Bandera County River Authority and Groundwater District

BANDERA COUNTY TEXAS



ANNUAL REPORT

FY 2023

www.bcragd.org

The District

BOARD OF DIRECTORS

Don Sloan, President
Bruce Hayes, Vice President
Ernest DeWinne, Secretary-Treasurer
John Benedict
Neil Boultinghouse
Rebeca Gibson
Andrea King
Melissa Checkovage
Jada Jo Smith



PUBLISHED

April 2024

AUTHOR

Prepared by: Charley Curd
Cover Photo: Diversion Lake CRP Site 14205
Courtesy of Shelby Sckittone

The District

OUR MISSION

The principal mission of the Bandera County River Authority and Groundwater District is to protect and preserve the County's water and natural resources for the State of Texas. The District is also tasked with maintaining local accountability of the County's water resources to help safeguard the property rights of the citizens of Bandera County.

CORE VALUES

Professionalism, Dedication to Science, Honor, Integrity, Public Service, Stewardship, Leadership and Collaboration, Accountability, and Transparency.

CONTACT INFORMATION

Address: 440 FM 3240 | PO Box 177
Bandera, TX 78003-0177
Phone: (830)796-7260 | Website: www.bcragd.org

@bcragd

@bcragd_tx

Bandera County River Authority & Groundwater District

Bandera County River Authority & Groundwater District

@bcragd_tx

@BCRAGD_TX

TABLE *of* CONTENTS

PART 1: DISTRICT INFORMATION

About the District 1
Purpose of a District 2
Location, River Basins, & Major Aquifers.....3
District Staff 5
District Teams 8
General Manager's Statement 9

PART 2: DISTRICT PROGRAMS & INITIATIVES

List of Programs & Initiatives 11
Collaboration Highlights 12
PROGRAM DESCRIPTIONS
Groundwater Programs 13
Surface Water Programs 26
Enforcement / Investigations.....56
Education & Outreach 58
Regional Resource Planning & Collaboration 79

PART 3: ARTICLES, PUBLICATIONS, & PRESS RELEASE

List of Publications 87
Featured Publications 89

APPENDIX A: PERFORMANCE & MANAGEMENT GOALS

APPENDIX B: ANNUAL FINANCIAL REPORT BY EDE & COMPANY, LLC.

About the District

August 30, 1971 Bandera County River Authority was established from House Bill 988 from the 62nd Texas Legislature. This bill was filed without signature on June 4, 1971. The Bandera County River Authority was created under Article XVI, Section 59 of the Texas Constitution.

June 14, 1989 Springhills Water Managment District was created from Senate Bill 1636 of the 71st Texas Legislature. The new District joined the responsibility of surface water and groundwater. The District was formed under Article XVI, Section 59 of the Texas Constitution.

In **2003** the Texas Commission on Environmental Quality approved the Districts petition to change its name from Springhills Water Management District to Bandera County River Authority and Groundwater District.

In **2023** the State of Texas adopted the BCRAGD codification bill, creating Chapter 8850 of the Special District Local Laws Code in the Texas Constitution. The codification of the District allows for better understanding and clarification of the District's powers and authorities.

Bandera County River Authority

In 1971, the 62nd Texas Legislature created the Bandera County River Authority under House Bill 988. It was created as a conservation and reclamation district under and pursuant to Article XVI, Section 59, of the Texas Constitution. As defined by Article 8280-526, Vernon's Texas Civil Statutes, the River Authority encompassed all of the territory contained in Bandera County except the territory included in the Bandera County Fresh Water Supply District No.1 (Pebble Beach) and the Bandera County Water Control and Improvement District No.1 (City of Bandera). According to the provisions of the legislation, the Bandera County River Authority shall have and exercise and is hereby vested with all of the rights, powers, privileges, authority, and duties conferred and imposed by the general laws of this state now in force or hereafter enacted, applicable to water control and improvement districts created under authority of Article XVI, Section 59 of the Texas Constitution; but to the extent that the Provisions of any such general laws may be in conflict or inconsistent with the provisions of this Act, the provisions of this Act shall prevail. All such general laws are hereby adopted and incorporated by reference with the same effect as if incorporated in full in this Act.

Springhills Water Management District

In 1985, the Board of Directors began working with State and local officials, and concerned citizens to determine the most advantageous method to manage groundwater in Bandera County. After numerous public meetings, the decision was made to pursue legislation creating a joint surface and groundwater district in Bandera County. The result was the creation of the Springhills Water Management District.

Springhills Water Management District was created under Senate Bill 1636. The District's enabling legislation, appearing as Act of June 17, 1989, Ch. 654, 1989, Tex. Gen. Laws 2155 (Vernon), granted the District the rights, powers, privileges, authority, functions, and duties provided by Chapters 50 and 52; and the rights, powers, purposes, authority, and functions of the Bandera County River Authority. The legislation defines the District's boundaries as all of the territories contained within Bandera County. The legislation further stipulates that the Board of Directors will comprise nine (9) directors. The directors will be elected from commissioner precincts, with one director at large. The Springhills Water Management District continued all of the programs and activities initiated by the River Authority, and implemented the programs required of a groundwater conservation district.

Bandera County River Authority and Groundwater District

On April 10, 2003, the Texas Commission on Environmental Quality (TCEQ) authorized changing the District's name to Bandera County River Authority and Groundwater District (BCRAGD). The BCRAGD continues all the programs and activities of Springhills Water Management District. BCRAGD has all of the rights, powers, privileges, authority, functions, and duties now provided by Chapter 36, 49, and 51 of the Texas Water Code.

Bandera County River Authority and Groundwater District

The Bandera County River Authority and Groundwater District's enabling legislation was codified under HB 3731 of the 88th Regular Legislative Session. As of September 1, 2023 BCRAGD's enabling legislation can be found under Chapter 8850 of the Special Districts Local Laws Code in the Texas Constitution. This was a substantive change from the enabling legislation as it removed the District from the Sunset Commission Review process.

Purpose of the District

Texas Water Code, Chapter 51, Water Control and Improvement District

Section 51.121. Purposes of a District (River Authority)

A water control and improvement district organized under the provisions of Article XVI, Section 59, of the Texas Constitution, may provide for:

1. The control, storage, preservation, and distribution of its water and floodwater and the water of its rivers and streams for irrigation, power, and all other useful purposes;
2. The reclamation and irrigation, power, and all other useful purposes;
3. The reclamation, drainage, conservation, and deployment of its forests, water, and hydroelectric power;
4. The navigation of its coastal and inland water;
5. The control, abatement, and change of any shortage or harmful excess of water;
6. The protection, preservation, and restoration of the purity and sanitary condition of water within the state; and
7. The preservation and conservation of all natural resources of the state.

Texas Water Code, Chapter 36, Groundwater Conservation Districts

36.0015. Purpose (Groundwater)

In order to provide for the conservation, preservation, protection, recharging, and prevention of waste of groundwater, and of groundwater reservoirs or their subdivisions, and to control subsidence caused by the withdrawal of water from those groundwater reservoirs or their subdivisions, consistent with the objective of Section 59, Article XVI, Texas Constitution, groundwater conservation districts may be created as provided by this chapter. Groundwater conservation districts created as provided by this chapter are the state's preferred method of groundwater management.



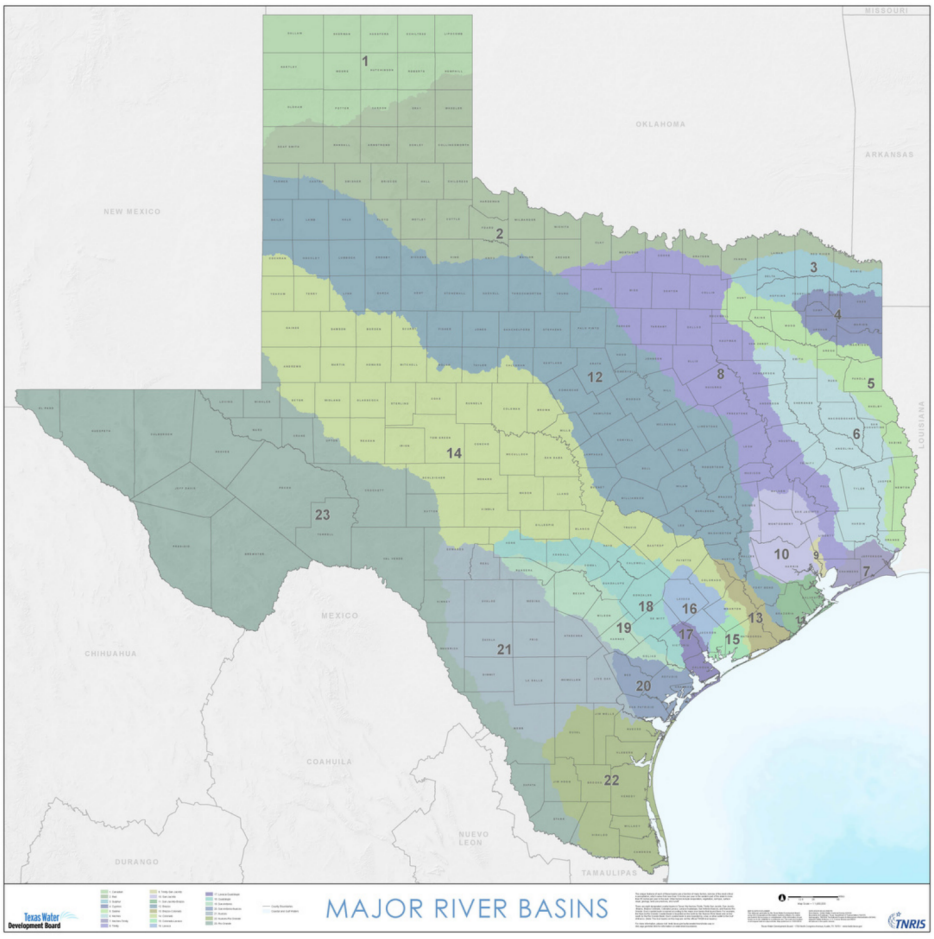
Medina River

Location

The District's office is located at 440 FM 3240 Bandera, Texas. Bandera County lies in the south-central part of Texas, in the hill country region of the Edwards Plateau. The County has an aerial extent of 797.6 square miles or 510,464 acres. The County seat, the city of Bandera, is centrally located at the intersection of South Highways 16 and 173. Kerr, Kendall, Bexar, Medina, Uvalde, and Real Counties bound the County, in a clockwise pattern. Bandera County River Authority and Groundwater District encompasses all of Bandera County.

River Basin

Bandera County contains parts of three major drainage basins. The Nueces River basin occupies approximately 25 percent of the County to the west and southwest, with drainage to the south. The San Antonio River basin occupies approximately 73 percent of the County, located from the north-central to the southeastern portion of the County, where the river has been dammed to form Medina Lake. Drainage from the San Antonio River basin is to the southeast. The Guadalupe River basin occupies approximately 2 percent of the County as a small portion of the central northern section. The two major rivers in the County are the Sabinal River, located in the Nueces River basin, and the Medina River, located in the San Antonio River Basin. The larger rivers are dominantly effluent and form wide valleys. Two dominant types characterize the smaller creeks and streams: the perennial spring-fed streams and the intermittent creeks that only transport precipitation runoff.

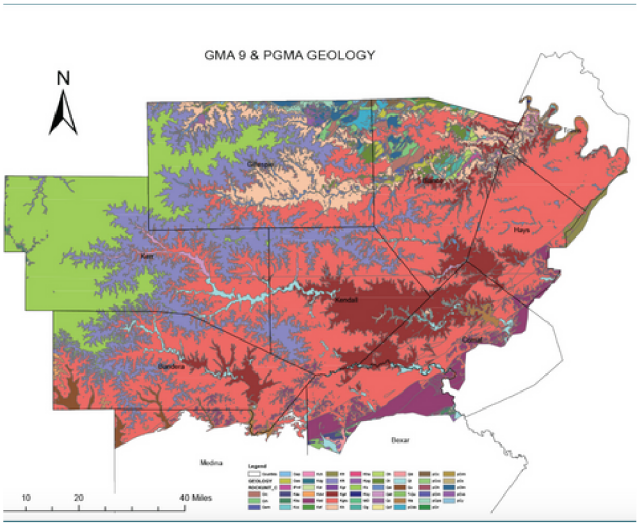


Major Aquifers

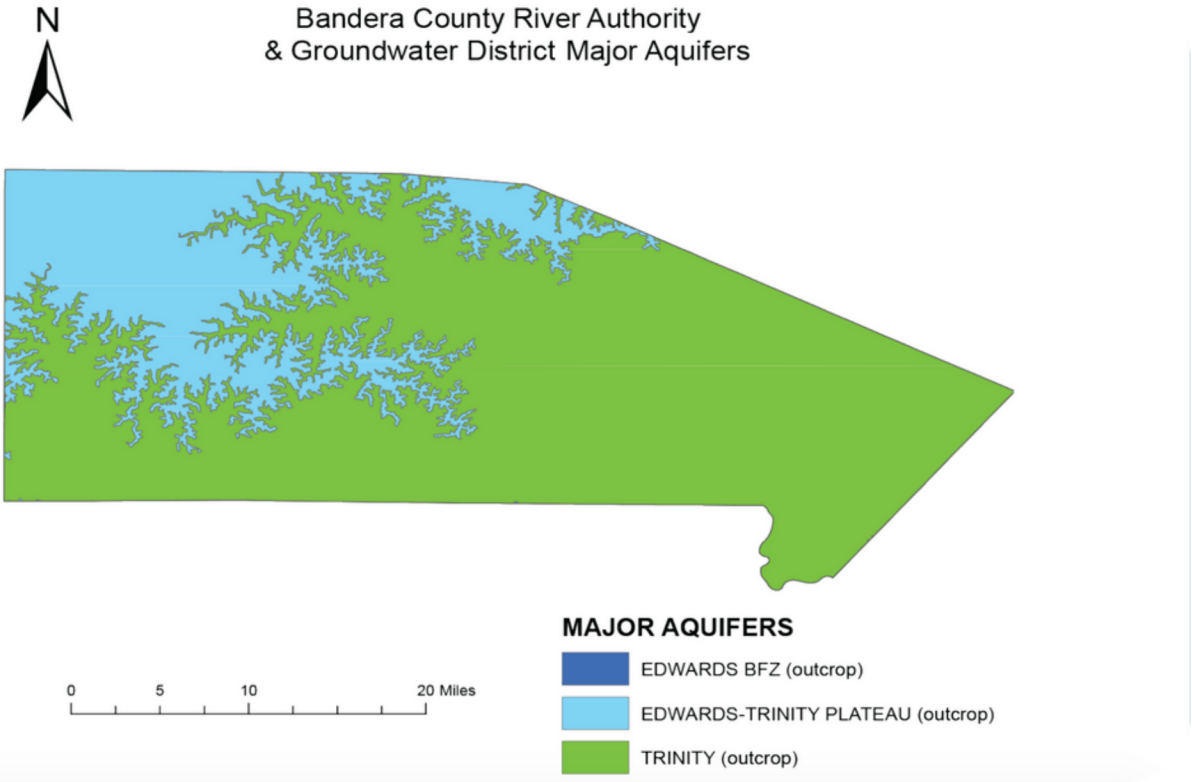
The Trinity Group aquifer underlies all of Bandera County, underlying the Edwards Plateau aquifer in the northwest portion of the County and extending south into Medina and Uvalde counties and east into Kendall and Bexar counties. The Trinity Group aquifer is the primary source of groundwater in Bandera County. This aquifer is divided into three groups: the Upper Trinity, Middle Trinity, and Lower Trinity. The Upper Trinity aquifer contains the Upper Glen Rose Limestone. The Middle Trinity aquifer contains the Lower Glen Rose Limestone, the Hensell Sand, and the Cow Creek Limestone. The Lower Trinity aquifer is composed of the Sligo Limestone and Hosston Sands. The Trinity Group aquifer yields groundwater from the Upper and Lower units of the Glen Rose Formation; and the Hensell, Cow Creek, Sligo, and Hosston members of the Travis Peak Formation of the

Trinity Group of Cretaceous age. Downdip from the outcrop area, in the artesian pressure a portion of the aquifer, groundwater production supplies water to all wells. Primary sources of recharge to the Trinity Group aquifer include the infiltration of precipitation on the outcrops to the north and northwest of Bandera County and infiltration of surface water from lakes and streams through vertical leakage from overlying formations. The Trinity Group aquifer primarily exists under water-table conditions along the outcrop and under artesian conditions downdip, where confining beds of limestone and shale bound the water-bearing units. The movement of shallow groundwater is primarily down gradient, from high to low elevations, and at right angles to the potentiometric surface contours, which denote the configuration of the water table. The overall groundwater movement is to the southeast with local movement away from groundwater highs and along with the surface of the drainage system, with groundwater lows that have developed as a result of production in large well fields.

Alluvial deposits are found in the flood plain of the major tributaries of streams, which make up the surface drainage system in the county. The alluvial deposits are highly permeable with a maximum thickness of approximately 50 feet and a small areal extent. They yield only



small amounts of good quality water. Due to the naturally occurring anhydrate and gypsum beds, the overall quality of groundwater obtained from the Upper Trinity aquifer, which contains the Upper Glen Rose formation is of poor quality, with small yield. The Middle Trinity aquifer, which contains the Lower Glen Rose Limestone, Hensell Sand, and Cow Creek Limestone formations, yields small to moderate amounts of water with a good to excellent water quality. The lower Trinity aquifer that contains the Sligo Limestone and Hosston Sand, yields moderate to large quantities of water of good to excellent quality.



District Staff



Dave Mauk
General Manager
The General Manager is the Chief Executive Officer responsible for the planning, development, and implementation of policies of the District for the protection, management, and conservation of groundwater and surface water, or any other natural resource within the District. The General Manager works closely with the elected Board of Directors to assure that the District's goals and policies are met in a timely manner. The General Manager is responsible for hiring, discharging, and supervising District Staff.



Luke Whitmire, PhD
Assistant General Manager
The Assistant General Manager is under the direction of the General Manager and is responsible for performing complex administrative duties through research, prioritization, and follows up on issues and concerns addressed to the General Manager. Additionally, the Assistant General Manager is responsible for supporting the General Manager in implementing all District policies and programs; ensuring both field and office operations are conducted efficiently, properly, and in accordance with District, Federal, and State, rules, policies, and regulations. Support includes oversight of the Groundwater Science and Surface Water Science Departments and collaboration with the Field Operations Manager, Education and Outreach Manager, Flood Science Manager, Finance & HR Manager, and Intergovernmental Affairs Manager.



Diane Irvin
Executive Assistant & Office Manager
The Executive Assistant & Office Manager is under the direction of the General Manager and is primarily responsible for supporting the General Manager in implementing all District Policies and programs; ensuring office operations are conducted efficiently, successfully implementing financial and human resources operations properly and in accordance with District, Federal, and State rules, policies, and regulations. Job duties include office procurement, citizen assistance, front desk operations, serving as the District's Public Information Request Coordinator, coordination of office coverage, completion of well registrations, and assisting in developing office policies and procedures for improved workflow. Additionally, the completion of the annual Financial Audits and reports, execution of all standard operating procedures related to accounts payable and receivable, securing and maintaining all financial and personnel records, implementing Human Resource policies, and disseminating training of district staff during new hire onboarding and throughout the year.



Hayli Hernandez
Intergovernmental Affairs Manager
The position of Intergovernmental Affairs Manager is under the direction of the General Manager and is primarily responsible for supporting the General Manager in implementing all District policies and programs, as well as Legislative compliance. The Intergovernmental Affairs Manager serves as the supervisor for all intergovernmental affairs operations. Some of the primary duties include assisting the General Manager with issues during the Legislative session, interim changes, and any other political or policy issue. The Intergovernmental Affairs Manager is responsible for all communication and cooperation between the District and other local, State, and Federal agencies. The position is also tasked with Board Meeting coordination, Records Management, Employee Benefits Coordination, Public Relations, and maintaining District compliance with all legislation requirements. The Intergovernmental Affairs Manager also serves as the District's Election Coordinator and as the alternate for the General Manager on all Regional Planning Committees. This position is also tasked with providing confidential, complex, and high-level executive assistance to the General Manager.

District Staff



Clinton Carter, PSM
Field Operations Manager

The Field Operations Manager is under the direction of the General Manager. He works closely with all departments of the District to coordinate and conduct field activities including, but not limited to, surface water quality programs, groundwater monitoring and protection programs, invasive species programs, field and aquatic studies, ecological assessments, and special projects. The Field Operations Manager's primary role is to help ensure projects are performed and completed to QA/QC standards and procedures while working closely with the District Staff to implement the District's programs and objectives. In addition, the Field Operations Manager is also the Lead Compliance and Enforcement Officer for the District's Environmental Investigations Team.



Charley Curd, MPH
Education & Outreach Coordinator

The Education & Outreach Coordinator is under the direction of the Education & Outreach Manager. The position is primarily responsible for promoting science-based educational programs and best management practices that promote water conservation and water quality protection. Some of the primary duties include providing educational presentations and hands-on learning activities to local schools and coordination of workshops for adults that promote water conservation and water quality protection and other natural resource issues. In addition, the Education & Outreach Coordinator is tasked with developing, creating, and disseminating educational and promotional content for the district's outreach via social media platforms that align with the District's management goals as well as the creation and design layout for the District's Annual Report.



Corrina Fox
Education & Outreach Manager

The Education & Outreach Manager is under the direction of the General Manager and serves as the supervisor for all education operations. The Education & Outreach Manager is primarily responsible for ensuring that the District's project and management goals are reached through the promotion and development of science-based educational programs that promote water conservation and water quality protection awareness. Duties include creating and providing water conservation and preservation educational presentations and hands-on learning activities to local schools that are aligned with the K-12 Texas State curriculum and coordination of workshops and programs for adults related to water conservation, water quality protection, and other natural resource issues. Additionally, the Education & Outreach Manager supervises the content of the District's Social Media pages ensuring the adherence of all policies and regulations. The Education & Outreach Manager is required to obtain CEUs to maintain Teacher Certification.



Larry B. Thomas, CFM
Flood Science Manager

The Flood Science Manager is under the direction of the General Manager and is primarily responsible for supporting the implementation of the District's surface water quality, natural resources, and monitoring programs. The Flood Science Manager serves as the team leader for all rainfall monitoring and related programs. As the Chief Data Officer, the Flood Science Manager maintains collaborative efforts and is the liaison for BCRAGD / TWDB and USGS as the Flood Early Warning System Project Manager for the Medina and Sabinal Rivers in Bandera County. In addition, the Flood Science Manager holds a voting member position on the Nueces River Authority Board, representing Region 13 flood districts and as an expert member of the Region 13 flood planning group sub-committee.

District Staff



Levi Sparks, M.S., CLM

Aquatic Ecologist

The Aquatic Ecologist is under the direction of the Field Operations Manager. The Aquatic Ecologist's primary responsibility is to support the implementation of the District's surface water quality, natural resources, and monitoring programs. Primary duties include implementing the District's laboratory operations, In-House Sampling program, Clean Rivers Program, environmental investigations, invasive species programs, and enforcement of all regulations and rules of the state and District. In addition, the Aquatic Ecologist is responsible for conducting site visits to verify that adherence to applicable rules and construction standards are followed during the drilling process of registered and permitted wells.



Shelby Sckittone

Natural Resource Specialist

The Natural Resource Specialist is under the direction of the Field Operations Manager. The Natural Resource Specialist's primary responsibility is to support the implementation of the District's surface water quality, natural resources, and monitoring programs. Primary duties include implementing the District's laboratory operations, In-House Sampling program, Clean Rivers Program, environmental investigations, invasive species programs, and enforcement. In addition, the Natural Resource Specialist is responsible for conducting site visits to verify that adherence to applicable rules and construction standards are followed during the drilling process of registered and permitted wells.

District Teams



Staff members are organized into 11 teams. Many employees serve on more than one team:

General Management

Finance/Human Resources

Office Operations

Groundwater Science Operations

Surface Water Operations

Field Operations

Flood Warning and Awareness

Water Resource Management & Policy

Education and Community Outreach

Performance Management and Quality Improvement

Data Management

General Manager's Statement

Bandera County tends to experience periods of drought interrupted by periods of heavy rainfall. This year, the State of Texas continues to experience a punishing drought. During the fiscal year of 2023, Governor Abbott's office issued multiple disaster drought proclamations that affected Bandera County and the surrounding area.

With this continued drought, the District has heightened its concern with water conservation and continues to promote rainwater harvesting and drought awareness. District personnel have assisted and counseled landowners on how to protect both their water quantity and quality. Moving forward, the District will continue to enforce rules and follow both our Groundwater Management Plan and Drought Management Plan. BCRAGD continues to host events and educational talks on water conservation, drought awareness, invasive species management, flash flood awareness, and riparian information. The District will continue to implement key conservation and water quality programs, including the Clean Rivers Program, Aquifer Monitor Well Program, Community Outreach and Education, Illegal Dumping Abatement, and our Flood Awareness Program.

Our region continues to be threatened by the spread of invasive species. The District is particularly concerned with Arundo donax and Zebra Mussels. Arundo donax is a noxious weed native to Europe and Asia. It easily spreads and can obstruct habitats along our watercourses. The District has partnered with the Nueces River Authority and the Texas Parks and Wildlife Department (TPWD) to aggressively control the weeds in both the Sabinal and Medina River Basins. Zebra Mussels are a fingernail-sized mollusk native to lakes in Ukraine and Southern Russia. Zebra Mussels spread primarily by clinging to boat hulls, bait buckets, and boat bilge tanks. This invasive species hinders water recreation and destroys aquatic ecosystems. The District, in conjunction with TPWD, have instituted a Zebra Mussel surveillance program for Medina Lake. Unfortunately, Medina Lake was classified as infested during FY 2021 following the Districts discovery of Zebra Mussel colonies and further investigation conducted by TPWD. The District will continue to monitor this situation.

Looking toward the opposite conditions from this drought; this region is one of the most flash flood-prone areas in the world. In the past decade, several rain events in our area have threatened life and property. Seeing the public safety need, the District applied for and received a TWDB grant for a USGS flood warning project in 2016. The Flood Early Warning System (FEWS) utilizes river gages and basin modeling, which will give Emergency Managers in Bandera County a set of predictive tools that will allow them to anticipate what areas will potentially flood during an event. This science-based project had its completion date in May of 2019. Regional Flood Planning Groups have been formed, and BCRAGD has become involved with the San Antonio River Basin Regional Flood Planning Group and the Nueces River Basin Flood Planning Group.

As a District, we continue to be a regional player to help safeguard the rights and natural resources of the people of Bandera County. We have actively participated in the Regional Water Planning Groups, Regional Flood Planning Groups, GMA-9, TCEQ's Clean Rivers Program, South Central Emergency Management Association, and Bay and Basin Stakeholder Committee. Our District has established lasting collaborations with other Districts and community organizations. The District will continue to improve its programs and processes to further the policies of the Board. This continued progress and regional engagement will help ensure that the interests and water resources are protected for the people of Bandera County and the entire basin. District personnel are constantly revisiting and improving operating procedures. We continue to strive to be as transparent as possible. As General Manager, I have an open door policy, making myself available for any citizen's questions and concerns.

Very Respectfully,

Dave Mauk
General Manger

District Programs & Initiatives



District Programs & Initiatives

Groundwater Programs

Groundwater Management Plan

Registered/Exempt Well Program

Permitted Well Program

Monitor Well Program

Groundwater Sampling and Analysis

Geophysical Logging

Well Camera Inspections

Abandoned Well Plugging Program

Drought Management Plan

Rainfall Monitoring Program

Surface Water Programs

TCEQ Clean Rivers Program

In-House Surface Water Quality Monitoring Programs

NEW! Medina River Microbial Analysis

Invasive Species Management

Medina Lake Management

USGS Flood Early Warning System (FEWS) Sabinal River- TWDB Flood Protection Grant

USGS Flood Early Warning System (FEWS) Medina River

Public Safety - Flood Preparedness

Enforcement / Investigations

Enforcement of State and District Rules

Environmental Investigations

- Illegal Dumping Litter Abatement Public Safety / Pollution

Education & Community Outreach

Public Education and Community Outreach Program

- Bandera, Medina, & Utopia ISD Programs
- Expanding Your Horizons

University Internship Program

Water Conservation & Natural Resource Stewardship

Invasive Species & Healthy Riparian Education

Annual Medina River Clean-Up

Resource Planning & Collaboration

GMA-9 Representative

Region J (Plateau) Water Planning Group

TAGD Member- Legislative and Executive Committee

GSA BBASC Environmental Flows member and representative

US Department of Agriculture

Natural Resource Conservation Services

State Technical Committee

San Antonio Regional Flood Planning Group, Region 12

Nueces Regional Flood Planning Group, Region 13

Collaboration Highlights

BCRAGD highlights many of the local, regional, and state agencies and organizations that assist with programs and initiatives each year.

United States Geological Survey
BCRAGD contracted USGS to finalize, install, and maintain the Flood Early Warning System (FEWS) Tool Set for Bandera County and the Sabinal River under the grant awarded to the District by Texas Water Development Board. In addition, BCRAGD contracted USGS to implement the toolset for the USGS Flood Early Warning System (FEWS) of the Medina River under the grant awarded to the District by Texas Water Development Board.

Texas Water Development Board
Flood Protection Grant funding was provided to BCRAGD for a Flood Early Warning System in Bandera County. Working with USGS, this project will protect the lives of local residents and also the communities downstream through a food warning tool set.

Texas Commission on Environmental Quality
Environmental Investigations

San Antonio River Authority
Clean Rivers Program partners; Aquatic Life Monitoring, collaborators; Laboratory services

Nueces River Authority
Clean Rivers Program partners; ISD Education collaboration; Invasive plant collaboration - Arundo Donax

Edwards Aquifer Authority
Aquifer science, streamflow study collaboration, rainfall gages

TAMU AgriLife Extension Service
Educational Outreach; water conservation and land stewardship workshops

Schreiner University
Expanding Your Horizons Program

Texas Water Foundation
Texas Runs on Water Campaign

Texas Water Development Board (TWDB)
United States Geological Survey (USGS)
Texas Commission on Environmental Quality (TCEQ)
Texas Department of Licensing and Regulation (TDLR)
Texas Parks and Wildlife Department (TPWD)
Texas Alliance of Groundwater Districts (TAGD)
Texas Water Resources Institute
GSA BBASC Environmental Flows
Groundwater Management Area 9
Region J Water Plateau Planning Group
Texas Water Conservation Association (TWCA)
Texas A&M AgriLife Extension
US Dept of Agriculture-Natural Resource Conservation Services
State Technical Committee
San Antonio River Authority (SARA)
Nueces River Authority
Edwards Aquifer Authority
Blanco Pedernales Groundwater District
Central Texas Groundwater Conservation District
Hill Country Underground Water Conservation District
Schreiner University
Bandera Electric Cooperative
Bandera County Constables
Bandera County Sheriff's Department
Bandera, Medina, and Utopia ISDs
Bandera Co. Commissioners' Court
City of Bandera
LAMCOS
Medina River Protection Fund
Hill Country Alliance
San Antonio Regional Flood Planning Group, Region 12
Nueces Regional Flood Planning Group, Region 13
Texas Children In Nature Network

Groundwater Programs

Groundwater Management Plan

All Texas Groundwater Conservation Districts are required to develop and implement a TWDB-approved management plan to manage their groundwater resources effectively. BCRAGD revised and approved its Management Plan on July 14, 2022. The current Management Plan was approved by TWDB on January 20, 2023.

During FY 2023, BCRAGD:

- Upheld management plan as required by TCEQ, TWDB, and the DFC process.
- Ensured management goals were met and documented to compliance.



Example of a completed Water Well

Permitted Well Program

The District maintains a permitting program for non-exempt wells. Pumping reports are collected each January, and the water used is tabulated. Newly permitted wells are inspected to ensure compliance with District and State rules and requirements. These pumping amounts help the District evaluate the county's groundwater resources for Desired Future Conditions (DFC) compliance and management.

In order to protect groundwater resources in FY 2023, BCRAGD:

- Registered and issued authorization to drill domestic and livestock wells.
- Registered existing exempt wells.
- Ensured registered wells met exempt requirements.
- Maintained files and database of registered wells.
- Provided water logs to the general public when requested.
- 119 Registrations were issued in FY 2023.

Registered/Exempt Well Program

All exempt wells to be drilled are registered, approved, and inspected by the District to ensure compliance with State and District rules and requirements. BCRAGD maintains a proactive policy of inspecting well sites before well registrations are issued. District staff inspect wells during the drilling and completion phases to ensure compliance with District and State rules. This approach has helped protect both the landowners and groundwater resources in Bandera County.



BCRAGD staff collecting a sample from a water well for a post drill inspection

Groundwater Programs

In order to protect groundwater resources in FY 2023 BCRAGD:

- Identified wells that needed to be permitted.
- Permitted existing wells that required permits.
- Prepared permit applications for Board approval.
- Posted permit hearing information as required by District rules and by the Open Meetings Act.
- Gave permit recommendations to the Board as needed.
- Conducted contested case hearings.
- Ensured compliance with annual pumping reporting requirements.
- Transferred permits for changes in property ownership.
- Identified permits that require permit amendments.
- Tracked annual usage for DFC purposes.
- Eight Permits were issued in FY 2023.

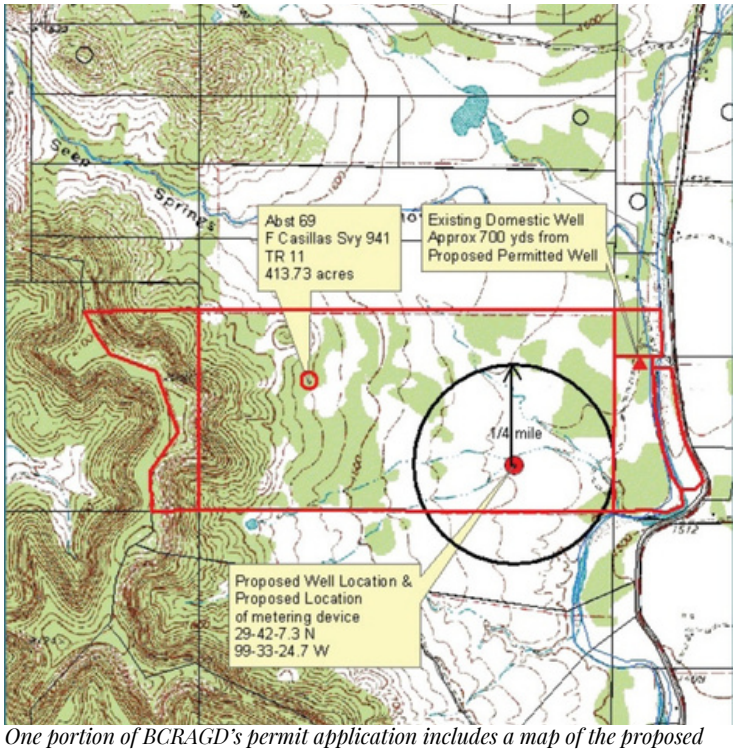
Monitor Well Program

The District maintains and operates a monitor well program to track and assess aquifer conditions in Bandera County. This is done through quarterly water level measurements and biannual water quality sample collection from designated monitor wells.

As a result of this program, during FY 2023 the District:

- Conducted surveillance of aquifer conditions.
- Tracked aquifer recharge.
- Managed for Desired Future Conditions (DFC). Reported data to Texas Water Development Board for DFC purposes.
- Kept the public informed via the District's website and quarterly meetings.
- Submitted to the local newspaper level aquifer information when available.

Well Location



One portion of BCRAGD's permit application includes a map of the proposed well location with the property line and any other existing wells in the immediate area.

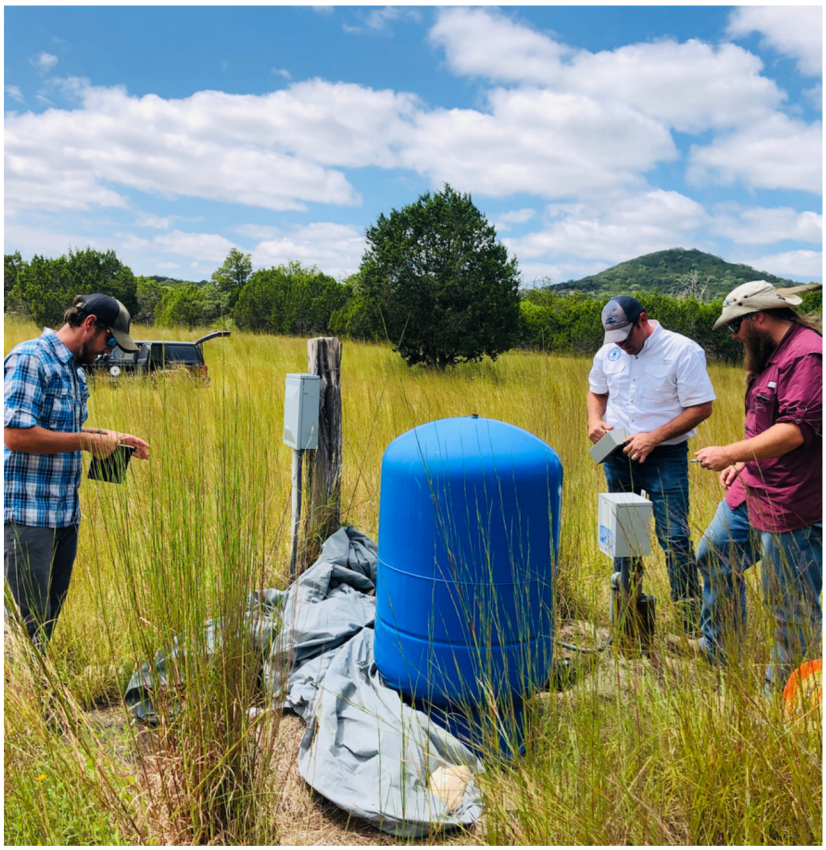


Example of water well.

Groundwater Programs



C. Carter conducting a monitor well measurement



C. Carter, L. Sparks, & L. Whitmire conducting a monitor well measurement



L. Thomas & C. Carter conducting a well camera run

Groundwater Programs

Geophysical Logging Program

BCRAGD is partnered with Blanco Pedernales Groundwater Conservation District, Hill Country Underground Water Conservation District, and Central Texas Groundwater Conservation District in shared ownership of a geophysical logging trailer, in which the geophysical properties of our aquifers are regularly recorded and monitored. Data recorded further informs aquifer science and groundwater management in the region.



BCRAGD field team conducting Logging trailer training.



L. Thomas conducting a geophysical log; lifting the logging probe out of the wellhead.

Well Camera Inspection

BCRAGD's WellVu Camera is a recorded media used to assess collapsed and/or damaged wells. It can also be used as a tool to investigate compliance with district well construction rules. The District provides a camera well inspection service to identify problems and assess damaged wells to determine if the well needs to be rehabilitated or plugged.



BCRAGD field team conducting well camera run.



BCRAGD staff conducting well logging.

Groundwater Programs

Groundwater Sampling and Water Analysis Program

BCRAGD operates a non-certified laboratory that tests for the presence/absence of total fecal coliforms and E. coli and mineral testing, including total hardness, pH, TDS, and Specific Conductivity of water samples. BCRAGD tests groundwater samples collected from newly inspected wells at no cost to the owner and offers groundwater testing services to the public for a nominal fee.



Probe used to read a water's pH level in the BCRAGD lab.



This photo shows the water-quality probe being used to test the water of a monitor well. Some of the measurements taken here were temperature, pH, conductivity, and total dissolved solids.

Summary of Groundwater Services Provided by the District FY 2023:

- Conducted chemical and bacterial analysis of monitor well samples.
- Sampled and analyzed samples from newly drilled wells when possible.
- Tested groundwater samples brought in by the public.
- Provided information to the public on avoiding sources of contamination and disinfecting identified contaminated wells.
- Investigated complaints relating to contaminants and waste.
- Educated and counseled citizens about sources of possible contamination.
- Advised citizens about corrective and preventive measures for contamination.

Abandoned Well Plugging Program

There is a high environmental risk associated with abandoned/deteriorated wells, as they are a direct conduit from the surface to our groundwater resources. In response to the existence and threat of abandoned wells to the health of Bandera County's groundwater, BCRAGD offers the public a well plugging program.

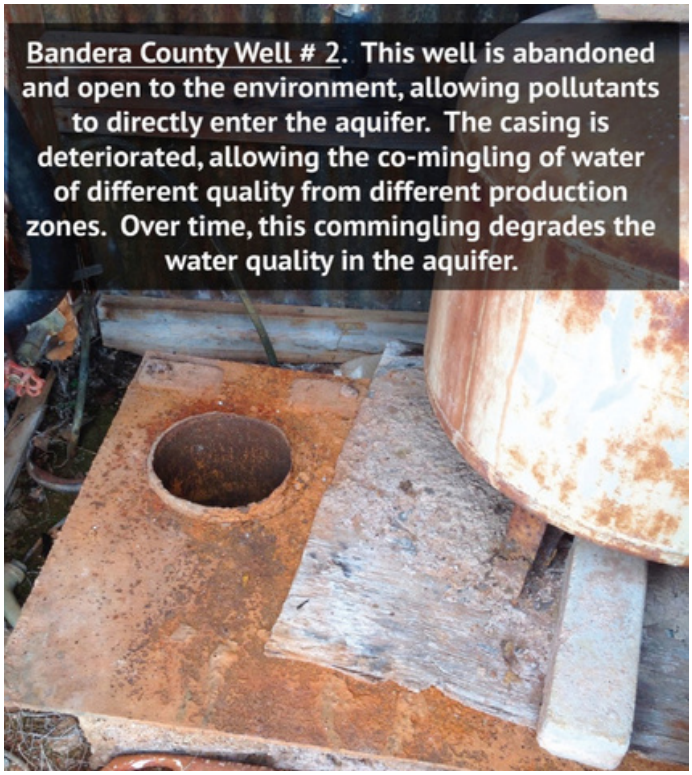
Abandoned Well Program accomplishments:

- The District did not plug any wells for the general public during the fiscal year 2023.
- BCRAGD issued violations to well owners to plug or repair abandoned wells.
- The District contributed abandoned well information to the presentation and aquifer model components of the Nueces River Authority Water Resource Stewardship Program and other outreach efforts.

Groundwater Programs

Images below are examples of abandoned water wells from previous years.





Graphics from a presentation given to the State Legislature illustrating the importance of plugging wells to protect groundwater quality for the public.



L. Sparks and L. Thomas Logging a Water Well

Groundwater Programs









Pictures taken by S. Sckittone throughout Bandera County

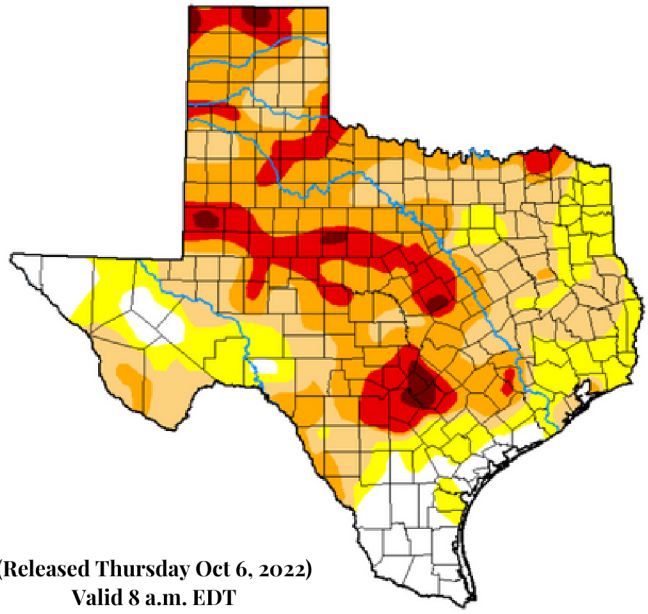
Groundwater Programs

Drought Management Plan

During FY 2023, BCRAGD:

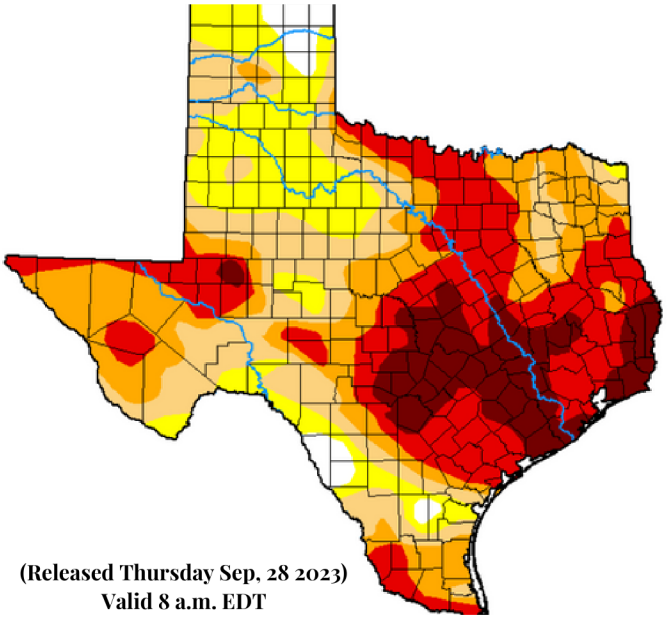
- Implemented drought stages.
- Notified permit holders of drought stages and restrictions.
- Investigated allegations of waste and issued Notices of Violation as warranted.
- Reported drought conditions at quarterly meetings.
- Record the Drought Severity Index each month, and when drought conditions exist, post the drought stage and any appropriate drought restrictions at the District's office.
- Reviewed Drought Management Plan.

