seven years ending August 31, 2021 was greater in Hays and Travis counties than during the seven years ending August 31, 2022. Which of the two seven-year periods best reflects average recharge conditions is uncertain without considerably more data analysis.

Adding to the uncertainty, both 2022 and 2023 were years of below average precipitation. Thus, the rolling seven-year average ending August 31, 2023 likely declined again. It is worth asking, however, if the most recent seven-year average can be considered to be an “average recharge period.” Additional data analysis may reveal that a seven-year period that reflects average recharge (i.e., a period without one or more years of below average precipitation) is rare to nonexistent given the location considered.

The DFC expression is:

“Springflow at Barton Springs during average recharge conditions shall be no less than 49.7 cfs averaged over an 84-month (7-year) period; and during extreme drought conditions including those as severe as a recurrence of the 1950’s drought of record, springflow at Barton Springs shall be no less than 6.5 cfs average on a monthly basis.”

For the Saline Edwards, Northern Subdivision, the DFC expression is no more than 75 feet of regional average potentiometric surface drawdown due to pumping when compared to pre-development conditions. Currently, there are no approved permits in the Saline Edwards.

For a summary of aquifer conditions, see Objective 8-1 above.

**Performance Standards and Objectives**

General Management (9 objectives)	Administration (3 objectives)	Education & Outreach (6 objectives)	Aquifer Science (8 objectives)	Regulatory Compliance (7 objectives)
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**GOAL 1 - Providing the Most Efficient Use of Groundwater – 31 TAC 356.52(a)(1)(A)/TWC §36.1071(a)(1)**

	Management Plan Objectives	Performance Standards
1-1	Provide and maintain on an ongoing basis a sound statutory, regulatory, financial, and policy framework for continued District operations and programmatic needs.	<p>A. Develop, implement, and revise as necessary, the District Management Plan in accordance with state law and requirements. Each year, the Board will evaluate progress towards satisfying the District goals. A summary of the Board evaluation and any updates or revisions to the management plan will be provided in the <u>annual report</u>.</p> <p>B. Review and modify District Rules as warranted to provide and maintain a sound statutory basis for continued District operations and to ensure consistency with both District authority and programmatic needs. A summary of any rule amendments adopted in the previous fiscal year will be included in the <u>annual report</u>.</p>
1-2	Monitor aggregated use of various types of water wells in the District, as feasible and appropriate, to assess overall groundwater use and trends on a continuing basis.	Monitor annual withdrawals from all nonexempt wells through required monthly or annual meter reports to ensure that groundwater is used as efficiently as possible for beneficial use. A summary of the volume of aggregate groundwater withdrawals permitted and actually produced from permitted wells for each Management Zone and permit type will be provided in the <u>annual report</u> .
1-3	Evaluate quantitatively at least every five years the amount of groundwater withdrawn by exempt wells in the District to ensure an accurate accounting of total withdrawals in a water budget that includes both regulated and non-regulated withdrawals, so that appropriate groundwater management actions are taken.	<p>A. Provide an estimate of groundwater withdrawn by exempt wells in the District using TDLR and TWDB databases and District well records, and update the estimate every five years with the District’s management plan updates.</p> <p>B. In the interim years between management plan updates, the most current estimates of exempt well withdrawals will be included in a summary of the volume of aggregate groundwater withdrawals permitted and actually produced from permitted wells for each Management Zone and permit type that will be provided in the <u>annual report</u>.</p>
1-4	Develop and maintain programs that inform and educate citizens of all ages about groundwater and springflow-related matters, which affect both water supplies and salamander ecology.	<p>A. Publicize District drought trigger status (Barton Springs 10-day average discharge and Lovelady Monitor Well water level) in monthly eNews bulletins and continuously on the District website.</p> <p>B. Provide summaries of associated outreach and education programs, events, workshops, and meetings in the monthly team activity reports in the publicly-available Board backup.</p> <p>C. A summary of outreach activities and estimated reach will be provided in the <u>annual report</u>.</p>
1-5	Ensure responsible and effective management of District finances such that the District has the near-term and long-term financial means to support its mission.	<p>A. Receive a clean financial audit each year. A copy of the auditor’s report will be included in the annual report.</p> <p>B. Timely develop and approve fiscal-year budgets and amendments. The dates for public hearings and Board approval of the budget and any amendments will be provided in the annual report.</p>