October 4, 2022



(Released Thursday Oct 6, 2022)
Valid 8 a.m. EDT

September 26, 2023



(Released Thursday Sep, 28 2023)
Valid 8 a.m. EDT

Drought Classification

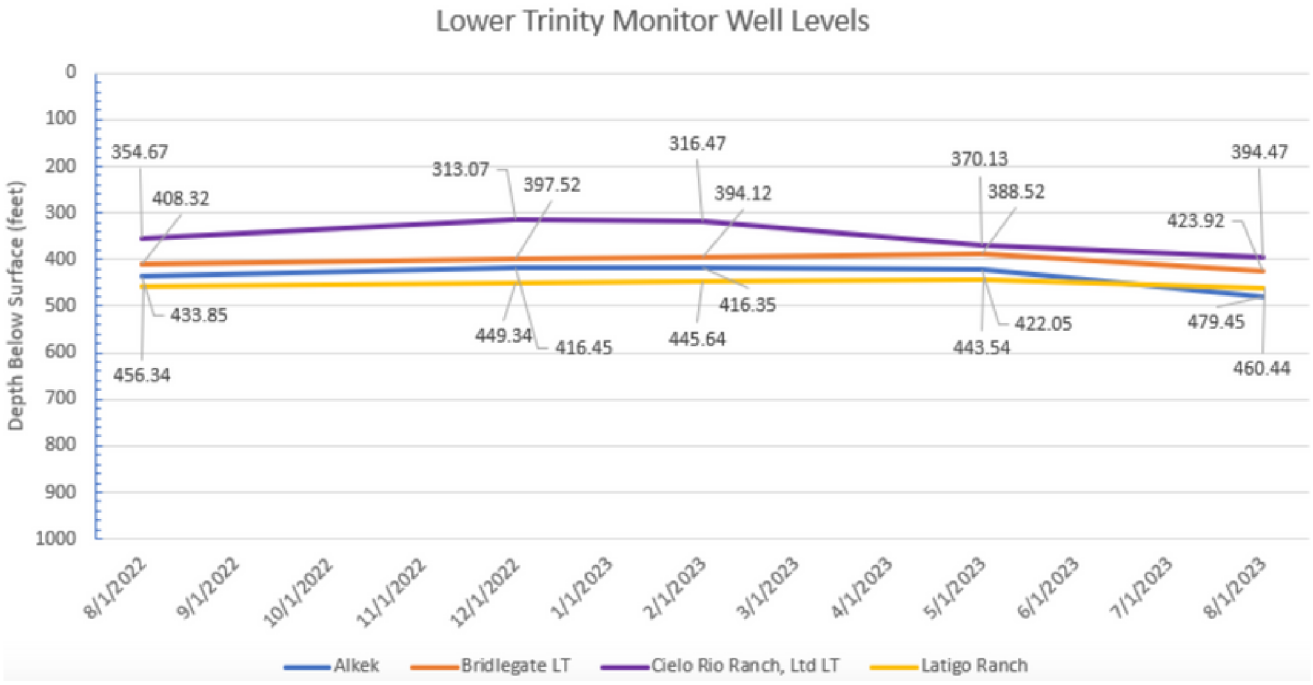
- None
- Abnormally Dry
- Moderate Drought
- Severe Drought
- Extreme Drought
- Exceptional Drought

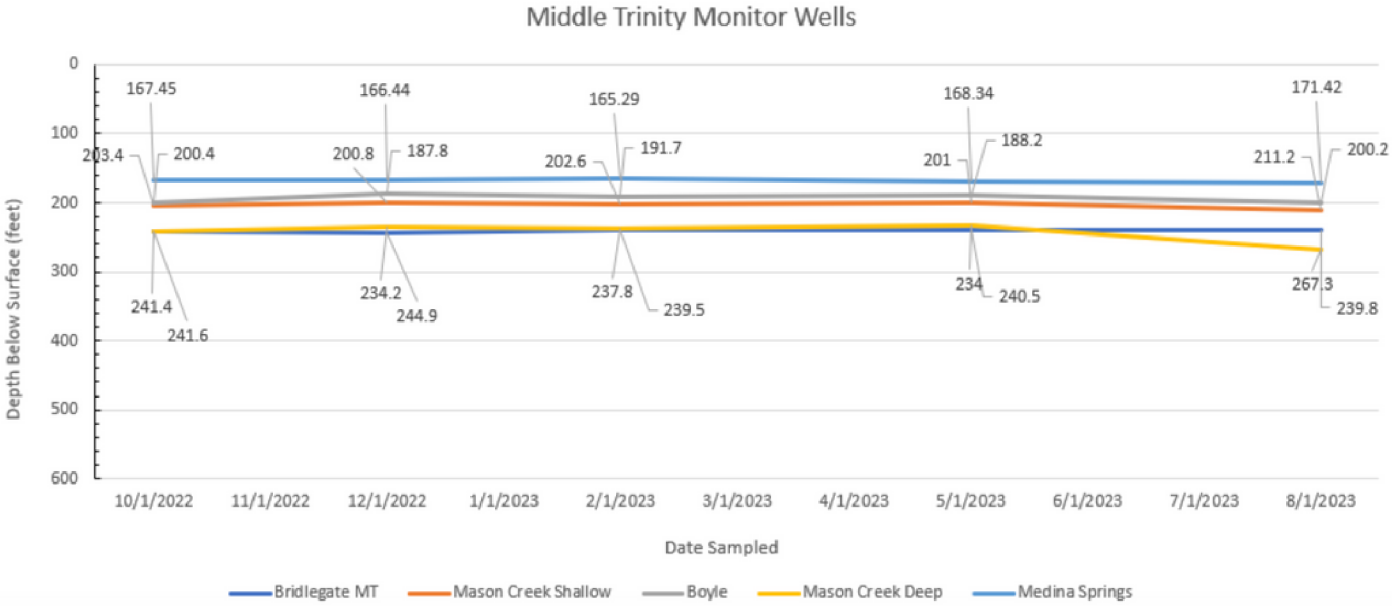


The Bandera County River Authority and Groundwater District displays a sign in front of its office in Bandera indicating the area is in extreme drought. - William Luther/San Antonio Express-News

Groundwater Programs

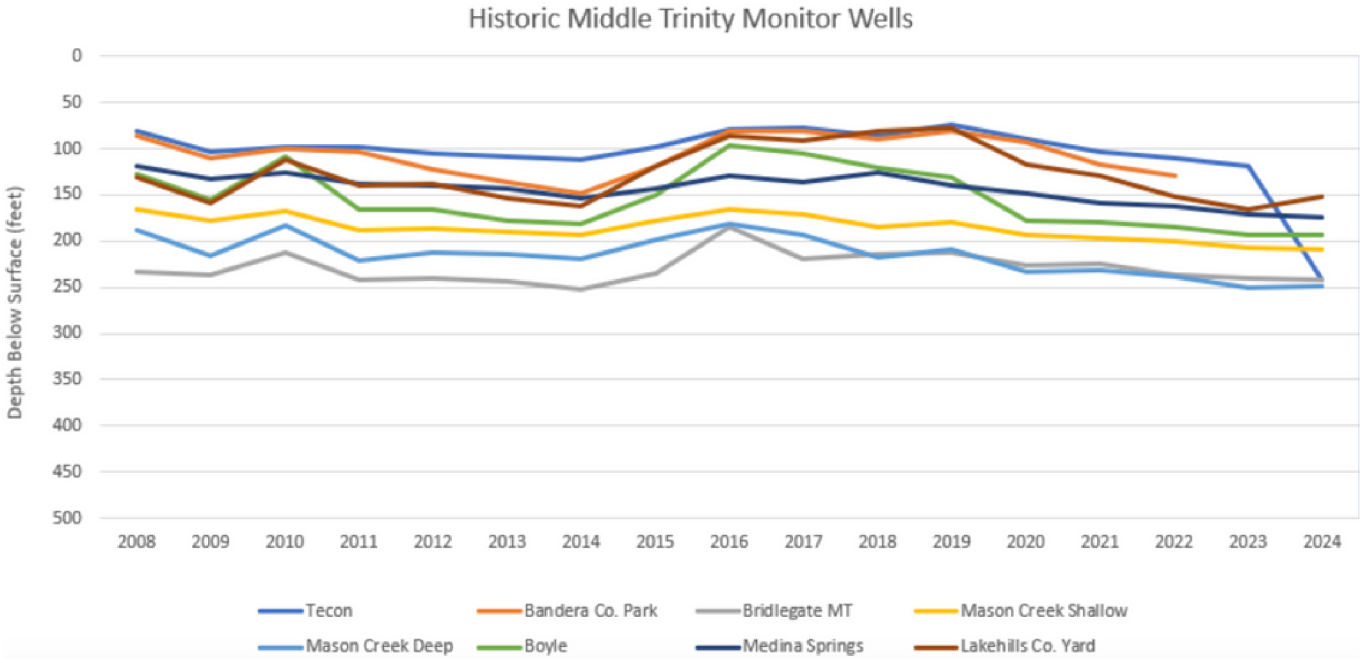
Overall Average Change in Water Level for fiscal year 2023

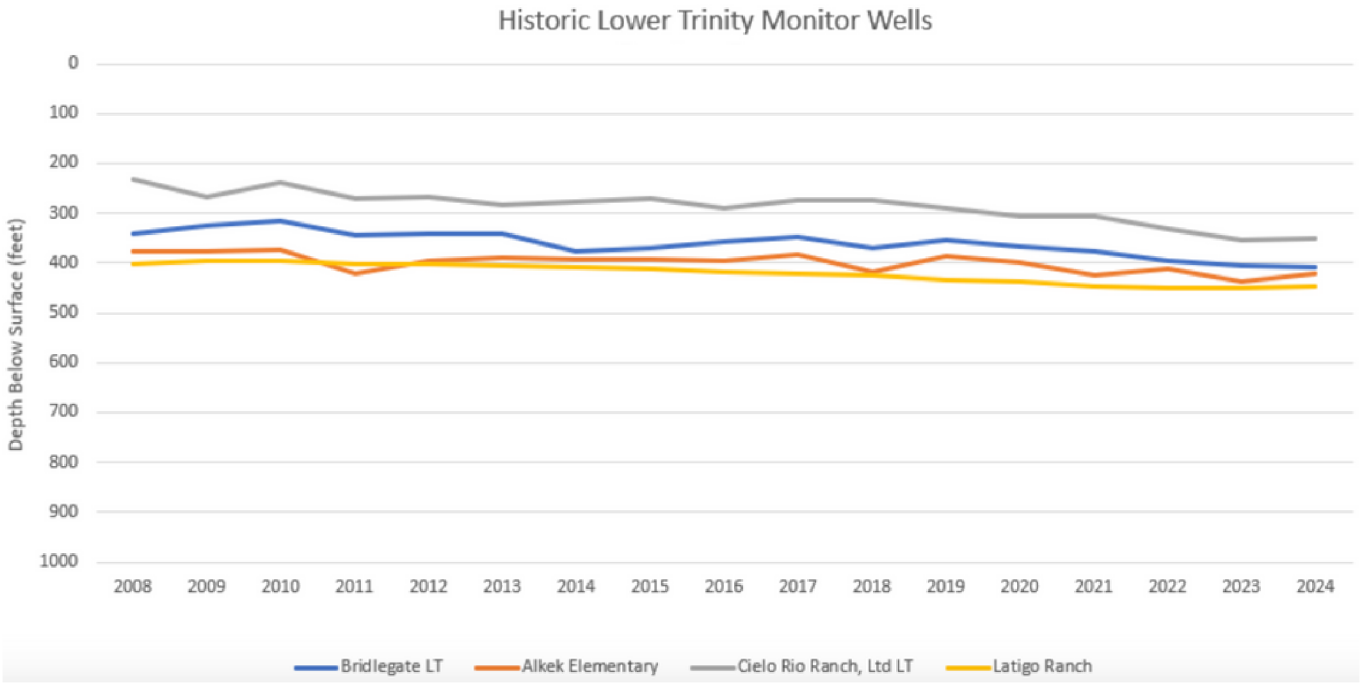




Groundwater Programs

Overall Average Change in Water Level





Groundwater Programs

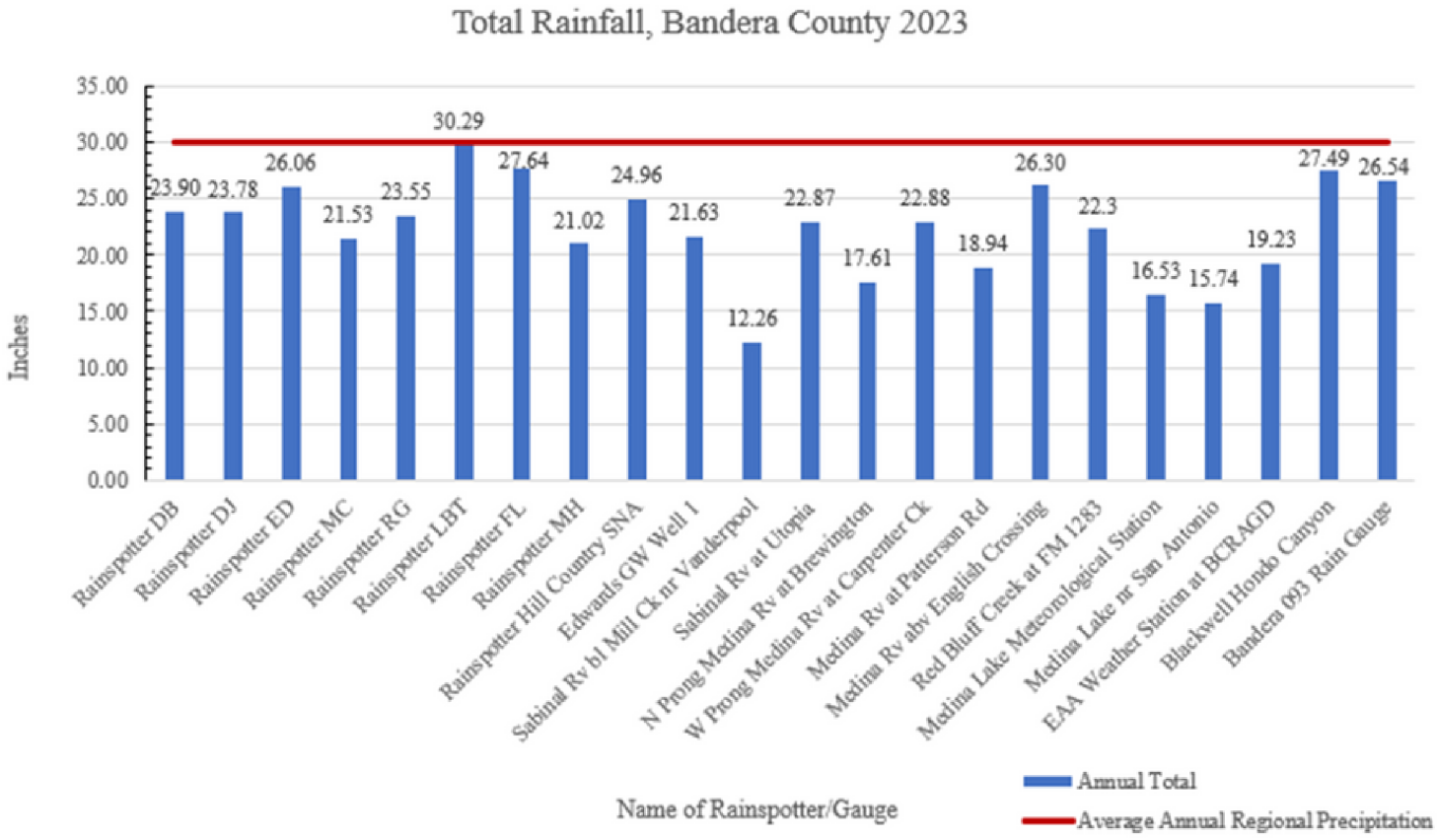
Rainfall Monitoring Program

Gages and Weather Station:
BCRAGD is partnered with Bandera County and the Bandera Electric Cooperative in sponsorship of a USGS streamflow station for water surface stage and river flow and a rainfall gage at Patterson Road in Medina. This gage displays all parameters in real-time via a telemetry unit and is accessible to the public through the USGS website (www.usgs.gov). The Texas Water Development Board, Flood Protection Grants for the Medina River, Sabinal River, and West Sabinal River watersheds allow significant expansion of USGS hydrologic conditions monitoring, resulting in a more comprehensive flood warning toolset for Bandera County.

The District maintains an official Weather Station utilizing HOBOlink courtesy of the EAA's gage at BCRAGD's District office. Conditions can be accessed from the District's website, www.bcragd.org.



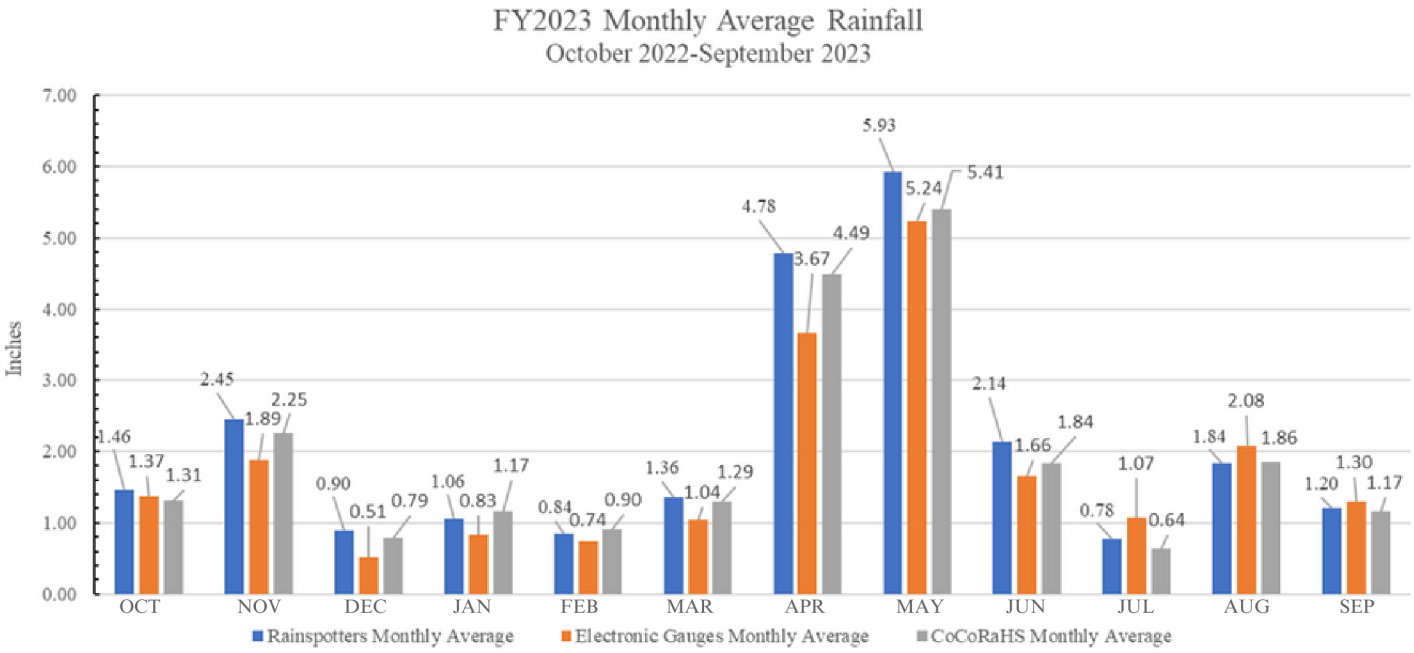
The image above shows the EAA weather station and rain gage that provides information to the HOBOlink.

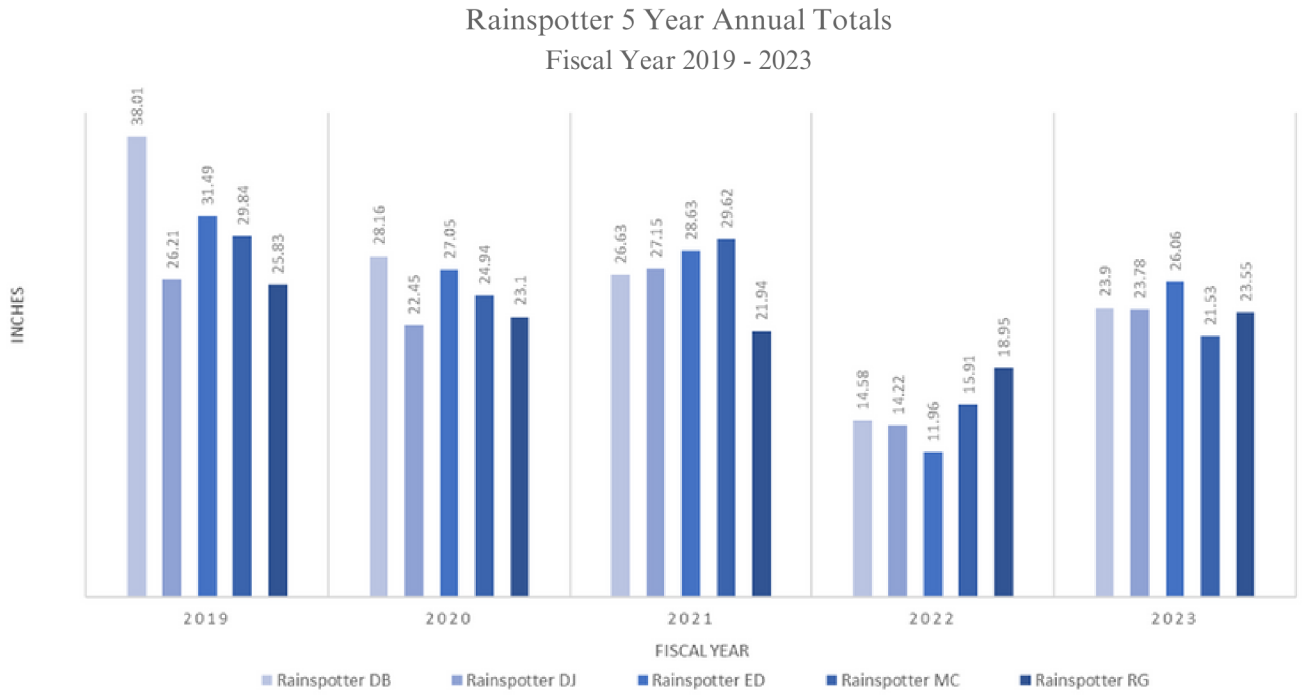


Groundwater Programs

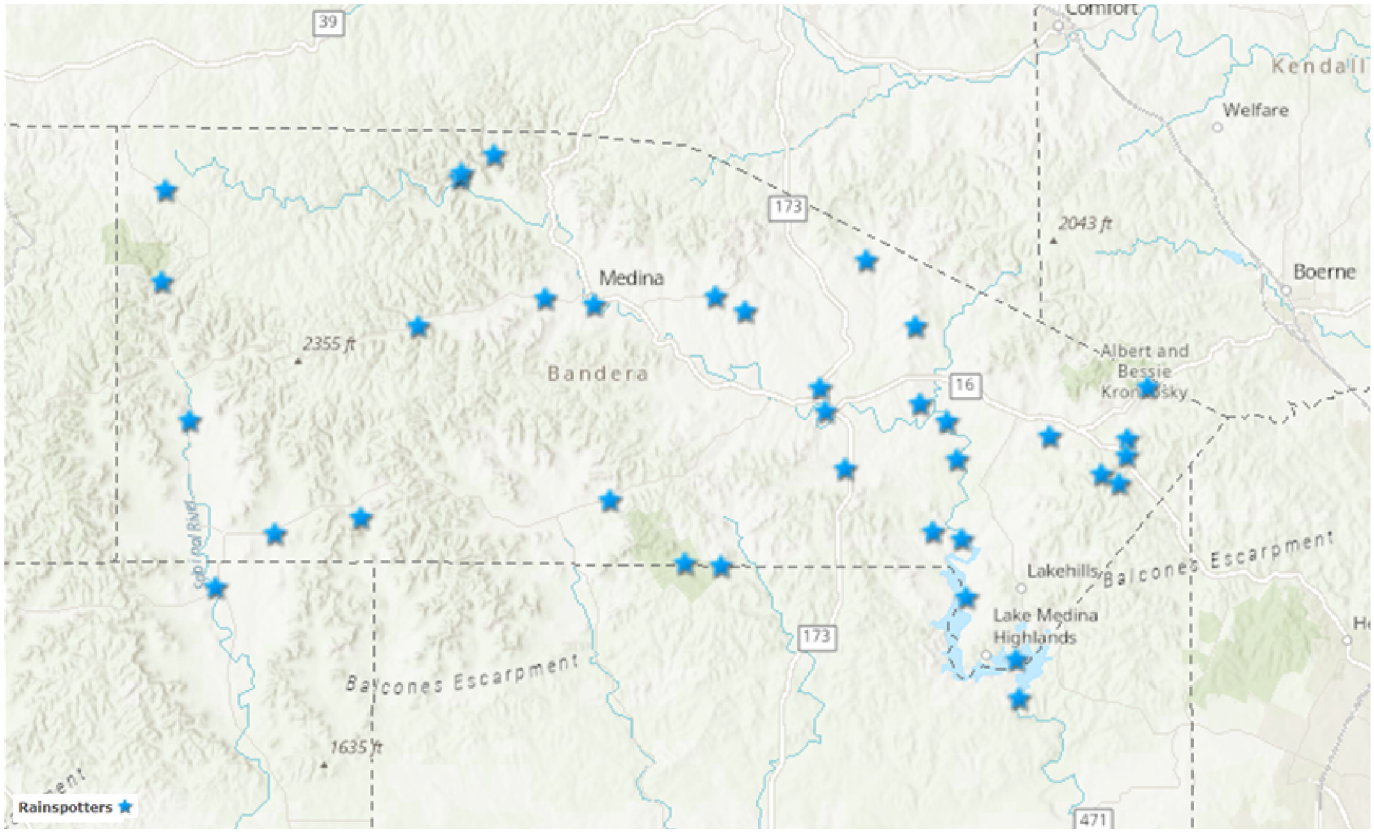
Rainspotters Program

BCRAGD runs a Rainspotters Program in which Bandera County citizens volunteer to record rainfall observed at their homes with a rain gauge provided to them by the District. BCRAGD began the 2023 Fiscal Year with 13 Rainspotters, including Hill Country State Natural Area and Lost Maples State Natural Area. After heavy recruiting, the Rainspotters Program had grown to 26 Rainspotters by the end of the fiscal year.





Groundwater Programs



This map shows the areas in which the district Rainspotters data is collected.

The availability of rainspotters has changed over the years during the duration of the program. Growth and decline of rainspotters within the program have been sporadic in number of participants. The increased opportunity of technological uses for automated rainfall data collection and dissemination is critical and additional active rainspotter participants are needed.



Medina River - Bandera County

Surface Water Programs

TCEQ Texas Clean Rivers Program

BCRAGD has a total of 21 Clean Rivers Program (CRP) sites throughout the San Antonio and Nueces River Basins. The table to the right lists all of the CRP sites that were sampled each quarter. They are separated into sections as follows: Medina River sites, Medina Lake sites, Diversion Lake sites, and Sabinal River / Nueces Basin sites.

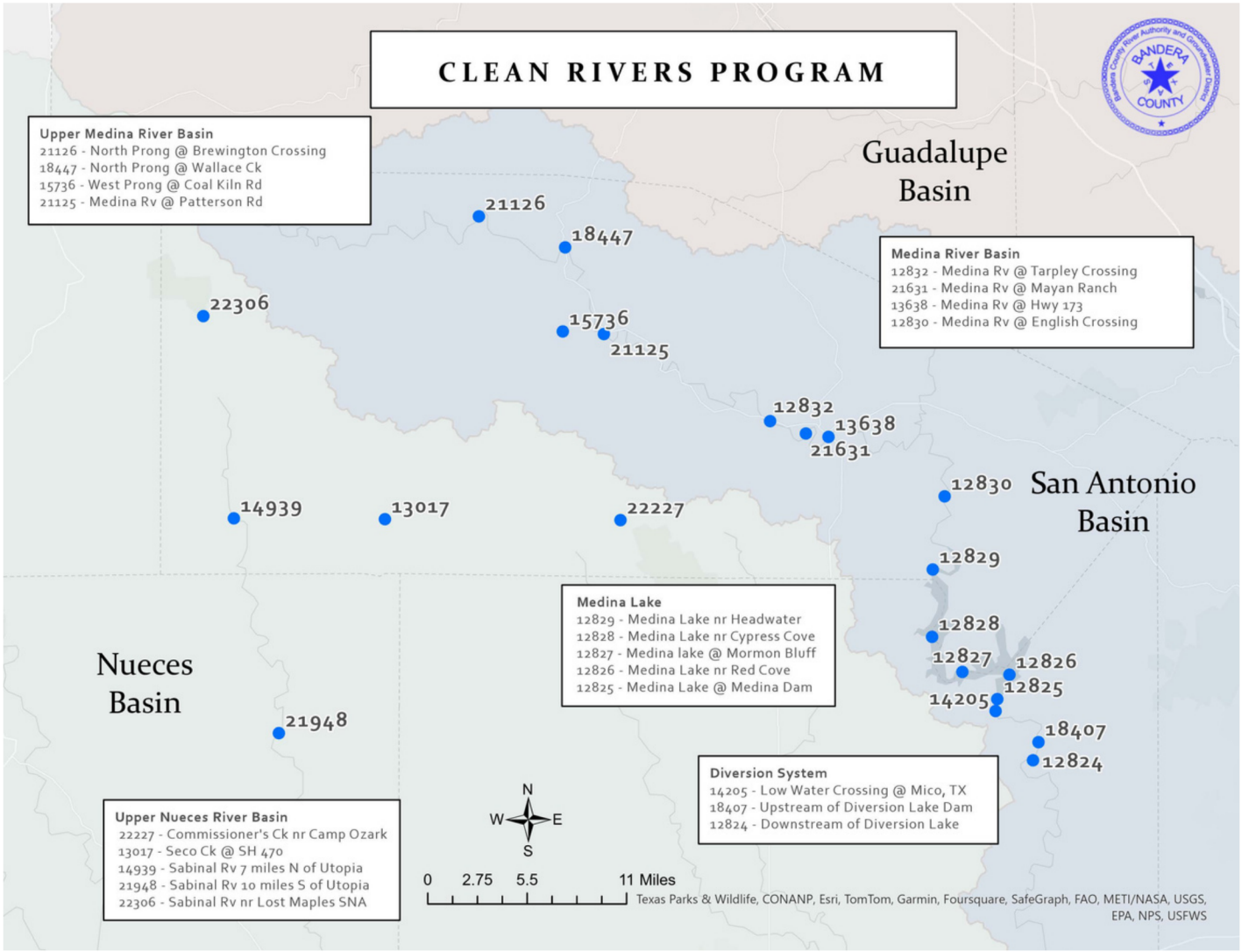
BCRAGD partnered with the San Antonio River Authority (SARA) to participate in the Clean Rivers Program in the San Antonio River Basin in 2012. BCRAGD staff are responsible for sampling 8 sites, which are in Bandera County on the Medina River and summarized to the right. The FY 2023 sample dates for Medina River were November 18 and 31, 2022, January 19, 2023, April 5 and 19, 2023, June 7, 2023, and August 01, 2023. The District completed a successful audit by SARA for the TCEQ Clean Rivers Program on September 15, 2023.

At the end of FY 2016, BCRAGD added 5 CRP sites on Medina Lake along with 3 CRP sites on Diversion Lake, partnering with SARA. The FY 2023 sample dates for Medina Lake were: December 01, 2022, February 15, 2023, and May 17, 2023. The district was unable to collect water quality samples on Medina Lake during the fourth quarter of FY 2023 due to Lake levels being below 5%. Sample dates for Diversion Lake were: October 16, 2022, January 24, 2023, February 7, 2023, March 29, 2023, May 24, 2023, August 30, 2023, and September 19, 2023.

BCRAGD partnered with the Nueces River Authority (NRA) in 2016 to participate in the Clean Rivers Program in the Nueces River Basin. BCRAGD staff is responsible for the 5 sites shown in the chart to the right. The FY 2023 sample dates for the Nueces River Basin were: November 9 and 10, 2022, January 5 and 10, 2023, June 21, 2023, July 6, 2023, September 19 and 21, 2023

Section ID	Site Name
12830	Medina R. @ English Crossing
18447	North Prong Medina R. @ HWY 16 - Wallace Creek
13638	Medina R. @ S HWY 173 (Bandera City Park)
12832	Medina R. @ FM 470 - Tarpley Crossing
21125	Medina R. @ Moffett Park
21126	N. Prong Medina R. @ FM 2107 - Brewington
15736	W. Prong Medina R. - Coalkiln Road
21631	Medina R. @ The Mayan Ranch
12829	Medina Lake near Headwater
12828	Medina Lake between Cypress & Spettel Coves
12827	Medina Lake @ Mormon Bluff
12826	Medina Lake near Red Cove
12825	Medina Lake @ ML Dam West of San Antonio
12824	Medina R. Downstream of Diversion Dam
18407	Diversion Lake just upstream of Diversion Lake Dam
14205	Low water Crossing in Mico, Tx
13017	Seco Creek @ RR 470
14939	Sabinal River @ FM 187
21948	Sabinal River @ Onion Creek
22227	Commissioner's Creek Downstream of Camp Ozark
22306	Sabinal River near Lost Maples SNA

Surface Water Programs



The map shown on the next pages show all of the CRP sites covered by the San Antonio River Authority and Nueces River Authority. The sites sampled by BCRAGD are included in both.



S. Sckittone conducting CRP Samples

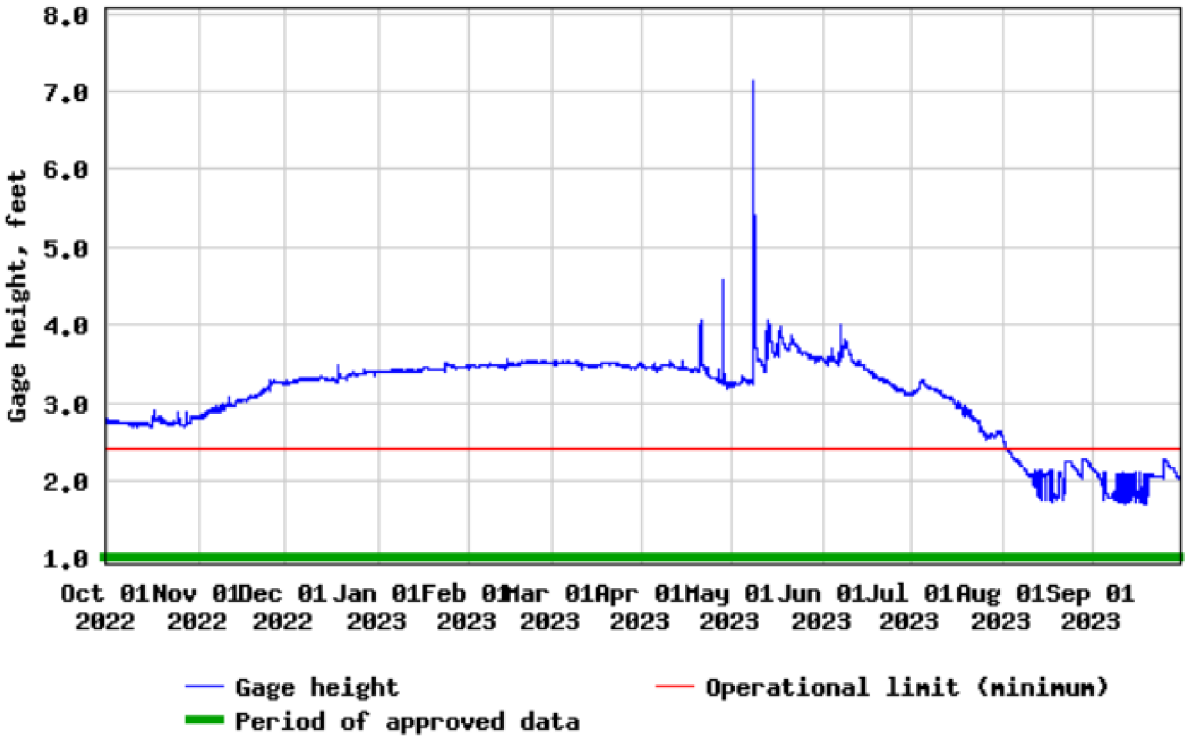


C. Carter & Intern conducting CRP sampling

Surface Water Programs

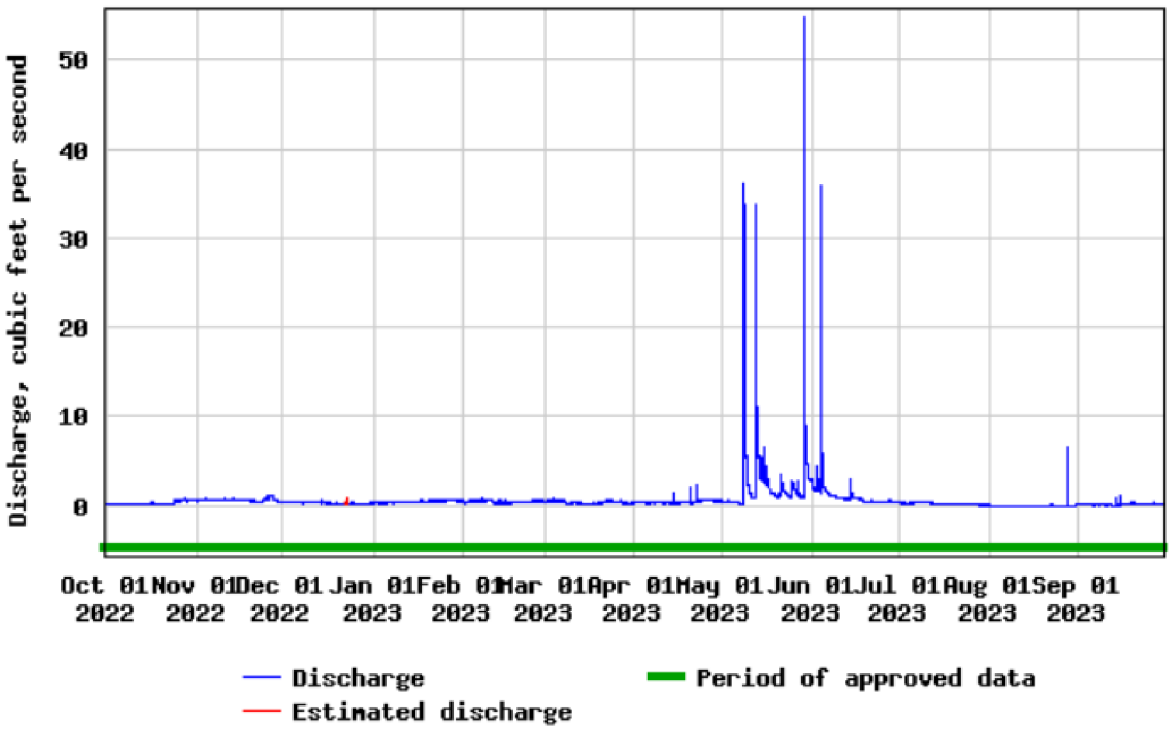
USGS

USGS 08178880 Medina Rv at Bandera, TX



USGS

USGS 08197936 Sabinal Rv bl Mill Ck nr Vanderpool, TX



Data retrieved from usgs.gov on 2/13/2024

Surface Water Programs



Medina River

Surface Water Programs



Diversion Lake at CRP site 14205

During FY 2023, BCRAGD District Staff completed/attended the following events related to Surface Water:

- 05-07.OCT.2022 TWCA Fall Conference
- 06.OCT.2022 Reviewed USGS 'Live Camera Feed' of Medina Lake
- 13.OCT.2022 Bandera – Convening of Grassroots Water Advocates
- 19.OCT.2022 CBSL Watershed Conservation Committee
- 20.OCT.2022 Hill Country Land Team Meeting
- 26.OCT.2022 Diversion Lake CRP
- 27.OCT.2022 Texas Master Naturalist Meeting
  OCT.2022 Reviewed with Shelby and USGS regarding Erroneous Rainfall Data
  02.NOV.2022 Medina River CRP
- 03.NOV.2022 Medina River CRP
- 09.NOV.2022 Sabinal River CRP
  10.NOV.2022 Sabinal River CRP
- 17.NOV.2022 SARFPG Region 12 Meeting
- 30.NOV.2022 Rio Medina CRP
- NOV.2022 Collected GW Water Levels and Water Quality samples
- NOV.2022 Worked with USGS regarding a Planned Thermal Water Temp Survey
- 01.DEC.2022 Medina Lake CRP
- 06.DEC.2022 In-House Sampling
- 06.DEC.2022 Region 13 Legislative Subcommittee
- 07.DEC.2022 Texas Water Foundation
- 13-16.DEC.2022 Fish and Mussel ID Short Course
- DEC.2022 Collected GW Water Levels and Water Quality samples
- 05.JAN.2023 Upper Sabinal CRP
- 05.JAN.2023 Sabinal CRP
- 09.JAN.2023 Upper Sabinal CRP
- 19.JAN.2023 Medina River CRP
- 24.JAN.2023 Diversion Dam CRP
- 25.JAN.2023 AEG Webinar
- 25.JAN.2023 Peer reviewing a paper for Lake and Reservoir Management Journal
- 07.FEB.2023 Diversion CRP
- 07.FEB.2023 Rio Medina CRP
- 08.FEB.2023 UGRA Meeting
- 08-10.FEB.2023 Urban Riparian Workshop
- 10.FEB.2023 Texas Hill Country Conservation Network Meeting
- 14.FEB.2023 Meeting Hill Country Alliance
- 15.FEB.2023 Medina Lake CRP

Surface Water Programs

- 16.FEB.2023 Field trip to Albert & Bessie Kronkosky State Natural Area
- 16.FEB.2023 CBSL Core Team Meeting
- 22-26.FEB.2023 Texas Chapter American Fisheries Society Conference
- 27-28.FEB.2023 Texas Water Day Meeting
- MAR.2023 Reviewed QA QC procedures and applications for the English Crossing 14-15.MAR.2023 Quarterly In-house Sampling
- 15.MAR.2023 CBSL Watershed Conservation Committee
- 16.MAR.2023 Upper Sabinal CRP
- 17.MAR.2023 CRP Stakeholder Meeting SARA
- 22.MAR.2023 Sabinal CRP
- 22.MAR.2023 The Brackish Groundwater Production Zone
- 23.MAR.2023 ASR Presentation Run-through
- 24.MAR.2023 Nueces River Authority CRP Coordinated Monitoring Meeting (Virtual)
- 28.MAR.2023 Mayan Biological Project
- 29.MAR.2023 Diversion Dam CRP
- 29.MAR.2023 Rio Medina CRP
- 05.APR.2023 Medina River CRP
- 05.APR.2023 ECFP Sampling
- 06.APR.2023 SARA CMM
- 13.APR.2023 ECP Sampling
- 19.APR.2023 Upper Medina CRP
- 20.APR.2023 ECP Sampling w/ PHab
- 27.APR.2023 ECP Sampling
- 03.MAY.2023 Mussels Surveying
- 04.MAY.2023 ECP Sampling
- 04.MAY.2023 ECP Standard Review
- 11.MAY.2023 ECP Sampling
- 17.MAY.2023 Medina Lake CRP
- 18.MAY.2023 ECP Sampling
- 24.MAY.2023 Diversion CRP
- 24.MAY.2023 Rio Medina CRP
- 25.MAY.2023 ECP Sampling
- 30.MAY.2023 Summer In-House
- 01.JUN.2023 Quarterly In-House
- 06.JUN.2023 Quarterly In-House
- 07.JUN.2023 Medina River CRP
- 07.JUN.2023 ECP Sampling w/ Field Duplicates
- 08.JUN.2023 ECP Sampling
- 14.JUN.2023 Kayaking River Recon - Brewington
- 15.JUN.2023 ECP Standard Review
- 15.JUN.2023 ECP Sampling
- 21.JUN.2023 Summer In-House
- 21.JUN.2023 Upper Sabinal CRP
- 21.JUN.2023 Summer In-House Resample
- 22.JUN.2023 Meeting with HCI
- 22.JUN.2023 ECP Sampling
- 29.JUN.2023 ECP Sampling
- 06.JUL.2023 Sabinal CRP
- 06.JUL.2023 Summer In-House Sampling
- 06.JUL.2023 ECP Sampling and Biological Sampling
- 17.JUL.2023 Mayal Biologial
- 18.JUL.2023 Rio Medina CRP
- 19.JUL.2023 Summer In-House Sampling
- 20.JUL.2023 ECP Sampling
- 20.JUL.2023 Summer In-House Resample
- 21.JUL.2023 Mtg. Bacterial Source Tracking Infrastructure Information
- 25.JUL.2023 Arundo Survey
- 26.JUL.2023 Arundo Survey
- 27.JUL.2023 Arundo Survey
- 27.JUL.2023 ECP Sampling
- 02.AUG.2023 Arundo Survey
- 02.AUG.2023 Upper Medina CRP
- 02.AUG.2023 ECP Stander Review
- 03.AUG.2023 Summer In-House Sampling
- 03.AUG.2023 ECP Sampling
- 04.AUG.2023 HAB Analysis at Bandera City Park
- 09.AUG.2023 Fish & Turtle Recon
- 10.AUG.2023 ECP Sampling w/ Field Duplicates
- 17.AUG.2023 Summer In-House Sampling

Surface Water Programs

- 17.AUG.2023 Summer In-House Sampling
- 17.AUG.2023 ECP Sampling
- 29.AUG.2023 Summer In-House Sampling
- 20.AUG.2023 Diversion CRP
- 07.SEP.2023 ECP Sampling
- 12.SEP.2023 Quarterly In-House Sampling
- 12.SEP.2023 Meeting with TWRI
- 13.SEP.2023 ECP Stander Review
- 13.SEP.2023 ECP Sampling
- 15.SEP.2023 CRP Audit
- 19.SEP.2023 Upper Sabinal CRP
- 19.SEP.2023 Rio Medina CRP
- 21.SEP.2023 ECP Sampling
- 21.SEP.2023 Sabinal CRP
- 26-28.SEP.2023 SWQM Workshop
- S. Sckittone attended weekly meetings with Texas Master Naturalist to get her certification



C. Carter collecting specimens for ongoing scientific research



C. Carter & L. Sparks collecting biometric data on a turtle



L. Sparks Implanting tag into specimen

Surface Water Programs

District In-House Sampling Programs

In order to preserve and protect the headwaters of the Medina and Sabinal Rivers, as well as Medina Lake, BCRAGD conducts multiple In-House programs to monitor water quality and inform the public of any potential concerns.

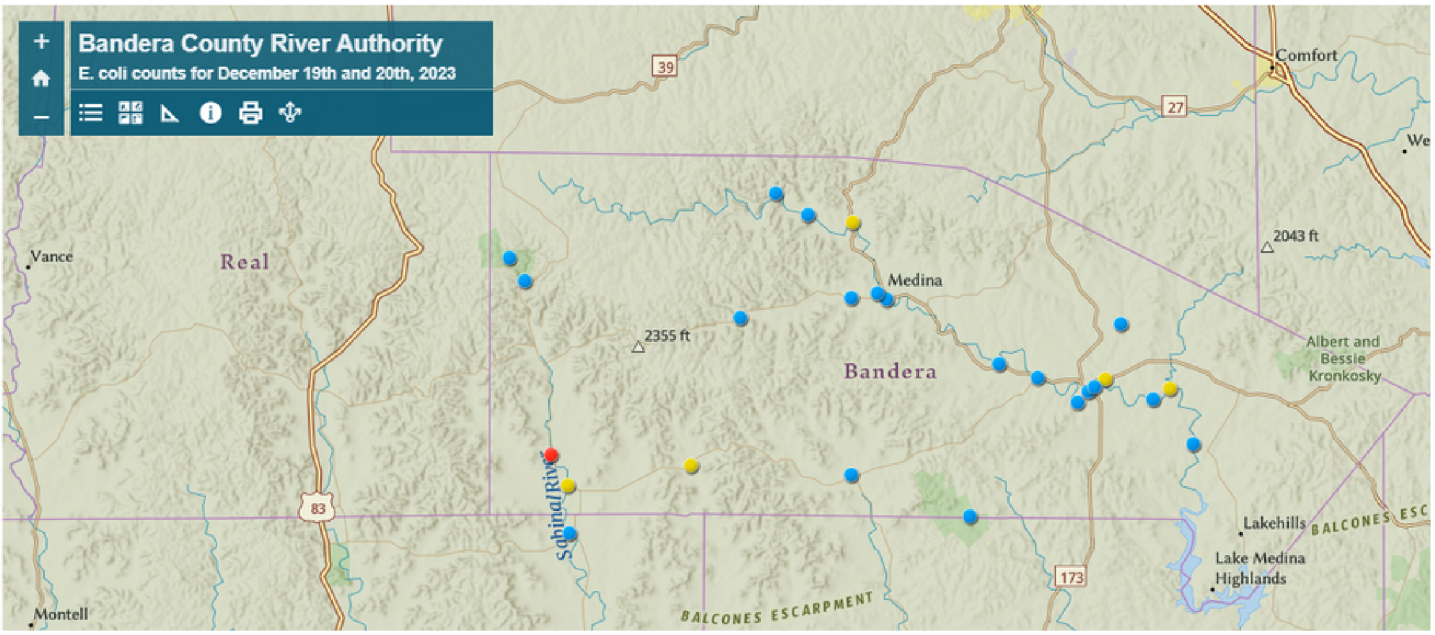
Surface Water Quality Monitoring

The Surface Water Quality Sampling Program was initiated in order to monitor water quality throughout Bandera County. It has been modified to better serve the community by increasing the number of sites for a more representative data collection, reporting E. coli counts via local newspapers and the District website to the citizens of Bandera County for safety. BCRAGD's In-House Surface Water Sampling Program allows District staff to detect bacteria spikes in the Medina and Sabinal Rivers, as well as Medina Lake, and follow up with an immediate investigation.

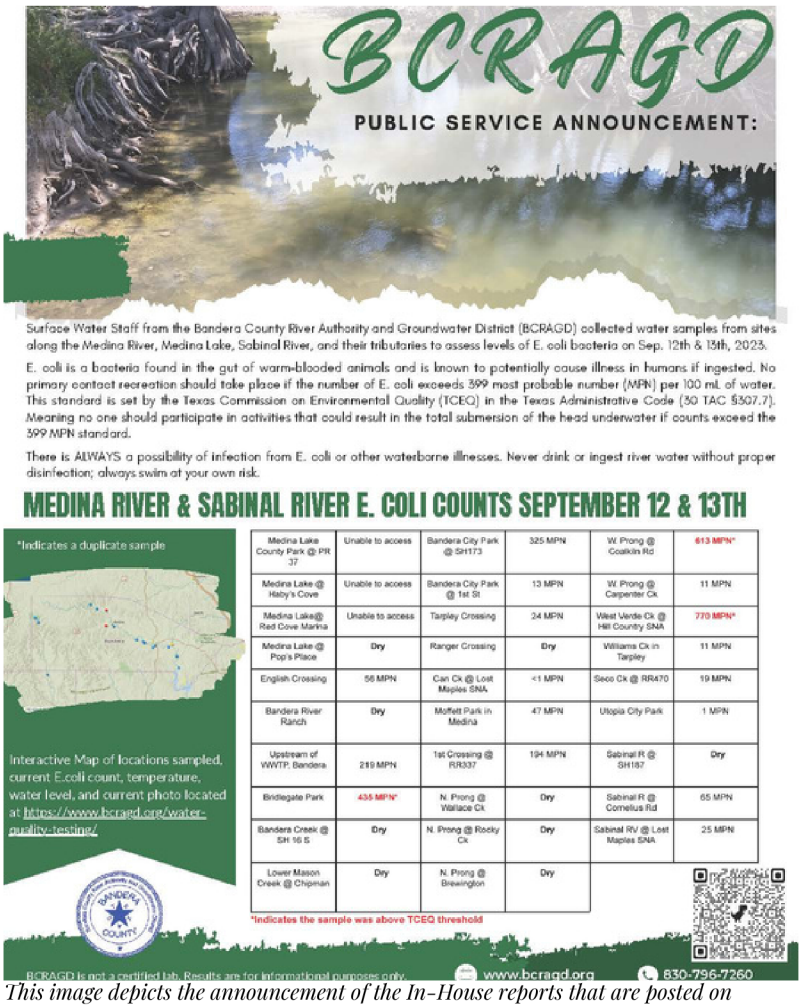
From October 2022 to September 2023, there were 19 instances with E.coli counts over the TCEQ standard of 399 MPN (most probable number) per 100 mL of sample water. The District recommends no swimming to take place in areas where the count is over the limit. That sample site area is then investigated, beginning with a re-sample effort. If the MPN remains above 399 MPN, further investigations are made.

Site #	Location	Site #	Location
ML-1.04	Medina Lake @ County Park NE of Boat Ramp	MP-3.01	Medina R @ Moffett Park
MR-1.01	Medina R @ English Crossing	MRN-3.01	N. Prong Medina R @ Rocky Creek Crossing FM 2107
MR-1.02	Medina R @ Bridlegate Park	MRN-3.03	N. Prong Medina R @ Brewington Crossing FM 2107
MR-1.03	Medina R @ Bandera River Ranch Park	WC-3.01	N. Prong Medina R @ Wallace Creek
BC-2.01	Bandera Creek @ SH 16	MRW-3.01	W. Prong Medina R @ Coal Kiln Rd RR 337
LMC-2.01	Lower Mason Creek @ Chipman Ln.	MRW-3.03	W. Prong Medina R @ Carpenter Creek @ RR 337
MR-2.025	Above Sewage Treatment Plant Effluent	SC-4.01	Seco Creek @ RR 470 Crossing
MR-2.03	Medina R @ Bandera City Park HWY 173	CC-4.01	Sabinal R @ Cornelius Rd Crossing
MR-2.05	Medina R @ Bandera City Park 1st Street Bridge	SR-4.03	Sabinal R in Vanderpool @ SH 187
MR-3.01	Medina R @ RR 337	LM-4.03	Sabinal R @ Lost Maples 1st Bridge
MR-3.04	Medina R @ Tarpley Crossing	WVC-2.01	Hill Country State Natural Area @ FM 1077
MR-3.05	Medina R @ Ranger Crossing HWY 16	WC-4.01	Williams Creek Crossing
UTOP	Utopia City park	CC-1.01	Can Creek @ Lost Maples
PC-1.01	Privilege Creek @ SH 16	MR-3.06	Medina @ Peaceful Valley
ML-2.07	Medina Lake @ Red Cove Marina	ML.1.06	Medina Lake Pop's Place
ML-2.06	Medina Lake @ Haby's Cove		

Surface Water Programs



The surface water team built a digital map utilizing ESRI's ArcGIS software to create an interactive web application to allow the public to view water quality results on a mapping platform. Public users have access to the following information: site location, bacteria results, water temperature, and a snapshot of current stream conditions. The link to the map is located on the district website at www.bcragd.org.



This image depicts the announcement of the In-House reports that are posted on the District Website and Social Media Platforms.



Sonde Meter being used to conduct surface water sampling

Surface Water Programs

Below is the combined summary of BCRAGD's In-House and Clean Rivers Program

1st Quarter: (October 2022 - December 2022)

- 16.OCT.2022 Diversion Lake CRP
- 09.NOV.2022 Sabinal River CRP
- 10.NOV.2022 Sabinal River CRP
- 18.NOV.2022 Medina River CRP
- 31.NOV.2022 Medina River CRP
- 01.DEC.2022 Medina Lake CRP
- 06.DEC.2022 Quarterly In-House
- 08.DEC.2022 Quarterly In-House

3rd Quarter: (April 2023 - June 2023)

- 5.APR.2023 Medina River CRP
- 19.APR.2023 Medina River CRP
- 17.MAY.2023 Medina Lake CRP
- 24.MAY.2023 Diversion Lake CRP
- 01.JUN.2023 Quarterly In-House
- 7.JUN.2023 Medina River CRP
- 06.JUN.2023 Quarterly In-House
- 08.JUN.2023 Quarterly In-House
- 21.JUN.2023 Sabinal River CRP
- 21.JUN.2023 Summer In-House
- 28.JUN.2023 Summer In-House



2nd Quarter: (January 2023 - March 2023)

- 05.JAN.2023 Sabinal River CRP
- 10.JAN.2023 Sabinal River CRP
- 19.JAN.2023 Medina River CRP
- 24.JAN.2023 Diversion Lake CRP
- 07.FEB.2023 Diversion Lake CRP
- 15.FEB.2023 Medina Lake CRP
- 16.MAR.2023 Sabinal CRP
- 14.MAR.2023 Quarterly In-House
- 15.MAR.2023 Quarterly In-House
- 22.MAR.2023 Sabinal CRP
- 29.MAR.2023 Diversion Lake CRP

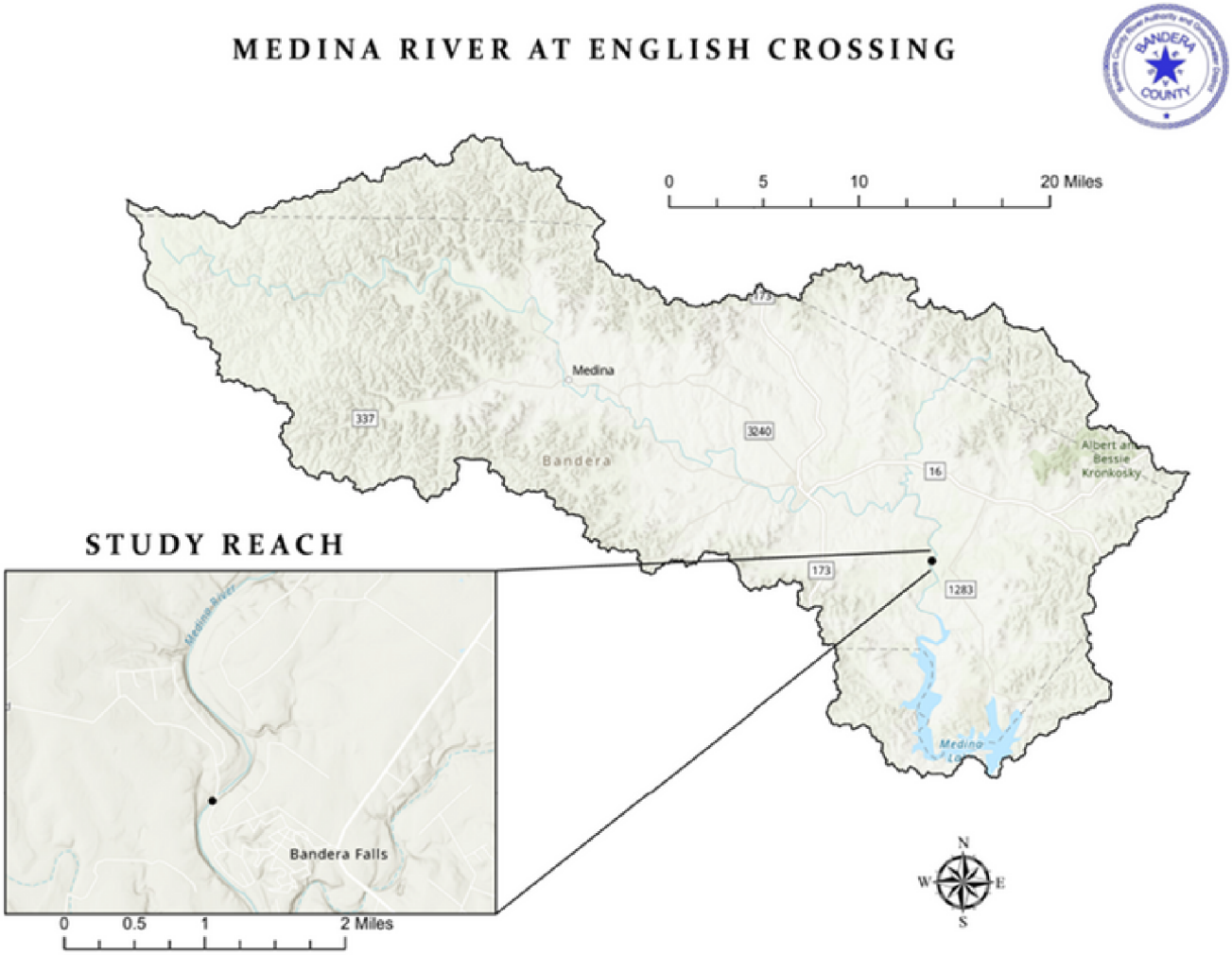
4th Quarter: (July 2023 - September 2023)

- 06.JUL.2023 Sabinal River CRP
- 06.JUL.2023 Summer In-House
- 18.JUL.2023 Diversion CRP
- 19.JUL.2023 Summer In-House
- 01.AUG.2023 Medina River CRP
- 03.AUG.2023 Summer In-House
- 17.AUG.2023 Summer In-House
- 29.AUG.2023 Summer In-House
- 30.AUG .2023 Diversion Lake CRP
- 12.SEP.2023 Quarterly In-House
- 13.SEP.2023 Quarterly In-House
- 19.SEP.2023 Diversion Lake CRP
- 19.SEP.2023 Sabinal River CRP
- 20.SEP.2023 CRP Audit
- 21.SEP.2023 Sabinal River CRP

Surface Water Programs

Medina River Microbial Analysis

The Bandera County River Authority & Groundwater District has begun a high-resolution bacterial monitoring study on the Medina River at English Crossing Road to better understand bacterial loading in relation to instantaneous water quality parameters. The data derived during this project will provide crucial information to better protect our watershed. Please see the project's executive summary for detailed information regarding the study.



Medina River Microbial Analysis - Executive Summary

Under section 303(d) of the Clean Water Act, Segment 1905 of the Medina River is classified as impaired for contact recreation due to elevated bacteria levels. The primary goal of this project is to restore segment 1905 of the Medina River to meet the water quality standards set forth by the State of Texas for the health and benefit of the community and the environment. These water quality standards are codified in Ch. 307 of the Texas Administrative Code [1],

Rule §307.7
(A) Freshwater
Primary contact recreation 1. The geometric mean criterion for E. coli is 126 per 100 mL. In addition, the single sample criterion for E. coli is 399 per 100 mL.

The objectives of Task I-III are to successfully provide high resolution temporal mapping of bacterial loading on the Medina River at English Crossing to increase the probability of implementing a representative Bacterial Source Tracking (BST) analysis to enhance future remediation efforts and watershed management decisions. Data derived from these studies will be used to design and implement specific Best Management Practices (BMP's) to improve water quality and restore watershed health within this reach.

Task I will use an adaptive management strategy to provide high resolution data on the spatial and temporal characteristics of bacterial loading in relation to stream flow conditions, diurnal and seasonal variation, instantaneous water quality parameters, and general watershed response to significant precipitation events. The methods and procedures to accomplish Task I are detailed within this QA project plan.

Task II will incorporate the collection of one or more BST samples to be analyzed. The BST results will indicate a percent contribution of E. coli bacteria generated by human and/or non-human sources. The timing and methods of these collection efforts will be based on the interpretation of data collected in Task I to increase the probability of analyzing representative bacterial sourcing.

Task III shall provide a detailed remediation plan and/or a watershed protection plan that will incorporate specific BMP strategies based on data derived from Task I & II. These data should provide a course of action on remediation efforts and watershed management decisions needed to successfully reduce bacterial loading and restore water quality of the Medina River at English Crossing.

Surface Water Programs



L. Sparks & C. Carter conducting ECP measurements



C. Carter taking environmental data at a CRP site on the Sabinal River



In-House Sampling site gone dry, upstream of Ranger Crossing.



L. Sparks conducting an Arundo Survey

Surface Water Programs

Invasive Species Management

BCRAGD Staff monitor invasive species activity in Bandera County. Of particular interest is the invasive and noxious species *Arundo donax* (Giant Reed), classified as a "noxious plant species" under the Texas Administrative Code, Title 4, Part 1, Chapter 19, Subchapter T. The classification means *Arundo donax* has "serious potential to cause economic or ecological harm to the State."

The Nueces River Authority has been actively and successfully managing Arundo Donax along a portion of the Sabinal River in Bandera County for the past 12 years. BCRAGD has provided funding for the Nueces River Authority to continue treating the *Arundo donax* within their original project boundaries. BCRAGD Staff has also assisted the Nueces River Authority in the chemical treatment and physical removal of Arundo, as well as technical advice to assist in their current efforts.

The District is currently implementing *Arundo donax* management on the headwaters of the Medina River by joining the Healthy Creeks Initiative partnership with the Texas Parks and Wildlife Department. This initiative, which began in the summer of 2018, offers workshops and no-cost treatment of Arundo and maintains ongoing monitoring and re-treatment as needed. Currently, BCRAGD has over 45 landowners actively participating in the HCI program consisting of over 4 acres of total Arundo area. If you have Arundo Donax on your property and want more information on how to properly control it, please call BCRAGD at (830) 796-7260. To learn more about the Healthy Creeks Initiative, visit the Texas Parks and Wildlife Department website: https://tpwd.texas.gov/landwater/water/aquatic-invasives/healthy-creeks.html.



BCRAGD District staff preparing for Medina Lake Sampling.


L. Sparks & C. Carter conducting an Arundo Survey


L. Sparks conducting an Arundo Survey

Surface Water Programs



Zebra Mussel cluster

Zebra Mussels

BCRAGD also monitors Zebra Mussels- small, fresh-water mussels that spread by clinging to boat hulls, bilges, and bait buckets. Zebra Mussels hinder water recreation, destroy aquatic ecosystems, ruin beaches, and damage municipal water supplies and intake structures. To prevent this, remove all debris from your boat and trailer, and drain all water from the boat, engine, and bait bucket. Then, let the boat dry for at least a week or wash it with high-pressure, hot, soapy water before boating on another waterbody.

BCRAGD staff continued to field questions from concerned citizens about the zebra mussel infestation at Medina Lake. Many of these questions revolved around the current lake levels in the hopes that this would curb the current population issues. Along with alleviating concerned citizens, staff continued to conduct thorough reviews of the current and ongoing research into methods of zebra mussel control and detection.



Surface Water Programs

During FY 2023, BCRAGD District Staff completed/attended the following for Invasive Species Management:

- BCRAGD District staff conducted Arundo Surveys on 25.JUL.2023, 26.JUL.2023, 27.JUL.2023, 02.AUG.2023.
- 16.NOV.2022 Invasive Mussel Collaborative Tools and Accomplishments
- 13-16.DEC.2022 Fish and Mussel ID Short Course
- 25.JAN.2023 AAMN Webinar - Invasive Species
- 08-10.FEB.2023 Urban Riparian Workshop
- 22-26.FEB.2023 Texas Chapter American Fisheries Society Conference
- 06.APR.2023 SARA CMM
- 03.MAY.2023 Mussels Surveying
- 31.MAY.2023 Riparian Health Survey, Biologicals, Invasive Species Management.
- 14.JUN.2023 Kayaking River
- 26-28.SEP.2023 SWQM Workshop



Pictured Above is an Arundo Rhizome Structure.



Arundo Donax stand in Bandera County.



C. Carter & L. Sparks conducting visual identification of aquatic plant life



Arundo Donax stand in Bandera County.

Surface Water Programs



Photo taken of Medina Lake.



Photo of Medina Lake topographic map from USGS.



Photo taken from the Medina Lake Camera hosted by USGS, reporting realtime images of the Lake from 18.FEB.2024.

Medina Lake Management

Medina Lake is an important natural resource for the citizens of Texas. The lake serves not only as an irrigation water source and a popular recreational site, but it also is an important drinking water reservoir for the entire region. The waters in the lake are some of the most pristine in the county. It is imperative that the lake be preserved and protected.

The Bandera County River Authority and Groundwater District is committed to protecting, preserving, and monitoring Medina Lake. Since 2015, the BCRAGD has taken a much more active approach in protecting the quality of Medina Lake. One approach BCRAGD has taken has been to build on the Zebra Mussel montioring program in partnership with TPWD to include efforts in looking at future control methods via chemical means. The District also monitors the quality of the water through the CRP program and a study in partnership with USGS.

The BCRAGD has an interest in the human health and safety associated with Medina Lake. In FY 2022, BCRAGD Staff acquired a Hazard Buoy for immediate deployment in the lake to warn boaters of hazards. Staff have also advised numerous people all around the lake on potential best management practices for improvements of both their land and reducing the environmental impacts harmful practices could have on Medina Lake. BCRAGD also participated in numerous Fish Surveys and Fish Stockings completed by TPWD in the lake over the past few years.

Surface Water Programs



Medina River upstream of Brewington Crossing



C. Carter conducing Sampling on North Prong Medina River at Brewington.



L. Sparks conducting an Arundo Survey.

Surface Water Programs

Aquatic Life Monitoring with San Antonio River Authority

On July 17, 2023 BCRAGD District Staff assisted the San Antonio River Authority in conducting an Aquatic Life Monitoring event on the Medina River. This assessment is used to identify species diversity and community composition of freshwater fish and to measure physical habitat conditions along a specific reach of the Medina River. These events help to determine if the designated aquatic life uses are being attained.



C. Carter and intern P. Schnoebelen assisted San Antonio River Authority employees in conducting an Aquatic Life Monitoring (ALM) event at the Mayan Ranch.

BCRAGD Surface Water Highlights FY 2023

December 13th through 16th, 2022, Clint Carter, Levi Sparks, and Shelby Sckittone attended a Fish & Mussel ID short course, giving the attendees 30 hours of participation CE's. The course included lecture and laboratory components. Additionally, we reserved some time for participants to bring specimens and work on identification in the laboratory.



Surface Water Programs

BCRAGD Surface Water Highlights FY 2023

The District installed a rain gauge for Lost Maples SNA. This gauge now reports their rainfall amounts to the District. Providing us with a new reporting location in the county's northwestern corner.



Rain Gauge at the Lost Maples



Aquatic Life Monitoring



Aquatic Life Monitoring



Aquatic Life Monitoring

Mayan Biological - Aquatic Life Monitoring was held on March 28, 2023 & July 17, 2023. This is the biological component of TCEQ's Clean Rivers Program: the BCRAGD Staff Clinton Carter, Levi Sparks, and Shelby Sckittone with the San Antonio River Authority. Aquatic Life Monitoring assessments identify species diversity and community composition of freshwater fishes and measure physical habitat conditions along a specific reach of the Medina River.

Surface Water Programs

BCRAGD Surface Water Highlights FY 2023

In the previous quarter, BCRAGD employees began long-term scientific research projects to look at growth rates and survival rates of multiple species across multiple taxonomic groups in the Upper Medina Watershed. The primary focus of these projects is to have all field staff of BCRAGD trained in identification and marking techniques used in these studies and to refine the methodologies to allow for the greatest chance of marking success and specimen survival. These studies are accomplished by using capture-mark-recapture techniques. Two taxonomic groups were focused on for this quarter. The first group, the fish of the Micropterus genus, were captured and marked using 2 VIA tags, one in the dorsal fin and one in the caudal fin. The second group were turtles of the Pseudemys genus marked using a Scute Notch Code. Both groups' markings allow for individual identification of specimens for future analyses.





In November of 2022, Shelby Sckittone received her Master Naturalist certification with the Alamo Area Chapter. Since then, she has volunteered 30+ hours at various locations in order to maintain her credits. By attending MN meetings, talks, and field trips, Shelby has learned about local flora and fauna and management, which she, in turn, shares with homeowners during land stewardship consultations and restoration tasks at the District. This directly benefits Bandera County citizens by enlightening them about native plant uses in landscaping to conserve water and introducing them to their local MN chapter.

Surface Water Programs

BCRAGD Surface Water Highlights FY 2023

On August 9th, 2023, Bandera County River Authority & Groundwater District employees conducted a sampling trip to a private landowner's property on the Medina River. The trip was done to further the District's scientific research. This particular trip had two goals. The first goal was an ongoing turtle research project involving hand-catching turtles. If any species of concern for the study is caught, that specimen will be marked with a unique Scute Notch Code to allow for individual recognition in the future. The primary group of concern for this project is the River Cooters (*Pseudemys* sp.). The second goal was a baseline inventory of fish species in the Medina River Basin. In regards to these two goals, the following were accomplished:

- A total of 6 turtles were collected consisting of two separate species.
- Five turtles collected were from the group Pseudemys and were subsequently measured and marked with individual Scute Notch Codes.
- The remaining turtle was a Common Musk Turtle (*Sternotherus odoratus*).
- Many fish species were seen on sight, including Gray Redhorse (*Moxostoma congestum*), Largemouth Bass (*Micropterus salmoides*), and many different sunfish species (*Lepomis* sp.).
- The concentration of fish in the area will warrant future fish collection for separate fish studies being conducted by the District.



The District has partnered with Texas Parks and Wildlife to control the non-native, invasive species known as Arundo donax. This cane-like plant produces seeds, but the seeds are not viable. Instead, it regenerates from the breaking of individual nodes on the stalk of the plant. Throughout the quarter, the district team conducted Arudo Surveys.

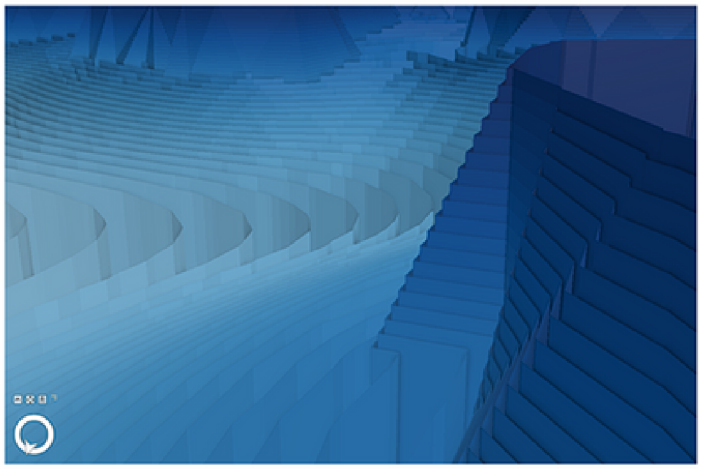
June through August, BCRAGD Staff conducted In-House bacteria collections every two weeks for the benefit of the public as they seek our region's waterways for recreational activities. Staff collect, incubate, and analyze surface water for E. coli and post the results, photos, and field data on an interactive map on our website for the public.

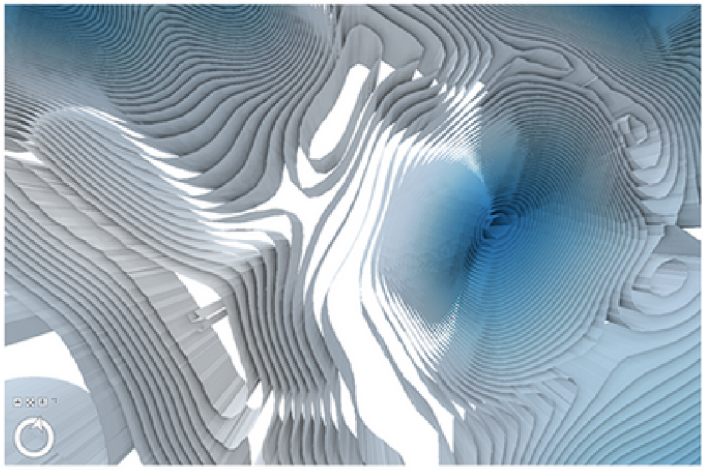
The annual Audit for the Clean Rivers program was conducted on September 15, 2023. This Audit ensures that procedures and data stay consistent from year to year.

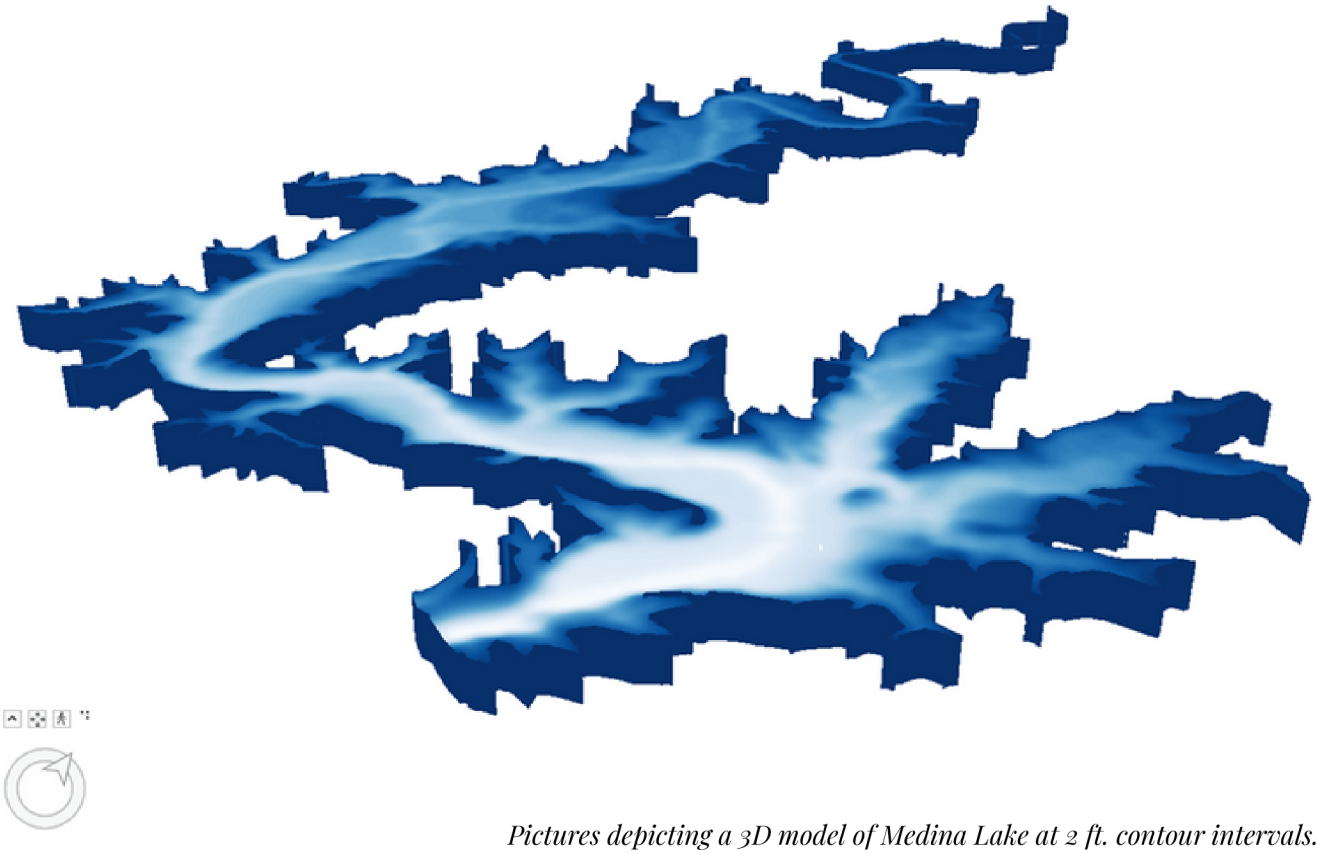
Surface Water Programs

BCRAGD Surface Water Highlights FY 2023

BCRAGD recently purchased software that allows for three-dimensional modeling using ArcGIS. This software has many potential uses in both surface water modeling and groundwater/aquifer modeling. It will also allow the District to use data sources already in existence and held by the District to centralize the data and create viewing portals to allow for a better understanding of Bandera County's surface water and groundwater resources.







Pictures depicting a 3D model of Medina Lake at 2 ft. contour intervals.

Surface Water Programs

USGS Flood Early Warning System (FEWS)

Medina River Flood Early Warning System

On June 1, 2016, the Bandera County River Authority and Groundwater District (BCRAGD) applied for and received a 50/50 cost-shared funding grant from the Texas Water Development Board (TWDB) (total project cost - $530,300.00) to contract with the U.S. Geological Survey (USGS) for development of a flood warning tool set for the Medina River in Bandera County, Texas. A contract agreement was approved and signed by both agencies (TWDB and BCRAGD) on August 25, 2016.

The study area encompassed a 23-mile reach of the Medina River from the confluence of Winans Creek to English Crossing Road above Medina Lake (Figure 1). The USGS utilized a Hydrologic Engineering Center-River Analysis System (HEC-RAS) model to apply data from existing streamflow-gaging stations, including two newly installed 'stage only' streamflow-gaging stations with rainfall monitors along the headwaters of the North and West Prongs of the Medina River. A flood atlas, consisting of a library of flood-inundation maps for a range of streamflow conditions, was developed and included on the USGS Flood Inundation Mapping Program (FIMP) website (http://water.usgs.gov/osw.flood_inundation). The Flood Inundation Maps (FIMS) depict estimates of the area extent and depth of flooding corresponding to selected water levels (stages) at the USGS streamflow-gaging station 08178880 on the Medina River at Bandera, Texas.

USGS Twitter

- #TX RainWatch https://twitter.com/USGS_TexasRain
- #TX FloodWatch https://twitter.com/USGS_TexasFlood
- #USGS[streamgage number] (e.g.#USGS08178880)



BCRAGD's Flood Science Manager L. Thomas, presenting the installed USGS stream gages to the Texas Water Development Board.

They are:

- USGS National Water Information System https://waterdata.usgs.gov/nwis/
- North Prong gage at Brewington Creek https://waterdata.usgs.gov/nwis/inventory/?site_no=08178861
- West Prong gage at Carpenter Creek Road https://waterdata.usgs.gov/nwis/inventory/site_no=08178871
- Patterson Rd. gage https://waterdata.usgs.gov/nwis/inventory/site_no=0817887350
- Bandera gage https://waterdata.usgs.gov/tx/nwis/inventory/site_no=08178880
- USGS Texas Water Dashboard https://txpub.usgs.gov/txwaterdashboard/
- USGS WaterAlert https://water.usgs.gov/wateralert/
- USGS Water On-The-Go https://txpub.usgs.gov/water-onthego/

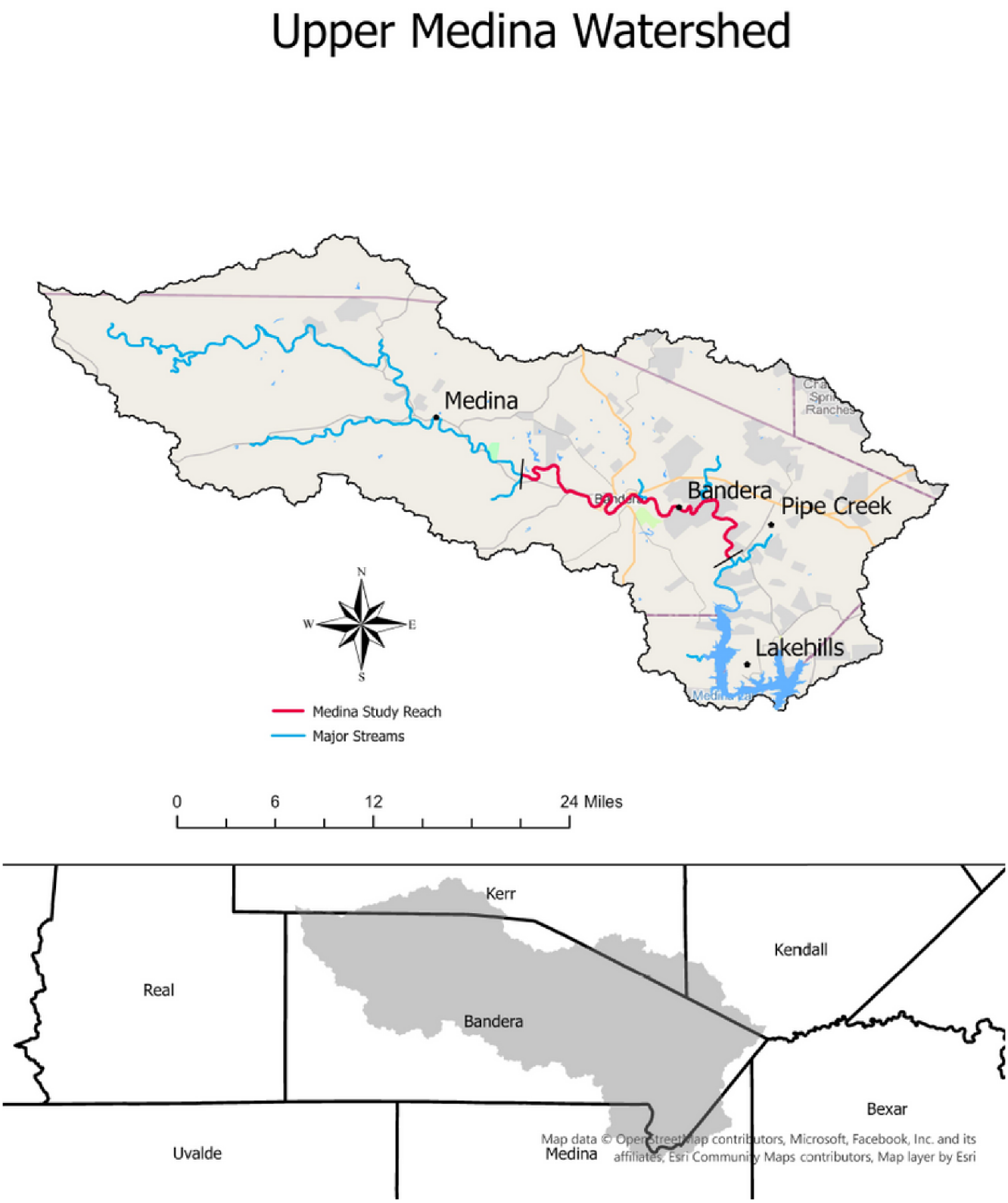


Figure 1: Upper Medina Watershed

Surface Water Programs

Sabinal River Flood Early Warning System
On November 12, 2018, the Bandera County River Authority and Groundwater District (BCRAGD) received an additional 50/50 cost-shared funding grant from the Texas Water Development Board (TWDB) (total project cost - $460,000.00) to contract with the U.S. Geological Survey (USGS) for development of a flood warning tool set for the Sabinal River in Western Bandera County, Texas and included a portion of Uvalde County, Texas at Utopia. A contract was entered into agreement with the third- party Federal Contractor, the U.S. Geological Survey (USGS) for development of a Flood Early Warning System (FEWS) for western Bandera County, Texas of the Upper Sabinal, and West Sabinal River watersheds. The U.S. Geological Survey also agreed to a cost-sharing portion of the agreement with BCRAGD for this project.

The study area includes a 10-mile river reach of the Sabinal River in western Bandera County from Vanderpool, TX to Uvalde County at Utopia, TX and encompasses portions of the West Sabinal River above Utopia, TX. (Figure 2)



One of Five USGS Insitu Pressure Transducer, Water Level Electronic Data Loggers – Installed Above Utopia, TX, along the Sabinal and West Sabinal River.



USGS Stream Gage at Sabinal River Bridge at Utopia, TX FM-1050, 08197970 Sabinal Rv at Utopia, TX. The photo was taken on March 4, 2020. Stream Gage is located on the Left Bank-Downstream side of the bridge near the top of the stream bank.

As a result of persistent and severe drought conditions throughout the study area including the majority of Texas and the United States during the initial project development period, the USGS in May 2021 requested an extension of the Sabinal River FEWS project completion timeline in hopes of securing much-needed hydrologic data for Flood Inundation Maps (FIMS). BCRAGD submitted a project extension request to TWDB and was approved for a full 1-year extension from the contractual expiration date of August 31, 2021, to August 31,2022. During which time the USGS put forth significant efforts of resources developing a synthetic stage discharge data assembly using a regionalized regression equation of the basin characteristics. These data were applied to a Generalized Additive Regression Model (GAM) to create a synthetic stage-discharge rating curve for the Sabinal River FEWS.

Surface Water Programs

A stage-discharge relation at the Utopia gage was synthetically developed using a regional regression equation (Asquith and others, 2013) to construct the model boundary condition inputs as well as a calibration target, and the July 2002 flood event was reconstructed as the highest modeled river stage. The hydraulic model was used to compute 35 layers of water-surface elevations for gage heights at half-foot (ft) intervals referenced to the station datum and ranging from 7 ft, near bank full, to 24 ft.

The USGS - FIMP website (https://water.usgs.gov/osw/flood_inundation) provides USGS flood-inundation study information to the public. The website links to the FIMP application that presents map libraries and provides detailed information on flood-inundation extents and gage heights for modeled sites are found at: InFRM | Flood Decision Support Toolbox (usgs.gov). These flood-inundation maps, in conjunction with the real-time stage data from the Utopia gage, are intended to help guide the public in taking individual safety precautions and intended to provide emergency management personnel with a tool to efficiently manage emergency flood operations and post flood recovery efforts.

BCRAGD's Flood Science Manager, Larry Thomas, CFM, NRS serves as the project manager on all Flood Early Warning Systems for Bandera County, Texas. Larry is a voting member of the Nueces River Authority Board, of Region 13, representing the Nueces River Basin Flood District as a member of the Regional Flood Planning Group (RFPG) and is the liaison to Region 13 for the San Antonio Flood Plan group of Region 12.

The Sabinal River FEWS / USGS stations are:

- Sabinal River at Panther Hill Rd. near Vanderpool, TX USGS station ID: 08197938
- Sabinal River below Mill Creek near Vanderpool, TX USGS station ID: 08197936
- Sabinal River Up Stream of Long Hollow, near Utopia, TX. USGS station ID: 08197940
- Sabinal River Down Stream of Blackjack Hollow, near Utopia, TX. USGS station ID: 08197945
- Sabinal River located on FM-1050, below Utopia Park at Utopia, TX Station ID:08197970
- West Sabinal River at West Sabinal Road near Utopia, TX. USGS station ID: 08197965
- West Sabinal River at Spring Branch Road near Utopia, TX. USGS station ID: 08197968

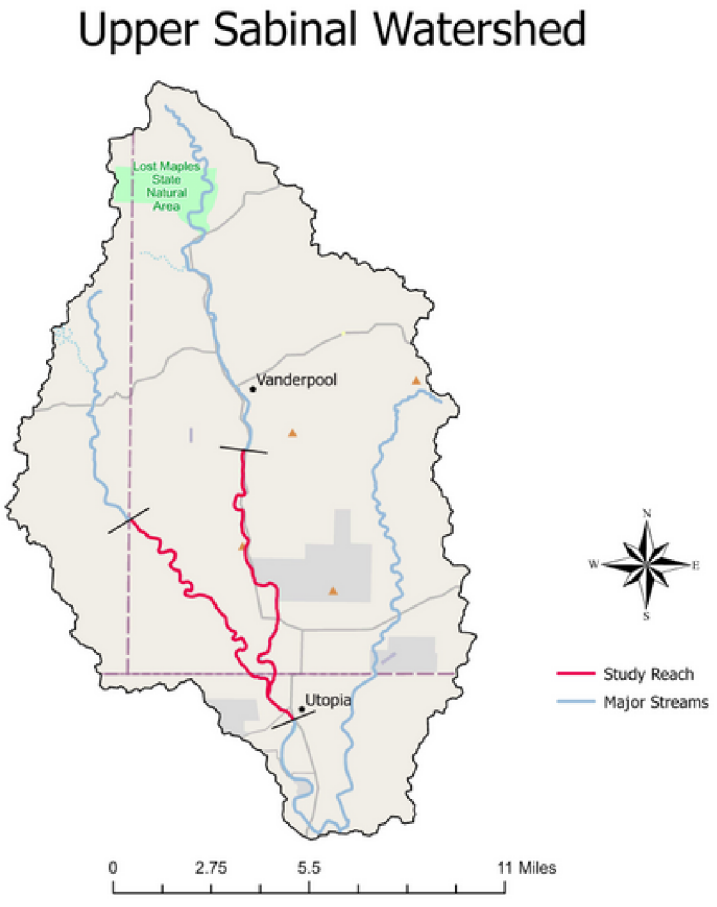


Figure 2: Upper Sabinal Watershed.

Surface Water Programs



Photo taken at the Medina Lake Dam during the July 5th 2002 Flood. Photo taken by Jerry Sides



Photo taken at the Flood at Medina River above Bandera on July 5th, 2002 . Photo taken by Jerry Sides

Surface Water Programs

BCRAGD hosted and attended multiple meetings concerning flood awareness as well as administratively prepared data spearheaded by BCRAGD's Flood Science Manager. See details below:

- Due to drought conditions the district posted the drought status weekly at the courthouse, district bulletin board, and website.
- OCT.2022 Completed the third Medina River FEWS Annual Report
- OCT.2022 Completed the Sabinal River FEWS Final Report
- OCT.2022 Reviewed USGS regarding Erroneous Rainfall Data
- 06.OCT.2022 Reviewed USGS 'Live Camera Feed' of Medina Lake
- 13.OCT.2022 The General Manager gave a Drought Presentation
- 13.OCT.2022 SARFPG Region 12 Meeting
- NOV.2022 Worked with USGS regarding a Planned Thermal Water Temp Survey
- NOV.2022 Corresponding Data Requests for Privilege Creek area
- NOV.2022 Conference call w/ HDR eng. group & Region 13 Nueces RFPG Technical ad. Comm.
- NOV.2022 Communication with USGS regarding Rio Medina Area
- 14.NOV.2022 South Central US Drought Update and Winter Outlook
- 15.NOV.2022 Install Rain Gauge for Lost Maples
- 17.NOV.2022 SARFPG Region 12 Meeting
- 18.NOV.2022 Lower Mississippi River Basin Special Drought Webinar DEC.2022 Revised BCRAGD Flood Plan
- DEC.2022 Work on TWDB Quarterly Reports & USGS Invoicing
- 06.DEC.2022 Region 13 Legislative Subcommittee
- 07.DEC.2022 Meeting: Flood CFM Training & Providing Certs Info Update
- 08.DEC.2022 Region 13 Floodplain Mgmt and Goals Subcommittee
- 12.DEC.2022 Nueces RFPG
- 19.DEC.2022 SARFPG Region 12 Meeting
- 26.JAN.2023 Review/Edit district Hazard Plan
- 07.FEB.2023 USGS Region 9
- 14.FEB.2023 Meeting: Rainfall Monitoring Gauges Budget for Project Review
- 17.FEB.2023 Rainspotter Consult
- 21.FEB.2023 SARFPG Region 12 Meeting
- 22.FEB.2023 Review/Edit Flood Plan & Hazard Plan
- 23.FEB.2023 Region 12 RFPG
- MAR.2023 Attend an on-line virtual - NRA / Region 13 meeting
- 13.MAR.2023 Send out Rainspotters Info
- 15.MAR.2023 Provide Rainspotter Info for Program + Gauge
- 27.MAR.2023 Region 13Nueces RFPG - General Meeting
- Completed the Sabinal Rv FEWS initial commitment
- Processing the Medina Rv FEWS
- Reviewed and submitted BCRAGD approval authorizations and a payment request to TWDB
- BCRAGD Flood Plan & Environmental/Catastrophic Hazards Workplace Contingency Plan
- Comm. via a data request from Garland Tx regarding a FEWS requirement.
- Prepared & presented thank you letters for district partners
- 20.APR.2023 SARFPG Region 12 Meeting
- 11.MAY.2023 Meeting FloodMapp & Bandera County
- 15.MAY.2023 Nueces RFPG Region 13 Flood Planning Meeting

Surface Water Programs

- 23.MAY.2023 SARFPG Region 12 Meeting
- 25.MAY.2023 Nueces RFPG Region 13 Meeting
- 22.JUN.2023 BCRAGD flood - emergency management meeting
- 26.JUN.2023 Nueces RFPG Region 13 meeting
- 27.JUN.2023 SARFPG Region 12 Meeting
- Completed Annual Medina FEWS annual progress report 4 of 5
- Completed Annual Sabinal FEWS annual progress report 1 of 5
- Communications/revisions with USGS for the final Sabinal Report

Public Safety- Flood Preparation Programs

BCRAGD employs two certified floodplain managers and is an active member of the Texas Floodplain Management Association.