1-6	Provide efficient administrative support and infrastructure, such that District operations are executed reliably and accurately, meet staff and local stakeholder needs, and conform to District policies and with federal and state requirements.	<p>A. Maintain, retain, and control all District records in accordance with the Texas State Library and Archives Commission-approved District Records Retention Schedule to allow for safekeeping and efficient retrieval of any and all records, and annually audit records for effective management of use, maintenance, retention, preservation and disposal of the records' life cycle as required by the Local Government Code. A summary of records requests received under the PIA, any training provided to staff or directors, or any claims of violation of the Public Information Act will be provided in the <u>annual report</u>.</p> <p>B. Develop, post, and distribute District Board agendas, meeting materials, and backup documentation in a timely and required manner; post select documents on the District website, and maintain official records, files, and minutes of Board meetings appropriately. A summary of training provided to staff or directors or any claims of violation of the Open Meetings Act will be provided in the <u>annual report</u>.</p>
1-7	Manage and coordinate electoral process for Board members.	Ensure elections process is conducted and documented in accordance with applicable requirements and timelines. Elections documents will be maintained on file and a summary of elections-related dates and activities will be provided in the <u>annual report</u> for years when elections occur.

**GOAL 2 - Controlling and Preventing Waste of Groundwater – 31 TAC 356.52(a)(1)(B)/TWC §36.1071(a)(2)**

	<b>Management Plan Objectives</b>	<b>Performance Standards</b>
2-1	Require all newly drilled exempt and nonexempt wells, and all plugged wells to be registered and to comply with applicable District Rules, including Well Construction Standards.	A summary of the number and type of applications processed and approved for authorizations, permits, and permit amendments including approved use types and commensurate permit volumes for production permits and amendments will be provided in the <u>annual report</u> .
2-2	Ensure permitted wells and well systems are operated as intended by requiring reporting of periodic meter readings, making periodic inspections of wells, and reviewing pumpage compliance at regular intervals that are meaningful with respect to the existing aquifer conditions.	A. Inspect all new wells for compliance with the Rules, and Well Construction Standards, and provide a summary of the number and type of inspections or investigations in the <u>annual report</u> . B. Provide a summary of the volume of aggregate groundwater withdrawals permitted and actually produced from permitted wells for each Management Zone and permit type in the <u>annual report</u> .
2-3	Provide leadership and technical assistance to government entities, organizations, and individuals affected by groundwater-utilizing land use activities, including support of or opposition to legislative initiatives or projects that are inconsistent with this objective.	A. In even-numbered fiscal years, provide a summary of interim legislative activity and related District efforts in the <u>annual report</u> . In odd-numbered fiscal years, provide a legislative debrief to the Board on bills of interest to the District and provide a summary in the annual report. B. Provide a summary of District activity related to other land use activities affecting groundwater in the <u>annual report</u> .
2-4	Ensure all firm-yield production permits are evaluated with consideration given to the demand-based permitting standards including verification of beneficial use that is commensurate with reasonable non-speculative demand.	A summary of the number and type of applications processed and approved for authorizations, permits, and permit amendments including approved use types and commensurate permit volumes for production permits and amendments will be provided in the <u>annual report</u> .

**GOAL 3 - Addressing Conjunctive Surface Water Management Issues – 31 TAC 356.52(a)(1)(D)/TWC §36.1071(a)(4)**

	<b>Management Plan Objectives</b>	<b>Performance Standards</b>
3-1	Assess the physical and institutional availability of existing regional surface water and alternative groundwater supplies and the feasibility of those sources as viable supplemental or substitute supplies for District groundwater users.	Identify available alternative water resources and supplies that may facilitate source substitution and reduce demand on the Edwards Aquifer, while increasing regional water supplies, and evaluate feasibility by considering: <ol style="list-style-type: none"> <li>1. available/proposed infrastructure,</li> <li>2. financial factors,</li> <li>3. logistical/engineering factors, and</li> <li>4. potential secondary impacts (development density/intensity or recharge water quality).</li> </ol> A summary of District activity related to this objective will be provided in the <u>annual report</u> .
3-2	Encourage and assist District permittees to diversify their water supplies by assessing the feasibility of alternative water supplies and fostering arrangements with currently available alternative water suppliers.	Identify available alternative water resources and supplies that may facilitate source substitution and reduce demand on the Edwards Aquifer, while increasing regional water supplies, and evaluate feasibility by considering: <ol style="list-style-type: none"> <li>1. available/proposed infrastructure,</li> <li>2. financial factors,</li> <li>3. logistical/engineering factors, and</li> <li>4. potential secondary impacts (development density/intensity or recharge water quality).</li> </ol> A summary of District activity related to this objective will be provided in the <u>annual report</u> .
3-3	Demonstrate the importance of the relationship between surface water and groundwater, and the need for implementing prudent conjunctive use through educational programs with permittees and public outreach programs.	A. Provide summaries of associated outreach and education programs, events, workshops, and meetings in the monthly team activity reports in the publicly-available Board backup. B. Summarize outreach activities and estimate reach in the <u>annual report</u> .
3-4	Actively participate in the regional water planning process to provide input into policies, planning elements, and activities that affect the aquifers managed by the District.	Regularly attend regional water planning group meetings and <u>annually report</u> on meetings attended.