Sabinal River south of Utopia, TX



C. Carter taken CRP data measurements on the Sabinal River North of Utopia, TX

Enforcement/Investigations





The images above are from an environmental investigation from 2019 regarding an algae bloom in Utopia City Park.

Environmental Investigations

Illegal Dumping Litter Abatement Program

BCRAGD operates an illegal dumping litter abatement program to proactively protect and manage surface water and groundwater resources. The District adopted Rules out of Chapter 51 of the Texas Water Code, dealing specifically with illegal dumping that affects water quality. The Rules are in both the civil and penal code.

Enforcement of State & District Rules

BCRAGD proactively enforces both State and District rules for Well Drilling. These rules are taken from TDLR Administrative Code and BCRAGD's Adopted Chapter 36 Rules. As a result of this program, during FY 2023, the District:

- Inspected all permitted and registered wells in Bandera County to ensure compliance with both District and State Rules
- Investigated Nuisance Complaints
- Issued Notice of Violations and ensured compliance with Notice of Violations
- Conducted investigations with TDLR

Chapter 36 Administrative Requirements

During FY 2023, the District maintained and reviewed policies mandated by Chapter 36 of the Texas Water Code, including the Public Funds Investment Policy, Ethics Policy, Financial Management Policy, and Travel Policy. Additionally, the District reviewed and adjusted rules and District activities.



The image above is from an environmental investigation from 2019 regarding an oil and tire dump.

Enforcement/Investigations

Environmental & Enforcement Training

- On September 26-28, 2023 BCRAGD staff attended the Surface Water Quality Monitoring Workshop.

During FY 2023, BCRAGD attended or conducted the following Illegal Dumping / Environmental Investigation / Regulatory Compliance programs:

- BCRAGD District Staff conducted environmental investigations throughout the fiscal year.
- 20.OCT.2022 Meeting: Abandoned Well Program Expansion Specs
- 21.OCT.2022 Medina Lake Site Visit
- 27.OCT.2022 Meeting: Well Plugging Program Specs & Expansion
- 03.NOV.2022 South Central Texas Regional Environmental Task Force
- 08.DEC.2022 Meeting with TCEQ for open Investigation
- DEC.2022 Well Site Visit
- 26.JAN.2023 Environmental Investigation site visit with local constable
- 02.FEB.2023 South Central Texas Regional Environmental Task Force (SCT RETF)
- 04.MAY.2023 SCT RETF Second Quarter 2023 meeting
- 11.JUL.2023 Meeting with TCEQ for open Investigation
- 03.AUG.2023 SCT RETF 3rd Quarter 2023 meeting
- 13.SEP.2023 GoTo Webinar - Sampling and Environmental Attribution



Sonde Meter - Water analysis tool used by BCRAGD for surface water quality monitoring.

Public Safety / Pollution

BCRAGD serves as a first responder in cases of possible surface water or groundwater pollution or contamination. The District investigates and identifies the potential problem and refers to outside regulatory agencies when warranted.

The District's In-House Surface Water Quality Programs allow Staff to detect bacteria spikes and follow up with immediate investigation and re-sampling.



Staff collecting biometric data

Education & Outreach Programs

Public Education and Outreach Programs

The District prioritizes the education of students and the public regarding surface water and groundwater in Bandera County. Educational strategies emphasize hands-on activities, presentations, and workshops bringing water quality, water conservation, and water preservation awareness to community members.

Educational Programs in the ISDs

Since 2012, BCRAGD has sponsored and co-facilitated the Nueces River Authority Water Resource Stewardship Education Program for Bandera, Medina, and Utopia 5th and 7th grade students. The program features a water use and conservation presentation and demonstrates surface water runoff and aquifer models, emphasizing non-point source pollution.

The Nueces River Authority Water Resource Stewardship Program, in collaboration with BCRAGD, heavily emphasizes water conservation, water quality protection, and natural resource systems to the 5th and 7th grade students in Bandera County throughout each Spring season. The District sponsors and co-facilitates the program every year. Students learned about watersheds, water conservation, and riparian ecosystems. They were engaged in a hands-on experiment with a river basin model to demonstrate how pollution travels into water streams and ends up in the ocean. They thoroughly discussed ways to be good stewards of our streams and waterways.

The BCRAGD Education & Outreach Manager and the Education & Outreach Coordinator held Educational Programs with NRA on the following dates: March 29, 2023, Utopia ISD – 5th and 7th Grade, April 20, 2023, Hill Country Elementary School – 5th Grade, April 21, 2023, Medina ISD – 5th Grade and 7th Grade, April 24 & 27, 2023 Bandera Middle School – 7th Grade, May 15 & 17, 2023 Alkek Elementary School – 5th Grade.



C. Fox presenting an aquifer model to Bandera MS 7th grade



NRA presenting at Utopia School Visit



C. Fox presenting watershed model at Alkek Elementary 5th grade

Education & Outreach Programs

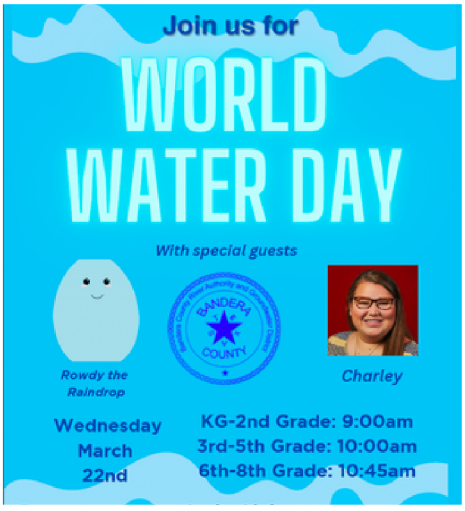


C. Fox quizzing students at Back to School Bash

Back to School Bash

On July 29, 2023, BCRAGD's Education team was proud to participate in the Back to School Bash countywide community event that helps school-aged children obtain what they need to have a great start to the school year. The Education team played a " Test your water knowledge" game with the children and adults. The game is designed specifically to bring awareness about how much freshwater is available on the planet, how much water humans use, and ways to conserve and preserve water. Correct answers to questions earned the children raffle tickets for a chance to win a basket of lunchbox goodies in a drawing. More than 500 children attended this year's Bash.

BCRAGD's Education Coordinator, Charley Curd, presented to 180 online students in grades K-2, 3-5, and 6-8 grades. Each grade received a tailored presentation that was TEKS-aligned and age-appropriate. Concepts included the Water Cycle, Water Conservation, and Understanding watersheds.



Flyer for the TxVS presentation



C. Fox working with Alkek ES 5th grade class on weathering & erosion lab

BCRAGD's Education and Outreach team visited all 5th-grade students (approximately 100 students) at Alkek Elementary School. BCRAGD staff reviewed TEKS-related topics of Weathering, Erosion, and Deposition and their effects on the State's waterways. Students participated in three lab stations where these concepts were created. They discussed how these natural events change water courses and how the combination of these events with human impact affects water.

Education & Outreach Programs







S. Sckittone, L. Sparks, & C. Carter presenting to the Medina County 4H group

4H Workshop

October 8, 2022, Medina County 4H Workshop BCRAGD staff organized short lectures, demonstrations, a scavenger hunt, fish-catching techniques, and identifications. BCRAGD staff covered native plants of the area, highlighting species diversity and covering the soil type and water availability native plants use and need. Students were then engaged in a scavenger hunt using BCRAGD-provided field guides to find and identify key riparian plants. BCRAGD staff then briefly talked about inland fish in the Medina River and techniques for catching fish to represent all species. Staff then engaged students in different methods of catching fish and had them help identify the fish caught. The importance of habitat conservation to promote species diversity was highlighted, along with a discussion on food webs. Students were brought to a floodplain area away from the river to demonstrate a snake trap. BCRAGD staff presented materials on snakes, lizards, and turtles found in the area and how the trap depends on the species' behavior to catch them. Students then discussed species in the area, habitat, and food webs. About 18 students attended this workshop, ages ranging from 5 to 17. Parents also attended and listened to the lectures and were engaged in discussions and learning.

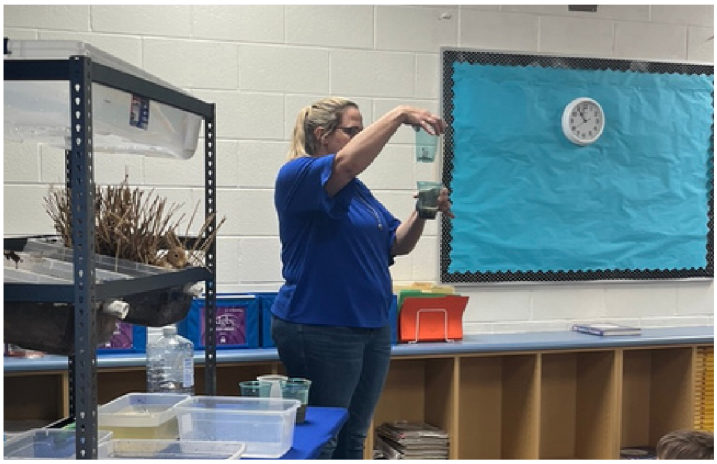
Education & Outreach Programs

Tom Daniels Elementary School Science Expo

March 10, 2023, BCRAGD's Education Team participated in Tom Daniel's Science Expo for the second year. All Second-grade students at Tom Daniel's elementary school were presented with information about the Water Cycle and given an interactive watershed demonstration. Students were heavily engaged in applying critical thinking skills regarding conservation ideas and potential solutions to preserving the watersheds in their community. This event is a means to build relationships with citizens in adjacent communities that face the same water issues.



C. Fox presenting at the Conservation Day for 6th grades in Bandera County





C. Fox presenting at Tom Daniels Elementary School Science Expo

SWCD Conservation Day Workshop

April 28, 2023, The Education and Outreach Team participated in the Soil & Water Conservation District Conservation Day Workshop in collaboration with the Nueces River Authority Education team. All 6th-grade students in Bandera County benefitted from this educational event. Students were given a demonstration of a rain event and how water moves through two types of watersheds. Corrina Fox and Charley Curd presented the concepts of Surface water, groundwater, riparian plants, and water quality. Nueces River Authority staff member Mary Bales presented students with biodegradable trash bags and discussed the importance of keeping trash and pollution out of the Texas waterways. Approximately 180 students participated.

Education & Outreach Programs

Community Library Events

BCRAGD presented at three separate Community Library events. The Education team works to present hands-on activities with a presentation or with a children's storybook that emphasizes the themes of conservation.

- 31.OCT.2022 Lakehills Library Trick or Treat
- 22.FEB.2023 Medina Library Youth Programming - Healthy Watersheds
- 26.JUN.2023 Medina Library Youth Summer Programming - How pollution moves through our waterways.
- 06.JUL.2023 Bandera Library Youth Summer Programming - Aquifers and the Importance of Groundwater
- 13.JUL.2023 Bandera Library Story Time reading Saving Tally
- 20.SEP.2023 Lakehills Library Story Time reading “Saving Tally”



Bandera Library Youth Summer Program



Medina Library Summer Activity.



C. Fox Presenting at Medina Library Summer Library program.



C. Curd Presenting activity at Lakehills Story Time

Education & Outreach Programs

Hydro Geo Workshop

On September 30, 2023, BCRAGD Staff presented a module for their second year at the 8th Annual HydroGeo Workshop at Cave Without A Name in Boerne, Texas. The Workshop organizers requested that BCRAGD present their module, titled TCEQ's Clean Rivers Program, three times in order to reach as many students as possible. The module gave an overview of the CRP Program, and staff demonstrated the equipment used to fulfill the program data collection requirements. BCRAGD has a unique perspective that provides students with holistic and relevant insight from accomplished staff. Staff were pivotal in answering participant questions and providing resources in order to aid these students in their research.



Hydro Geo Workshop River sampling interactive activity.



Hydro Geo Workshop River sampling interactive activity.

Texas Parks and Wildlife Project WILD

On September 30, 2023, BCRAGD's Education and Outreach team was invited to facilitate a Project Wild training by Texas Parks and Wildlife. The event was held at Hardberger Park Urban Ecology Center in San Antonio, Texas. The Project Wild program is designed to train formal and informal educators on all conservation and environmental preservation topics. The event was coordinated by BCRAGD's Outreach Coordinator, Charley Curd. Ms. Curd connected presenters from all over the hill country to provide participants with a top-notch learning experience. Education manager Corrina Fox assisted in behind-the-scenes preparation and was also a presenter for the event. 37 participants from all over the hill country area participated in this successful event.



C. Curd leading the TPWD Project WILD event

Education & Outreach Programs

For FY2023, the District completed/attended the following for Education & Community Outreach:

- 08.OCT.2022 BCRAGD & Medina County 4H Workshop
- 10-11.OCT.2022 Women's Land Stewardship Conference
- 15.OCT.2022 Expanding Your Horizons hosted by Schreiner University
- 26.OCT.2022 Schreiner University Women's Conference
- 29.OCT.2022 LAMCOS Meeting
- 31.OCT.2022 Lakehills Library Trick or Treat Event
- 02.NOV.2022 Kerrville Kiwanis Club Drought talk
- 16.NOV.2022 Webinar on Adding Value to Internships or Value-Added Internships
- 29.NOV.2022 Flowchart for Well info doc. Socials, Flier Creation
- 05-06.DEC.2022 Alkek Elem. Weathering, Erosion, and Deposition Lab
- 07-09.DEC.2022 TCINN Conference
- 20.DEC.2022 Christmas Conservation Event
- 01.FEB.2023 Webinar: What Clues for Prevention are in Local Litter?
- 14.FEB.2023 Landowner Outreach
- 17.FEB.2023 TCAFS Student Outreach Committee Meeting
- 22.FEB.2023 Medina Library edu. Event
- 22.FEB.2023 Hill Country Alliance event pre-event table with ed. Demo
- 22.FEB.2023 Hill Country Alliance event hosted at Schreiner University
- 27-28.FEB.2023 Texas Water Day
- 10.MAR.2023 Tom Daniels Science Expo
- 22.MAR.2023 Water Day Presentations with TxVS
- 24.MAR.2023 Alamo RCD & SWCD adult education event
- 29.MAR.2023 Utopia ISD
- 30.MAR.2023 TWDB Longevity As. for the CofB Water Wells Study Webinar
- Starting the third quarter, the Education and Outreach team started attending Expanding Your Horizons Event Planning Meetings on Wednesdays Weekly
- 20.APR.2023 Hill Country Elementary with Nueces River Authority School Presentation
- 21.APR.2023 Medina ISD with Nueces River Authority School Presentation
- 24 & 27.APR.2023 Bandera Middle School with Nueces River Authority School Presentation
- 28.APR.2023 Soil and Water Conservation District 6th Grade Event
- 15.MAY.2023 Meet w/ KWEX-TV at Lake Office
- 15 & 17.MAY.2023 Alkek Elementary with NRA Presentations
- 22-26.MAY.2023 Flood Awareness social media campaign
- 02.JUN.2023 Presentation at Utopia Senior Center by General Manager
- 26.JUN.2023 Medina Library Event
- 06.JUL.2023 Bandera Library Summer Event aquifer build
- 13.JUL.2023 Bandera Library Story Time - Saving Tally
- 29.JUL.2023 Back to School Bash
- 04.AUG.2023 Presentation for Soil Water Conservation District
- 08.AUG.2023 TPWL Project WILD Planning Meeting with external organization
- 16.AUG.2023 TPWL Project WILD Prep with external organization
- 20.SEP.2023 Lakehills Library Story Time - Saving Tally
- 28.SEP.2023 HCA Leadership Summit Panelist
- 30.SEP.2023 TPWL Project WILD
- 20.SEP.2023 HydroGeo Presentations

Education & Outreach Programs

Internship Program

BCRAGD provides opportunities for any undergraduate and graduate students to obtain real life skills working in surface water and groundwater. Interns are exposed to ongoing projects, services provided to the community, and learn about water legislation.

Bandera County River Authority and Groundwater District are pleased to have Paul Schnoebelen for his second summer as a District Intern. Paul started his bachelor's degree in computer engineering at Texas Tech University and will continue his education at the University of Texas in the fall. The District internship program is an introduction to the world of water that provides hands-on experience in conducting surface water monitoring and groundwater monitoring, as well as facilitating water conservation education in the community.







Education & Outreach Programs

Invasive Species /Healthy Riparian Education Programs

In addition to working in the field to manage invasive species, BCRAGD provided many different educational programs and presentations to spread awareness:

- 20.OCT.2022 Meeting: Abandoned Well Program Expansion Specs
- 21.OCT.2022 Medina Lake Site Visit
- 27.OCT.2022 Meeting: Well Plugging Program Specs & Expansion
- 03.NOV.2022 South Central Texas Regional Environmental Task Force
- 08.DEC.2022 Meeting with TCEQ for open Investigation
- DEC.2022 Well Site Visit
- 26.JAN.2023 Environmental Investigation site visit with local constable
- 02.FEB.2023 South Central Texas Regional Environmental Task Force (SCT RETF)
- 04.MAY.2023 SCT RETF Second Quarter 2023 meeting
- 11.JUL.2023 Meeting with TCEQ for open Investigation
- 03.AUG.2023 SCT RETF 3rd Quarter 2023 meeting
- 13.SEP.2023 GoTo Webinar - Sampling and Environmental Attribution
- BCRAGD District staff conducted Arundo Surveys on 25.JUL.2023, 26.JUL.2023, 27.JUL.2023, 02.AUG.2023
- The district has resources on the website and posts information content and tips on their social media sites.

If you identify any invasive species on your property, such as Arundo donax or Zebra Mussels, take a picture of it, record the location, and call BCRAGD at (830) 796-7260.



C. Carter & L. Sparks Hiking to conduct an Arundo Survey.



C. Carter conducting an Arundo Survey.



Zebra Mussels found by BCRAGD at Medina Lake.

Education & Outreach Programs

Water Conservation Programs & Natural Resource Stewardship

The District prioritizes the conservation of Bandera County's surface and groundwater, as well as the stewardship of natural resources as a whole. This priority is reflected in the execution of District programs and initiatives and being an integral part of the District's overall Education and Community Outreach Program.

Annually, BCRAGD hosts a Water Conservation Christmas Event. Typically, information is shared regarding the District's ongoing projects and shared tips for Water Conservation. This event is part of the District's goal to improve intergovernmental relations and work collaboratively with other county and city agencies to provide services to the community better, as well as to provide Water Conservation information to the public. This event was hosted on December 22, 2022.

The District continues to partner with local entities to educate the community on natural resource stewardship. Bandera's Texas A&M AgriLife Extension Service (AgriLife), Texas Parks and Wildlife, and Hill Country Alliance (HCA) have been essential partners in various community outreach efforts.

Annual Medina River Cleanup

The Medina River Cleanup is an annual event that is held the first Saturday in May and supports a healthy ecosystem through the organization of volunteers to remove trash and debris from the Medina River. BCRAGD supports and participates annually through donation and advertising in local papers, radio ads, District social media, the District's website, and at the District's office.

The River Clean up was not held during FY 2023 due to drought conditions. Typically, our District staff volunteers alongside the board of Directors. The last Clean Up was held in FY 2019- there were about 250 participants from 35 cities and towns in Texas who attended, and two large dumpsters were filled with debris removed from the river, one of which was full of metal that was recycled. For FY2019, The cleanup removed approximately 7,000 pounds of recyclable metal including an entire automobile. A second dumpster was filled with trash that could not be recycled.

The Medina River Cleanup recycling effort produced dividends for the Medina River Protection Fund, which hosts the clean-up each year. For FY2019, Kerrville Recycling loaned the dumpsters. While FY2023's Medina River Cleanup Event was canceled due to drought conditions, we are hopeful that it will resume in the future. For more information or if you would like to become a volunteer please visit http://www.medinariver.net/.

Education & Outreach Programs

District Christmas Conservation Event
On December 20, 2022, BCRAGD hosted a Christmas Conservation Event, a holiday event for community leaders to share essential updates on the district's projects and functions within the community and gain insight into improving relations and resourcefulness with other county agencies.



Board of directors and spouces at the Christmas Conservation event.





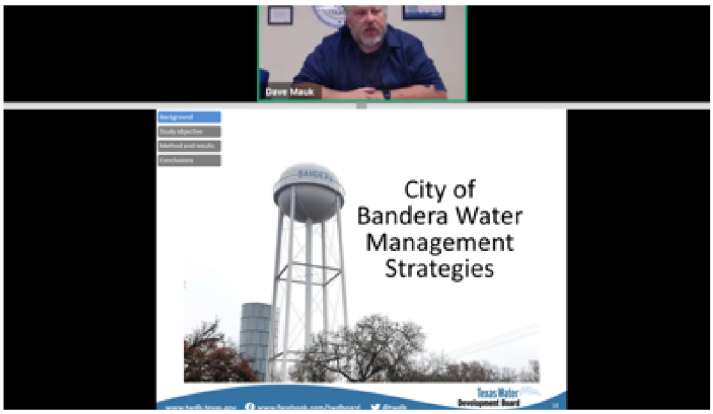
D. Mauk sitting as a panelist at the Hill Country Alliance Water Talk

Hill Country Alliance Water Talk
On February 22, 2023, Hill Country Alliance and Schreiner University hosted a Water Symposium open to the Hill Country community. This event included a panel discussion with BCRAGD's General Manager, Dave Mauk, and other leaders from collaborative partners such as Upper Guadalupe River Authority and Hill Country Alliance. The Discussion focused on drought and other water-related issues and their effects on the Hill Country Area. Prior to the event, Attendees observed the Education Team (C. Curd and C. Fox) demonstrate the Watershed Model, which shows how water flows through a healthy and unhealthy watershed. The demonstration was an interactive way to connect water concepts and issues to understand better how water flows during a rainfall event. Approximately 75 people attended the Symposium.

Education & Outreach Programs

TWDB Longevity Assessment for the City of Bandera Water Wells Study

On March 30, 2023, the Texas Water Development Board hosted a webinar to present the Longevity Assessment for the City of Bandera Water Wells Study. General Manager Dave Mauk, along with representatives from the City of Bandera, participated in the webinar, giving solutions and input for moving forward with improving water resource infrastructure. The project abstract is as follows: The City of Bandera and the Bandera County River Authority and Groundwater District (BCRAGD) are concerned with increased water demand associated with the rapid growth in the Texas Hill Country. The City of Bandera is considering alternative water supplies, including aquifer storage and recovery (ASR), to increase the reliability of its current water resource infrastructure and prepare for future development. A key component of the city's future water supply planning involves the need to understand better how increased pumping could affect the life span of its lower Trinity aquifer wells. To address this need, the TWDB developed a numerical model to forecast future conditions under different pumping scenarios. This information will assist the City in evaluating the viability of the recommended ASR project and will aid in determining a timeline for project implementation. This longevity assessment focused on the lower Trinity aquifer due to it being the primary water production source for the City of Bandera and the target for the ASR project



Alamo RCD Area Presentation

BCRAGD's General Manager, Dave Mauk, was a presenter at this regional collaborative workshop held at Mansfield Park. Dave presented on the health and condition of the Aquifer systems in Bandera County and the effects of the population growth in Bandera County, along with the impact of the exceptional Drought on the Aquifer systems. Approximately 65 people attended this event.





Top: D. Muak presenting at a webinar for the TWDB Longevity Assessment for the City of Bandera Water Wells Study
Bottom: D. Mauk presenting for the Alamo RCD Area group

Education & Outreach Programs

On June 2, 2023, Dave Mauk, General Manager of Bandera County River Authority and Groundwater District, spoke on the ongoing Drought affecting Bandera County and the Texas Hill Country. Additionally, Dave presented a brief overview of the Sabinal River Flood Early Warning System that will be coming online soon.



D. Mauk giving a presentation in Utopia, TX





Top: Staff photo taken after completing Stop the Bleed Training
Bottom: C. Carter receiving Stop the Bleed training patch.

Stop the Bleed Training

The District staff attended Stop the Bleed Training with Home Front Trauma on June 28, 2023. This training is to help better prepare the individuals who take the class to know what can be done during those critical moments when waiting for help to come. Home Front Trauma provided simulated wounds and high-stress scenarios to get hands-on practice on how to be safe in the face of injuries in the field.

The rest of the District staff attended Stop the Bleed Training with Home Front Trauma on Septemeber 27, 2023. This training was a scaled-back in-office training for our office-focused admin. This training is to help better prepare the individuals who take the class to know what can be done during those critical moments when waiting for help to come. Home Front Trauma provided simulated wounds and high-stress scenarios to get hands-on practice on how to be safe in the face of injuries in the field.

Education & Outreach Programs

On October 29, 2022, the General Manager and the District Aquatic Biologist attended and presented at the LAMCOS public meeting. This presentation had updates on the Districts current projects and drought conditions.





Top: C. Curd reading at Lakehills Library Story Time
Bottom: C. Curd reading at Bandera Library Story Time







Top: Levi giving presentation LAMCOS presentation
Middle: preparing for kayak scientific research exploration
Bottom: District staff

Education & Outreach Programs

Social Media Highlights

For FY2023, the BCRAGD Education Team has been working diligently on public outreach. One of the most effective means of public outreach is through social media. Through Facebook, Instagram, Twitter, Pinterest, Linked In, and YouTube. The team has the ability to provide vital information to targeted audiences and provide public awareness to changing weather patterns and ongoing projects of the District that will directly benefit the community. As a political subdivision of the state, the District has an obligation of transparency to the public, which is met through social media and provides additional open lines of communication between the District and the general public. Social Media outlets allow the District to share and promote resources from collaborating agencies such as National Weather Service, the Texas Ag-Extension office, Texas Floodplain Managers Association, Texas Water Development Board, Texas Runs on Water, and many others.



@bcragd

@bcragd_tx

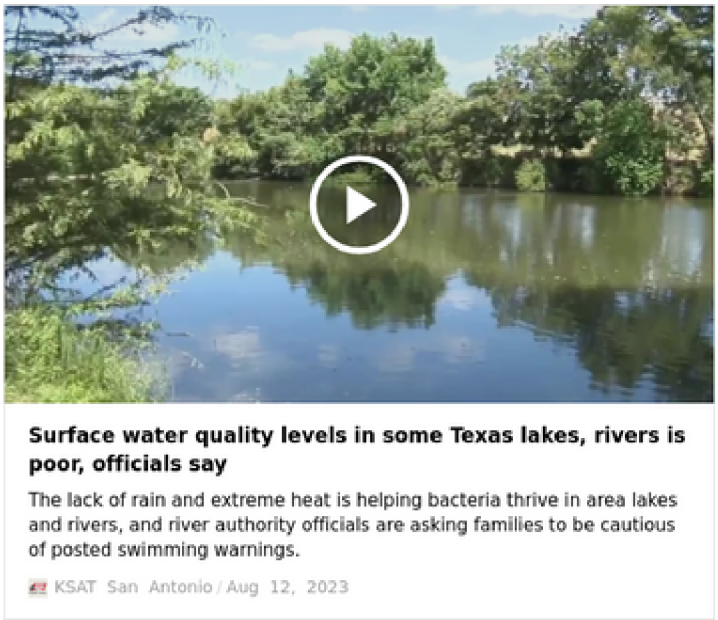
Bandera County River Authority & Groundwater District

Bandera County River Authority & Groundwater District

@bcragd_tx

During this fiscal year, the General Manager gave several Presentations and interviews on persistent drought conditions.

KSAT: Surface water quality levels in some Texas lakes and rivers are poor; officials say High heat and lack of rain are helping bacteria thrive in some rivers and lakes.



Surface water quality levels in some Texas lakes, rivers is poor, officials say

The lack of rain and extreme heat is helping bacteria thrive in area lakes and rivers, and river authority officials are asking families to be cautious of posted swimming warnings.

KSAT San Antonio / Aug 12, 2023

Kens5: Bandera issues public health emergency declaration closing and banning swimming at the park. The city cited high water temperatures, low flow, and bacteria levels for the closure.



Bandera issues public health emergency declaration closing and banning swimming at park

The city cited high water temperatures, low flow, and bacteria levels for the closure

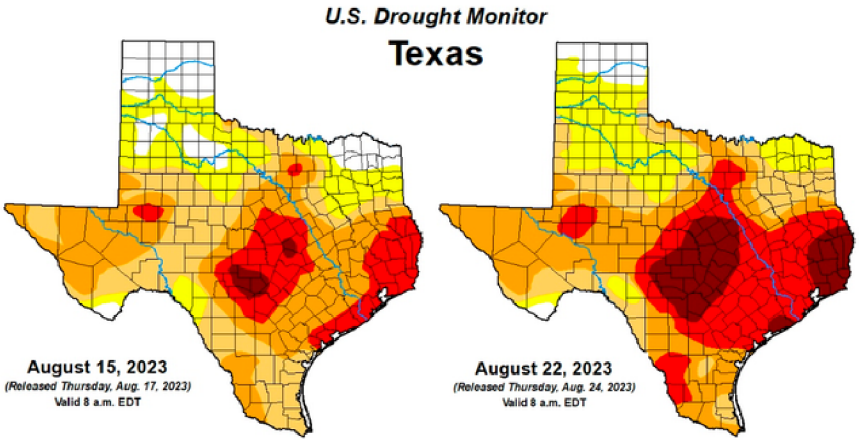
kens5.com / 2:16

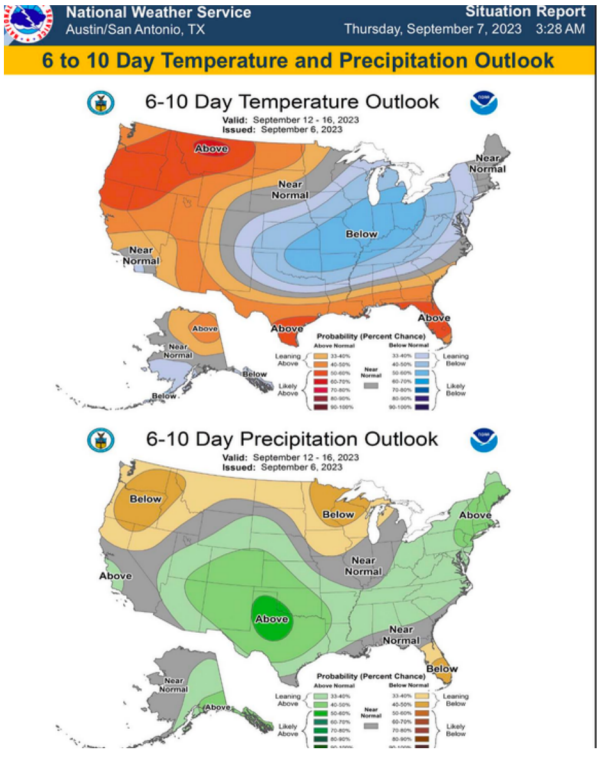
Education & Outreach Programs

Social Media Outlets are Used to Share important information about Drought and Weather Conditions.

The Education and Outreach Team has diligently shared information from the Texas Water Development Board and US Drought Monitor about the Drought stages in Texas. Also, BCRAGD has shared information about severe weather conditions from the National Weather Service. This information is pertinent to the residents in the county to ensure public safety.





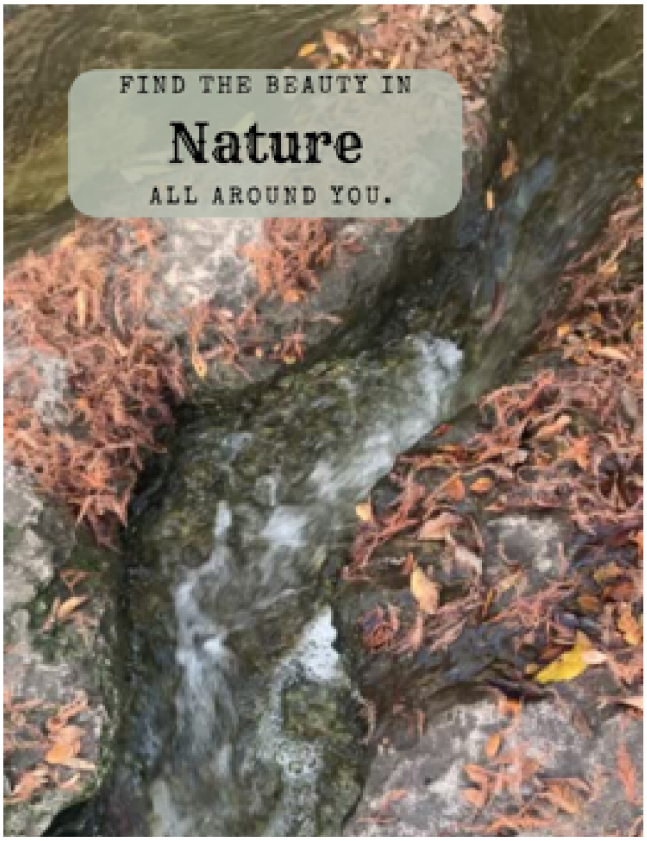




Education & Outreach Programs

The Outreach Team created a campaign around water usage and tips for saving water, focusing on ways to do so during the holidays.

During the first quarter, in addition to holiday conservation tips, the team promoted future events, including the Expanding your Horizons event hosted by Schreiner University and the San Antonio Regional Flood Planning Group for a public meeting.









Education & Outreach Programs

In the second quarter, the Outreach team focused on sending weather notices from the National Weather Service to inform the public about the current climate. In addition, the District launched a winterizing campaign on the best practices to save water during winter and how to winterize your pipes in the winter months.

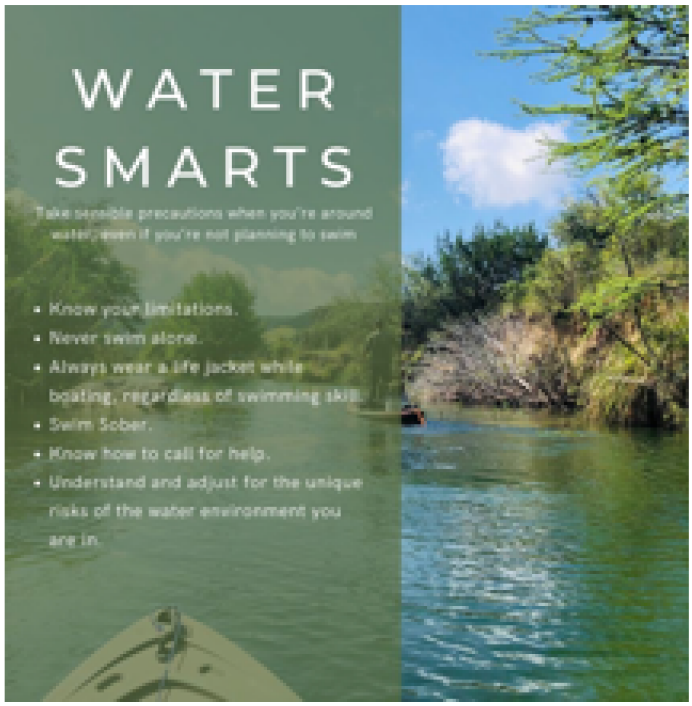


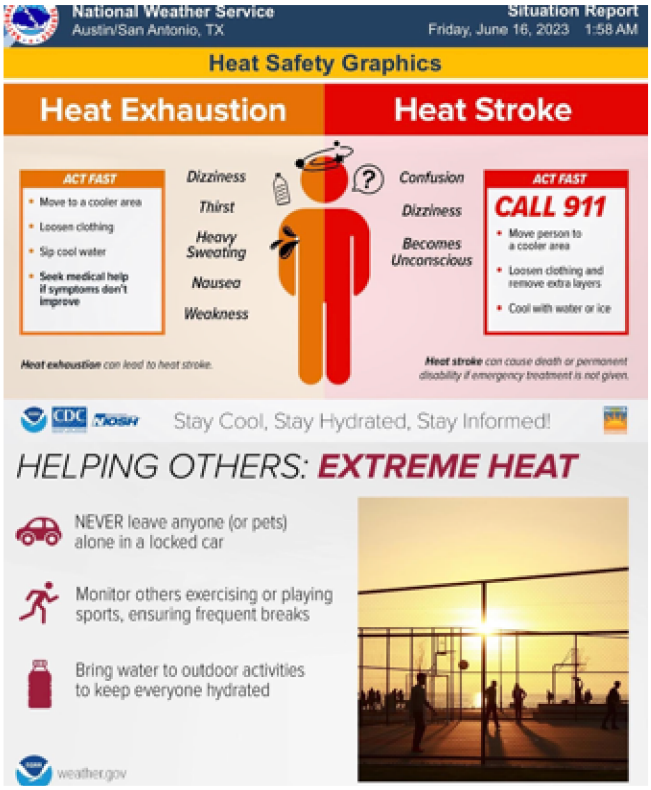




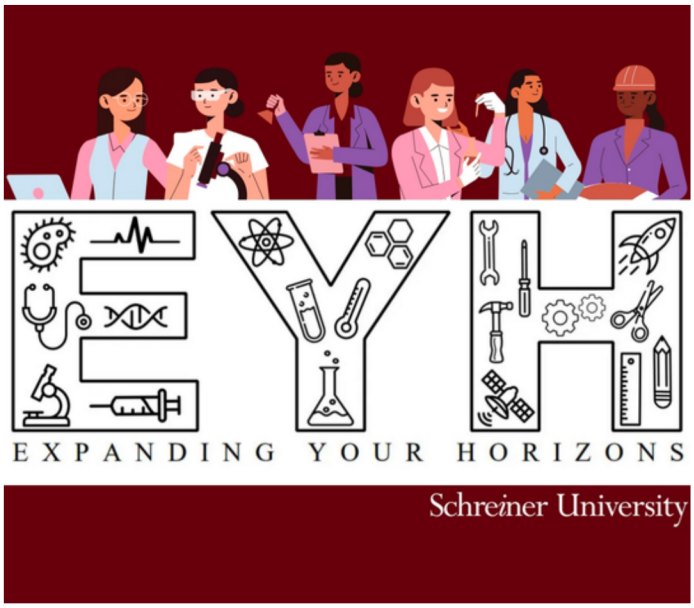
Education & Outreach Programs

In the third quarter, the Outreach Team focused on Flood Preparedness and Awareness and on promoting the content of the Texas Floodplain Managers Association for Flood Awareness Week. In addition, the Team concentrated on water conservation and preservation by giving ideas and ways over how small changes can make a difference. In the summer months, the Team has also been promoting the In-house sampling results and recreational safety regarding the importance of practicing water safety in and around any body of water.









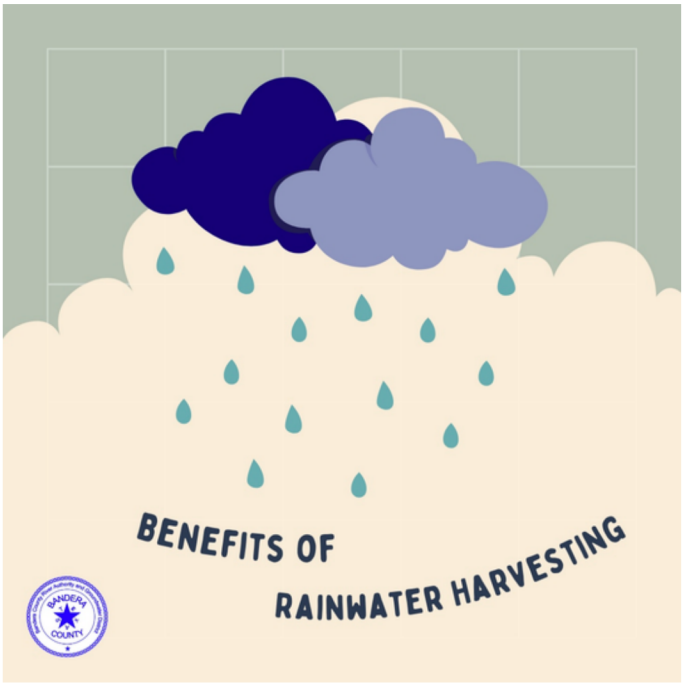
Education & Outreach Programs

In the fourth quarter, the Outreach team focused on water preservation and conservation ideas on social platforms with infographics, short videos, and visual representations. The District ran a week-long Rainwater Harvesting Campaign to promote alternative water sources.









Education & Outreach Programs

During the fourth quarter, the district partnered with the Texas Runs on Water campaign. Texas Runs on Water is a first-of-its-kind statewide water campaign developed by the Texas Water Foundation to inspire a generation of Texans to participate in the cultural and behavioral changes needed to meet future water supply needs. For this partnership, Bandera Country River Authority and Groundwater District created their own local campaign, Bandera Runs on Water, under the Texas Runs on Water.

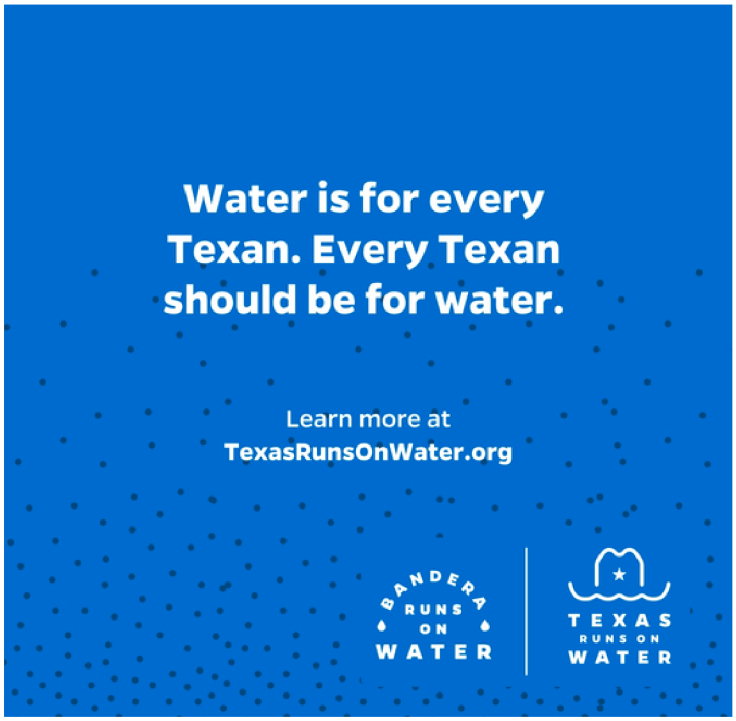
PROUD PARTNERS

Bandera County River Authority and Groundwater District
BANDERA
TEXAS
COUNTY

TEXAS
RUNS ON
WATER

BANDERA
RUNS
ON
WATER





Texas Sunset Commission

The Bandera County River Authority and Groundwater District (BCRAGD) underwent a thorough review by the Texas Sunset Commission staff. The first step began in June 2021 and continued through September 2021, where the BCRAGD Staff compiled a Self Evaluation Report that is available online.

This was a team effort from the entire staff, spearheaded by Hayli Hernandez, Intergovernmental Affairs Manager, and Dave Mauk, General Manager. The Sunset Commission Staff began their formal review of BCRAGD in June 2022 and completed their review on November 3, 2022, with an exit conference call with District Attorney Greg Ellis, Hayli Hernandez, and Dave Mauk. The Sunset Commission found that Springhills Water Management District (1989) absorbed all of the powers and authorities of Bandera County River Authority (1971) in it's enabling legislation, however, it did not dissolve Bandera County River Authority, thus leaving two separate entities (BCRA being inactive). Additionally, the Sunset Commission Staff found they needed to possess the authority to review BCRAGD as the legislation authorizing the Sunset Commission's review of River Authorities cites the enabling legislation for Bandera County River Authority, an inactive entity. Thus, the Sunset Commission's report, published on November 17, 2022, recommended that The Bandera County River Authority and Groundwater District be removed from the Sunset Review. This recommendation for the Sunset Commission aided the District in its efforts to codify its enabling legislation, which was successful via HB 3731 of the 88th Regular Legislative Session. The Texas Sunset Legislative Commission accepted and adopted this recommendation on January 12, 2023. The final report, published in January 2023, contains the Commission's decisions and is available online.

Codification

The Bandera County River Authority and Groundwater District's enabling legislation was codified under HB 3731 of the 88th Regular Legislative Session. As of September 1, 2023, BCRAGD's enabling legislation can be found under Chapter 8850 of the Special Districts Local Laws Code in the Texas Constitution. This was a substantive change from the enabling legislation as it removed the District from the Sunset Commission Review process. This was an ongoing process for the District that spanned over a decade.

Click the link below to see the Report:

Sunset Advisory Commission Self Report with Commission Decisions

Resource Planning & Collaboration

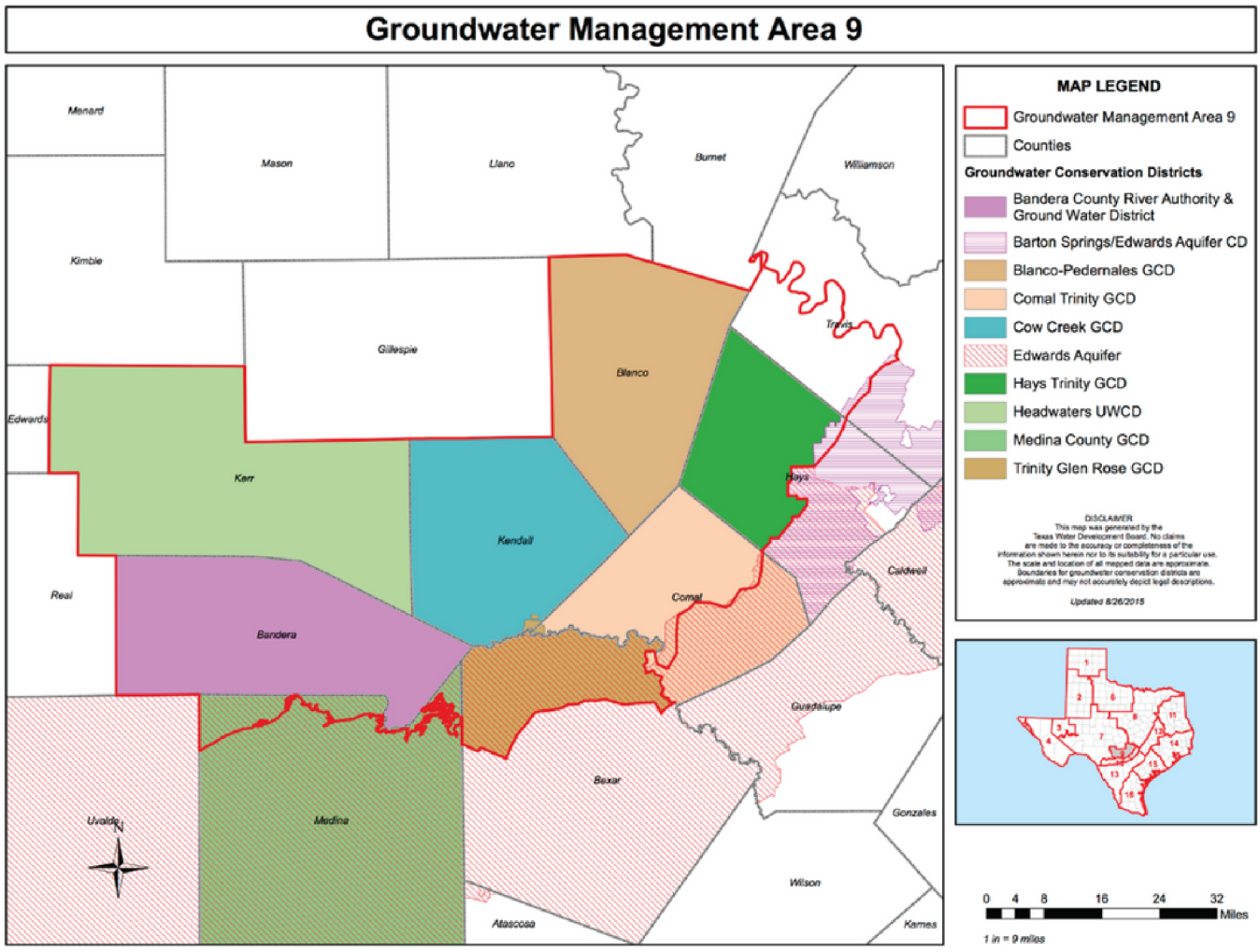
Groundwater Management Area 9 (GMA-9) Representative

Groundwater Management Areas were created "in order to provide for the conservation, preservation, protection, recharging, and prevention of waste of the groundwater, and of groundwater reservoirs or their subdivisions, and to control subsidence caused by the withdrawal of water from those groundwater reservoirs or their subdivisions, consistent with the objectives of Section 59, Article XVI, Texas Constitution, "groundwater management areas may be created." (Texas Water Code § 35.001).

BCRAGD has been a member of GMA-9, a regional water management group, since 2005. More information on the group, including data and reports, can be found at https://www.twdb.texas.gov/groundwater/management_areas/gma9.asp

Our District's involvement is summarized below:

- BCRAGD's General Manager, Intergovernmental Affairs Manager, and Assistant General Manager attended and represented the District at the GMA-9 Joint Planning Meetings and Technical Meetings on 17.OCT.2022, 9.DEC.2022, 21.FEB.2023, 25.APR.2023, 25.JUL.2023, 26.SEP.2023 .



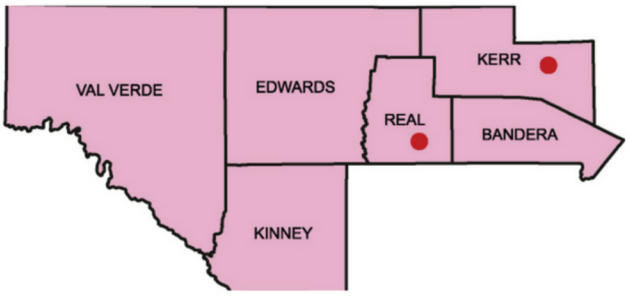
Resource Planning & Collaboration

Texas Water Development Board (TWDB)
Created in 1957, the mission of the Texas Water Development Board (TWDB) is to lead the state's efforts in ensuring a secure water future for Texas and its citizens. Their mission is a vital part of Texas' overall vision and the state's mission and goals that relate to maintaining the viability of the state's natural resources, health, and economic development. https://www.twdb.texas.gov/about/index.asp#twdb-history

Our District's involvement is summarized below:

- Meeting on USGS invoicing and financing 04.OCT.2022, 12.DEC.2022, 24.JAN.2023, 15.MAR.2023,
- DEC.2022 Work on TWDB Quarterl Reports & USGS Invoicing
- 30.MAR.2023 TWDB Longevity As. for the CofB Water Wells Study Webinar
- APR-JUN Reviewed and submitted BCRAGD approval authorizations and a payment request to TWDB
- 25.JUL.2023 TWDB Board Meeting

Region J- Plateau Regional Water Planning Group



Map of Region J - Plateau Regional Water Planning Group.

BCRAGD is a representative Groundwater Conservation District on the Region J Plateau Regional Planning Group and represents Bandera County in the design of viable water management strategies in the region. BCRAGD attends planning group meetings and proactively participates with Region J's consultants in the creation of the Region J Water Plan. The Region J Meetings that were attended by BCRAGD staff were on 26.JAN.2023, 20.APR.2023, 22.JUN.2023, 2.AUG.2023.

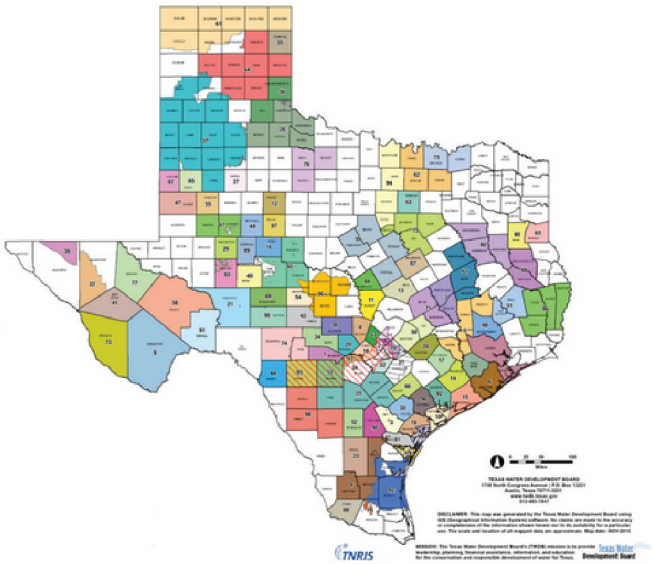
Texas Water Conservation Association (TWCA)
Texas Water Conservation Association (TWCA) is a 501(c)(4) association of water professionals and organizations in the State of Texas. TWCA's membership is made up of diverse entities and individuals, all connected to the surface water and groundwater industries in some way. https:// www.twca.org/about

Our District's involvement is summarized below:

- BCRAGD's General Manager attended the TWCA Regional Districts & Authorities Meeting on September 21st - 22nd.
- BCRAGD's prior General Manager and Assistant General Manager attended the TWCA's Conference on October 5th - 7th.

GSA BBASC Environmental Flows

BCRAGD is a member of the Guadalupe, San Antonio, Mission, and Aransas Rivers and Mission, Copano, Aransas, and San Antonio Bays Basin and Bay Stakeholder Committee (GSA BBASC). It was "created by the 80th Texas Legislature in recognition of the importance that the ecological soundness of our riverine, bay, and estuary systems and riparian lands have on the economy, health, and well-being of our state." The above excerpt and more information can be found at the following website:



There are about 99 Groundwater Conservation Districts in the State of Texas, and a good majority belong to the Texas Alliance of Groundwater Districts.

GSA BBASC website informaiton - https://www.tceq.texas.gov/permitting/water_rights/wr_technicalresources/eflows/guadalupesanantonio-bbasc-bbest

District General Manager, Dave Mauk, serves as a BBASC Member, representing the Regional Water Planning Groups Interest Group.

Texas Alliance of Groundwater Districts (TAGD) Member

Founded in 1988, the Texas Alliance of Groundwater Districts (TAGD) "works to promote and support the sound management of groundwater based on local conditions and good science. TAGD provides educational and technical assistance to member districts and the public, serves as a resource on groundwater issues with state officials, assists members in keeping current with state law, and is a central point of contact for information on groundwater issues and practices." (excerpt from TAGD's website: https:// texasgroundwater.org/what-we-do/.

General Manager Dave Mauk joined the Executive Committee for TAGD as the representative of the Lower Edwards Trinity. This committee has the power to fill vacancies of officers, represent TAGD during the legislative session, gather information and make decisions for TAGD as directed by the membership, review, adopt, and take action on financial matters, and perform other duties and responsibilities deemed necessary by the membership.

District General Manager, Dave Mauk, serves as the legislative committee's district liaison and voting member.

During FY 2023, BCRAGD remained an active member:

- BCRAGD's General Manager attended the TAGD Legislative Committee conference calls on 10.AUG.2022
- BCRAGD's General Manager attended the TAGD Executive Committee Meeting

Resource Planning & Collaboration

Texas Water Foundation (TWF) is working to lead Texas into a sustainable water future by investing in the next generation of water leaders, equipping decision-makers, and inviting every Texan to recognize that Texas Runs on Water. https://www.texaswater.org/.

Texas Water Foundation has a Texas Water Leaders Program within their Carole Baker Water Leadership Institute. This annual leadership program provides water professionals stepping into leadership positions with the tools, training, and opportunities to expand their potential. The Texas Water Leadership Certification offers emerging leaders the opportunity to grow their leadership skills and become a part of an exclusive network of professionals stepping into leadership positions across a diverse water sector.

Bandera County River Authority and Groundwater District provides funds for a scholarship benefiting minority Water Leaders.

Our District's involvement is summarized below:

- General Manager attended meetings on December 7th and July 27th.
- General manager attended Texas Water Day hosted by Texas Water Foundation
- 16.FEB.2023 Workforce Survey

San Antonio Regional Flood Planning Group: Region 12

San Antonio Regional Flood Planning Group (SARFPG), Region 12 aims to provide comprehensive regional flood planning and is to carry the related responsibilities placed on regional flood planning groups by state law. The plan identifies short and long-term flooding issues and recommends flood management strategies for addressing them. Region 12 consists of the following parts of counties in Aransas, Atascosa, Bandera, Bexar, Caldwell, Calhoun, Comal, DeWitt, Goliad, Guadalupe, Karnes, Kendall, Kerr, Medina, Refugio, Victoria, and Wilson Counties.

The District's General Manager, Dave Mauk, applied on October 20, 2020, to sit as the representative for Bandera County on the Region 12 Flood Regional Planning Group.

Our District's involvement in FY 2023 is summarized below:

- BCRAGD General Manager or Intergovernmental Affairs Manager attended General Meetings 13.OCT.2022, 17.NOV.2023, 19.DEC.2023, 21.FEB.2023, 20.APR.2023, 23.MAY.2023, 27.JUN.2023

Resource Planning & Collaboration

Nueces Regional Flood Planning Group: Region 13

This Flood Planning acts similarly to the Region 12 Flood Planning Group. The groups propose to provide comprehensive regional flood planning and are to carry the related responsibilities placed on regional flood planning groups by state law. Region 13 represents parts or all of the following counties Aransas, Atascosa, Bandera, Bee, Bexar, Brooks, Calhoun, Dimmit, Duval, Edwards, Frio, Goliad, Jim Hogg, Jim Wells Karnes, Kenedy, Kerr, Kinney, Kleberg, La Salle, Live Oak, Maverick, McMullen, Medina, Nueces, Real, Refugio, San Patricio, Uvalde, Webb, Wilson, & Zavala.

The District's Flood Science Manager, Larry Thomas, CFM, was nominated and approved as the representative of Bandera County for the Region 13 Flood Districts on Nueces Regional Flood Planning Group on April 26, 2021.

Our District's involvement is summarized below:

- BCRAGD Flood Science Manager or Assistant General Manager attended meetings on 27.MAR.2023, 15.MAY.2023, 26.JUN.2023

Other noteworthy Administrative Events, Training, & BCRAGD Highlights for FY2022 Include:

- 04.OCT.2022 Regular City Council Meeting
- 13.OCT.2022 Quarterly Meeting
- 13.OCT.2022 Drought Presentation
- 27.OCT.2022 CBSL Core Team Meeting
- 03.NOV.2022 Meeting: Review PFIA Policy
- 03.NOV.2022 Sunset Exit Interview
- 03.NOV.2022 South Central Texas Regional Environmental Task Force
- 30.NOV.2022 Response Due to Sunset
- 06.DEC.2022 Sunset Report Hearing in Austin
- 15.DEC.2022 CBSL Core Team Meeting
- 20.DEC.2022 Called Meeting
- 07-09.DEC.2022 TCINN Conference
- 28.DEC.2022 In-Person Financial Audit Performed by Ede & Company, LLC.
- 09.JAN.2023 Posted Permit Hearing Notice
- 10.JAN.2023 OTX WAS Planning
- 11.JAN.2023 Sunset Legislative Meeting in Austin
- 17.JAN.2023 Longevity Assessment for the City of Bandera Water Wells mtg
- 19.JAN.2023 Quarterly Meeting
- 08.FEB.2023 UGRA Meeting
- 14.FEB.2023 Meeting Hill Country Alliance
- 16.FEB.2023 CBSL Core Team
- 09.MAR.2023 Meeting Jessica-Prophet
- 28.MAR.2023 Meeting in Medina-Public Outreach
- JAN-MAR Filled Public Information Request
- JAN-MAR Reviewed, edited and approved three potential project reports
- JAN-MAR Reviewed gathered and collated information for the Annual Report for FY 2022
- 01.MAR.2023 Public Information Request Call
- 02.MAR.2023 Kerr County - Mining Water Demand Projections
- 08.MAR.2023 County Magazine Photographer

Resource Planning & Collaboration

- 22.MAR.2023 The Brackish Groundwater Production Zone
- 28.MAR.2023 Natural Resource Committee 03.APR.2023 DFC and Management Goals
- 19.APR.2023 CBSL Watershed Committee Meeting
- 13.APR.2023 Quarterly Meeting
- 27.APR.2023 CBSL Partnership Online Meeting
- 17.MAY.2023 CBSL Watershed Conservation Committee
- 18.MAY.2023 Called Meeting
- 25.MAY.2023 Staff Mtg: Updates
- 05.JUN.2023 City of Bandera Flood Infrastructure and Habitat Angler Access Program
- 08.JUN.2023 GoTo - NWS Austin/San Antonio Spring 2023 Climate
- 21.JUN.2023 CBSL Watershed Conservation Committee
- 30.JUN.2023 Groundwater Quality Monitoring Survey
- 19.JUL.2023 Staff Mtg: fieldwork dashboard review
- 19.JUL.2023 CBSL Watershed Conservation Committee
- 20.JUL.2023 Quarterly Meeting
- 27.JUL.2023 CBSL Partnership Summer Meeting
- 03.AUG.2023 Interview with KSAT w/ water sample at Bandera City Park
- 04.AUG.2023 Presentation for Soil Water Conservation District
- 16.AUG.2023 CBSL Watershed Conservation Committee
- 17.AUG.2023 GCD Managers Meeting
- 22.AUG.2023 Bandera City Council Meeting
- 24.AUG.2023 Called Meeting for Budget and Tax Rate
- 12.SEP.2023 Meeting with TWRI
- 14.SEP.2023 Public Hearing & Called Meeting
- 15.SEP.2023 Court Proceedings
- 19-20.SEP.2023 Southern Plains DEWS Partners Meeting
- 20.SEP.2023 CBSL Watershed Conservation Committee
- 21-22.SEP.2023 TWCA Regional Districts & Authorities Meeting
- 28.SEP.2023 HCA Leadership Summit Panelist
- 27.SEP.2023 Court Proceedings





Bandera County River Authority & Groundwater District
Protecting & Preserving our Natural Resources



Articles, Publications & Press Releases

Newspaper Articles

Date	Article Title- Bandera Bulletin
26.OCT.2022	Citizens Ask Courts to Increase Plat Fres
01.NOV.2022	Gathering of Water Advocates Reveals Ongoing Water Challenges Opportunities in the Region
04.JAN.2023	Businesses Residents Reckon with a Dying Medina Lake
25.JAN.2023	Vocal Crowd Packs River Authority and Groundwater District Meeting
08.MAR.2023	BCRAGD Grants Camp OTX Variance From Drought Restrictions
30.MAY.2023	Ongoing Water Shortage Negatively Impacts Region's Most Vulnerable Citizens
26.JUL.2023	City Council Abates, then Swiftly Renews Drought Response Plan
	Dangerous E. coli levels present at Bandera City Park

Date	Article Title- Bandera Prophet
25.JAN.2023	Groundwater District Denies 200-acre-foot Permit Application,
20.APR.2023	Apapproves Lower Pumping Amount.
24.APR.2023	Groundwater district levies $66k fine for abandoned well, pollution
30.APR.2023	Water is Precious
27.JUN.2023	Groundwater District Declares Extreme Drought
18.SEP.2023	See the Latest Bandera County River Authority and Groundwater District Water Quality Testing Results
	Public Service Announcement In-House Sampling

Date	Article Title- San Antonio News Express
10.AUG.2023	Water utility enacts Stage 4 restrictions for customers in Medina, Bandera counties

Date	Article Title- Kens 5
11.AUG.2023	Bandera issues public health emergency declaration closing and banning swimming at park

Date	Article Title- KSAT
11.AUG.2023	Surface water quality levels in some Texas lakes, rivers is poor, officials say



Featured Newspaper Articles

October 1, 2021 - September 30, 2022

26.OCT.2022

Citizen asks court to increase plat fees

By Cari Golyzniak
For the Bulletin

During the public forum portion of the Commissioners' Court on Oct. 13, county resident Margo Denke advocated for the Bandera County Commissioners' Court to increase plat fees.

Her request echoed and supported the County Engineer's recommendation and included examples from neighboring counties that were often five figures. Bandera's plat fees are $500 across the board.

Denke proposed: "Bandera County has long remained rural "Cowboy Country" because our county lacks interstates, railroads, and a major city. Most of our roads are two lanes, most without shoulders. We have BISD serving exclusively Bandera County, share two far smaller school districts with neighboring counties(Medina ISD, Utopia ISD) and share a small part of the largest school district in Bexar County (Northside ISD). Most residents rely on domestic wells; there are few public water utilities in our county. Most residents rely on septic systems for disposal of domestic wastewater; there is only one direct wastewater discharge permit in our County. All of these factors, plus the lower costs of land compared to other bedroom counties close to San Antonio, create an environment where our County will end up being 'developed' without considerations for sustainable growth"

Considering what the court has already done, Denke said, "We are proud of the significant step the Commissioners' Court made to require that an assessment of water availability be made prior to submission of a preliminary plat. We are also proud that our county revised lot sizes for new plats from five acres to ten acres to be consistent with BCRAGD.

In support of her appeal, Denke contended developers, not current taxpaying Bandera County residents, should pay the costs to review new plat proposals and to inspect the quality of street, road and drainage improvements as work proceeds.

"We recognize that the county cannot recoup all of the costs of growth, but we ask for due diligence to collect all costs from all possible sources to pay for the needed infrastructure to support this growth," she said.

Denke concluded by asking the Court to review and deliberate this issue before this item is placed on their agenda.

Bandera County Judge Richard Evans thanked Denke.

Gathering of water advocates reveals ongoing water challenges, opportunities in the region

Leah Cuddeback
Hill Country Alliance



Participants of the grassroots gathering of water advocates take a tour of the Bandera wastewater treatment plant, led by plant manager John Heggemeier, left. (Photo courtesy of the HCA)

Hill Country water advocates from across the region gathered in Bandera on Oct. 13 for a day of learning, connecting and strategizing for water stewardship in our region.

"The work to protect our aquifers and rivers is challenging but vital to the long-term prosperity of the Hill Country. It makes all the difference to be able to work together, learn from one another and celebrate each other's successes," said Hill Country Alliance Water Program Manager Marisa Bruno.

More than 40 people, representing 27 local organizations from 13 Hill Country counties —including Bandera, Blanco, Bexar, Comal, Kendall, Kerr, Kimble, Gillespie, Hays, Medina, Real, Travis and Uvalde — attended the gathering, which was organized by HCA.

The day began with a tour of Bandera's wastewater treatment plant. Bandera Mayor Pro Tem Rebeca Gibson welcomed the group to the facility and explained the need to move and update the plant.

"This plant has flooded several times over the years, sending untreated wastewater down the Medina River," she said "Future state and local investments into our system should be aimed at moving our plant out of the river's floodplain, while also transitioning to a reuse system that puts treated wastewater to use through drip irrigation on sports fields and hay farms, for example."

The gathering continued on to Bandera Brewery for an afternoon of speakers and discussion. Dave Mauk, general manager of the Bandera County River Authority and Groundwater District, kicked off the program with a conversation about drought.

"The U.S. Drought Monitor might show that drought conditions have improved, but we're still feeling the drought in Bandera," Mauk said. "Aquifer levels in the Lower and Middle Trinity have not recovered, and the Medina River is still dry."

Representatives from Save Medina Lake added that Medina Lake is only at 7% capacity.

Nick Dornak, director of watershed services at The Meadows Center for Water and the Environment at Texas State University, and Robin Gary, managing director of The Watershed Association, followed up the drought presentation with potential solutions in the form of One Water.

"One Water is a holistic approach to water management that recognizes rainwater, gray water and treated wastewater as resources to be used wisely. Rather than considering water in these forms as a nuisance to be disposed of, forward-thinking communities are investing in infrastructure to slow down, capture and beneficially reuse these resources," Dornak said.

The last guest speaker was Danielle Goshen, policy specialist and counsel at National Wildlife Federation, who gave an overview of the legislative process and some goals for the upcoming legislative session.

Those interested in participating or learning more can contact the HCA by emailing marisa@hillcountryalliance.org.

The Hill Country Alliance is a nonprofit organization that brings together a diverse coalition of partners to preserve the open spaces, starry night skies, clean and abundant waters and unique character of the Hill Country. Visit www.hillcountryalliance.org for more information.

Leah Cuddeback is the public engagement manager for Hill Country Alliance. She can be reached at leah@hillcountryalliance.org.

04.JAN.2023


Businesses, residents reckon with
a drying Medina Lake
BULLETIN PHOTO/Karla Held
It's not just drought. Straw sticking out of Medina Lake impacts water levels and accessibility.

By Karla Held
Special to the Bulletin

"I miss sitting on my dock in the evenings chilling, watching the fish and turtles. Now I just watch the grass grow."

The owner of Hancock Resurfacing, Cherry Cove resident Darrell Hancock has lived on the shores of Medina Lake for over 25 years. Although he loves living on the lake, he says he misses being able to put his boat in the water, as well as other aspects that come with a fuller lake.

It's a sentiment shared not just by residents but by visitors like Jose Diaz, who enjoyed a full moon paddle last November.

"Medina Lake is truly a piece of heaven in Texas. It's my favorite place, where I go when I need to escape the city, do a major decompression and breathe some peace while paddling," said Diaz.

Medina Lake is currently just over six percent full, according to the Texas Water Development Board (TWDB). That percentage is the lowest in over half a decade, when levels dropped as low as 2.7 percent in 2014.

The last day Medina Lake saw 100 percent capacity was July 7, 2019. It has steadily dried up since.

"A resource like this would be virtually impossible to recreate," said Medina Lake Area resident Jim Ray, owner of Ray Law Firm. "Whether we like it or not, the growth of San Antonio is quickly advancing to our shores, and it is time for us to make a concentrated effort to maximize both its beauty and those irreplaceable opportunities before they are irretrievably lost."

The Bandera County Park at Medina Lake has been closed since May 2021 due to low water levels, and County Commissioner Greg Grotheus says reopening the location is a waiting game.

"It could be in two days, it could be in two years. It depends on God," said Grotheus, who began his term as Bandera County Commissioner for Precinct Two earlier this year.

Although the park is closed, Grotheus says work is being done.

"There's a lot of work to be done at the park, and we're now updating some of the amenities, such as the tables and benches," he said. "We are limited on space, and we have some drawbacks due to the narrow watershed. There's some mismanagement, but the big issue is the rain"

Grotheus added the drought is the main issue impacting water level, but high amounts of straw in the lake also add to water access issues.

While kayaking and paddleboarding are still possible on the water, the closed park keeps access to the lake limited. There aren't any other public access options for hiking, fishing, or swimming in the Medina Lake area.

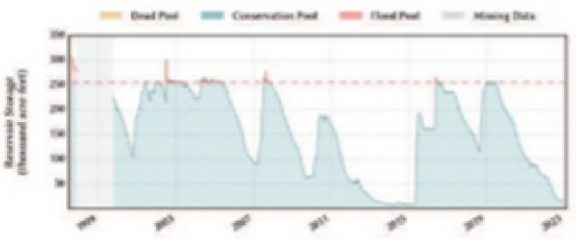
Unless one owns lakefront property, the only option for launching a boat for locals is paying $20 a day at Red's Cove, located in the southern region of the lake near the dam.

Businesses are impacted by the lack of tourism to the county park. Adolph's Store and Restaurant closed in December 2021 after 91 years of operation. Cloud 9 Snacks closed their storefront on Dec. 30, 2022.

Longtime resident Bob Brischetto says the severe drought makes it impossible to run a reliable water sport business in the area.

Restaurants like 4 Way Bar and Grill, Out of the Way Cafe, La Cabana Cafe and Lucy's BBQ are still open, while other businesses like Lake Medina RV resort have learned to adapt to an empty lake.

Gina Grothues, who owns Lake Medina RV resort with her husband, says the location offers other activities when the lake is low such as pickleball, fossil hunting and hiking.



Courtesy Texas Water Development Board

The last day Medina Lake saw 100 percent capacity was July 7, 2019. It has steadily dried up since and currently sits just above six percent.

Brichestto says the impact of the lake's current status reaches beyond tourism.

"There is also the loss of water through inefficient delivery to farmers by the dam owners, who often leave the dam gates open," he said. "Much water is also lost through seepage in the unlined canals that deliver water to the farmers."

In terms of moving forward, Brischetto says the community will have to adjust habits regarding water conservation and reuse.

"We will need to adjust to new technologies that make development and growth less taxing on our natural resources," said Brischetto. "And we will need to take seriously the problem of climate change and adopt global solutions"

Other area business owners and residents voiced the importance of conserving water and working with various agencies.

"Nobody benefits from an empty lake," said Michelle Reichle, the owner of Hi Energy Realty in Lakehills who has lived on the lake for 22 years.

Reichle says her business has not suffered in the wake of the drought and low lake levels, but that's only because she works with properties outside of Medina Lake, including Lakehills, Pipe Creek and Boerne. She adds selling houses on a near empty lake is obviously more challenging, and lakefront sales have been down.

Reichle says she believes area agencies like the Bexar-Medina-Atascosa Counties Water Control and Improvement District No. 1 (BMA) and river authority and groundwater districts in Bandera and Medina County could work together to share skills and resources to address the situation.

"I find the BMA board and many of their staff unfriendly, unapproachable and uncaring," said Reichle. "There could be enough water for everybody if it was not wasted. Many businesses suffer with an empty lake, wells are going dry, and the fish are dying."

She says she would like to see a conservation level set for the lake and drought contingency plans followed, as well as transparency regarding use of irrigation water.

"I think after 100-plus years, we should brainstorm methods of delivering water to the farmers that is not so wasteful," she said. "I would like to see the BMA board's membership changed to reflect all stakeholders that use Medina Lake waters."

BMA did not return the Bulletins request for comment, but last July adopted a resolution agreeing not to assert "regulatory authority over property in Bandera County," marking the end of an almost decade-long legal battle with the Bandera County River Authority and Groundwater District (BCRAGD)

"People who live in Bandera

SEE **DRYING**, PAGE 10

LADY"
by Goodman. PLLC
era Road. Ste. 222
as 78023
949-1000
te - Trusts
.net
Law.com

" NOBODY BENEFITS FROM AN EMPTY LAKE"

- Michelle Reichle, the owner of Hi Energy Realty in Lakehills who has lived on the lake for 22 years

County, right around the lake, are not going to have to pay any attention to any comments, rules or regulations or anything else that might come out of the BMA," BCRAGD attorney Greg Ellis, attorney for the Bandera County River Authority said in a statement following the decision. "All existing agreements with the BMA are not affected, and people can enter into voluntary agreements, but otherwise, the people there do not have to pay attention."

In light of that decision, the BMA may still file complaints to the Texas Commission on Environmental Quality regarding unlawful diversions of water from Medina Lake or if they believe a Bandera County well is producing water from Medina Lake storage.

BMA may also file complaints if they believe a Bandera County septic tank on property adjacent to Medina Lake is not functioning or is discharging untreated or partially treated human waste into Medina Lake.

A Save Medina Lake petition to the state of Texas to increase oversight and control of Medina Lake water management has received 680 signatures since its publication last November.

"The BMA watery delivery system is a joke," said Save Medina Lake committee member Mike Crandall. He owns Mico's Wally's Watersports, which opens during the summer months for kayak rentals, boat and RV storage and ski and wake board lessons.

In addition to asking for equal representation on BMA's board, the petition also asks for BMA to be placed under Sunset Review and replaced with a River Authority. Save Medina Lake also is asking the state to establish a conservation level and change drought laws so they can be enforced.

While groups press for solutions and others wait for rain, Ray says he time is not on Medina Lake's side.

"We must make a concentrated effort to do what is required before this once in a lifetime opportunity is lost," he said. "Medina Lake is far more than a mere irrigation reservoir. It is literally the lifeblood of our region, and a virtually untapped resource. To do nothing, or to believe that nothing can be done to preserve and enhance it, is simply not true.

Information about the Bandera County Medina Lake Park can be found at banderacounty.org/services/MedinaLakePark.htm.

More information about the Bandera County Comissioners can be found at banderacounty.org/departments/CommissionerCourt.htm or by dialing.

More information about the BMA can be found at bmawater.org.

More information about Save Medina Lake can be found at facebook.com/savemedinalake.



BULLETIN PHOTO/Karla Hold

Michelle Reichle observes Medina Lake from her lakefront property. "There could be enough water for everybody if it was not wasted," she said. "Many businesses suffer with an empty lake, wells are going dry, and the fish are dying."



isabilities
ears of
special
es have
ropriate
n.
ow a child
e contact
of Special
ext. 2301
ISD
ERA.
w you.
ING PATIENTS.

25.JAN.2023

Vocal crowd packs River Authority and Groundwater District meeting

Board grants two permits to Vanderpool Management

By Tracy Thayer
For the Bulletin

The quarterly meeting of the Bandera County River Authority and Groundwater District (BCRAG) on January 19 drew a record crowd of over 60 people, 23 of whom spoke during public comment regarding an application for two water wells in western Bandera County by Vanderpool Management.

Vanderpool Management had requested two water wells, one for 130 acre feet and another for a "barn well" requesting 70 acre feet of water for a total of 200 acre feet of water.

Peter Gregg, attorney for Vanderpool Management, made a statement to the Board in favor of approving the wells as requested.

After lengthy public comments, the board granted the permits but only for residential usage of 28 acre feet and barn usage of 28 acre feet for a total of 56 acre feet, notably less than the 200 acre feet requested.

Public comment was limited to three minutes per speaker.

Fred Berner of Mill Creek and Evans spoke first against granting the wells to Vanderpool Management. He was followed by Carlos Benavides from Laredo.

Benavides mentioned his family owns land in Kerr and Bandera Counties and remarked denying the wells was not the correct strategy to contain water use in the Hill Country. He recommended the community band together and lobby the Texas Legislature for stricter laws.

Next up was Kevin Wynn of Mill Creek Road. Wynn said his grandfather purchased 500 acres

SEE **BOARD,** PAGE 7

BOARD, CONTINUED *from 1*

on Mill Creek in 1935. He asked the board to consider granting the wells would cause Mill Creek Spring to dry up. Most of the residents in the area use Mill Creek Spring as their water source.

Randy Harp of Foster Ranch Road made a brief statement and encouraged the board to deny the permits.

Peter Hornsby of Rainbow Drive reported he had property in Medin and had already lowered his well due to the drought and couldn't afford to lower it further.

Brittany Clark reported the wells had already been drilled and expressed concern about how they would be monitored.

Peter Gregg asked approval of the wells be deferred.

Stephen Sparks said he opposed the wells and said a company outside of Midland was the one requesting the well. He added the well would impact him financially if he had to drop the pump lower in his well.

Evelyn O'Hara from the Utopia Food Pantry spoke for her organization. She reported that the food pantry was giving out water to clients whose wells had gone dry. She reported her clients did not have the resources to deepen their wells. Some at the meeting speculated that Vanderpool Management planned to pump the water table dry and sell the water back to the residents.

Harrison Buxton also spoke against granting the permit.

Margo Denke spoke about drawing water to fill so-called "vanity lakes" on the property in question. She said requesting that much water to fill the lakes with an uncontrolled spillway was not reasonable. She said that the "irrigation loophole" should not apply to this well.

Attorney Lauren Ice, representing the Friends of Hondo Canyon, said granting the applications for water wells to Vanderpool Management was inappropriate because they had not properly filled out their application and granting the applications was inconsistent with the county water management plan. She suggested denying the applications or sending them back to the company.

Rancher Ann Schnin noted that this was Texas' driest year yet. And remarked these wells would have a detrimental impact on the area's water. If the application were approved, she said, it would establish a dangerous precedent.

Resident Nancy Rinn said she was only a small property owner, but she had already lost her well and had to lower it 60 feet.

Steve Stringfellow spoke against approving the well permits. Dan Poston of Medina Water Company remarked that the permits asked for 6 times what the city of Medina (286 residents) used in a year. He also cited statistics that said wells that size could support 4 thousand head of cattle, or 59 thousand sheep/goats. The wells could irrigate 133 acres of agriculture. No one could specify what the large amount of water requested by Vanderpool Management would be used for.

Becky Westerbrooke, speaking for senior Josephine Parker, asked what the water was being used for. She referenced the proposed water park that was part of the Young Life camp. She asked if the Fire Departments would even have access to water to fight local fires. She stated that the permits "exceeds normal residential use by 1000 times."

Resident Bill Weinacht wrote a letter his proxy, Becky Westerbrooke, read to the group. His letter opposed the granting of the permits because losing his water well would substantially decrease the property value.

Alva Alvarez, wife of Bill Weinacht, wrote a letter also read by Westerbrooke. It outlined the environmental impact to their ranch the lack of water caused.

Barbara Baggett from Keep Utopia Beautiful remonstrated the Board and said an employee of the Vanderpool Management Company had been untruthful. She exhorted the board to "not trust this landowner."

David Barber of North Mill Creek stated that the "aquifer is not infinite." He also stated this not only affects Bandera County but all the surrounding counties as well.

After the public comments closed, the Water Board began its regular meeting.

A financial audit for the year 2022 was presented. The water board got an "non-modified opinion," which is the highest rating available.

The board also approved water permits for Emily Hauer and for the City of Bandera as well as the sale of out-of-date vehicles.

Finally, General Manager Dave Mauk gave an in-depth report of the BCRAG's activities in the last quarter.

08.MAR.2023



BULLETIN PHOTO/Karla Held

ONGOING WATER SHORTAGE NEGATIVELY IMPACTING REGION'S MOST VULNERABLE CITIZENS

By Sam Boykin
Special to the Bulletin

Edna Prior was watering her lawn last May when suddenly the water started sputtering and then shut off completely. She and her husband Jim live on about 10 acres in southwest Bandera County and, like many people in the area, get their water from a well.

Prior explained that water inside her house comes from a 1,500-gallon holding tank, while the water outside the house comes from a well pump.

She said after her water stopped running, she walked to the pump and could hear it grinding away, but the well had run dry. She quickly cut it off to prevent any damage.

"Our well is 454 feet deep, and we had never run out of water until then," she said.

The couple had to pay $500 to lower the pump about 20 feet to reach the water. In February, they had to shell out another $500 to lower it 20 feet again.

On that same May afternoon, Prior's neighbor, Nancy Rinn, was tinkering around the house when her water suddenly shut off.

Like Prior, Rinn's well had run dry, and their water pump burned out. They were without water for about a week.

Rinn and her husband live on about 70 acres, and she said that in 1997 they had their well dug to 485 feet; the water level at the time was at 210 feet.

Last summer, workers didn't reach water until 348 feet. The couple had to spend $4,250 to replace and lower their pump 60 feet to reach the aquifer.

"That's nothing compared to the price of having to dig a new well, which a lot of people are faced with," said Rinn.

Prior and Rinn are both fortunate in that they had the money to fix their pumps and get water flowing again. But there are a lot of people in Bandera County with tapped out wells who don't have the money for repairs, forcing them to make do without one of life's basic necessities.

"It's desperate. We need water so bad," said Rinn. "And even if we do get rain, it takes a long time to replenish the aquifers."

Evelyn O'Hara has seen the desperation firsthand. She's a member of Utopia Baptist Church and works at the church's food pantry.

O'Hara said the pantry has recently been giving out cases of bottled water to clients whose wells have gone dry and can't afford to remedy the situation.

"It's very little compared to what they need," she said. "We're trying to help as much as we can, but we can only do so much."

'TOO MANY STRAWS IN THE GROUND'

There are three main factors contributing to Bandera's water shortage woes, said Marisa Bruno, water program manager at the Dripping Springs-based Hill County Alliance, a nonprofit dedicated to protecting the Hill Country region's water supplies, agricultural heritage, and wildlife.

Bruno said the region's water shortage can be attributed to a combination of drought, population growth and the disproportionate demand for water from certain businesses and homeowners.

Bruno points to the Alliance's "State of the Hill Country" report from 2022, which indicates the Hill Country's population, currently at about 3.8 million, has grown by nearly 50 percent in the last 20 years.

> "IT'S DESPERATE. WE NEED WATER SO BAD"
>
> *- Nancy Rinn, Bandera county resident*

That number is expected to grow by another 35 percent over the next 20 years, reaching 5.2 million in 2040.

Moreover, the unincorporated population—subdivisions and neighborhoods outside established city boundaries that typically rely on well water—increased 103 percent from 1990 to 2020 to about 865,000 residents.

In Bandera County, the population in unincorporated areas has increased by 137 percent since 1990, while the population within the city limits stayed practically level.

All this population growth means new subdivision development, placing greater demand on the region's finite water supply.

"There's just too many straws in the ground," Bruno said.

Moreover, there's ongoing tension over the amount of water some businesses and homeowners use.

For example, Vanderpool Management, a property management company, recently requested two water wells, one for 130 acre feet and another for a "barn well" requesting 70 acre feet of water for a total of 200 acre feet of water.

In response, dozens of people spoke against Vanderpool Management's request at the quarterly meeting of the Bandera County River Authority and Groundwater District in January.

In the end, the board granted the permits, but only for residential usage of 28 acre feet and barn usage of 28 acre feet for a total of 56 acre feet, notably less than the 200 acre feet requested.

Rinn also points to other Bandera County businesses and homeowners building lakes and ponds on their property or irrigating large swaths of land.

"The land here is not suited for that," she said. "This is a dry area, we're at the edge of a desert. We're not meant to have lakes and lush green forests. You can't keep sucking aquifers dry to create this unnatural environment. People have a right to water, but they don't have a right to use it irresponsibly and turn this land into something it's not meant to be."

The situation angers O'Hara from Utopia Baptist Church as well. She said when some people and businesses use more than their fair share of water, it directly impacts those people who already struggling.

"It's just not right," she said. "So many are doing without and there are these people wanting to put in swimming pools and

SEE EMPTY, PAGE 7



BULLETIN PHOTO/Kaela Heid

> "WE'RE TRYING TO HELP AS MUCH AS WE CAN, BUT WE CAN ONLY DO SO MUCH."
>
> *- Evelyn O'Hara, member of Utopia Baptist Church and works at the church's food pantry*



BULLETIN PHOTO/Kaela Heid

Medina Lake's low level is only one impact of a county-wide drought that has also caused wells to dry up.

EMPTY, CONTINUED *from 1*

ponds and irrigate land for livestock. And it's sad because most of the people suffering are poor and they don't have anyone to fight for them."

OPTIMIZING RESOURCES

Bruno with the Hill County Alliance points out groundwater has long been one of most valuable—and contested—natural resources in the region.

Underground aquifers not only provide water for homes, businesses, and agriculture, but they're also a source of water for the area's springs, creeks, and rivers, which also help drive tourism.

To sustain this valuable resource, it must be carefully managed, she said.

While factors like drought and population growth are not going away, Bruno said, there are technologies and strategies that can help preserve water.

For example, a growing number of new subdivisions are implementing systems that capture rainwater, which homeowners can use for things like flushing their toilets and watering their lawns.

She added that homeowners can plant lawns using native grasses and plants that don't require daily watering. She also mentioned how a growing number of golf courses—often criticized for using too much water—are using treated wastewater on their greens and fairways rather than fresh groundwater.

"There are many ways we can optimize the resources that we currently have," she said. "We just need the will and resources to do it."

BCRAGD grants Camp OTX variance from drought restrictions

By Daniel Tucker
editor@banderabulletin.com

In a unanimous decision last Thursday, the Bandera County River Authority and Groundwater District granted Camp OTX a variance from drought management restrictions.

BCRAGD General Manager Dave Mauk, General Manager of the Bandera County River Authority and Groundwater District said the variance had to be looked at without emotion and under state code.

"They have a TCEQ permit. We cannot classify this as waste under this new code, said Mauk. "We may not like it. We might all think its wasteful, but the code says it's not in this case."

Mauk recommended to grant Camp OTX, a Tarpley youth camp, a variance not to exceed 24-acre feet out of an existing allotment from the Lower Trinity only during stage five drought restrictions. Mauk said the county is currently in stage four.

"We have to balance the aquifer, but we also have to balance the rights of the permitee," he said. "That's what we're told to do."

In response to some concerns voiced during the citizen comment portion of the meeting, Mauk said there was an issue with the well in question, but it has since been fixed.

"It was out of service. I went and checked," he said. "There was an issue with it that was fixed. It simply needed to be jetted. Pump was put in it and

SEE **DROUGHT,** PAGE 10



BULLETIN PHOTO/Daniel Tucker

A packed BCRAGD meeting room listens to General Manager Dave Mauk discuss his thoughts on a variance request from Camp OTX last Thursday.

City Council abates, then swiftly renews drought response plan

By Cari Golyzniak
For the Bulletin

At the City Council's August 22 meeting, members voted without opposition to revert to their current drought plan Ordinance 412B after the city attorney said the city was in violation of their well permit without a drought contingency plan.

Two weeks prior to this decision, the council voted to rescind Ordinance 412B and abate a section of Chapter 13 Utilities Article 13.08 Drought Contingency Plan for 60 days, giving the city time to review and reconsider the triggering criteria for initiation and termination of drought response stages.

Ordinance 412B is an amendment to the original drought plan coded in September 2022 to specifically match triggering criteria for drought response with Bandera County River Authority and Groundwater District (BCRAGD).

AUGUST 22 MEETING

Following City Attorney Dan Santee's recommendation, Mayor Rebeca Gibson said that the city could be in jeopardy of a $10,000 per day fine from the BCRAGD for being out of compliance.

Council decided to re-enact the ordinance to be in compliance and prevent fines.

Battle was not present for the vote.

According to Santee, the state law about the BCRAGD's statutory authority was explicit.

"You are the permittee. You are in violation of the permit," he said.

"Council misunderstood these permit guidelines," said Councilman Manny Longoria, speaking to the Bulletin about their August 8 decision where Santee was not present.

Going forward, Longoria said that they expect to have a sitting committee with the BCRAGD to work together and have a better understanding of the restrictiveness of the guidelines, understanding that a compromise might not be met.

According to the Longevity Assessment for the City of Bandera Water Wells presented in March 2023 by the TWDB, the city is interested in understanding how long its wells can reliably supply water now and in the future.

The City of Bandera is facing several water-supply challenges, including: increase in water demand due to population, reliance on a single water supply source (groundwater from the Trinity Aquifer), capacity/limitations of wells have reached maximum drawdown under the current pump configurations, between 516-531. Stage 3 is 532-546, stage 4 is 547-566. I just hope that Council takes the time, maybe, es-

Table 4-1. City of Bandera water supply wells.

Well name	Dallas Street (#5a)	Dallas Street (#5)	Mulberry Street (#4)	Indian Waters (#6)
BRACS ID	58033	58432	52986	58742
State well number	6924116	6924102	6924202	6924221
PWS source number	1000012	G0100012C	G0100012B	G0100012D
Drill year	2017	1967	1953	1998
Well depth (feet)	480	805	842	770
Screen intervals (feet)	221-480	533-805	740-842	610-710
Well completion	Open hole	Open hole	Open hole	Screened
Operation rate (gallons per minute)	120	500	480	300
Daily average run time (hour)	2.4	2.4	3.6	3.1
Average production per day (gallon)	17,280	72,000	103,680	55,800
Percentage of total production	7	29	42	22
Static water depth (feet)	257	468	444	444
Pumping water depth (feet)	268	581	490	494
Drawdown (feet)	11	113	46	50
Aquifer code	Middle Trinity	217HSTN-Hosston formation	217HSTN – Hosston formation	217HSTN-Hosston formation
Available water level information – measurements	-	19	20	3
Available water level information – publishable winter values	-	6	5	1

Notes: PWS = public water supply and BRACS = Brackish Resources Aquifer Characterization System.

Courtesy Photo

Table 4-1 lists the details of the City of Bandera water wells that include names and identifier aliases, formation and well completion, operation details, and available water level observations. Source: Texas Water Development Board Report 389

drawdown under the current pump configurations, and the wells lack redundancy to compensate for one of the wells failing.

AUGUST 8 MEETING

During the August 8 meeting, council members delved into points of accuracy and implications of Ordinance 412B.

Councilman Tony Battle voiced concerns about the city being deemed to be in stage five water restrictions, after reading this information in an email from Mayor Rebeca Gibson.

"I started to do some research on the surrounding cities and found that none of them are anywhere close to stage 5 water restrictions," stated Battle. "I did a bit more research and determined that we are actually in stage 4."

He continued, "My opinion is that BCRAGD has a different agenda than the city. So I started to look through the original ordinance based on Chapter 13 Utilities, and I feel like that ordinance is pretty well-written. I went through it in detail, and I have some concerns with it.

"If you look at 13.09.068, there are multiple stages, stage 1-6. Those different stages are based on the water level within our wells. So, it's a direct reflection on the water that we currently have in our well system, which is how Kerrville does theirs, how Hondo does theirs, how the City of San Antonio does theirs, how the City of Boerne does theirs.

"Stage 2 comes into effect when our well is between 516-531. Stage 3 is 532-546, stage 4 is 547-566. We are currently at 515, which means based on that ordinance, we are in Stage 1. I don't think that in our city, we have people who abuse our water. I feel like we have pretty responsible citizens within town. I feel like some of our ordinances are being over-restricted. Do we need an ordinance? I agree that we do, but it needs to be carefully drafted. Do we need to conserve water? Absolutely, but we as a governing body do not have the authority to govern the personal property and the damage of people's personal property by not allowing them to use water."

Mayor Gibson responded, "The reason we went with the triggers of the River Authority before was that these well depths did not work with the Dallas Street well. I was told that if we got to one of these levels, that we were essentially out of water and we needed to drop the casing down. I was just reviewing the Water Longevity Study, which I think should really come into play for this adjustment." T

he Water Longevity Study was conducted by the Texas Water Development Board (TWDB).

"If we don't have enough data on that well (Dallas St), there are other monitor wells. And we might need to consider each of the separate wells and their respective levels before noting the triggers and what they should be for each stage. I agree with reviewing the restrictions in each stage. I just hope that Council takes the time, maybe, establishes a committee with the experts on what those should be and how those really impact the city's water availability.

"I know that Kerrville has a more diversified and far more developed water resource system than we do. I think Hondo might be closer of a comparison as far as water availability. I know the City of Blanco ran out of water, and there are cities with boil water notices in effect. So there's a lot to consider. I understand the concern for fewer and different restrictions.

"I don't want to cause damage to anyone's investment or property. There's a lot to balance out, which is what council, I'm sure, can do."

Councilwoman Lynn Palmer told Gibson she didn't think a committee needed to be formed to evaluate the ordinance.

"As a Council, we can make those decisions. We can do the research," she said. "My problem is that when I went to the city's website today, it says that we're in Stage 4. I went back on all of my water bills and since January, we've been at Stage 5. We had rain in April and May. I don't know why that didn't change. But it should change our well levels. Our well levels were probably not at 515 in April and May."

Gibson rebutted that whichever stage the BCRAGD is in, the city is in the corresponding stage.