**GOAL 4 - Addressing Natural Resource Issues which Impact the Use and Availability of Groundwater, and which are Impacted by the Use of Groundwater – 31 TAC 356.52 (a)(1)(E)/TWC §36.1071(a)(5)**

	<b>Management Plan Objectives</b>	<b>Performance Standards</b>
4-1	<p>Assess ambient conditions in District aquifers on a recurring basis by:</p> <ol style="list-style-type: none"> <li>1. sampling and collecting groundwater data from selected wells and springs monthly;</li> <li>2. conducting scientific investigations as indicated by new data and models to better determine groundwater availability for the District aquifers; and</li> <li>3. conducting studies as warranted to help increase understanding of the aquifers and, to the extent feasible, detect possible threats to water quality and evaluate their consequences.</li> </ol>	<ol style="list-style-type: none"> <li>A. Review water-level and water-quality data that are maintained by the District and/or TWDB, or other agencies, on a regular basis.</li> <li>B. Improve existing analytical or numerical models or work with other organizations on analytical or numerical models that can be applied to the aquifers in the District.</li> <li>C. A review of the data mentioned above will be assessed for significant changes and reported in the <u>annual report</u>.</li> </ol>
4-2	<p>Evaluate site-specific hydrogeologic data from applicable production permits to assess potential impact of withdrawals to groundwater quantity and quality, public health and welfare, contribution to waste, and unreasonable well interference.</p>	<p>This involves evaluations of certain production permit applications for the potential to cause unreasonable impacts as defined by District rule. To evaluate the potential for unreasonable impacts, staff will:</p> <ol style="list-style-type: none"> <li>A. Perform a technical evaluation of the application, aquifer test, and hydrogeological report;</li> <li>B. Use best available science and analytical tools to estimate amount of drawdown from pumping and influence on other water resources; and</li> <li>C. Recommend proposed permit conditions to the Board for avoiding unreasonable impacts if warranted.</li> </ol> <p>A list of permit applications that are determined to have potential for unreasonable impacts will be provided in the <u>annual report</u>.</p>
4-3	<p>Implement separate management zones and, as warranted, different management strategies to address more effectively the groundwater management needs for the various aquifers in the District.</p>	<ol style="list-style-type: none"> <li>A. Increase the understanding of District aquifers by assessing aquifer conditions, logging wells, and collecting water quality data. A summary of the number of water quality samples performed will be provided in the <u>annual report</u>.</li> <li>B. A summary of the volume of aggregate groundwater withdrawals permitted and actually produced from permitted wells for each Management Zone and permit type will be provided in the <u>annual report</u>.</li> </ol>
4-4	<p>Actively participate in the joint planning processes for the relevant aquifers in the District to establish and refine Desired Future Conditions (DFCs) that protect the aquifers and the Covered Species of the District HCP.</p>	<p>Attend at least 75% of the GMA meetings and annually report on meetings attended, GMA decisions on DFCs, and other relevant GMA business.</p>

4-5	Implement the measures of the District Habitat Conservation Plan (HCP) and Incidental Take Permit (ITP) from the U.S. Fish & Wildlife Service (USFWS) for the covered species and covered activity to support the biological goals and objectives of the HCP.	Prior to ITP permit issuance, a progress report summarizing activities related to the USFWS review of the ITP application will be provided in the <u>annual report</u> . Upon ITP issuance, the <u>HCP annual report</u> documenting the District's activities and compliance with ITP permit requirements will be incorporated into the <u>annual report</u> by reference.
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**GOAL 5 - Addressing Drought Conditions – 31 TAC 356.52 (a)(1)(F)/TWC §36.1071(a)(6)**