Palmer said that she called the BCRAGD last week, and they told her that they were in stage D3, which allows watering

"But we are still in Stage 5 according to our utility bills," said Palmer. "Here's one thing I need you to understand. There's a lot people who do not go on our website. A lot of people in the city are going by what they are reading on their utility bills. Also, BCRAGD does not affect private wells. It's only for public water services. That is what I was told by the BCRAGD."

According to interim City Administrator Richard Morton, stage D3 is the same as stage 4.

"What you're saying is not wrong.", added Morton, "We are not doing a good job as a city in making the connection in where we're supposed to be and where we ought to be. Something went wrong there. We should get that straightened out. But, on the 3rd of August, the BCRAGD went to extreme conditions which triggered their Stage 5 (D4). Ok, that's where they're at now. So, we are obligated under our current ordinance to go to Stage 5."

Gibson told the council that she didn't know how staff monitors the BCRAGD in order to update the website, but that it should be ongoing.

"In my opinion, I don't think we were doing it," said Morton.

Gibson stated if you reference the new ordinance,

SEE **CITY,** PAGE 7

CITY, CONTINUED *from 4*

it still references the well depth levels. Palmer countered that all of the well depth verbiage was stricken out on the new ordinance.

"That's correct, there is no reference to the water levels.", said Morton.

Councilwoman Christine Morse reminded the Council why the ordinance was amended last year.

"I recall when we did this because no one could speak to the understanding of the levels of the well and the casing and no one from Public Works could understand what it all meant," said Morse. "To be safe, we went with the Groundwater Authority because nobody could properly tell us what was going on with the well. We didn't have any information to really monitor the wells. We said, ok, let's not put ourselves in a place where can grab more water than we do."

Councilman Jeff Flowers said, "I'm trying to wrap my head around this, 'cause, once again, it's the City shooting itself in the foot. So as a City, we're going to demand residents to be in a circumstance because we can't understand our own water levels and how to read them. And we've taken a year and we still don't know how to read them?"

"That's not accurate," said Gibson.

Morton surmised, "Well, today Tony says it's at 515. What the mayor is saying is, is that a real number, given, which well? I can't say whether it is or it isn't. We just had a well worked on. Mulberry. That had to be engineered and we know the case and depth on that. Maybe we can work with the engineer and hydraulics and determine if that's a real reading or not."

Battle concluded, "If you read the information on the BCRAGD, it's unenforceable and unrealistic government. Why do it? To me it feels like a power grab. We should have ordinances that we can govern correctly that meet the needs of our citizens that we can enforce. If tonight we walk out of here and we rescind this ordinance, that we've got everybody sitting in their backyard ready to open the faucet and just start watering it. It's not gonna' happen. We don't have a bunch of squanderers in this town. And if you really think that people are hauling water in here, your misguided."

Afterwards, Battle entered a motion to rescind ordinance 412B and abate the enforcement of Chapter 13 Utilities, Article 13.09 for 60 days, during which time they can determine what the essential rules and rights should be.

Palmer seconded the motion and the council all voted in favor.

"We need to act with a sense of urgency here. Water conservation is important, and we need to have something in place. I'm willing to spend whatever hours it takes to sit down with anybody to get this back on the books for our next meeting so that we can ordinance in place," said Battle.



26.JUL.2023



BULLETIN PHOTO

BCRAGD reports dangerous levels of e coli in the Park near 173, but those levels are safer closer to 1st Street.

Dangerous e.coli levels present at Bandera City Park

By Daniel Tucker
editor@banderabulletin.com

Bandera County River Authority and Groundwater District (BCRAGD) is reporting dangerous e. coli levels at Bandera CIty Park at Hwy 173 and at N. Prong Wallace Creek.

July 19's sampling at Hwy 173 showed a level of 1,414 Most Probable Number (MPN) while the Wallace Creek testing returned a result of 1,120 MPN.

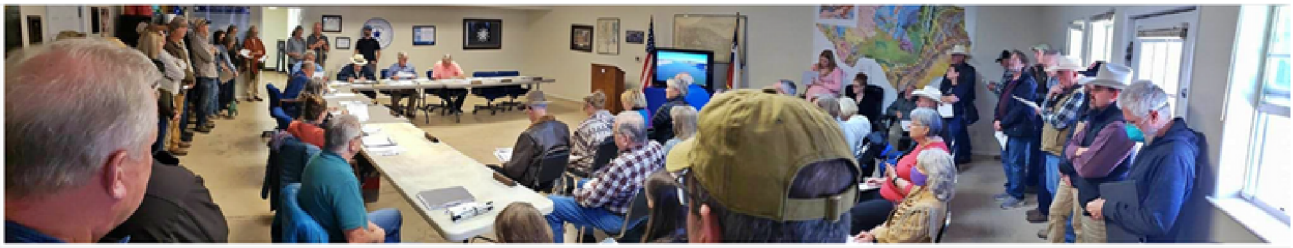
The standard set by TCEQ designates anything over 399 MPN as unsafe.

"No one should participate in activities that could result in the total submersion of the head under water if counts exceed the 399 MPN standard," read a release from BCRAGD.

Water samples tested at Bandera City Park at 1st Street showed a level of 189, according to BCRAGD's latest data.

BCRAGD's full report of samples conducted throughout Bandera County is available on their Facebook as well as bcragd.org.

25.JAN.2023



Photos by Jessica Nohealapa'

January 25, 2023

Groundwater District denies 200-acre-foot permit application, approves lower pumping amount

By Jessica Nohealapa'ahi
The Bandera Prophet

Standing room only was left during last week's groundwater district board meeting, with more than 25 people signed up to speak on two permit applications for a cumulative 200-acre-foot water well pumping limit.

Vanderpool Management, LP, filed two applications for an annual production limit of 130 acre-feet and 70 acre-feet, for a house and barn well already drilled on FM 337 near Mill Creek Road. The total request translates into 65,200,000 gallons of water per year.

"Water is an invested property right in Texas," Bandera County River Authority and Groundwater District General Manager Dave Mauk said on Thursday, adding the board has a balancing act, tasked with protecting the aquifer and applicants' rights.

Mauk said the management company's requested drawdown is not consistent with the GMA 9 recommended maximum of minus 30 feet, and goes against the district's desired future conditions filed with the state. However, he said every well can legally pump 28 acre-feet of water.

The board approved Mauk's recommendation of 28-acre-feet withdrawal per year per well, with maximum capacities of 80 gallons per minute for the house well and 55 gallons per minute for the barn well, totaling 56 acre feet.

In his General Manager's Report, Mauk reported the county's drought status has moved into exceptional, and was "not slowing



Carlos Benavides speaks during the public forum of the Jan. 18 BCRAGD meeting, stating his opposition to Vanderpool Management, LLC's permit application.



20.APR.2023

The Bandera Prophet

April 20, 2023

Groundwater district levies $66k fine for abandoned well, pollution

By Jessica Nohealapa'ahi
The Bandera Prophet

Tackling a months-long nuisance complaint that could be deemed an environmental disaster, the Bandera County River Authority and Groundwater District board of directors is fining a Bandera County resident $66,000.

Though he has been incarcerated for the last two years while he awaits trial for an unrelated charge, Andrew Dougherty is now facing violations from BCRAGD in the amounts of $44,000 and $22,000, for an abandoned well and polluting the watercourse, respectively.

"It is with a heavy heart that I motion to take action and levy fines against Andrew Dougherty," Director Rebeca Gibson said during BCRAGD's April 13 quarterly meeting.

Dougherty's attorney, Patrick Hundley, spoke on his client's behalf. He said Dougherty leased three-quarters of an acre of his property on FM 3240 to a tenant who opened a temporary RV park.

"While Andrew has been in jail, [the tenant] has failed to manage the water or pay rent," Hundley said. "He has been piling up a lot of garbage and refuse above ground, as well as burying it. He won't pay rent. He won't do anything."

Hundley said he is trying to preserve the 10-acre property for Dougherty, but he needs help. He said if BCRAGD delivers an ultimatum to the tenant, it may give him some teeth to take further action and potentially seek eviction.

BCRAGD General Manager Dave Mauk said at least 20 people live there, and he has witnessed them burying trash.

"Every day when I go home I look at it, and the next morning there's more," Mauk said, adding the garbage could be polluting both the Upper and Lower Glen Rose aquifers. "I can't even begin to say how much it will cost to clean."

Mauk and Hundley said they have contacted the people living there, the county constable and Sheriff's Office, but they said thus far no action has been taken by anyone.

"This is a problem. This has to end," Mauk said. "I've never seen anything like it."

Mauk said the area where the garbage has been buried is in the water course, and flows into the river and lakes. When the well failed, he said the tenant attempted to pull the pump out, but could not get it to move, so he poured oil into the well to loosen the pump.

"The well is probably collapsed and is now polluting the aquifer," Mauk said. "This will not be a quick process. This is the worst case I've ever seen."

Todd Malecha, who lives on English Hollow Drive adjacent to the property in question, said he contacted the EPA and TCEQ regarding the pollution. He said he has videos of the 20-plus residents burying waste with a skidloader.

"They have ruined my fence line. There's trash all over the back of the acreage," Malecha said. "Every time it rains, all the trash goes down into the ravine. I'm pulling out tires and mattresses. You can smell chemicals, too."

BCRAGD Attorney Richard Mosty said the cleanup is key, and will be expensive. The first step, he said, is to impose the fines and a lien against the property. Mosty said he wanted to visit with Hundley, and consider a solution together. He said the property could be listed for sale with the county for the cost of the fine, but, he said, "I'd be surprised if the property has any value at this point because of the pollution."

Mauk said the well, drilled in 2008, is a direct conduit into the aquifer. "This is the only avenue the district can take," Mauk said.


12/08/2022 10:25


12/08/2022 10:28

24.APR.2023

Water is precious

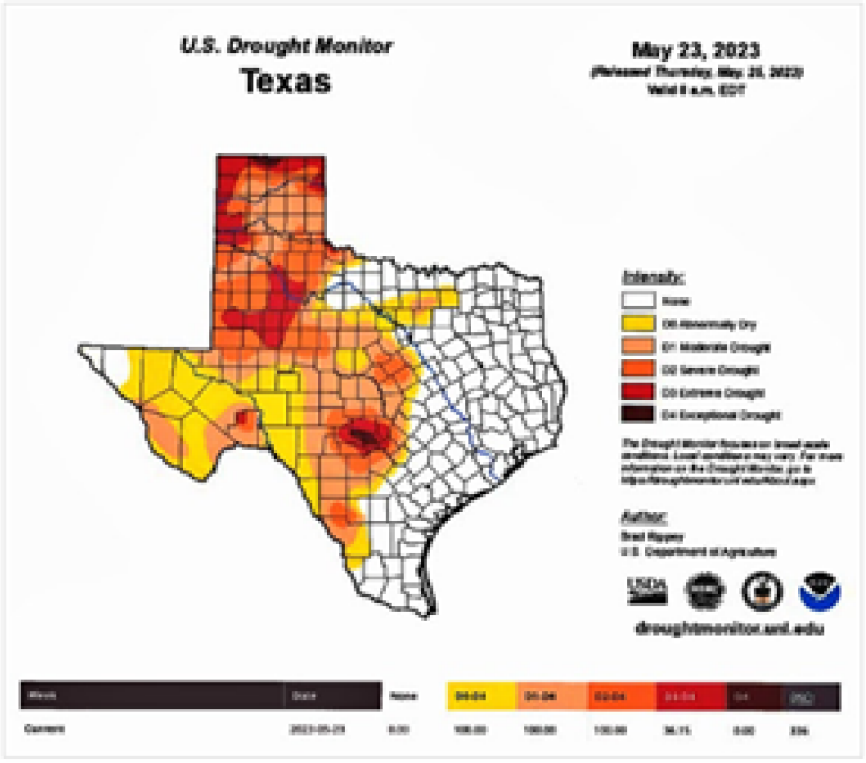
So wonderful to get rain - Praise to our Maker!
In 2019, with your financial support, Friends of Hondo Canyon partnered with Bandera River Authority and Groundwater District (BCRAGD) and United States Geologic Service (USGS) to provide start up funds to drill and equip a Middle Trinity Monitoring Well and Flood Alert Station in Hondo Canyon. And it works! We now can be alerted when rapid rains indicative of flash flooding occur. Alleluia!
We also can watch our Middle Trinity Aquifer level, which before this recent rain, has fallen 42 feet since the monitor station went live on June 9, 2022. For a link to see for yourself (and see how much this new rain has changed our section of the Middle Trinity) click on the link:

https://waterdata.usgs.gov/nwis/inventory/?site_no=294003099141101&agency_cd=USGS&

And, here is where I need your help. As development in our canyon proceeds, many more deeper, Lower Trinity wells are being drilled. Friends of Hondo Canyon would like to raise startup money to drill and equip a Lower Trinity Monitoring Well next to our Middle Trinity Monitoring Well. We need to raise an additional $40,000 to achieve this goal.
Water is precious. A USGS equipped monitor well provides access to real-time and historical data for everyone. The flood alert station is already in place -warning downstream landowners and give magnitude of sudden precipitation. A Lower Trinity Monitoring Well will provide more information about the aquifers we so depend upon. Any donation would be appreciated.

Margo Denke
Secretary/Treasurer
Friends of Hondo Canyon

30.MAY2023



May 30, 2023

Groundwater district declares extreme drought

The Bandera County River Authority and Groundwater District has declared Extreme Drought Conditions, one step down from Exceptional, which the county had been in since Jan. 12. The determination is based on current groundwater levels and rainfall deficit.

The restrictions, as of May 18, apply to all permit holders and public water suppliers, as well as anyone who uses water from a public water supploy system or any district permit holder in the county.

They include:

Water permit users shall limit irrigation of landscaped areas and turf to one day per week, before 8 a.m. or after 8 p.m. Golf courses that use treated wastewater effluent or other non-groundwater sources may uses those sources for golf course greens, tees and fairways.

It is prohibited to wash down sidewalks, walkways, driveways, parking lots, tennis courts and other hard-surfaced areas. Buildings or structures may only be washed down for immediate fire protections. It is also prohibited to wash cars, motorbikes, boats, trailers or other vehicles except in a commercial car wash. Filling or adding to private swimming pools is also prohibited.

BCRAGD reserves the right to suspend the issuance of new water well permits and amendments, except to replace an existing well.

For more information, go to www.bcragd.org.

27.JUN2023

See the latest Bandera County River Authority and Groundwater District water quality testing results

BCRAGD Public Service Announcement:
Medina River & Sabinal River *E. coli* Counts June 21, & 22, 2023

Surface Water Staff from the Bandera County River Authority and Groundwater District (BCRAGD) collected water samples from sites along the Medina River, Medina Lake, Sabinal River, and their tributaries to assess levels of *E. coli* bacteria on June 21st and 22nd 2023.

E. coli is a bacteria found in the gut of warm-blooded animals and is known to potentially cause illness in humans if ingested. **No primary contact recreation should take place if the number of *E. coli* exceeds 399 most probable number (MPN) per 100 mL of water.** This standard is set by the Texas Commission on Environmental Quality (TCEQ) in the Texas Administrative Code (30 TAC §307.7). Meaning, no one should participate in activities that could result in the total submersion of the head under water if counts exceed the 399 MPN standard.

There is ALWAYS a possibility of infection from *E. coli* or other waterborne illness. **Never drink or ingest river water without proper disinfection, and always swim at your own risk.**

Results listed below were analyzed at the BCRAGD lab:

Medina Lake - Park @ PR 37	Unable to access	Bandera City Park @ 1st St	36 MPN	Can Creek @ Lost Maples	2 MPN
English Crossing	>2420 MPN 42 MPN**	Tarpley Crossing	102 MPN	Medina Lake @ Pop's Place	46 MPN
Bridlegate Park	2 MPN	Ranger Crossing	58 MPN	N. Prong, Wallace Ck	24 MPN
Bandera River Ranch Park	Dry	Moffett Park in Medina	54 MPN	Medina Lake @ Haby's Cove	Unable to access
W. Prong @ Coalkiln Rd	179 MPN	N. Prong @ Brewington	22 MPN	Utopia City Park	13 MPN
Medina Lake @ Red Cove	Unable to access	Sabinal R @ Lost Maples	3 MPN		
Bandera City Park @ SH173	>2420 MPN 218 MPN**	Medina Rv @ Peaceful Valley Rd	42 MPN		

*Indicates that the sample was over the TCEQ threshold
** Indicates that the location was re-sampled on June 22nd, 2023.

The above results can also be found on the BCRAGD website, www.bcragd.org, and the BCRAGD Facebook page. BCRAGD is not a certified lab. Results are for informational purposes only.



BCRAGD

PUBLIC SERVICE ANNOUNCEMENT:

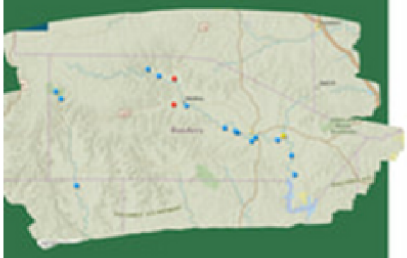
Surface Water Staff from the Bandera County River Authority and Groundwater District (BCRAGD) collected water samples from sites along the Medina River, Medina Lake, Sabinal River, and their tributaries to assess levels of E. coli bacteria on Sep. 12th & 13th, 2023.

E. coli is a bacteria found in the gut of warm-blooded animals and is known to potentially cause illness in humans if ingested. No primary contact recreation should take place if the number of E. coli exceeds 399 most probable number (MPN) per 100 mL of water. This standard is set by the Texas Commission on Environmental Quality (TCEQ) in the Texas Administrative Code (30 TAC §307.7). Meaning no one should participate in activities that could result in the total submersion of the head underwater if counts exceed the 399 MPN standard.

There is ALWAYS a possibility of infection from E. coli or other waterborne illnesses. Never drink or ingest river water without proper disinfection; always swim at your own risk.

MEDINA RIVER & SABINAL RIVER E. COLI COUNTS SEPTEMBER 12 & 13TH

*Indicates a duplicate sample



Interactive Map of locations sampled, current E.coli count, temperature, water level, and current photo located at https://www.bcragd.org/water-quality-testing/

Medina Lake County Park @ PR 37	Unable to access	Bandera City Park @ SH173	325 MPN	W. Prong @ Coalkiln Rd	613 MPN*
Medina Lake @ Haby's Cove	Unable to access	Bandera City Park @ 1st St	13 MPN	W. Prong @ Carpenter Ck	11 MPN
Medina Lake@ Red Cove Marina	Unable to access	Tarpley Crossing	24 MPN	West Verde Ck @ Hill Country SNA	770 MPN*
Medina Lake @ Pop's Place	Dry	Ranger Crossing	Dry	Williams Ck in Tarpley	11 MPN
English Crossing	56 MPN	Can Ck @ Lost Maples SNA	<1 MPN	Seco Ck @ RR470	19 MPN
Bandera River Ranch	Dry	Moffett Park in Medina	47 MPN	Utopia City Park	1 MPN
Upstream of WWTP, Bandera	219 MPN	1st Crossing @ RR337	194 MPN	Sabinal R @ SH187	Dry
Bridlegate Park	435 MPN*	N. Prong @ Wallace Ck	Dry	Sabinal R @ Cornelius Rd	65 MPN
Bandera Creek @ SH 16 S	Dry	N. Prong @ Rocky Ck	Dry	Sabinal RV @ Lost Maples SNA	25 MPN
Lower Mason Creek @ Chipman	Dry	N. Prong @ Brewington	Dry		

*Indicates the sample was above TCEQ threshold

BCRAGD is not a certified lab. Results are for informational purposes only.

www.bcragd.org

830-796-7260

10.AUG.2023

Water utility enacts Stage 4 restrictions for customers in Medina, Bandera counties

Texas Water Co. tells users in those counties to stop almost all outdoor watering.

By Ricardo Delgado,Staff writerUpdated Aug 10, 2023 4:34 p.m.

Private utility Texas Water Co. has issued Stage 4 drought restrictions for its customers in Medina and Bandera counties.

Under Stage 4 restrictions, Texas Water Co. customers must stop all outdoor water usage unrelated to sustaining livestock. Bulk water haulers can't pull from hydrants unless they use the water for drinking and other indoor uses.

Texas Water Co.'s director of communications Larry Jackson attributed the restrictions to persistent hot and dry weather and "high demand for landscape irrigation."

Texas Water Co. is a private water utility servicing many parts of the Hill Country. It is a subsidiary of SJW Group, a publicly traded holding company that also operates San Jose Water and SJW Land Co.

Bandera County is Bexar's neighbor to the northwest. Medina County lies to the west of San Antonio and directly south of Bandera.

The Bandera County River Authority and Groundwater District recently enacted Stage 5 drought restrictions. Those prohibit irrigation of any landscaping and turf. The restrictions apply to all well owners with permits issued by the governmental entity and all public water supply users.

Texas Water Co. already had moved its Kendall County customers to Stage 4 drought restrictions.

The city of Blanco, where water service is provided by Texas Water Co., briefly moved into Stage 6 emergency restrictions in late July. The city's mayor accused Texas Water Co. of diverting water to cities with higher demand, calling the incident it a "man-made emergency." Blanco is currently under Stage 2 restrictions.



Medina Lake is seen Tuesday, June 20, 2023 behind the dam as the lake sits at 5.2 percent full, according to the Texas Water Development Board's Water Data For Texas website. Medina Lake is managed by the Bexar-Medina-Atascosa Counties WCID #1.
William Luther/Staff



A virtually-dry Diversion Lake, just down stream from Medina Lake on the Medina River is seen Tuesday, June 20, 2023. Both lakes are managed by the Bexar-Medina-Atascosa Counties WCID #1.
William Luther/Staff

11.AUG.2023

Bandera issues public health emergency declaration closing and banning swimming at park

The city cited high water temperatures, low flow, and bacteria levels for the closure

BANDERA, Texas — Last week the City of Bandera decided to close down the city park and restrict swimming, because of the unfavorable conditions of the Medina River.
Officials with the Bandera County River Authority and Ground Water District say they agree with the closure.
"The river conditions up here, well they are horrendous right now, basically in many areas there is no river. It's stopped flowing, there's absolutely no water, it's pooled up." Says David Mauk, General Manager BCRAGD

Mauk says the lack of rain and heat are to blame for the river's conditions.
"There's a lot of organisms that will multiply and will flourish in that kind of environment." Says Mauk
City Council held a meeting on Tuesday, where they decided to extend the closure until conditions improve. Mayor Rebecca Gibson says the river is the gem of the city and it's heart breaking for everyone, especially for tourism.
"A substantial source of revenue that has suffered greatly even before the park closure." Says Mayor Gibson
Mauk says the lack of water also attracts wildlife like feral hogs and deer to areas like the park, which could add to the unfavorable condition. He also says it just needs to rain throughout the basin, so everything can get flushed out.
Mauk also wants to remind everyone to conserve water.
Bandera city officials say they look forward to moving past the restrictions, once conditions improve.
Friday, Comal County also issued an emergency declaration due to steadily increasing fire danger throughout the last month.



11.AUG.2023

Surface water quality levels in some Texas lakes rivers is poor, officials say
High heat and lack of rain are helping bacteria thrive in some rivers and lakes

BANDERA, Texas – Signs posted on Bandera Park at the Medina River tell people not to swim in the water, warning of elevated bacteria levels.

David Mauk, general manager of the Bandera County River Authority and Groundwater District, said the high heat and lack of rain are helping bacteria thrive in some rivers and lakes.

“These are the headwaters, and generally, they are pretty pristine waters. But when it’s not flowing, and you get temps over 90 degrees and over 100, you are going to see things introduced,” he said.

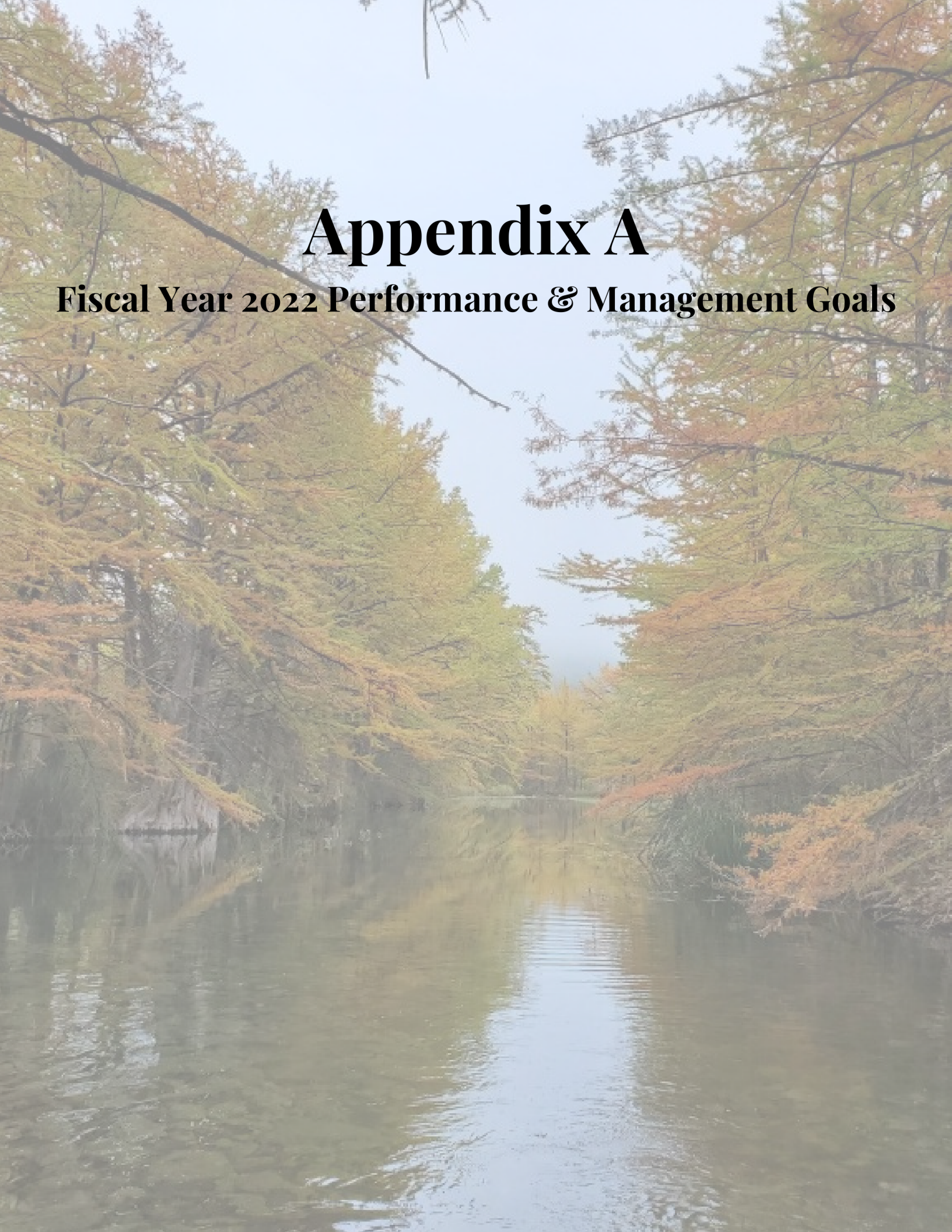
Surface water testing is done every two weeks in different locations of the headwaters of the San Antonio and Medina basins, the Nueces and Sabina rivers and Medina Lake.

“People are very tied to the river system here, and when the river system suffers like this, people, animals, the fish, they’re going to suffer,” Mauk said.

Surface water testing data is public. The key number to look for when checking water conditions is the number followed by the acronym MPN, which stands for Most Probable Number. See the data here.

In Bandera, the test levels are coming back high for E. Coli. The number, usually between 50 to 100 MPN, is well over 700 in the last test completed.





Appendix A

Fiscal Year 2022 Performance & Management Goals

FISCAL YEAR 2023 PERFORMANCE MANAGEMENT GOALS

Management Goal 1

1.0.0 Manage groundwater to provide the most efficient use of groundwater resources.

1.1.1 Management Objective

Implement a program to develop data on the aquifers for better modeling of the aquifers.

1.1.2 Performance Standard

a. Collect pump test data from subdivision test wells after water availability studies are conducted.

- *There was a total of four(4) water availability studies submitted to the Bandera County River Authority and Groundwater District for four (4) new permitted water wells.*

b. Collect water level data from a minimum of 10 monitor wells on a semi-annual basis.

- *Clint making chart*

c. Summarize water availability studies and aquifer level data in an annual report.

- *In the fiscal year 2023, four (4) water availability studies were submitted to the Bandera County River Authority and Groundwater District for four new water wells. Two (2) are under Board review and are not included in this report. Of the remaining two (2), one (1) was drilled as a Public Water Supply and the other was completed as an irrigation well. A summary of the data provided is available in Table 1. In addition, the Texas Water Development Board completed a groundwater longevity report for the City of Bandera that forecasted water use for the city. [1] All wells used in the groundwater availability studies and the City of Bandera longevity report can be found in Figure 1. The complete longevity report can be assessed at the Texas Water Development Board's website.*

  An excerpt from the summary highlights modeled future aquifer levels based on various levels of withdrawal.

  The Bandera well longevity model was then used to forecast future aquifer conditions up to 2079. Three future scenarios were tested on the wells with this numerical model:
  1. *Pumping will remain static with no increases to meet future water supply demands.*
  2. *Pumping will increase to match the projected demands in the 2022 State Water Plan.*
  3. *Pumping will increase even more to produce the volumes of groundwater listed as existing supply to the City of Bandera in the 2022 State Water Plan.*

  If current pumping remains static and never increased to meet increasing water demands, the model shows that the Mulberry Street well will be able to provide sufficient water through the entire period modeled to 2079. The model also indicates water level decline of 65 feet in the lower Trinity aquifer over almost 60 years period, and, after 16 years, the pump may need to be lowered to remain functional. If pumping is increased to match the projected demands in the 2022 State Water Plan, the predicted lower Trinity aquifer water

levels would fall to the pump depth after two years of increased pumping, which would require the pump to be lowered for the well to remain functional. Under this second scenario, a gradual water level decline would continue for 29 years, at which point the water level would reach the bottom of the well casing making the Mulberry Street well no longer useable. If pumping were to increase to produce all available groundwater supplies allocated to the City of Bandera in the 2022 State Water Plan, the wells would no longer be usable after five years." [1]

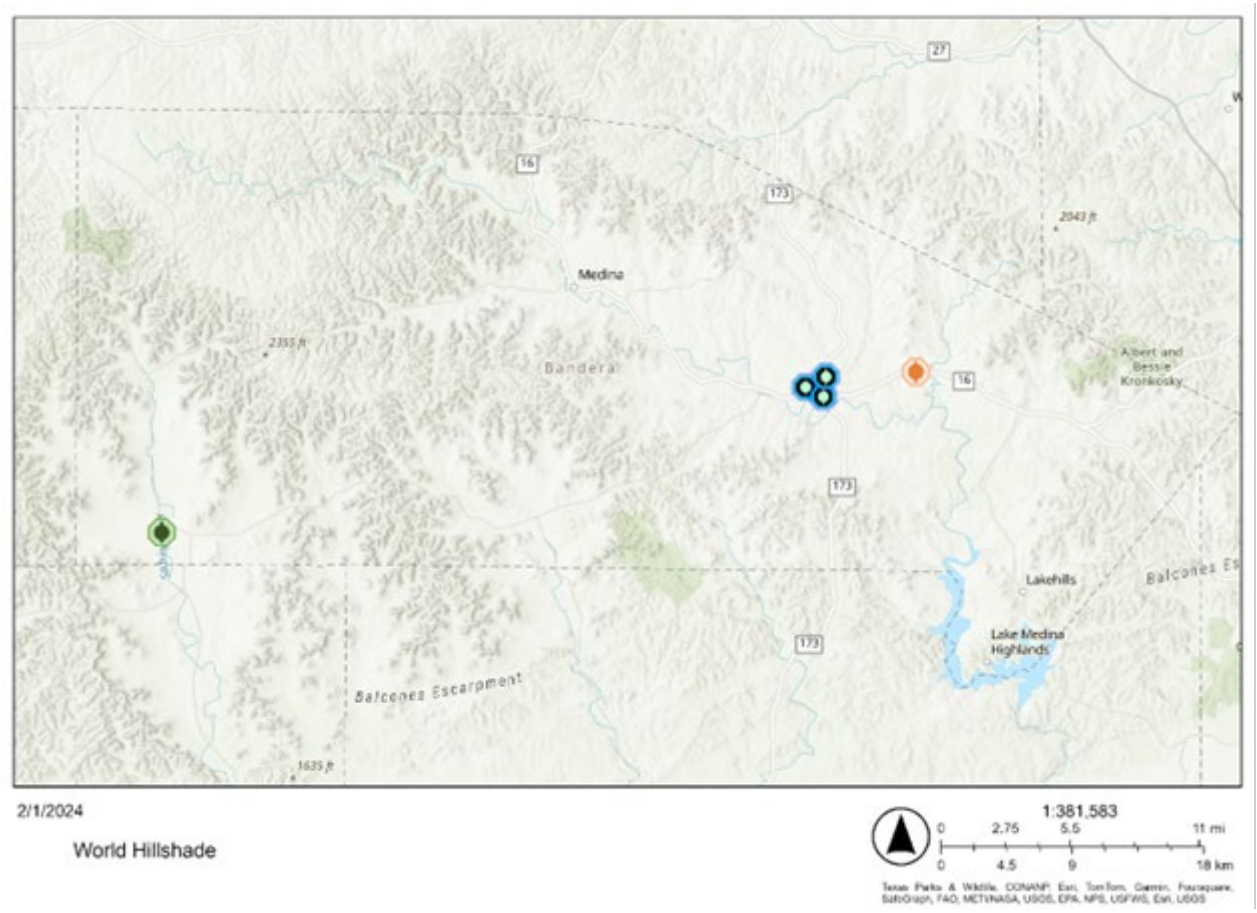


Figure 1 – Location of water availability studies conducted in Bandera County in the fiscal year 2023. Irrigation well in green, City of Bandera wells in blue, and PWS in orange.

Table 1 – Summary data from aquifer testing reports provided to the District.

Date	Well	Average Pump Rate (gpm)	Drawdown (ft)	Transmissivity (ft2/d)	Storativity bason on Observation Well	Aquifer Thickness (ft)
1/12/2023	PWS	68.8	45.7	457.0	1.49x10^-5	60
5/24/2023	Irrigation	208	165.03	1400	2.00x10^-4	60

References

[1] A. AlKurdi, S. C. Wade, J. Golab and A. Croskrey, "Aquifer Storage and Recovery Report: Longevity Assessment for the City of Bandera Water Wells," Texas Water Development Board, Austin, 2023.

1.2.1 Management Objective

Maintain a program of issuance of well permits for non-exempt wells and registrations for exempt wells.

1.2.2 Performance Standard

Maintain an ongoing program of issuance of well permits each year. Provide the number of permits issued each year and the number of registrations issued each year in an annual report to the Board of Directors.

- *Permits issued - 8*
- *Registrations issued - 119*

Management Goal 2

2.0.0 Control and prevent the waste of groundwater.

2.1.1 Management Objective

Provide literature to the public on the efficient use of water and water saving devices in the home.

2.1.2 Performance Standard

a. Provide handouts with well permits and registrations to educate the public on water saving devices. The District will report the number of handouts with well permits and registrations in an annual report to the Board of Directors.

    - *For every well permit and registration, literature was provided. There were total of 8 permits and 119 registrations issued in fiscal year 2023.*

b. Coordinate a minimum of one public presentation per year. Provide the number of shows, demonstrations, events, or educational talks at which literature or information is provided to the public, in an annual report to the Board of Directors.

    - *Water conservation literature is provided to the public at all District public meetings (9 meetings). 13.OCT.2022, 10.NOV.2022, 20.DEC.2022, 19.JAN.2023, 13.APR.2023, 18.MAY.2023, 20.JUL.2023, 24.AUG.2023 , 14.SEP.2023.*

    - *The BCRAGD Education & Outreach Manager and the Education & Outreach Coordinator held Educational Programs with NRA on the following dates: March 29, 2023 Utopia ISD – 5th and 7th Grade, April 20, 2023 Hill Country Elementary School – 5th Grade, April 21, 2023 Medina ISD – 5th Grade and 7th Grade, April 24 & 27, 2023 Bandera Middle School – 7th Grade, May 15 & 17, 2023 Alkek Elementary School – 5th Grade. The Nueces River Authority Water Resource Stewardship Program, in collaboration with BCRAGD, heavily emphasizes water conservation, water quality protection, and natural resource systems to the 5th and 7th grade students in Bandera County throughout each*

Spring season. Our District sponsors and co-facilitates the program every year. Students learned about watersheds, water conservation, and riparian ecosystems and are engaged in a hands-on experiment with a river basin model to demonstrate how pollution travels into water streams and ends up in the ocean and had a thorough discussion on ways to be good stewards of our streams.

- *October 8, 2022, Medina County 4H Workshop BCRAGD staff organized short lectures, demonstrations, a scavenger hunt, fish-catching techniques, and identifications. BCRAGD staff covered native plants of the area, highlighting species diversity and covering the soil type and water availability native plants use and need. Students were then engaged in a scavenger hunt using BCRAGD-provided field guides to find and identify key riparian plants. BCRAGD staff then briefly talked about inland fish in the Medina River and techniques for catching fish to represent all species. Staff then engaged students in different methods of catching fish and had them help identify the fish caught. The importance of habitat conservation to promote species diversity was highlighted, along with a discussion on food webs. Students were brought to a floodplain area away from the river to demonstrate a snake trap. BCRAGD staff presented materials on snakes, lizards, and turtles found in the area and how the trap depends on the species' behavior to catch them. Students then discussed species in the area, habitat, and food webs. About 18 students attended this workshop, ages ranging from 5 to 17. Parents also attended and listened to the lectures and were engaged in discussions and learning.*

- *October 31, 2022, BCRAGD's Education manager attended this community event at the Lakehills Library to foster a presence and commitment of BCRAGD to the Bandera County Community. This event brought hundreds of community members for a safe, fun evening.*

- *December 20, 2022, BCRAGD hosted a Christmas Conservation Event that is a holiday event for community leaders to share essential updates on the projects and functions of the district within the community and gain insight into improving relations and resourcefulness with other county agencies.*

- *February 22, 2023, Hill Country Alliance, along with Schreiner University, hosted a Water Symposium on February 22, 2023, that was open to the hill country community. This event included a panel discussion with BCRAGD's General Manager, Dave Mauk, and other leaders from collaborative partners such as Upper Guadalupe River Authority and Hill Country Alliance. The Discussion focused on drought and other water-related issues and their effects on the Hill Country Area. Prior to the event, Attendees observed the Education Team (C. Curd and C. Fox) demonstrate the Watershed Model, which shows how water flows through a healthy and unhealthy watershed. The demonstration was an interactive way to connect water concepts and issues for a better understanding of how water flows during a rainfall event. Approximately 75 people attended the Symposium.*

- *March 10, 2023 BCRAGD's Education Team participated in Tom Daniel's Science Expo for the second year. All Second-grade students at Tom Daniel's elementary school were presented with information about the Water Cycle and*

given an interactive watershed demonstration. Students were heavily engaged in applying critical thinking skills regarding conservation ideas and potential solutions to preserving the watersheds in their community. This event is a means to build relationships with citizens in adjacent communities that face the same water issues.

- *March 30, 2023, Texas Water Development Board hosted a webinar to present the Longevity Assessment for the City of Bandera Water Wells Study. General Manager Dave Mauk, along with representatives from the City of Bandera participated in the webinar giving solutions and input for moving forward with improving water resource infrastructure. The project abstract is as follows: The City of Bandera and the Bandera County River Authority and Groundwater District (BCRAGD) are concerned with increased water demand associated with the rapid growth in the Texas Hill Country. The City of Bandera is considering alternative water supplies, including aquifer storage and recovery (ASR), to increase the reliability of its current water resource infrastructure and prepare for future development. A key component of the city's future water supply planning involves the need to understand better how increased pumping could affect the life span of its lower Trinity aquifer wells. To address this need, the TWDB developed a numerical model to forecast future conditions under different pumping scenarios. This information will assist the City in evaluating the viability of the recommended ASR project and will aid in determining a timeline for project implementation. This longevity assessment focused on the lower Trinity aquifer due to it being the primary water production source for the City of Bandera and the target for the ASR project.*

- *April 28, 2023, The Education and Outreach Team participated in the Soil & Water Conservation District Conservation Day Workshop in collaboration with the Nueces River Authority Education team. All 6th students in Bandera County benefitted from this educational event. Students were given a demonstration of a rain event and how water moves through two types of watersheds. Corrina Fox and Charley Curd presented the concepts of Surface water, groundwater, riparian plants, and water quality. Nueces River Authority staff member Mary Bales presented students with biodegradable trash bags and discussed the importance of keeping trash and pollution out of the Texas waterways. Approximately 180 students participated.*

- *On June 2, 2023, Dave Mauk, General Manager of Bandera County River Authority and Groundwater District, spoke on the ongoing Drought affecting Bandera County and the Texas Hill Country. Additionally, Dave presented a brief overview of the Sabinal River Flood Early Warning System that will be coming online soon.*

- *On July 29, 2023, BCRAGD's Education team was proud to participate in the Back-to-School Bash countywide community event that helps school-aged children obtain what they need to have a great start to the school year. The Education team played a "Test your water knowledge" game with the children and adults. The game is designed specifically to bring awareness about how much freshwater is available on the planet, how much water humans use, and ways to conserve and preserve water. Correct answers to questions earned the children raffle tickets for a chance to win a basket of lunchbox goodies in a drawing. More than 500 children attended this year's Bash.*

- *On August 4, 2023, BCRAGD's General Manager, David Mauk, presented information on the health and condition of the Aquifer systems in Bandera County and other issues related to the Exceptional drought the State of Texas has been experiencing. This event was hosted by the Bandera County Soil and Water Conservation District.*

- *On September 28, 2023, General Manager David Mauk attended the 2023 Hill Country Leadership Summit as a panelist expert. The District's regional collaborative partners at Hill Country Alliance hosted the Summit. Mr. Mauk was instrumental in getting out the message of the District's mission and connecting vital information regarding water health and availability in the county as well as the Hill Country area to community members.*

- *On September 30, 2023, BCRAGD's Education and Outreach team was invited to facilitate a Project Wild training by Texas Parks and Wildlife. The event was held at Hardberger Park Urban Ecology Center in San Antonio, Texas. The Project Wild program is designed to train formal and informal educators on all conservation and environmental preservation topics. The event was coordinated by BCRAGD's Outreach Coordinator, Charley Curd. Ms. Curd connected presenters from all over the hill country to provide participants with a top-notch learning experience. Education manager Corrina Fox assisted in behind-the-scenes preparation and was also a presenter for the event. 37 participants from all over the hill country area participated in this successful event.*

- *On September 30, 2023, BCRAGD Staff presented a module for their second year at the 8th Annual HydroGeo Workshop at the Cave with No Name in Boerne, Texas. The Workshop organizers requested that BCRAGD present their module, titled TCEQ's Clean Rivers Program, three times in order to reach as many students as possible. The module gave an overview of the CRP Program, and staff demonstrated the equipment used to fulfill the program data collection requirements.BCRAGD, as a River Authority and Groundwater District, has a unique perspective that provides students with holistic and relevant insight from accomplished staff. Staff were pivotal in answering participant questions and providing resources in order to aid these students in their research.*

2.2.1 Management Objective
Promote public awareness about preventing the waste of water resources.

2.2.2 Performance Standard
Record the number of speaking appearances and/or shows, demonstrations or events at which literature or information is provided to the public on preventing the waste of water resources. The District will report the number of aforementioned events in the annual report to the Board of Directors.

- *See 2.1.2 B*

Management Goal 3

3.0.0 Control and prevent subsidence.

The district has reviewed the TWDB subsidence risk report for applicability to Bandera

County. Figure 2 'Major aquifer subsidence risk' shows That the District has a low - medium subsidence risk. Therefore, this is not applicable.

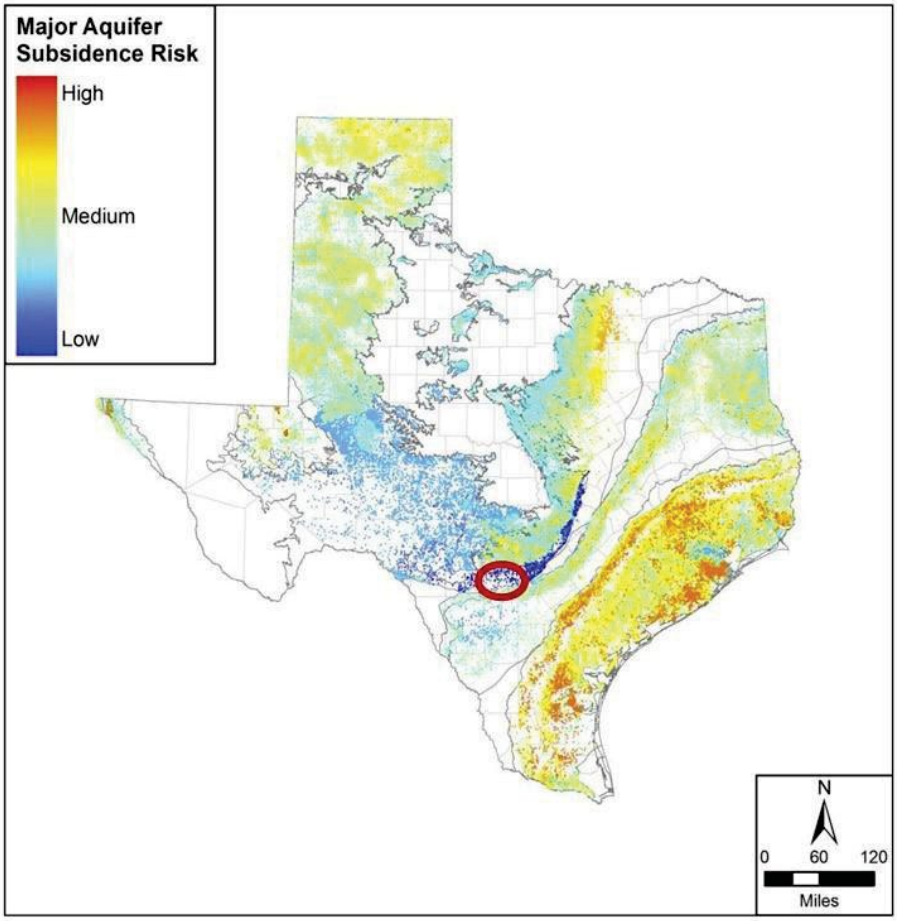


Figure 2 – Modified with a red circle highlighting the area of Bandera County from –Identification of the Vulnerability of the Major and Minor Aquifers of Texas to Subsidence with Regard to Groundwater Pumping – TWDB Contract Number 1648302062
http://www.twdb.texas.gov/groundwater/models/research/subsidence/subsidence.asp

Section 4.2.9 'Trinity', in the Final Report discusses the aquifer formation's high carbonate composition, low water saturated clays, and low risk for subsidence. Historically subsidence has not been observed within the District 's boundaries. The District will continue to monitor for signs of subsidence and will respond to any reports of potential subsidence.

4.0.0 Address conjunctive surface water management issues.

4.1.1 Management Objective

Make at least one annual evaluation of the groundwater resources and surface water quality in Bandera County and include the results of the evaluation in the annual report to the Board of Directors.

4.1.2 Performance Standard

a. Record the number of reports and evaluations provided to the Board of Directors on the groundwater resources and the surface water quality in the annual report.
   - *4 meetings total. Information was provided to the board at four quarterly board meetings in FY 2023 (13.OCT.2023, 19.JAN.2023, 13.APR.2023, 20.JUL.2023)*
   - *The General Manager gives a complete groundwater resources and surface water quality report to the bored of directors at the April quarterly meeting.*
   - *For groundwater annual evaluation report, please refer to management goal 13.1.2*

Annual Evaluation of Surface Water Quality in Bandera County FY 2023

Summary of Surface Water Sampling Events: From October 2022 to September 2023, there were 243 samples taken between the Clean Rivers Program, and District's In-House Surface Water Quality Testing Program. There were 19 instances with E. coli counts over the TCEQ standard of 399 MPN (Most Probable Number) per 100 mL of sample water. Medina Lake began with the water level at 7.5% on October 1, 2022, and ended at 4.0% on September 30, 2023.

Medina Lake Evaluation

Per Texas Water Development Board's water data for Texas website:

FY 2023	Data	Capacity (% full)
Quarter 1	October 31, 2022 December 31, 2022	7.0% 6.3%
Quarter 2	January 30, 2023 March 31, 2023	6.0% 5.3%
Quarter 3	April 30, 2023 June 30, 2023	5.2% 5.1%
Quarter 4	July 31, 2023 September 30, 2023	4.7% 4.0%

Table 2: Showes the Medina Lake capacity percentage at the beginning and end of each quarter during fiscal year 2023.

In-House Sampling

The surface water sampling program was initiated in order to monitor water quality throughout Bandera County. It has been modified to better serve the community by increasing the number of sites for a more representative data collection, reporting E. coli counts via local newspapers and the District website to the citizens of Bandera County for safety. BCRAGD's In-House Surface Water Sampling Program allows District staff to detect bacteria spikes in the Medina and Sabinal Rivers, as well as Medina Lake, and follow up with an immediate investigation. From October 2022 to September 2023, there were 19 instances with E.coli counts over the TCEQ standard of 399 MPN (Most Probable Number) per 100 mL of sample water. The District recommends no swimming to take place in areas where the count is over the limit. That sample site area is then investigated, beginning with a re-sample effort. If the MPN remains above the 399 MPN, further investigations are made (see dates on 12.2.2).

Site #	Location	Site #	Location
ML-1.04	Medina Lake @ County Park NE of Boat Ramp	MP-3.01	Medina R @ Moffett Park
MR-1.01	Medina R @ English Crossing	MRN-3.01	N. Prong Medina R @ Rocky Creek Crossing FM 2107
MR-1.02	Medina R @ Bridlegate Park	MRN-3.03	N. Prong Medina R @ Brewington Crossing FM 2107
MR-1.03	Medina R @ Bandera River Ranch Park	WC-3.01	N. Prong Medina R @ Wallace Creek
BC-2.01	Bandera Creek @ SH 16	MRW-3.01	W. Prong Medina R @ Coal Kiln Rd RR 337
LMC-2.01	Lower Mason Creek @ Chipman Ln.	MRW-3.03	W. Prong Medina R @ Carpenter Creek @ RR 337
MR-2.025	Above Sewage Treatment Plant Effluent	SC-4.01	Seco Creek @ RR 470 Crossing
MR-2.03	Medina R @ Bandera City Park HWY 173	CC-4.01	Sabinal R @ Cornelius Rd Crossing
MR-2.05	Medina R @ Bandera City Park 1st Street Bridge	SR-4.03	Sabinal R in Vanderpool @ SH 187
MR-3.01	Medina R @ RR 337	LM-4.03	Sabinal R @ Lost Maples 1st Bridge
MR-3.04	Medina R @ Tarpley Crossing	WVC-2.01	Hill Country State Natural Area @ FM 1077
MR-3.05	Medina R @ Ranger Crossing HWY 16	WC-4.01	Williams Creek Crossing
UTOP	Utopia City park	CC-1.01	Can Creek @ Lost Maples
PC-1.01	Privilege Creek @ SH 16	MR-3.06	Medina @ Peaceful Valley
ML-2.07	Medina Lake @ Red Cove Marina	ML.1.06	Medina Lake Pop's Place
ML-2.06	Medina Lake @ Haby's Cove		

Table 3: Shows the District In-house sampling site number and location description.

b. Maintain at the District Office an annual report of District activities available to the public.
    - *The district annual report, financial audit, and budget are readily available on the district website, and in physical form at the district office.*

4.2.1 Management Objective
Each year the District will participate in the regional planning process by attending Region J Regional Planning Group meetings.

4.2.2 Performance Standard
The attendance of a district representative at any Region J Regional Planning Group will be noted in the annual report to the Board of Directors.

- *BCRAGD is a representative of the Groundwater Conservation District on the Region J Plature Regional Planning Group, and represents Bandera County in the design of variable management strategies in the region. BCRAGD attends planning group meetings and proactively participates with Region J's consultants in the creating of the Region J Water Plan.*

- *BCRAGD General Manager and Intergovernmental Affairs Manager attended Region J meetings on 26.JAN.2023, 20.APR.2023, 22.JUN.2023, 2.AUG.2023.*

Management Goal 5

5.0.0 Address natural resource issues.

5.1.1 Management Objective
The District is an active participant in the TCEQ Clean Rivers Program. This program is the gold standard in Texas for monitoring the water quality in the State.

5.1.2 Performance Standard
The District will summarize all TCEQ Clean Rivers Program activities and report them to the Board of Directors in an annual report.

Clean Rivers Program:

BCRAGD has a total of 21 Clean Rivers Program (CRP) sites throughout the San Antonio and Nueces River Basins. Table 4 to the right lists all the CRP sites that were sampled each quarter. They are separated into sections as follows:
Medina River sites, Medina Lake sites, Diversion Lake sites, and Sabinal River / Nueces Basin sites.

BCRAGD partnered with San Antonio River Authority (SARA) to participate In the Clean Rivers Program in the San Antonio River Basin in 2012. BCRAGD staff are responsible for sampling 8 sites, which are in Bandera County on the Medina River, and summarized to the right. The FY 2023 sample dates for Medina River were: November 18 and 31, 2022, January 19, 2023, April 5 and 19, 2023, June 7, 2023, and August, 01, 2023 The District was audited by SARA for the TCEQ Clean Rivers Program on September 15, 2023.

At the end of FY 2016, BCRAGD added 5 CRP sites on Medina Lake along with 3 CRP sites on Diversion Lake, partnering with SARA. The FY 2023 sample dates for Medina Lake were: December 01, 2022, February 15, 2023, May 17, 2023. The district was unable to collect water quality samples on Medina Lake during the fourth quarter FY 2023 due to Lake levels being below 5%. Sample dates for Diversion Lake were: October 16, 2022, January 24, 2023, February 7, 2023, March 29, 2023, May 24, 2023, August 30, 2023, and September 19, 2023.

BCRAGD partnered with the Nueces River Authority (NRA) in 2016 to participate in the Clean Rivers Program in the Nueces River Basin. BCRAGD staff is responsible for the 5 sites shown in the chart to the right. The FY 2023 sample dates for the Nueces River Basin were: November 9 and 10, 2022, January 5 and 10, 2023, June 21, 2023, July 6, 2023, September 19 and 21, 2023

Station ID	Site Name
Medina River CRP	
12830	Medina R. @ English Crossing
18447	North Prong Medina R. @ Hwy 16- Wallace Creek
13638	Medina R. @ S Hwy 173 (Bandera City Park)
12832	Medina R. @ FM 470-Tarpley Crossing
21125	Medina R. @ Moffett Park
21126	N. Prong Medina R. @ FM 2107-Brewington
21631	Medina R. @ Myan Ranch
15736	W. Prong Medina R. @ Coalkiln Rd.
Medina Lake CRP	
12829	Medina Lake near Headwater
12828	Medina Lake between Cypress & Spettel Coves
12827	Median Lake @ Mormon Bluff
12826	Medina Lake near Red Cove
12825	Medina Lake @ ML Dam West of San Antonio
Diversion Lake CRP	
18407	Diversion Lake just upstream of Diversion Lake Dam
14205	Medina R. Downstream Medina Lake Dam in Mico, TX @ low water crossing
14205	Low water Crossing in Mico, Tx
Nueces River Basin CRP	
13017	Seco Creek @ RR 470
14939	Sabinal River @ FM 187
21948	Sabinal R. @ FM 187 S. of Utopia Onion Ck
22227	Commissioner's Creek Downstream of Camp Ozark
22306	Sabinal River near Lost Maples SNA

Table 4: Shows the CRP sites & location descriptions

CRP water quality data can be viewed at:

https://www80.tceq.texas.gov/SwqmisWeb/public/crpweb.faces

5.2.1 Management Objective

The District will investigate, or refer to the proper agency, any citizen's or District initiated complaint related to surface water, groundwater, or any natural resource within the District. These investigations are a valuable tool to help the District protect the natural resources in the County.

5.2.2 Performance Standard

The General Manager will report the number of nuisance complaints, Notice of Violations issued, natural resources investigations, surface water tests, and groundwater tests to the Board of Directors in an annual report.

- *Nuisance Complaints - 26*
- *Notice of Violations (NOV) – 19*
    - *Groundwater NOV - 18*
    - *Environmental NOV - 1*
- *Total Surface Water Samples (including CRP)- 243*
- *Total Groundwater Tests - 270*
    - *Bacteria + Mineral - 142*
    - *Bacteria Only - 118*
    - *Mineral Only – 10*

Management Goal 6

6.0.0 Address drought conditions.

For reference please visit: https://www.waterdatafortexas.org/drought

6.1.1 Management Objective

Record the Drought Severity Index each month, post the drought stage, and any appropriate drought restrictions at the District's office.

6.1.2 Performance Standard

In conjunction with the drought index, the General Manager may utilize flow rates from the Sabinal and Medina Rivers to determine appropriate drought stages. The General Manager shall post the drought stage and any appropriate drought restrictions at the District's office each month.

- *The applicable drought stage was implemented according to the Drought Management Plan and posted at the County's Courthouse, District Website, bulletin board located at the district's main office, and the road sign located at districts main office. The drought status was also presented to the board of directors in the quarterly meeting.*

6.2.1 Management Objective

Evaluate groundwater availability each year by monitoring water levels of the aquifer from monitor wells within Bandera County.

6.2.2 Performance Standard

Record number of wells monitored each year in the annual report to the Board of Directors.

- *The district has a monitor well network that consists of 42 monitor wells that are sampled and assessed at least quarterly.*

Management Goal 7

7.0.0 Address conservation

7.1.1 Management Objective
Promote public awareness of the need for water conservation.

7.1.2 Performance Standard
A minimum of one public water quality/conservation show, demonstration, event, or educational talk will be held each year. The number of events, shows, or talks should be reported in the annual report to the Board of Directors.

- *Water conservation literature is provided to the public at all District public meetings (9 meetings). 13.OCT.2022, 10.NOV.2022, 20.DEC.2022, 19.JAN.2023, 13.APR.2023, 18.MAY.2023, 20.JUL.2023, 24.AUG.2023 , 14.SEP.2023.*

- *The BCRAGD Education & Outreach Manager and the Education & Outreach Coordinator held Educational Programs with NRA on the following dates: March 29, 2023 Utopia ISD – 5th and 7th Grade, April 20, 2023 Hill Country Elementary School – 5th Grade, April 21, 2023 Medina ISD – 5th Grade and 7th Grade, April 24 & 27, 2023 Bandera Middle School – 7th Grade, May 15 & 17, 2023 Alkek Elementary School – 5th Grade. The Nueces River Authority Water Resource Stewardship Program, in collaboration with BCRAGD, heavily emphasizes water conservation, water quality protection, and natural resource systems to the 5th and 7th grade students in Bandera County throughout each Spring season. Our District sponsors and co-facilitates the program every year. Students learned about watersheds, water conservation, and riparian ecosystems and are engaged in a hands-on experiment with a river basin model to demonstrate how pollution travels into water streams and ends up in the ocean and had a thorough discussion on ways to be good stewards of our streams.*

- *October 8, 2022, Medina County 4H Workshop BCRAGD staff organized short lectures, demonstrations, a scavenger hunt, fish-catching techniques, and identifications. BCRAGD staff covered native plants of the area, highlighting species diversity and covering the soil type and water availability native plants use and need. Students were then engaged in a scavenger hunt using BCRAGD-provided field guides to find and identify key riparian plants. BCRAGD staff then briefly talked about inland fish in the Medina River and techniques for catching fish to represent all species. Staff then engaged students in different methods of catching fish and had them help identify the fish caught. The importance of habitat conservation to promote species diversity was highlighted, along with a discussion on food webs. Students were brought to a floodplain area away from the river to demonstrate a snake trap. BCRAGD staff presented materials on snakes, lizards, and turtles found in the area and how the trap depends on the species' behavior to catch them. Students then discussed species in the area, habitat, and food webs. About 18 students attended this workshop, ages ranging from 5 to 17. Parents also attended and listened to the lectures and were engaged in discussions and learning.*

- *October 15, 2022 BCRAGD sponsored the Expanding Your Horizons Program hosted by Schreiner University. The EYH program is a conference designed to engage female middle school students in STEM (science, technology, Engineering, and Math) related topics and activities to foster interest in these fields. Corrina Fox was on of the keynote speakers for the event. The presentation was filled with information about STEM and the experience of BCRAGD staff as females in water conservation. There were*

approximately 75 students in attendance from Bandera, Kerr, and Kendall counties.

- *October 31, 2022, BCRAGD's Education manager attended this community event to foster a presence and commitment of BCRAGD to the Bandera County Community. This event brought hundreds of community members for a safe, fun evening.*

- *December 5 & 6, 20233 BCRAGD's Education and Outreach team visited all 5th-grade students (approximately 100 students) at Alkek Elementary School. BCRAGD staff reviewed TEKS-related topics of Weathering, Erosion, and Deposition and these effects on the State's waterways. Students participated in three lab stations where these concepts were created. Discuss how these natural events change water courses and how the combination of these events with human impact affects water.*

- *December 20, 2022, BCRAGD hosted a holiday event for community leaders to share essential updates on the projects and functions of the district within the community and gain insight into improving relations and resourcefulness with other county agencies.*

- *February 22, 2023, Hill Country Alliance, along with Schreiner University, hosted a Water Symposium on February 22, 2023, that was open to the hill country community. This event included a panel discussion with BCRAGD's General Manager, Dave Mauk, and other leaders from collaborative partners such as Upper Guadalupe River Authority and Hill Country Alliance. The Discussion focused on drought and other water-related issues and their effects on the Hill Country Area. Prior to the event, Attendees observed the Education Team (C. Curd and C. Fox) demonstrate the Watershed Model, which shows how water flows through a healthy and unhealthy watershed. The demonstration was an interactive way to connect water concepts and issues for a better understanding of how water flows during a rainfall event. Approximately 75 people attended the Symposium.*

- *February 22, 2023 The BCRAGD Education team (C. Fox and C. Curd) presented an interactive watershed program to a group of 12 children at the Medina Library. Topics presented included information on healthy watersheds, the movement of surface water and groundwater in a watershed, how water gets into the aquifer, soil erosion, the effectiveness of riparian plants, water conservation, and good water stewardship. These topics were demonstrated using a model that simulated a rain event and the movement of water through a healthy watershed and an unhealthy watershed. Students could see in real-time how water flow works during a rain event.*

- *March 10, 2023 BCRAGD's Education Team participated in Tom Daniel's Science Expo for the second year. All Second-grade students at Tom Daniel's elementary school were presented with information about the Water Cycle and given an interactive watershed demonstration. Students were heavily engaged in applying critical thinking skills regarding conservation ideas and potential solutions to preserving the watersheds in their community. This event is a means to build relationships with citizens in adjacent communities that face the same water issues.*

- *March 22, 2023, BCRAGD's Education and Outreach Coordinator, Charley Curd, presented to 180 online students in grades K-2, 3-5, and 6-8 grades. Each grade received a tailored presentation that was TEKS-aligned and age-appropriate. Concepts included the Water Cycle, Water Conservation, and Understanding watersheds.*

- *March 22, 2023, BCRAGD's General Manager, Dave Mauk, was a presenter at this regional collaborative workshop held at Mansfield Park. Dave presented on the health*

and condition of the Aquifer systems in Bandera County and the effects of the population growth in Bandera County, along with the impact of the exceptional Drought on the Aquifer systems. Approximately 65 people attended this event.

- *March 30, 2023, Texas Water Development Board hosted a webinar to present the Longevity Assessment for the City of Bandera Water Wells Study. General Manager Dave Mauk, along with representatives from the City of Bandera participated in the webinar giving solutions and input for moving forward with improving water resource infrastructure. The project abstract is as follows: The City of Bandera and the Bandera County River Authority and Groundwater District (BCRAGD) are concerned with increased water demand associated with the rapid growth in the Texas Hill Country. The City of Bandera is considering alternative water supplies, including aquifer storage and recovery (ASR), to increase the reliability of its current water resource infrastructure and prepare for future development. A key component of the city's future water supply planning involves the need to understand better how increased pumping could affect the life span of its lower Trinity aquifer wells. To address this need, the TWDB developed a numerical model to forecast future conditions under different pumping scenarios. This information will assist the City in evaluating the viability of the recommended ASR project and will aid in determining a timeline for project implementation. This longevity assessment focused on the lower Trinity aquifer due to it being the primary water production source for the City of Bandera and the target for the ASR project.*

- *April 28, 2023, The Education and Outreach Team participated in the Soil & Water Conservation District Conservation Day Workshop in collaboration with the Nueces River Authority Education team. All 6th students in Bandera County benefitted from this educational event. Students were given a demonstration of a rain event and how water moves through two types of watersheds. Corrina Fox and Charley Curd presented the concepts of Surface water, groundwater, riparian plants, and water quality. Nueces River Authority staff member Mary Bales presented students with biodegradable trash bags and discussed the importance of keeping trash and pollution out of the Texas waterways. Approximately 180 students participated.*

- *On June 2, 2023, Dave Mauk, General Manager of Bandera County River Authority and Groundwater District, spoke on the ongoing Drought affecting Bandera County and the Texas Hill Country. Additionally, Dave presented a brief overview of the Sabinal River Flood Early Warning System that will be coming online soon.*

- *June 26, 2023, On June 26, 2023, the District Education Team presented at the Medina Library for the Youth Summer Program. Kids engaged in an activity where they discussed the types of pollution created by people at various locations (homes, schools, restaurants, rural areas, and gas stations) and how water moves through a watershed. One group used buckets, pretended to be water during a rain event, and moved through a maze, picking up pollution from the locations along the maze. Other groups placed pollution in buckets (the water), and the water moved to the river where all of the pollution was placed. This prompted conversations about solutions to preserve and conserve water.*

- *July 6, 2023, On July 6, 2023, The BCRAGD Education team engaged children at the Bandera Library in an interactive presentation on groundwater and aquifers. Children learned about the importance of groundwater and aquifers and how to preserve them. The education team guided the children through an exercise where they built their own aquifer. 27 children participated, ranging in age from 5 to 11 years of age.*

- *July 13, 2023, On July 13, 2023, Bandera BCRAGD's education team was invited to Bandera Library to participate in story time for younger preschool children. The team presented and read the Book " Saving Talley." The story is the tale of a young sea turtle that gets caught in plastic trash and has to be saved by her Lobster friend. The book is a prime example of how humans pollute and impact the environment and water quality. After the story the children were guided through a hands-on activity where the children could demonstrate their knowledge of how to preserve the water and keep the sea animals safe. 15 children ages 18 months to 4 years old participated.*

- *On July 29, 2023, BCRAGD's Education team was proud to participate in the Back-to-School Bash countywide community event that helps school-aged children obtain what they need to have a great start to the school year. The Education team played a "Test your water knowledge" game with the children and adults. The game is designed specifically to bring awareness about how much freshwater is available on the planet, how much water humans use, and ways to conserve and preserve water. Correct answers to questions earned the children raffle tickets for a chance to win a basket of lunchbox goodies in a drawing. More than 500 children attended this year's Bash.*

- *On August 4, 2023, BCRAGD's General Manager, David Mauk, presented information on the health and condition of the Aquifer systems in Bandera County and other issues related to the Exceptional drought the State of Texas has been experiencing. This event was hosted by the Bandera County Soil and Water Conservation District.*

- *September 20, 2023, On September 20, 2023, BCRAGD's education team was invited to facilitate story time at Lakehills Library. The Education team read the story " Saving Tally." The story is the tale of a young sea turtle that gets caught in plastic trash and has to be saved by her Lobster friend. The book is a prime example of how humans pollute and impact the environment and water quality. After the story, the children were guided through a hands-on activity where the children could demonstrate their knowledge of how to preserve the water and keep the sea animals safe. 22 children ages 18 months old to 4 years old participated.*

- *On September 28, 2023, General Manager David Mauk attended the 2023 Hill Country Leadership Summit as a panelist expert. The District's regional collaborative partners at Hill Country Alliance hosted the Summit. Mr. Mauk was instrumental in getting out the message of the District's mission and connecting vital information regarding water health and availability in the county as well as the Hill Country area to community members.*

- *On September 30, 2023, BCRAGD's Education and Outreach team was invited to facilitate a Project Wild training by Texas Parks and Wildlife. The event was held at Hardberger Park Urban Ecology Center in San Antonio, Texas. The Project Wild program is designed to train formal and informal educators on all conservation and environmental preservation topics. The event was coordinated by BCRAGD's Outreach Coordinator, Charley Curd. Ms. Curd connected presenters from all over the hill country to provide participants with a top-notch learning experience. Education manager Corrina Fox assisted in behind-the-scenes preparation and was also a presenter for the event. 37 participants from all over the hill country area participated in this successful event.*

- *On September 30, 2023, BCRAGD Staff presented a module for their second year at the 8th Annual HydroGeo Workshop at the Cave with No Name in Boerne, Texas. The Workshop organizers requested that BCRAGD present their module, titled TCEQ's Clean Rivers Program, three times in order to reach as many students as possible. The*

module gave an overview of the CRP Program, and staff demonstrated the equipment used to fulfill the program data collection requirements.BCRAGD, as a River Authority and Groundwater District, has a unique perspective that provides students with holistic and relevant insight from accomplished staff. Staff were pivotal in answering participant questions and providing resources in order to aid these students in their research.

7.2.1 Management Objective

The District will provide information on efficient use of groundwater to students in Bandera County.

7.2.2 Performance Standard

The General Manager will report the instances that educational conservation information was given to students in Bandera County in the annual report to the Board.

- *The BCRAGD Education & Outreach Manager and the Education & Outreach Coordinator held Educational Programs with NRA on the following dates: March 29, 2023 Utopia ISD – 5th and 7th Grade, April 20, 2023 Hill Country Elementary School – 5th Grade, April 21, 2023 Medina ISD – 5th Grade and 7th Grade, April 24 & 27, 2023 Bandera Middle School – 7th Grade, May 15 & 17, 2023 Alkek Elementary School – 5th Grade. The Nueces River Authority Water Resource Stewardship Program, in collaboration with BCRAGD, heavily emphasizes water conservation, water quality protection, and natural resource systems to the 5th and 7th grade students in Bandera County throughout each Spring season. Our District sponsors and co-facilitates the program every year. Students learned about watersheds, water conservation, and riparian ecosystems and are engaged in a hands-on experiment with a river basin model to demonstrate how pollution travels into water streams and ends up in the ocean and had a thorough discussion on ways to be good stewards of our streams.*

- *October 8, 2022, Medina County 4H Workshop BCRAGD staff organized short lectures, demonstrations, a scavenger hunt, fish-catching techniques, and identifications. BCRAGD staff covered native plants of the area, highlighting species diversity and covering the soil type and water availability native plants use and need. Students were then engaged in a scavenger hunt using BCRAGD-provided field guides to find and identify key riparian plants. BCRAGD staff then briefly talked about inland fish in the Medina River and techniques for catching fish to represent all species. Staff then engaged students in different methods of catching fish and had them help identify the fish caught. The importance of habitat conservation to promote species diversity was highlighted, along with a discussion on food webs. Students were brought to a floodplain area away from the river to demonstrate a snake trap. BCRAGD staff presented materials on snakes, lizards, and turtles found in the area and how the trap depends on the species' behavior to catch them. Students then discussed species in the area, habitat, and food webs. About 18 students attended this workshop, ages ranging from 5 to 17. Parents also attended and listened to the lectures and were engaged in discussions and learning.*

- *October 15, 2022 BCRAGD sponsored the Expanding Your Horizons Program hosted by Schreiner University. The EYH program is a conference designed to engage female middle school students in STEM (science, technology,*

Engineering, and Math) related topics and activities to foster interest in these fields. The Corrina Fox was on of the keynote speakers for the event. The presentation was filled with information about STEM and the experience of BCRAGD staff as females in water conservation. There were approximately 75 students in attendance from Bandera, Kerr, and Kendall counties.

- *December 5 & 6, 20233 BCRAGD's Education and Outreach team visited all 5th-grade students (approximately 100 students) at Alkek Elementary School. BCRAGD staff reviewed TEKS-related topics of Weathering, Erosion, and Deposition and these effects on the State's waterways. Students participated in three lab stations where these concepts were created. Discuss how these natural events change water courses and how the combination of these events with human impact affects water.*

- *March 10, 2023,* BCRAGD's Education Team (C. Fox and C. Curd) participated in Tom Daniel's Science Expo for the second year. All Second-grade students at Tom Daniel's elementary school were presented with information about the Water Cycle and given an interactive watershed demonstration. Students were heavily engaged in applying critical thinking skills regarding conservation ideas and potential solutions to preserving the watersheds in their community. This event is a means to build relationships with citizens in adjacent communities that face the same water issues.

- *March 22, 2023, BCRAGD's Education Coordinator, Charley Curd, presented to 180 online students in grades K-2, 3-5, and 6-8 grades. Each grade received a tailored presentation that was TEKS-aligned and age-appropriate. Concepts included the Water Cycle, Water Conservation, and Understanding watersheds.*

- *April 28, 2023, the Education and Outreach Team participated in the Soil & Water Conservation District Conservation Day Workshop in collaboration with the Nueces River Authority Education team. All 6th students in Bandera County benefitted from this educational event. Students were given a demonstration of a rain event and how water moves through two types of watersheds. Corrina Fox and Charley Curd presented the concepts of Surface water, groundwater, riparian plants, and water quality. Nueces River Authority staff member Mary Bales presented students with biodegradable trash bags and discussed the importance of keeping trash and pollution out of the Texas waterways. Approximately 180 students participated.*

- *On July 29, 2023, BCRAGD's Education team was proud to participate in the Back to School Bash countywide community event that helps school-aged children obtain what they need to have a great start to the school year. The Education team played a " Test your water knowledge" game with the children and adults. The game is designed specifically to bring awareness about how much freshwater is available on the planet, how much water humans use, and ways to conserve and preserve water. Correct answers to questions earned the children raffle tickets for a chance to win a basket of lunchbox goodies in a drawing. More than 500 children attended this year's Bash.*

Management Goal 8

8.0.0 Address rainwater harvesting

8.1.1 Management Objective

The District will promote rainwater harvesting and provide advice, information, and literature regarding the benefits of rainwater harvesting.

8.1.2 Performance Standard

Provide Rainwater Harvesting material to the public in handouts. Each year provide rainwater harvesting information on at least one occasion by one of the following methods and include it in an annual report to the Board of Directors:

- Article to local newspapers
- Distribution of conservation literature handouts
- Public presentation by District Staff
- Information on District website
- District exhibit/display booth at a public event

- *Rainwater Harvesting literature is made available to the public at all District public meetings (9 meetings). 13.OCT.2022, 10.NOV.2022, 20.DEC.2022, 19.JAN.2023, 13.APR.2023, 18.MAY.2023, 20.JUL.2023, 24.AUG.2023 , 14.SEP.2023.*

- *Rainwater harvesting materials are always available on the district website under the "Tools for Sustainability."*

- *During the fourth quarter, the district released a short rainwater harvesting campaign on social media that reviewed the importance and benefits of Rainwater Harvesting.*

Management Goal 9

9.0.0 Address recharge enhancement

The District does not currently have the financial resources to buy property and construct recharge structures; therefore, this goal is not applicable to the District at this time.

Management Goal 1O

10.0.0 Address precipitation enhancement

Precipitation enhancement over Bandera County is financed by the Edward Aquifer Authority and operates from Pleasanton, Texas; therefore, this goal is not applicable to the District at this time.

Management Goal 11

11.0.0 Address brush control.

11.1.1 Management Objective

Provide to the public available information on brush control including riparian health, along with native and invasive plant species management.

11.1.2 Performance Standard

Each year provide brush control, including riparian health, along with native and invasive plant species management information on at least one occasion by one of the following methods and include it in an annual report to the Board of

Directors:
• Article to local newspapers
• Distribution of conservation literature handouts
• Public presentation by District Staff
• Information on District website
• District exhibit/display booth at a public event

- *Materials and literature is made available to the public at all District public meetings (9 meetings). 13.OCT.2022, 10.NOV.2022, 20.DEC.2022, 19.JAN.2023, 13.APR.2023, 18.MAY.2023, 20.JUL.2023, 24.AUG.2023 , 14.SEP.2023.*

- *Brush Control information, including riparian health, along with native and invasive plant species management information is always available on the website by clicking on the "Tools for Sustainability" tab under the Education tab.*

- *BCRAGD district staff conducted Arundo Survey's on 25.JUL.2023, 26.JUL.2023, 27.JUL.2023, 02.AUG.2023*

- *During this fisical, Shelby Sckittone completed her Master Naturalist training for the Alamo Chapter. This helps to identify native, non-native, and invasive species of flora and fauna. She was immersed in several ecological conservation concepts and practices and cultural resources near her. Knowing the species in the surrounding areas is a good foundation for understanding and protecting them.*

- *The BCRAGD Education & Outreach Manager and the Education & Outreach Coordinator held Educational Programs with NRA on the following dates: March 29, 2023 Utopia ISD – 5th and 7th Grade, April 20, 2023 Hill Country Elementary School – 5th Grade, April 21, 2023 Medina ISD – 5th Grade and 7th Grade, April 24 & 27, 2023 Bandera Middle School – 7th Grade, May 15 & 17, 2023 Alkek Elementary School – 5th Grade. The Nueces River Authority Water Resource Stewardship Program, in collaboration with BCRAGD, heavily emphasizes water conservation, water quality protection, and natural resource systems to the 5th and 7th grade students in Bandera County throughout each Spring season. Our District sponsors and co-facilitates the program every year. Students learned about watersheds, water conservation, and riparian ecosystems and are engaged in a hands-on experiment with a river basin model to demonstrate how pollution travels into water streams and ends up in the ocean and had a thorough discussion on ways to be good stewards of our streams.*

- *October 8, 2022, Medina County 4H Workshop BCRAGD staff organized short lectures, demonstrations, a scavenger hunt, fish-catching techniques, and identifications. BCRAGD staff covered native plants of the area, highlighting species diversity and covering the soil type and water availability native plants use and need. Students were then engaged in a scavenger hunt using BCRAGD-provided field guides to find and identify key riparian plants. BCRAGD staff then briefly talked about inland fish in the Medina River and techniques for catching fish to represent all species.*

Staff then engaged students in different methods of catching fish and had them help identify the fish caught. The importance of habitat conservation to promote species diversity was highlighted, along with a discussion on food webs. Students were brought to a floodplain area away from the river to demonstrate a snake trap. BCRAGD staff presented materials on snakes, lizards, and turtles found in the area and how the trap depends on the species' behavior to catch them. Students then discussed species in the area, habitat, and food webs. About 18 students attended this workshop, ages ranging from 5 to 17. Parents also attended and listened to the lectures and were engaged in discussions and learning.

- *October 15, 2022 BCRAGD sponsored the Expanding Your Horizons Program hosted by Schreiner University. The EYH program is a conference designed to engage female middle school students in STEM (science, technology, Engineering, and Math) related topics and activities to foster interest in these fields. Corrina Fox was on of the keynote speakers for the event. The presentation was filled with information about STEM and the experience of BCRAGD staff as females in water conservation. There were approximately 75 students in attendance from Bandera, Kerr, and Kendall counties.*

- *December 5 & 6, 20233 BCRAGD's Education and Outreach team visited all 5th-grade students (approximately 100 students) at Alkek Elementary School. BCRAGD staff reviewed TEKS-related topics of Weathering, Erosion, and Deposition and these effects on the State's waterways. Students participated in three lab stations where these concepts were created. Discuss how these natural events change water courses and how the combination of these events with human impact affects water.*

- *December 13th through 16th, 2022, Clint Carter, Levi Sparks, and Shelby Sckittone attended a Fish & Mussel ID short course, giving the attendees 30 hours of participation CE's. The course will include lecture and laboratory components. Additionally, we reserved some time for participants to bring specimens and work in the laboratory on identification.*

- *March 10, 2023, BCRAGD's Education Team (C. Fox and C. Curd) participated in Tom Daniel's Science Expo for the second year. All Second-grade students at Tom Daniel's elementary school were presented with information about the Water Cycle and given an interactive watershed demonstration. Students were heavily engaged in applying critical thinking skills regarding conservation ideas and potential solutions to preserving the watersheds in their community. This event is a means to build relationships with citizens in adjacent communities that face the same water issues.*

- *March 28, 2023, conduct the Aquatic Life Monitoring This is the biological component of TCEQ's Clean Rivers Program. The BCRAGD Staff Clinton Carter, Levi Sparks, and Shelby Sckittone with the San Antonio River Authority on June 13, 2022. Aquatic Life Monitoring assessments are used to identify species diversity and community composition of freshwater fishes and measure physical habitat conditions along a specific reach of the Medina River."*

Management Goal 12

12.0.0 Addressing water quality.

12.1.1 Management Objective

Continue the existing program to monitor groundwater quality in the District.

12.1.2 Performance Standard

Continue to monitor water quality from wells in the monitoring system on a semi-annual basis, and from newly drilled wells when samples can be obtained. Report the number of samples obtained to the Board of Directors in an annual report.

- *Monitor Well water samples taken 39*
- *Water Analysis performed on New Wells 81*

12.2.1 Management Objective

Continue the existing program to monitor surface water quality in the District.

12.2.2 Performance Standard

Continue to monitor water quality from a minimum of 6 locations in the county from the Sabinal and Medina River basins on a quarterly basis. Report the number of samples obtained to the Board of Directors in an annual report.

The Bandera County River Authority & Groundwater District conducts routine surface water quality monitoring through a variety of programs and special projects including the Clean Rivers Program, In-House Bacterial Monitoring, Environmental Investigations, and more.

According to the recent issuances of the 2020 and 2022 Integrated Report generated by TCEQ (table 5) a portion of the Upper Medina River, Assessment Unit (AU) 1905_01, has been added to the list of impaired water bodies under section 303(d) of the Clean Water Act. This impairment specifically refers to elevated bacteria levels exceeding the threshold for contact recreation within this reach from data derived from the Clean Rivers Program.

Table 5 – E. coli Results Generated from the 2022 Texas Integrated Report

Use	Method	Parameter	Start Date	End Date	Criteria	# Data Assessed	Mean Data Assessed
Recreation Use	Bacteria Geomean	E. coli	12/01/13	11/30/20	126	70	155.1
# Exceedances	**Mean Exceedances**	**Dataset Qualifier**	**Level of Support**	**Carry Forward**	**Int Level of Support**	**TCEQ Cause**	**Category**
1	-	Adequate Data	Nonsupport	No	Nonsupport	Bacteria in water	5c

Assessment Unit 1905_01 is a freshwater stream on the Medina River above Medina Lake located from a point immediately upstream of the confluence of Red Bluff Creek upstream to RM 470 and consists of 3 (three) Clean River Program sites to include Station ID 21631 (Mayan Ranch), 13638 (Bandera City Park), and 12830 (English Crossing) (figure 3).

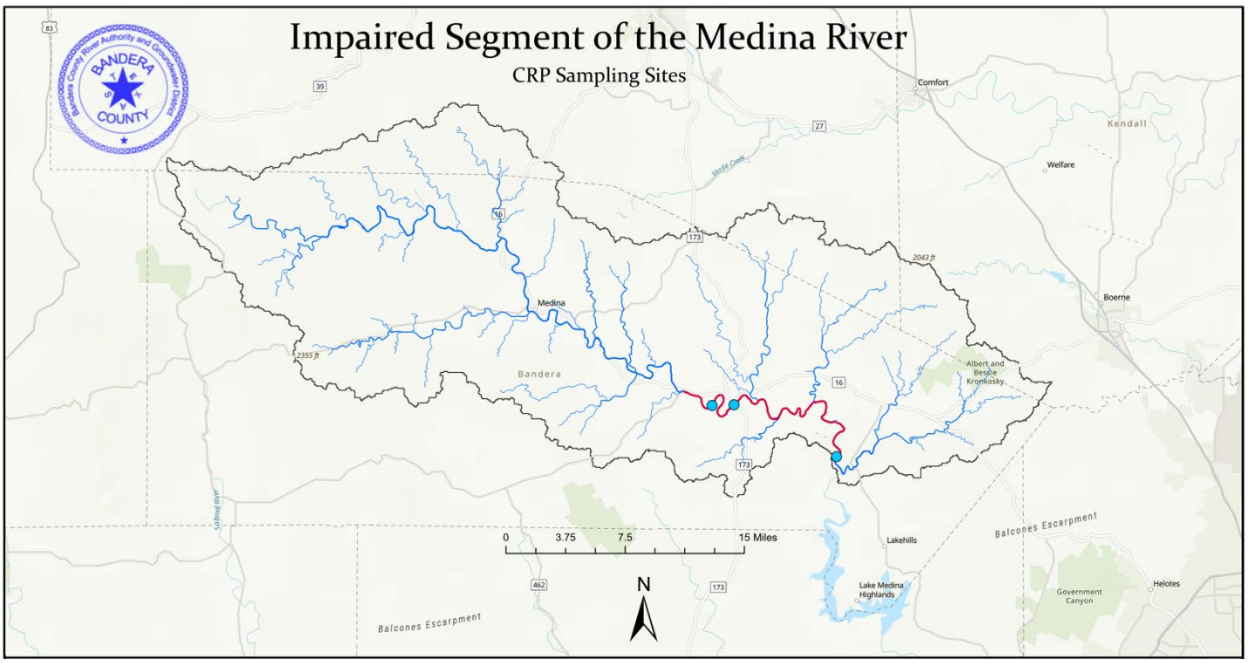


Figure 3 – Assessment Unit 1905_01 of the Medina River classified as impaired. Site names listed from left to right: 21631 (Mayan Ranch), 13638 (Bandera City Park), 12830 (English Crossing).

As a proactive approach to this impairment, the District has created a high-resolution bacterial monitoring program, the *Medina River Microbial Analysis*. This program began in March of 2023 and is still ongoing. For FY 2023, the District has collected a total of 29 samples that quantify *E. coli* bacteria in association with instantaneous water quality parameters and field observations. In addition, the District has performed 3 physical habitat assessments along this reach to monitor seasonal watershed conditions. More information regarding the Medina River Microbial Analysis project can be found below:

Medina River Microbial Analysis Overview

The objectives of Task I-III are to successfully provide high resolution temporal mapping of bacterial loading on the Medina River at English Crossing (figure 4) to increase the probability of implementing a representative Bacterial Source Tracking (BST) analysis to enhance future remediation efforts and watershed management decisions. Data derived from these studies will be used to design and implement specific Best Management Practices (BMP's) to improve water quality and restore watershed health within this reach.

Task I will use an adaptive management strategy to provide high resolution data on the spatial and temporal characteristics of bacterial loading in relation to stream flow conditions, diurnal and seasonal variation, instantaneous water quality parameters, and general watershed response to significant precipitation events. The methods and procedures to accomplish Task I are detailed within this QA project plan.

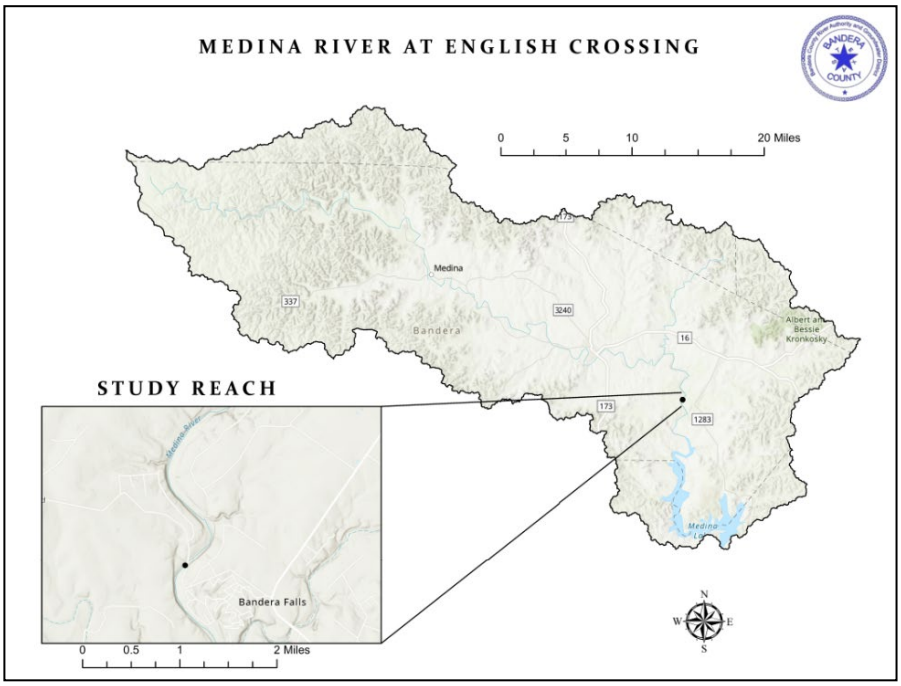


Figure 4 – Focal point of the Medina River Microbial Analysis Project.

Task II will incorporate the collection of multiple BST samples to be analyzed. The BST results will indicate a percent contribution of E. coli bacteria generated by human and/or non-human sources. The timing and methods of these collection efforts will be based on the interpretation of data collected in Task I to increase the probability of analyzing representative bacterial sourcing.

Task III shall provide a detailed remediation plan and/or a watershed protection plan that will incorporate specific BMP strategies based on data derived from Task I & II. These data should provide a course of action on remediation efforts and watershed management decisions needed to successfully reduce bacterial loading and restore water quality of the Medina River at English Crossing.

In September 2023, the District applied for grant funding in partnership with the Texas Water Resources Institute (TWRI) to include Bacterial Source Tracking (BST). The project proposal includes funding for the collection and analysis of 120 BST samples from a total of 9 locations throughout the Medina Watershed.

Below is the summary of Clean River and In House sampling dates and sites visited as apart of the districts Surface Water Quality Testing Programs along the Medina and Sabinal rivers for the protection of the citizens of Bandera County. 243 total samples were taken between these programs during FY 2023.

1st Quarter Oct 2022 – Dec 2023
16.OCT.2022 Diversion Lake CRP (3 sites
09.NOV.2022 Sabinal River CRP (3 sites)
10.NOV.2022 Sabinal River CRP (2 sites)
18.NOV.2022 Medina River CRP (4 sites)
31.NOV.2022 Medina River CRP (4sites)
01.DEC.2022 Medina Lake CRP (5 sites)
06.DEC.2022 Quarterly In-House (14 sites)
08.DEC.2022 Quarterly In-House (15 sites)

2nd Quarter Jan 2023 – Mar 2023
05.JAN.2023 Sabinal River CRP (2 sites)
10.JAN.2023 Sabinal River CRP (5 sites)
19.JAN.2023 Medina River CRP (8 sites
24.JAN.2023 Diversion Lake CRP (1 site)
07.FEB.2023 Diversion Lake CRP (2 sites)
15.FEB.2023 Medina Lake CRP (5 sites)
16.MAR.2023 Sabinal CRP (2 sites)
14.MAR.2023 Quarterly In-House (15 sites)
15.MAR.2023 Quarterly In-House (14 sites)
22.MAR.2023 Sabinal CRP (3 sites)
29.MAR.2023 Diversion Lake CRP (2 sites)

3rd Quarter Apr 2023 – Jun 2023
5.APR.2023 Medina River CRP (4 sites)
19.APR.2023 Medina River CRP (4 sites)
17.MAY.2023 Medina Lake CRP (5 sites)
24.MAY.2023 Diversion Lake CRP (1 sites)
01.JUN.2023 Quarterly In-House (10 sites)
7.JUN.2023 Medina River CRP (4 sites)
06.JUN.2023 Quarterly In-House (9 sites)
08.JUN.2023 Quarterly In-House (10 sites)
21.JUN.2023 Sabinal River CRP (2 sites)
21.JUN.2023 Summer In House (17 sites)
28.JUN.2023 Summer In House (2 sites)

4th Quarter Jul 2023 – Sep 2023
06.JUL.2023 Sabinal River CRP (3 sites)
06.JUL.2023 Summer In-House (20 sites)
18.JUL.2023 Diversion CRP (1 site)
19.JUL.2023 Summer In-House (19 sites)
01.AUG.2023 Medina River CRP (4 sites)
03.AUG.2023 Summer In-House (19 sites)
17.AUG.2023 Summer In-House (19 sites)
29.AUG.2023 Summer In-House (19 sites)
30.AUG .2023 Diversion Lake CRP (1 sites)
12.SEP.2023 Quarterly In-House (14 sites)
13.SEP.2023 Quarterly In-House (15 sites)
19.SEP.2023 Diversion Lake CRP (1 sites)
19.SEP.2023 Sabinal River CRP (2 sites)
20.SEP.2023 CRP Audit
21.SEP.2023 Sabinal River CRP (3 sites)

Management Goal 13

13.0.0 Addressing the Desired Future Conditions.

13.1.1 Management Objective

To achieve the Desired Future Condition adopted by GMA 9
For the Edwards Group of the Edwards Trinity (Plateau) and the Hill Country Trinity Aquifer.

13.1.2 Performance Standard

Groundwater Management Area 9 has adopted a Desired Future Condition (DFC) for the Edwards Trinity Plateau and the Hill Country Trinity aquifer.

District rules do not allow permitted wells in the Edwards Trinity Plateau Aquifer. The District has established a monitor well in the Edwards Aquifer and is monitoring the water level and rainfall on a real-time basis. A comparison of the annual water level measurements and the cumulative water level trend to the adopted Desired Future Condition will be made annually. The water levels will be included in the District database and a discussion of the water level trend-Desired Future Condition comparison will be reported to the Board of Directors on an annual basis and documented in the annual report.

The District will notate the Hill Country Trinity Aquifer water level trends from the District's Monitor Wells in order to track the District's progress in complying with the average drawdown as stated in GAM Run 16-023 MAG for Bandera County. The General Manager will report annually to the District Board of Directors the progress of achieving the Desired Future Condition. The General Manager will complete an annual groundwater report that details groundwater production from non-exempt wells combined with exempt well pumping estimates supplied by the Texas Water Development Board. This report will be included in the annual report provided to the District's Board of Directors.

FY 2023 EVALUATION

For the Hill Country Trinity Aquifer DFC evaluation, the 2008 monitor well levels were used as the comparing factor in order to stay consistent with the first GAM run for the DFC process, GAM Run 10-005. Bandera County Monitor Well locations with historical data dating back to 2008 are highlighted in Table 6.