	<b>Management Plan Objectives</b>	<b>Performance Standards</b>
5-1	Adopt and keep updated a science-based drought trigger methodology, and frequently monitor drought stages on the basis of actual aquifer conditions, and declare drought conditions as determined by analyzing data from the District’s defined drought triggers and from existing and such other new drought-declaration factors, especially the prevailing DO concentration trends at the spring outlets, as warranted.	<p>A. During periods of District-declared drought, prepare a drought chart at least monthly to report the stage of drought and the conditions that indicate that stage of drought. During periods of non-drought, prepare the drought charts at least once every three months.</p> <p>B. A summary of the drought indicator conditions and any declared drought stages and duration will be provided in the <u>annual report</u>.</p>
5-2	Implement a drought management program that step-wise curtails freshwater Edwards Aquifer use to at least 50% by volume of 2014 authorized aggregate monthly use during Extreme Drought, and that designs/uses other programs that provide an incentive for additional curtailments where possible. For all other aquifers, implement a drought management program that requires mandatory monthly pumpage curtailments during District-declared drought stages.	During District-declared drought, enforce compliance with drought management rules to achieve overall monthly pumpage curtailments within 10% of the aggregate curtailment goal of the prevailing drought stage. A monthly drought compliance report for all individual permittees will be provided to the Board during District-declared drought, and a summary will be included in the <u>annual report</u> .
5-3	Inform and educate permittees and other well owners about the significance of declared drought stages and the severity of drought, and encourage practices and behaviors that reduce water use by a stage-appropriate amount.	<p>A. During District-declared drought, publicize declared drought stages and associated demand reduction targets in monthly eNews bulletins and continuously on the District website.</p> <p>B. A summary of drought and water conservation related newsletter articles, press releases, and drought updates sent to Press, Permittees, Well Owners and eNews subscribers will be provided in the <u>annual report</u>.</p>

5-4	<p>Assist and, where feasible, incentivize individual freshwater Edwards Aquifer historic-production permittees in developing drought planning strategies to comply with drought rules, including:</p> <ol style="list-style-type: none"> <li>1. pumping curtailments by drought stage to at least 50% of the 2014 authorized use during Extreme Drought,</li> <li>2. “right-sizing” authorized use over the long term to reconcile actual water demands and permitted levels, and</li> <li>3. as necessary and with appropriate conditions, the source substitution with alternative supplies.</li> </ol>	<ol style="list-style-type: none"> <li>A. Require an updated UCP/UDCP from Permittees within one year of each five-year Management Plan Adoption.</li> <li>B. Provide a summary of any activity related to permit right sizing or source substitution with alternative supplies that may reduce demand on the freshwater Edwards Aquifer in the <u>annual report</u>.</li> </ol>
5-5	<p>Implement a Conservation Permit that is held by the District and accumulates and preserves withdrawals from the freshwater Edwards Aquifer that were previously authorized with historic-use status and that is retired or otherwise additionally curtailed during severe drought, for use as ecological flow at Barton Springs during Extreme Drought and thereby increase springflow for a given set of hydrologic conditions.</p>	<p>A summary of the volume of aggregate groundwater withdrawals permitted and actually produced from permitted wells for each Management Zone and permit type including the volume reserved in the freshwater Edwards Conservation Permit for ecological flows will be provided in the <u>annual report</u>.</p>

**GOAL 6 - Addressing Conservation and Rainwater Harvesting where Appropriate and Cost-Effective – 31TAC 356.52  
(a)(1)(G)/TWC §36.1071(a)(7)**

	<b>Management Plan Objectives</b>	<b>Performance Standards</b>
6-1	Develop and maintain programs that inform, educate, and support District permittees in their efforts to educate their end-user customers about water conservation and its benefits, and about drought-period temporary demand reduction measures.	<p>A. A summary of efforts to assist permittees in developing drought and conservation messaging strategies will be provided in <u>annual report</u>.</p> <p>B. Publicize declared drought stages and associated demand reduction targets monthly in eNews bulletins and continuously on the District website.</p>
6-2	Encourage use of conservation-oriented rate structures by water utility permittees to discourage egregious water demand by individual end-users during declared drought.	<u>On an annual basis</u> , the District will provide an informational resource or reference document to all Public Water Supply permittees to serve as resources related to conservation best management strategies and conservation-oriented rate structures.
6-3	Develop and maintain programs that educate and inform District groundwater users and constituents of all ages about water conservation practices and the use of alternate water sources such as rainwater harvesting, gray water, and condensate reuse.	Summarize water conservation related newsletter articles, press releases, and events in the <u>annual report</u> . Summary will describe the preparation and dissemination of materials shared with District groundwater users and area residents that inform them about water conservation and alternate water sources.



**GOAL 7 - Addressing Recharge Enhancement where Appropriate and Cost-Effective – 31TAC 356.52 (a)(1)(G)/TWC §36.1071(a)(7)**

	Management Plan Objectives	Performance Standards
7-1	<p>Improve recharge to the freshwater Edwards Aquifer by conducting studies and, as feasible and allowed by law, physically altering (cleaning, enlarging, protecting, diverting surface water to) discrete recharge features that will lead to an increase in recharge and water in storage beyond what otherwise would exist naturally.</p>	<p>Maintaining the functionality of the Antioch system will be the principal method for enhancing recharge to the freshwater Edwards Aquifer. Additional activities may be excavating sinkholes and caves within the District. A summary of all recharge improvement activities will be provided in the <u>annual report</u>.</p>
7-2	<p>Conduct technical investigations and, as feasible, assist water-supply providers in implementing engineered enhancements to regional supply strategies, including desalination, aquifer storage and recovery, effluent reclamation and re-use, and recharge enhancement of surface water (including floodwater) to increase the options for water-supply substitution and reduce dependence on the Aquifer.</p>	<p>Assess progress toward enhancing regional water supplies in the <u>annual report</u>.</p>

**GOAL 8 - Addressing the Desired Future Conditions of the Groundwater Resources – 31TAC (a)(1)(H)/TWC §36.1071(a)(8)**

	Management Plan Objectives	Performance Standards
8-1	<p><b>Freshwater Edwards Aquifer All-Conditions DFC:</b> Adopt rules that restrict, to the greatest extent practicable, the total amount of groundwater authorized to be withdrawn annually from the Aquifer to an amount that will not substantially accelerate the onset of drought conditions in the Aquifer; this is established as a running seven-year average springflow at Barton Springs of no less than 49.7 cfs during average recharge conditions.</p>	<p>A. A summary of the volume of aggregate groundwater withdrawals permitted and actually produced from permitted wells for each Management Zone and permit type will be provided in the <u>annual report</u>.</p> <p>B. Upon ITP issuance, the <u>HCP annual report</u> documenting the District’s activities and compliance with ITP permit requirements will be incorporated into the <u>annual report</u> by reference.</p> <p>C. Upon ITP issuance, compile a summary of aquifer data including: 1) the frequency and duration of District-declared drought, 2) levels of the Aquifer as measured by springflow and indicator wells (including temporal and spatial variations), and 3) total annual and daily discharge from Barton Springs will be provided in the <u>annual report</u>.</p>
8-2	<p><b>Freshwater Edwards Aquifer Extreme Drought DFC:</b> Adopt rules that restrict, to the greatest extent practicable and as legally possible, the total amount of groundwater withdrawn monthly from the Aquifer during Extreme Drought conditions in order to minimize take and avoid jeopardy of the Covered Species as a result of the Covered Activities, as established by the best science available. This is established as a limitation on actual withdrawals from the Aquifer to a total of no more than 5.2 cfs on an average annual (curtailed) basis during Extreme Drought, which will produce a minimum springflow of not less than 6.5 cfs during a recurrence of the drought of record (DOR).</p>	<p>A. A summary of the volume of aggregate groundwater withdrawals permitted and actually produced from permitted wells for each Management Zone and permit type will be provided in the <u>annual report</u>.</p> <p>B. Upon ITP issuance, the <u>HCP annual report</u> documenting the District’s activities and compliance with ITP permit requirements will be incorporated into the <u>annual report</u> by reference.</p> <p>C. Upon ITP issuance, compile a summary of aquifer data including: 1) the frequency and duration of District-declared drought, 2) levels of the Aquifer as measured by springflow and indicator wells (including temporal and spatial variations), and 3) total annual and daily discharge from Barton Springs will be provided in the <u>annual report</u>.</p>

8-3	Implement appropriate rules and measures to ensure compliance with District-adopted DFCs for each relevant aquifer or aquifer subdivision in the District.	Develop and implement a cost-effective method for evaluating and demonstrating compliance with the DFCs of the relevant aquifers in the District, in collaboration with other GCDs in the GMAs. Prior to method implementation, provide a summary of activities related to method development in the <u>annual report</u> . Once developed, provide a summary of data for each District-adopted DFC for each relevant aquifer indicating aquifer conditions relative to the DFC and provide in the <u>annual report</u> .
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