Table 6 – Historic Trinity Aquifer Monitoring Wells

Trinity aquifer group – An average level was calculated for each monitor well using data points taken throughout FY 2023. These averages were then compared to the 2008 water level measurements, and these differences were reported during an open meeting of the Groundwater Management Area 9 (GMA 9) Joint Planning Committee (held at 10:00 A.M. on Friday the 9th of December 2022 held at the Cow Creek Groundwater Conservation District’s Meeting Room located at 9 Toepperwein Road in Boerne, Texas, 78006).

Edwards-Trinity Plateau aquifer – District rules prohibit production permits for the use of the Edwards-Trinity Plateau aquifer. There is only one monitor well for the Edwards-Trinity Plateau in Bandera County –located at Lost Maples State Natural Area. Data for this well was originally collected in 2010 and data from the years 2017 – 2020 are unavailable. Cumulative available data was averaged between 2011 and 2022 and compared to the average water levels in 2010.

RESULTS OF THE DFC EVALUATION

The average loss or gain for Trinity group monitor wells is summarized in Table 6. Due to various recharge rates and usage of the various producing intervals of all of the Trinity Aquifers the Upper, Middle, and Lower Trinity Aquifers are summarized in Table 7, Table 8, and Table 9.

GMA 9 2021 Approved Desired Future Conditions:
For GMA 9 region-wide...Allow for an increase in Average Drawdown of Approximately 30 feet through 2060
For Bandera County…Allow for an increase in Average Drawdown of Approximately 30 feet through 2060

Table 6 – Bandera County – All Trinity Group Monitor Wells – Calendar Year Average Water Level Below Land Surface (all numbers in Feet)

Monitor Well	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average Change*
Alkek Elementary	375	377	373	422	394	388	393	393	395	383	419	387	398	417	414	438	-24.53
Bridlegate LT	340	326	316	345	340	341	376	370	356	348	370	356	367	377	395	406	-19.17
Cielo Rio Ranch, Ltd LT	233	266	240	271	269	283	278	272	291	273	272	291	304	308	324	353	-53.45
Latigo Ranch	402	395	397	402	401	406	408	413	419	421	425	435	438	445	452	455	-19.27
Bandera Co. Park	86	111	100	104	122	137	148	119	81	81	89	80	93	117	123	166§	-25.15
Bowie	203	203	199	209	207	208	210	210	206	209	214	212	219	221	233	227	-9.92
Boyle	127	156	108	165	165	177	181	150	96	105	121	130	177	180	189	193	-26.09
Bridlegate MT	233	237	213	241	240	244	252	235	185	219	215	213	227	225	238	241	4.52
Erfurt	21	21	17	25	23	23	40	21	16	20	19	21	28	30	38	42	-4.89
Evans Water System	202	205	197	205	201	204	208	201	200	202	202	201	193	204	206	211†	-0.41
Jeffery Yellow House	176	185	104	232	178	200	195	160	142	145	156	146	164	163	197	213	3.65
Jeffery Shallow	34	34	23	35	34	41	46	56	28	32	25	30	34	33	35	35	-1.31
Lakehills Co. Yard	131	159	113	140	138	153	162	119	86	91	81	78	118	129	152	166‡	4.95
Mason Creek Deep	188	216	183	221	213	215	220	198	181	194	218	210	233	231	222	241	-25.51
Mason Creek Shallow	166	178	168	188	187	189	193	179	166	171	185	180	194	196	201	207	-19.52
Medina Springs	119	132	125	139	140	144	153	143	130	136	126	139	149	159	162	171	-24.62
Orchard Park	34	37	30	33	33	34	34	33	33	36	32	33	37	37	37	36†	-0.30
Tarpley VFD	41	51	42	59	48	48	61	58	54	60	44	42	59	62	68	77	-14.20
Tecon	82	103	92	98	105	108	112	66	79	78	85	74	89	103	111	114	-12.94
																AVERAGE	-14.11

**** Overall Average Change – Compared to 2008 Average***
† Data Limited to Three Quarters of the Year
‡ Data Limited to Two Quarters of the Year
§ Data Limited to One Quarter of the Year

Table 7 – Bandera County – Upper Trinity Monitor Wells – Calendar Year Average Water Level Below Land Surface (all numbers in Feet)

Monitor Well	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average Change*
Erfurt	21	21	17	25	23	23	40	21	16	20	19	21	28	30	38	42	-4.89
Jeffery Shallow	34	34	23	35	34	41	46	56	28	32	25	30	34	33	35	35	-1.31
Orchard Park	34	37	30	33	33	34	34	33	33	36	32	33	37	37	37	36†	-0.30
Tarpley VFD	41	51	42	59	48	48	61	58	54	60	44	42	59	62	68	77	-14.20
																AVERAGE	-5.17

**** Overall Average Change – Compared to 2008 Average***
† Data Limited to Three Quarters of the Year

Table 8 – Bandera County – Middle Trinity Monitor Wells – Calendar Year Average Water Level Below Land Surface (all numbers in Feet)

Monitor Well	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average Change*
Bandera Co. Park	86	111	100	104	122	137	148	119	81	81	89	80	93	117	123	166§	-25.15
Bowie	203	203	199	209	207	208	210	210	206	209	214	212	219	221	233	227	-9.92
Boyle	127	156	108	165	165	177	181	150	96	105	121	130	177	180	189	193	-26.09
Bridlegate MT	233	237	213	241	240	244	252	235	185	219	215	213	227	225	238	241	4.52
Evans Water System	202	205	197	205	201	204	208	201	200	202	202	201	193	204	206	211†	-0.41
Jeffery Yellow House	176	185	104	232	178	200	195	160	142	145	156	146	164	163	197	213	3.65
Lakehills Co. Yard	131	159	113	140	138	153	162	119	86	91	81	78	118	129	152	166‡	4.95
Mason Creek Deep	188	216	183	221	213	215	220	198	181	194	218	210	233	231	222	241	-25.51
Mason Creek Shallow	166	178	168	188	187	189	193	179	166	171	185	180	194	196	201	207	-19.52
Medina Springs	119	132	125	139	140	144	153	143	130	136	126	139	149	159	162	171	-24.62
Tecon	82	103	92	98	105	108	112	66	79	78	85	74	89	103	111	114	-12.94
																AVERAGE	-10.10

**** Overall Average Change – Compared to 2008 Average***
† Data Limited to Three Quarters of the Year
‡ Data Limited to Two Quarters of the Year
§ Data Limited to One Quarter of the Year

Table 9 – Bandera County – Lower Trinity Group Monitor Wells – Calendar Year Average Water Level Below Land Surface (all numbers in Feet)

Monitor Well	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average Change*
Alkek Elementary	375	377	373	422	394	388	393	393	395	383	419	387	398	417	414	438	-24.53
Bridlegate LT	340	326	316	345	340	341	376	370	356	348	370	356	367	377	395	406	-19.17
Cielo Rio Ranch, Ltd LT	233	266	240	271	269	283	278	272	291	273	272	291	304	308	324	353	-53.45
Latigo Ranch	402	395	397	402	401	406	408	413	419	421	425	435	438	445	452	455	-19.27
																AVERAGE	-29.11

**** Overall Average Change – Compared to 2008 Average***
† Data Limited to Three Quarters of the Year
‡ Data Limited to Two Quarters of the Year
§ Data Limited to One Quarter of the Year

\

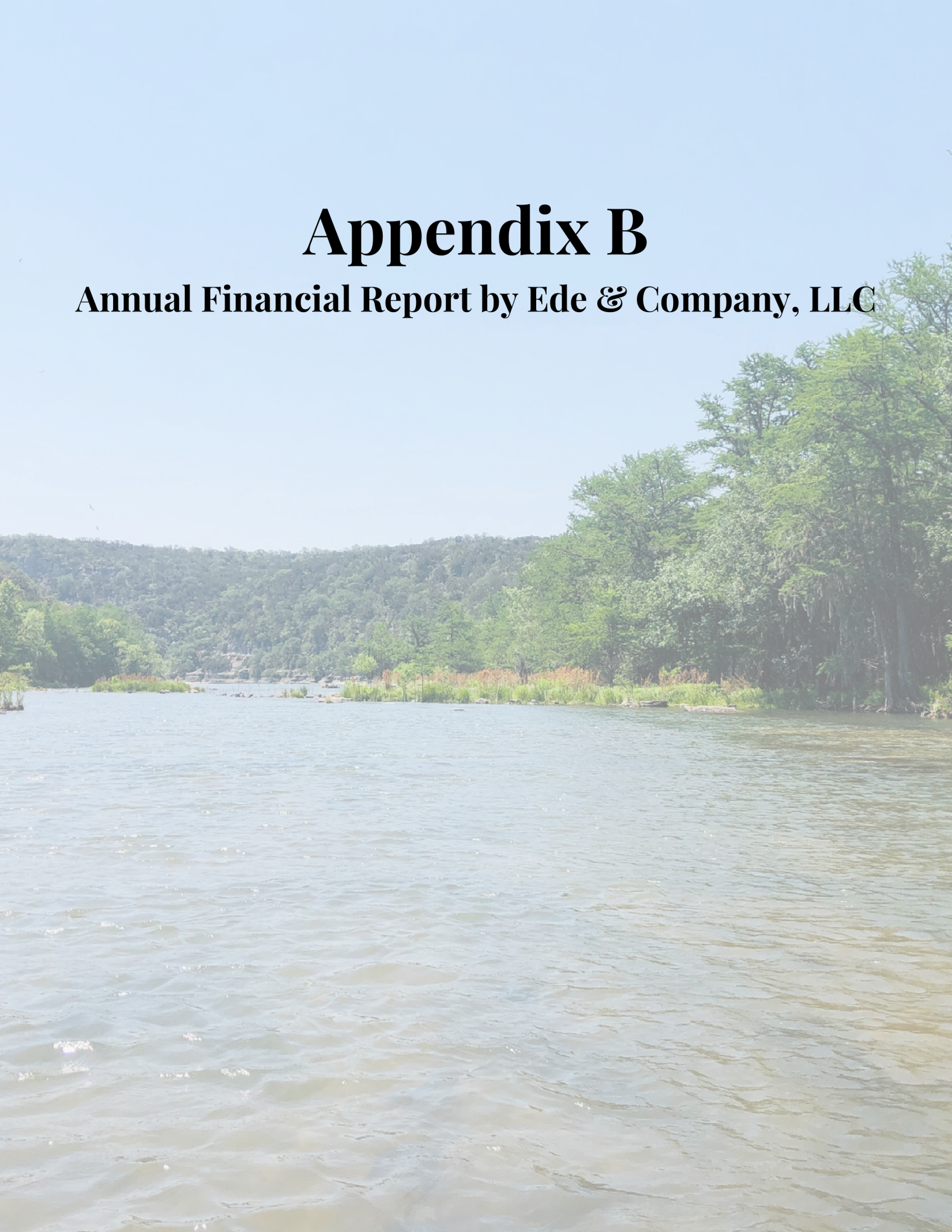
2023 Annual Pumping Amounts

Irrigation Wells									
P-1177	UR	P-1137	2.54	P-1078	0.085	P-1055	0.26	P-1034	RP
P-1164	31.078	P-1132	RP	P-1071	9.996	P-1054	RP	P-1025	UR
P-1160	0	P-1124	RP	P-1067	0	P-1053	0	P-1017	RP
P-1159	UR	P-1121	RP	P-1065	0	P-1052	70.954	P-1012	0
P-1155	115.093	P-1112	3.222	P-1064	59.305	P-1048	5.496	P-1011	0
P-1153	20.275	P-1109	4.034	P-1063	0	P-1046	RP	P-1008	RP
P-1149	4.269	P-1107	RP	P-1062	35.381	P-1041	RP	P-1003	6.858
P-1147	10.27	P-1093	RP	P-1061	0	P-1040	RP	P-1002	62.417
P-1138	23.403	P-1092	RP	P-1056	0.07	P-1035	0	Total	465.006
Public Water Supply Wells									
P-1208	0.194	P-1179	0.367	P-1158	UR	P-1119	3.054	P-1049	18.097
P-1205	RP	P-1178	UR	P-1157	RP	P-1118	19.625	P-1047	0
P-1203	0.252	P-1176	3.323	P-1150	11.593	P-1116	10.497	P-1045	9.194
P-1202	RP	P-1175	1.59	P-1146	1.808	P-1115	3.145	P-1042	14.264
P-1201	RP	P-1174	0.284	P-1145	25.951	P-1114	55.219	P-1038	1.354
P-1200	RP	P-1173	2.369	P-1144	6.476	P-1113	6.358	P-1032	16.708
P-1199	RP	P-1172	12.587	P-1143	0.74	P-1110	0.07	P-1031	19.392
P-1198	RP	P-1170	UR	P-1141	14.122	P-1106	11.086	P-1030	0
P-1193	0.04	P-1169	3.289	P-1140	0.616	P-1096	RP	P-1029	RP
P-1191	0.871	P-1168	0.083	P-1135	6.608	P-1089	2.362	P-1020	15.464
P-1190	1.257	P-1167	0.455	P-1134	171.49	P-1079	3.587	P-1019	RP
P-1188	UR	P-1166	4.323	P-1133	46.709	P-1075	15.195	P-1018	9.874
P-1187	2.836	P-1165	0.132	P-1131	15.464	P-1074	8.793	P-1015	20.589
P-1186	3.531	P-1163	3.814	P-1129	12.795	P-1073	7.571	P-1001	0
P-1183	71.915	P-1162	5.048	P-1128	6.68	P-1058	15.087	Total	754.751
P-1180	6.679	P-1161	UR	P-1120	8.408	P-1050	13.467		
Other Wells									
P-1204	0.019	P-1151	RP	P-1101	0	P-1082	RP	P-1027	0.018
P-1197	RP	P-1148	RP	P-1100	RP	P-1081	RP	P-1026	0
P-1196	0	P-1139	0.437	P-1098	0.139	P-1080	RP	P-1023	0.583
P-1195	RP	P-1125	1.122	P-1095	1.424	P-1070	RP	P-1022	0.004
P-1194	0.196	P-1123	RP	P-1091	RP	P-1069	UR	P-1016	RP
P-1192	0.129	P-1108	RP	P-1090	RP	P-1068	RP	P-1014	0.015
P-1189	0.151	P-1105	0	P-1088	14.199	P-1044	UR	Total	44.913
P-1171	0.184	P-1104	2.819	P-1085	RP	P-1037	1.35		
P-1154	0.676	P-1103	21.435	P-1084	RP	P-1036	0		
P-1152	0.013	P-1102	0	P-1083	RP	P-1028	RP		

RP = Report Pending
UR = Under Review
Other Wells = Permitted wells that fall into this category would be Domestic, Commercial, Livestock, etc.

Appendix B

Annual Financial Report by Ede & Company, LLC



BANDERA COUNTY RIVER AUTHORITY AND GROUND WATER DISTRICT

Annual Financial Report

For the Year Ended September 30, 2023

This Page Intentionally Left Blank

BANDERA COUNTY RIVER AUTHORITY AND GROUND WATER DISTRICT

Annual Financial Report

For the Year Ended September 30, 2023

Table of Contents	Page
Annual Filing Affidavit	1
Independent Auditor's Report	2 - 3
Management's Discussion and Analysis	4 - 8
Statement of Net Position and Governmental Funds Balance Sheet	11
Statement of Activities and Governmental Funds Revenues, Expenditures and Changes in Fund Balances	13-14
Notes to the Financial Statements	15-23
Required Supplementary Information	
Budgetary Comparison Statement - General Fund	25-26
Analysis of Taxes Receivable	28

ANNUAL FILING AFFIDAVIT

THE STATE OF TEXAS X
X
COUNTY OF BANDERA X

I, DONALD SLOAN of the BANDERA COUNTY RIVER AUTHORITY AND GROUND WATER DISTRICT hereby swear, or affirm, that the district named above has reviewed and approved at a meeting of the Board of Directors of the District on the 18th day of January, 2024, its annual audit report for the year ended September 30, 2023 and that copies of the annual report have been filed in the district office located, at BANDERA, TX .

This annual filing affidavit and the attached copy of the annual audit report are being submitted to the Texas Commission on Environmental Quality in satisfaction of all annual filing requirements within Section 49.194 of the Texas Water Code.

Dated 1/18/2024 ,2024

By: Donald Sloan
(Signature of District Representative)

DONALD SLOAN, PRESIDENT
(Type Name & Title of above District Representative)

Sworn to and Subscribed to before me this 18 day of January, 2024

Diane Irvin
(Signature of Notary)

Commission Expires on 2/7/2027

Diane Irvin
(Print Name of Notary)

Notary Public in and for the State of Texas.

Diane Jean Irvin
Notary Public, State of Texas
Comm. Expires 02-07-2027
Notary ID 13188519-2

EDE & COMPANY, LLC
Certified Public Accountants

Eric Ede, CPA
Donna Ede Jones, CPA
Kevin Ede, CPA

133 N. Camp St.
Uvalde, Texas 78801
Telephone (830) 278-2513
Fax (830) 278-6288
Email ede@edecpa.com

INDEPENDENT AUDITOR'S REPORT

Board of Directors
Bandera County River Authority
and Groundwater District
P. O. Box 177
Bandera, Texas 78003

Opinions

We have audited the accompanying financial statements of the governmental activities, each major fund, and the aggregate remaining fund information of the Bandera County River Authority and Groundwater District, as of and for the year ended September 30, 2023, and the related notes to the financial statements, which collectively comprise the District's basic financial statements as listed in the table of contents.

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities, each major fund, and the aggregate remaining fund information of the Bandera County River Authority and Groundwater District, as of September 30, 2023, and the respective changes in financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinions

We conducted our audit in accordance with auditing standards generally accepted in the United States of America Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the Bandera County River Authority and Groundwater District, and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the Bandera County River Authority and Groundwater District's ability to continue as a going concern for twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinions. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with generally accepted auditing standards will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with generally accepted auditing standards, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Bandera County River Authority and Groundwater District's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the Bandera County River Authority and Groundwater District's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and budgetary comparison information be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Management is responsible for the other information included in the annual report. The other information comprises the Schedule of Delinquent Taxes but does not include the basic financial statements and our auditor's report thereon. Our opinions on the basic financial statements do not cover the other information, and we do not express an opinion or any form of assurance thereon.

In connection with our audit of the basic financial statements, our responsibility is to read the other information and consider whether a material inconsistency exists between the other information and the basic financial statements, or the other information otherwise appears to be materially misstated. If, based on the work performed, we conclude that an uncorrected material misstatement of the other information exists, we are required to describe it in our report.

Ede & Company, LLC

Ede & Company. LLC
Certified Public Accountants
Uvalde, Texas

January 17, 2024

MANAGEMENT'S DISCUSSION AND ANALYSIS

In accordance with Governmental Accounting Standards Board ("GASB") Statement No. 34, the management of the Bandera County River Authority and Ground Water District (the "District") offers the following narrative on the financial performance of the District for the year ended September 30, 2023. Please read it in connection with the District's financial statements that follow.

For purposes of GASB Statement No. 34, the District is considered a special purpose government. This allows the District to present the required fund and government-wide statements in a single schedule. The requirement for fund financial statements that are prepared on the modified accrual basis of accounting is met with the "Total Governmental Funds" column. An adjustment column includes those entries needed to convert to the full accrual basis government-wide statements. Government-wide statements are comprised of the Statement of Net Position and the Statement of Activities.

FINANCIAL HIGHLIGHTS

- The District's total combined net position was $655,857.77 at September 30, 2023.
- During the year, the District's expenses were $39,155.40 less than the $1,590,160.94 generated in taxes, service fees and other revenues for governmental activities.
- The total cost of the District's programs increased during the current year.
- The general fund reported a fund balance this year of $254,497.43.
- The District's net position increased $39,155.40 which represents a 5.6 percent increase from 2022.

OVERVIEW OF THE FINANCIAL STATEMENTS

This annual report consists of three parts—management's discussion and analysis (this section), the basic financial statements, and required supplementary information. The basic financial statements include two kinds of statements that present different views of the District: The *Statement of Net Position and Governmental Funds Balance Sheet* includes a column (titled "Total Governmental Funds") that represents a balance sheet prepared using the modified accrual basis of accounting. The adjustments column converts those balances to a balance sheet that more closely reflects a private-sector business. Over time, increases or decreases in the District's net position will indicate financial health. The *Statement of Activities and Governmental Funds Revenues, Expenditures, and Changes in Fund Balances* includes a column (titled "Total Governmental Funds") that derives the change in fund balances resulting from current year revenues, expenditures, and other financing sources or uses. These amounts are prepared using the modified accrual basis of accounting. The adjustments column converts those activities to full accrual, a basis that more closely represents the income statement of a private-sector business.

The financial statements also include notes that explain some of the information in the financial statements and provide more detailed data. The statements are followed by a section of *required supplementary information* that further explains and supports the information in the financial statements.

FINANCIAL ANALYSIS OF THE DISTRICT AS A WHOLE

The District's combined net position was $655.7 thousand at September 30, 2023. (See Table A-1).

	Activities		Change
	2023	2022	2023 - 2022
Current assets:			
Cash and cash equivalents	$ 290.3	$ 250.3	15.98%
Accounts receivable	0.1	-	100.00%
Property taxes receivable (net)	94.8	78.7	20.46%
Due from other governments	2.5	0.4	525.00%
Prepayments	9.2	7.8	17.95%
Total current assets	396.9	337.2	17.70%
Noncurrent assets:			
Capital Assets	753.3	610.9	23.31%
Less accumulated depreciation	(330.8)	(299.4)	10.49%
Total noncurrent assets	422.5	311.5	35.63%
Total Assets	819.4	648.7	26.31%
Current liabilities:			
Accounts payable and accrued liabilities	47.7	22.4	112.95%
Current portion - Lease payable	2.4	3.1	-22.58%
Current Portion - Notes Payable	19.4		100.00%
Total current liabilities	69.5	25.5	172.5%
Noncurrent liabilities:			
Notes Payable- Long -term	94.1	-	100.0%
Total Liabilities	163.6	27.9	486.4%
Net Position:			
Invested in capital assets	306.4	311.5	-1.64%
Unrestricted	349.3	309.4	12.90%
Total Net Position	$ 655.7	$ 620.9	5.60%

Changes in net position. The District's total revenues were 1,590.2 thousand. A significant portion, 87 percent, of the District's revenue comes from property taxes. (See Figure A-3.) and 7% from permits on new wells.

The total cost of all programs and services was $1,551.0 thousand; 100 percent of these costs are for General Government.

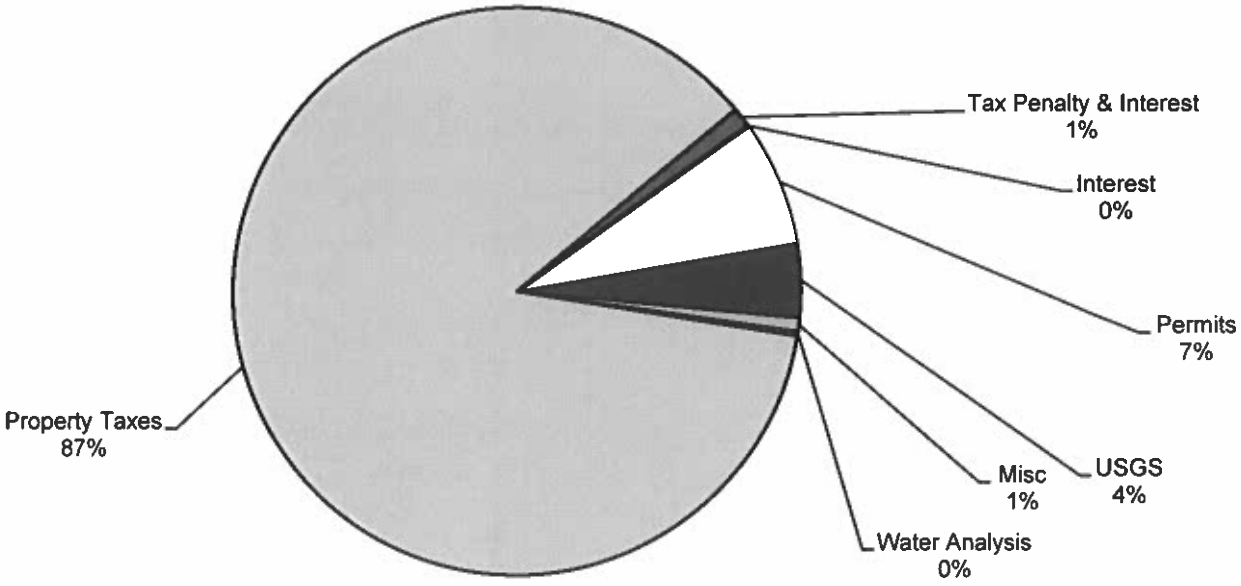
Table A-2

Changes in Bandera County River Authority and Groundwater District's Net Position

(In thousands dollars)

	Governmental Activities		Total Percentage Change
	2023	2022	2023-2022
General Revenue			
Property Taxes	1,374.4	1,202.0	14.34%
Penalty & Interest	17.6	16.0	10.00%
USGS	67.2	41.6	61.54%
New Well Applications & Permits	113.5	116.9	-2.91%
Other	17.4	31.9	-45.45%
Total Revenue	1,590.1	1,408.4	12.90%
Program Expenses			
General Government	1,551.0	1,110.5	39.67%
Total Expense	1,551.0	1,110.5	39.67%
Increase (Decrease) in Net Position	$ 39.1	$ 297.9	-86.87%

2023 Revenue Sources



2023 Expenses

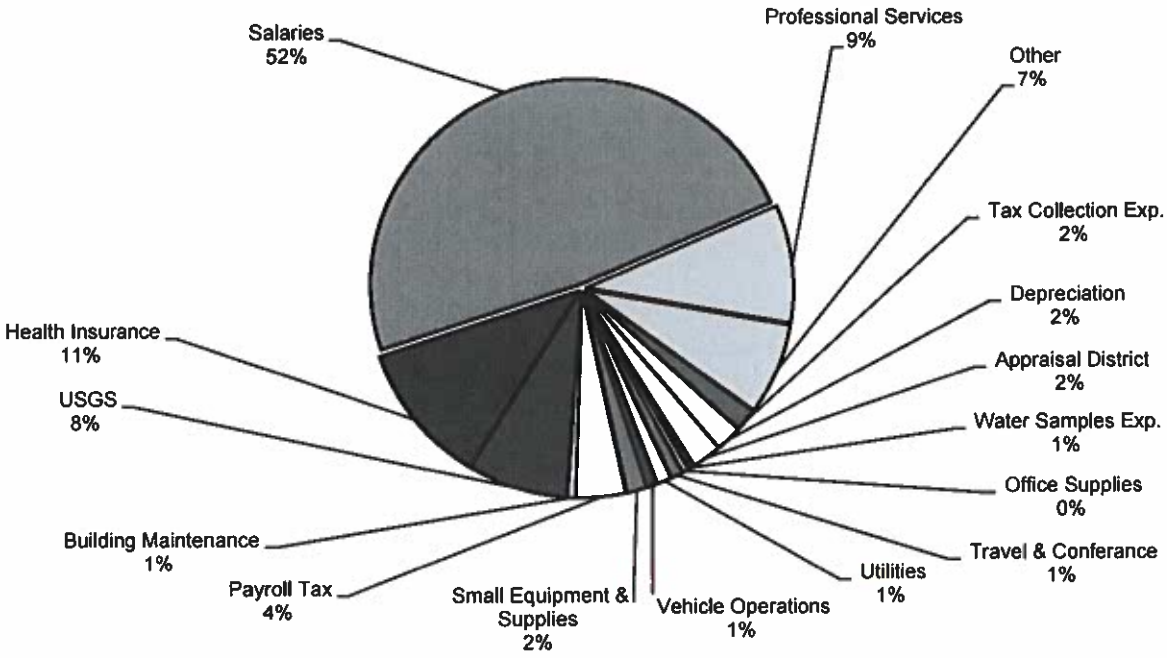


Table A-3 presents the cost of each of the District's largest functions as well as the major administrative categories.

- The cost of all *governmental* activities this year was 1,551.0 thousand.

Table A-3
Net Cost of Selected District Functions & Major Administrative Categories
(in thousands of dollars)

	Total Costs of Services		
	2023	2022	Percent Change
Salaries	754.3	683.9	10.29%
Professional Services	163.1	143.5	13.66%
Health Insurance	172.9	148.6	16.35%
Small Equipment & Supplies	24.4	20.3	20.20%
Vehicle Operations	13.7	22.0	-37.73%
Utilities	17.3	15.5	11.61%
Travel & Conference	14.6	9.5	53.68%
Office Supplies	7.7	5.2	48.08%
Water Samples Exp.	8.1	9.3	-12.90%
Appraisal District	35.5	31.2	13.78%
Depreciation	31.5	10.5	200.00%
Tax Collection Exp.	27.4	24.0	14.17%

FINANCIAL ANALYSIS OF THE DISTRICT'S FUNDS

General Fund Budgetary Highlights

Over the course of the year, the District revised its budget many times. Even with these adjustments, actual expenditures were $114,808.43 above final budget amounts. Resources available were $175,447.39 above the final budgeted amount.

CAPITAL ASSETS AND DEBT ADMINISTRATION

Capital Assets

At the end of 2023, the District had invested $610.9 thousand in a broad range of capital assets, including land, equipment, buildings, and vehicles. (See Table A-4.) This amount represents a net increase (including additions and deductions) of 2.8 percent over last year.

Table A-4
District's Capital Assets
(in thousands of dollars)

	Governmental Activities		Percentage Change
	2023	2022	2023-2022
Land	$ 150.0	$ 150.0	0.0%
Building and Improvements	172.1	172.1	0.0%
Vehicles	260.2	117.8	120.9%
Monitoring Wells & Equipment	171.0	171.0	0.0%
Totals at historical cost	753.3	610.9	23.3%
Total Accumulated Depreciation	(330.8)	(299.4)	10.5%
Net Capital Assets	$ 422.5	$ 311.5	35.6%

Long-Term Debt

The District had one Note Payable at the end of 2023.

Notes Payable $113,526.14

ECONOMIC FACTORS AND NEXT YEAR'S BUDGETS AND RATES

- Appraised value used for the 2024 budget preparation will increase by approximately 12%
- Tax rates for 2024 will decrease to $0.040642.

These indicators were taken into account when adopting the general fund budget for 2024. Amounts available for appropriation are approximately $1.57 million.

Expenditures are budgeted at approximately $1.6 million. The District continues to coordinate local funds with federal funds to optimize instructional programs.

If these estimates are realized, the District's budgetary general fund balance is expected to remain the same by the close of 2024

CONTACTING THE DISTRICT'S FINANCIAL MANAGEMENT

This financial report is designed to provide our citizens, taxpayers, customers, and investors and creditors with a general overview of the District's finances and to demonstrate the District's accountability for the money it receives. If you have questions about this report or need additional financial information, contact the District's Business Office.

This Page Intentionally Left Blank

Basic Financial Statements

BANDERA COUNTY RIVER AUTHORITY
AND GROUND WATER DISTRICT
Statement of Net Position and Governmental Funds Balance Sheet
September 30, 2023

	General Fund	Special Revenue Fund	Total Governmental Funds	Adjustments	Statement of Net Position
ASSETS					
Cash and investments	$ 263,016.59	$ 27,309.53	$ 290,326.12	$ -	$ 290,326.12
Accounts receivable	115.99	-	115.99	-	115.99
Taxes receivable (net)	94,775.21	-	94,775.21	-	94,775.21
Due from other governments	2,534.11	-	2,534.11	-	2,534.11
Prepayments	9,206.68	-	9,206.68	-	9,206.68
Capital assets (net of accumulated depreciation)					
Land	-	-	-	150,000.00	150,000.00
Building	-	-	-	111,854.07	111,854.07
Monitoring wells & equipment	-	-	-	23,725.63	23,725.63
Vehicles	-	-	-	136,915.82	136,915.82
Total assets	$ 369,648.58	$ 27,309.53	$ 396,958.11	422,495.52	819,453.63
LIABILITIES					
Accounts payable	$ 15,267.44	$ 27,315.62	$ 42,583.06	-	42,583.06
Payroll liabilities	5,108.50	-	5,108.50	-	5,108.50
Leases Payable-Current	-	-	-	2,378.16	2,378.16
Notes Payable-Current	-	-	-	19,397.70	19,397.70
Total Current Liabilities	20,375.94	27,315.62	47,691.56	21,775.86	69,467.42
Notes Payable-Long Term	-	-	-	94,128.44	94,128.44
Total liabilities	20,375.94	27,315.62	47,691.56	115,904.30	163,595.86
DEFERRED INFLOW OF RESOURCES					
Unavailable Revenue- Property Taxes	94,775.21	-	94,775.21	(94,775.21)	-
Total Deferred Inflows of Resources	94,775.21	-	94,775.21	(94,775.21)	-
FUND BALANCES/NET POSITION					
Fund balances:					
Committed	71,282.00	-	71,282.00	(71,282.00)	-
Unassigned	183,215.43	(6.09)	183,209.34	(183,209.34)	-
Total Fund Balance	254,497.43	(6.09)	254,491.34	(254,491.34)	-
Total liabilities deferred inflows and fund balances	$ 369,648.58	$ 27,309.53	$ 396,958.11		
Net Position:					
Invested in capital assets, net of related debt				306,591.22	306,591.22
Unrestricted				349,266.55	349,266.55
Total net position				$ 655,857.77	$ 655,857.77

The accompanying notes are an integral part of this statement.

This Page Intentionally Left Blank

BANDERA COUNTY RIVER AUTHORITY AND GROUND WATER DISTRICT

Statement of Activities and Governmental Funds Revenues, Expenditures and Changes in Fund Balances

For the Year Ended September 30, 2023

	General Fund	Special Revenue Fund	Total Governmental Funds	Adjustments	Statement of Activities
Revenues:					
Property taxes	$ 1,354,096.86	$ -	$ 1,354,096.86	$ 20,298.06	$ 1,374,394.92
Property taxes penalty & interest	17,627.73	-	17,627.73	-	17,627.73
Interest income	1,111.90	-	1,111.90	-	1,111.90
Permits and deposits	113,500.00	-	113,500.00	-	113,500.00
USGS Flood Project Funding	-	60,426.78	60,426.78	-	60,426.78
USGS Gauge Station	6,800.00	-	6,800.00	-	6,800.00
Miscellaneous	12,523.61	-	12,523.61	-	12,523.61
Monitor Well Funding Partners	-	-	-	-	-
Water analysis	3,776.00	-	3,776.00	-	3,776.00
Loan Proceeds: Vehicles	127,452.29	-	127,452.29	(127,452.29)	-
Total revenues	1,636,888.39	60,426.78	1,697,315.17	(107,154.23)	1,590,160.94
Expenditures/expenses:					
Service operations:					
Appraisal District	35,460.81	-	35,460.81	-	35,460.81
Bonds & Insurance	9,312.70	-	9,312.70	-	9,312.70
Building Maintenance	9,909.27	-	9,909.27	-	9,909.27
Dues & Subscriptions	5,160.75	-	5,160.75	-	5,160.75
Office Security	7,740.00	-	7,740.00	-	7,740.00
Education	10,676.98	-	10,676.98	-	10,676.98
Computer Software and Support	11,004.69	-	11,004.69	-	11,004.69
Small Equipment & Supplies	27,475.32	-	27,475.32	(3,102.37)	24,372.95
Health Insurance	172,937.41	-	172,937.41	-	172,937.41
Retirement	22,274.36	-	22,274.36	-	22,274.36
Monitoring Units	-	-	-		-
Office Supplies	7,722.37	-	7,722.37	-	7,722.37
Office Rent	9,600.00	-	9,600.00	-	9,600.00
Payroll Tax	60,265.67	-	60,265.67	-	60,265.67
Postage	903.94	-	903.94	-	903.94
Professional Services	163,143.82	-	163,143.82	-	163,143.82
Salaries	754,295.14	-	754,295.14	-	754,295.14

Tax Collection Exp.	27,417.33	-	27,417.33	-	27,417.33
GMA Expense	176.79	-	176.79	-	176.79
Travel & Conferences	14,576.71	-	14,576.71	-	14,576.71
Employee Training	7,661.61	-	7,661.61	-	7,661.61
Utilities	17,333.68	-	17,333.68	-	17,333.68
USGS - Gauges	57,100.00	-	57,100.00	-	57,100.00
USGS - Flood Control Project	-	60,401.78	60,401.78	-	60,401.78
Vehicle Operations	13,662.64	-	13,662.64	-	13,662.64
Capital Outlay: New Vehicles	142,452.29	-	142,452.29	(142,452.29)	-
Vehicle Loan Principal	13,926.15	-	13,926.15	(13,926.15)	-
Vehicle Loan Interest	4,548.96	-	4,548.96		4,548.96
Water Quality Project	1,238.86	-	1,238.86	-	1,238.86
Water Samples Exp.	8,114.87	-	8,114.87	-	8,114.87
Well Plugging & Logging	-	-	-	-	-
Clean Rivers Program	2,130.38	-	2,130.38	-	2,130.38
Illegal Dumping-Litter Aabate	96.90	-	96.90	-	96.90
Invasives - Zebra Mussels	-	-	-		-
Riparian Project	288.03	-	288.03	-	288.03
Brush Control	-	-	-	-	-
Miscellaneous	-	-	-	-	-
Depreciation	-	-	-	31,476.14	31,476.14
Total expenditures/expenses	1,618,608.43	60,401.78	1,679,010.21	(128,004.67)	1,551,005.54
Excess (deficiency) of revenues over expenditures	18,279.96	25.00	18,304.96	20,850.44	39,155.40
Other financing sources (uses)					
Transfers in	-	-	-	-	-
Transfers out	-	-	-	-	-
Total other financing sources (uses)	-	-	-	-	-
Change in fund balance/net position	18,279.96	25.00	18,304.96	20,850.44	39,155.40
Fund balance/net position:					
Beginning of the year	236,217.47	(31.09)	236,186.38	380,515.99	616,702.37
End of the year	$ 254,497.43	$ (6.09)	$ 254,491.34	$ 401,366.43	$ 655,857.77

The accompanying notes are an integral part of this statement.

Bandera County River Authority and Ground Water District
Notes to the Financial Statements
For the Year Ended September 30, 2023

NOTE 1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The accounting policies of Bandera County River Authority (the "District") conform with accounting principles generally accepted in the United States of America as promulgated by the Governmental Accounting Standards Board. The following is a summary of the most significant policies:

A. Reporting Entity

The Bandera County River Authority was created by Acts of the 71st Legislature of the State of Texas. The District was established as a conservation and reclamation district. The authority of the Bandera County River Authority was incorporated into the Springhills Water Management District through enabling legislation appearing as Act of June 17, 1989, Ch. 654, 1989, Tex. Gen. Laws 2155 (Vernon) The Springhills Water Management District, continued all of the programs and activities initiated by the River Authority, and implemented the programs required of a ground water conservation district. On April 10, 2003 the TCEQ authorized changing the District's name to the Bandera County River Authority and Ground Water District.

The District's Board of Directors, a nine member group, has governance responsibilities over all activities related to the District's operations within the jurisdiction of Bandera County River Authority and Ground Water District. Because members of the Board of Directors are elected by the public, they have the primary accountability for fiscal matters. The Governmental Accounting Standards Board has established the criteria for determining whether or not an entity is a primary government, a component unit of a primary government or a related organization. A primary government has a separately elected governing body; is legally separate; and is fiscally independent of other state and local governments. Fiscal independence implies that the government has the authority to adopt a budget, levy taxes, set rates, and/or issue bonds without approval from other governments. Under these criteria, the District is considered a primary government and is not a component unit of any other government. Additionally, no other entities meet the criteria for inclusion in the District's financial statements as component units.

B. Government –wide and Fund Financial Statements

For purposes of GASB Statement No. 34, the District is considered a special purpose government. This allows the District to present the required fund and government-wide statements in a single schedule. The requirement for fund financial statements that are prepared on the modified accrual basis of accounting is met with the "Total Governmental Funds" column. An adjustment column includes those entries needed to convert to the full accrual basis government-wide statements. Government-wide statements are comprised of the statement of net position and the statement of activities.

The government-wide financial statements report information on all of the activities of the District. The effect of interfund activity has been removed from these statements.

The statement of activities demonstrates what the District did with the revenue it raised.. The government-wide financial statements (i.e., the statement of net position and the statement of changes in net position) report information on all of the nonfiduciary activities of the primary government.

C. Measurement Focus, Basis of Accounting, and Financial Statement Presentation

The government-wide financial statements are reported using the economic resources measurement focus and the accrual basis of accounting. Revenues are recorded when earned, and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows. Property taxes are recognized as revenues in the year for which they are levied.

The total governmental fund column of the government-wide financial statements is reported using the current financial resources measurement focus and the modified accrual basis of accounting. Revenues are recognized as soon as they are both measurable and available. Revenues are considered to be available when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, the

government considers revenues to be available if they are collected within thirty-one days of the end of the current fiscal period. Expenditures generally are recorded when a liability is incurred, as under accrual accounting.

No accrual for property taxes collected within sixty days of year end has been made as such amounts are deemed immaterial; delinquent property taxes at year end are reported as deferred inflows of resources.

Fund Accounting

The District uses funds to maintain its financial records during the year. A fund is defined as a fiscal and accounting entity with a self-balancing set of accounts. The District only uses governmental funds.

Governmental Funds

Governmental funds are those through which most governmental functions typically are financed. Governmental funds reporting focuses on the sources, uses and balances of current financial resources.

Expendable assets are assigned to the various governmental funds according to the purpose for which they will be paid. The difference between governmental fund assets and liabilities is reported as fund balance.

The District reports the following major governmental funds:

General Fund – The General Fund is used to account for all financial resources of the District except those required to the accounted for in another fund.

Special Revenue Fund – The Special Revenue Fund is used to account for grant funds.

D. Budgets

The budget is adopted on a basis consistent with accounting principles generally accepted in the United States of America. The annual budget appropriations lapse at the fiscal year end. The adopted budget is not a spending limitation under law but rather an operating plan. The District does not use the encumbrance system; therefore purchase orders, contracts and other commitments for the expenditure of resources are not recorded as a reserve of fund balance.

E. Capital Assets

General capital assets generally result from expenditures in the governmental funds. These assets are reported in the statement of net position column of the government-wide statement of net position but are not reported in the general fund column.

All capital assets are capitalized at cost (or estimated historical cost) and updated for additions and retirements during the year. The District maintains a capitalization threshold of $5,000 for equipment, and all additions to infrastructure are capitalized. Improvements are capitalized; the cost of normal maintenance and repairs that do not add to the value of the asset or materially extend the asset's life are not.

The District depreciates capital assets using the straight-line method over the following estimated useful lives:

Assets	Years
Buildings	40
Monitoring Wells	20
Vehicles and Road Equipment	7
Office Equipment	7
Computer Equipment	7

F. Deferred Inflows and Outflows of Financial Resources

A deferred inflow of financial resources is the acquisition of resources in one period that is applicable to a future period, while a deferred outflow of financial resources is the consumption of financial resources in one period that is applicable to a future period. A deferred inflow results from the acquisition of an asset without a corresponding revenue or assumption of a liability. A deferred outflow results from the use of an asset without a corresponding expenditure or reduction of a liability. At the fund level, property taxes receivable do not meet the availability criteria required for revenue recognition and are recorded as deferred inflows of financial resources.

G. Net Position

Governmental Activities Governmental accounting standards establish the following three components of net position:

Net investment in capital assets – represents the District's investments in capital assets, less any outstanding debt or other borrowings used to acquire those assets.

Restricted – consists of financial resources that are restricted for a specific purpose by enabling legislation or external parties.

Unrestricted – resources not included in the other components.

H. Fund Balances

Governmental Funds Governmental accounting standards establish the following fund balance classifications:

Nonspendable - amounts that cannot be spent either because they are in nonspendable form or because they are legally or contractually required to be maintained intact.

Restricted - amounts that can be spent only for specific purposes because of constitutional provisions or enabling legislation or because of constraints that are externally imposed by creditors, grantors, contributors, or the laws or regulations of other governments.

Committed - amounts that can be used only for specific purposes determined by a formal action of the Board of Directors. The Board is the highest level of decision-making authority for the District. Commitments may be established, modified, or rescinded only through ordinances or resolutions approved by the Board. Committed fund balance also incorporates contractual obligations to the extent that existing resources in the fund have been specifically committed for use in satisfying those contractual requirements.

Assigned - amounts that do not meet the criteria to be classified as restricted or committed but that are intended to be used for specific purposes.

Unassigned - all other spendable amounts in the General Fund. When an expenditure is incurred for which committed, assigned, or unassigned fund balances are available, the District considers amounts to have been spent first out of committed funds, then assigned funds, and finally unassigned funds.

I. Estimates

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results may differ from those estimates.

Bandera County River Authority and Ground Water District
Notes to the Financial Statements
For the Year Ended September 30, 2023

J. Reconciliation of Government-wide and General Fund Financial Statements

Reconciliation of General Fund Balance to Net Position of Governmental Activities September 30, 2023

Total General Fund Balance	$	254,491.34
Amounts reported in governmental activities in the statement of net position are different because:		
Capital assets used in the governmental activities are not financial resources and therefore are not reported in the governmental funds. At the beginning of the year, the cost of these assets was $610,874 and accumulated depreciation was $299,355. In addition, long-term liabilities including right to use - lease liabilities are not due and payable in the current period , and therefore are not reported as liability in the governmental fund. The long-term debt at the beginning of the year was $5,481		306,038.84
Current year capital outlays and long-term debt principal payments are expended in the fund financial statements, but the should be shown as increases in capital assets and reduction in long-term debt in the government-wide financial statements. The net effect of including the capital outlays, and debt principal payments was to increase net position.		32,028.52
Accumulated depreciation has not been included in the general fund financial statements.		(31,476.14)
Revenue reported as deferred revenue in the general fund was recorded as revenue in the government-wide financial statements.		94,775.21
Net Position of Governmental Activities	$	655,857.77

Reconciliation of the Statement of Revenues, Expenditures and Changes in Fund Balances of Governmental Funds to the Statement of Activities

Net Change in Governmental Fund Balances	$	18,304.96
Amounts reported for the governmental activities in the statement of activities are different because:		
Various other reclassifications and eliminations are necessary to convert from the modified accrual basis of accounting to accrual basis		20,298.06
Current year capital outlays and long-term debt principal payments are expended in the fund financial statements, but the should be shown as increases in capital assets and reduction in long-term debt in the government-wide financial statements. The net effect of including the capital outlays, and debt principal payments was to increase net position.		32,028.52
Depreciation is not recognized as an expense in governmental funds since it does not require the use of current financial resources. The effect of the current year's depreciation is to decrease net position.		(31,476.14)
Change in Net Position of Governmental Activities	$	39,155.40

NOTE 2 – DEPOSITS, SECURITIES AND INVESTMENTS

District Policies and Legal and Contractual Provisions Governing Deposits

Custodial Credit Risk for Deposits State law requires governmental entities to contract with financial institutions in which funds will be deposited to secure those deposits with insurance or pledged securities with a fair value equaling or exceeding the amount on deposit at the end of each business day. The pledged securities must be in the name of the governmental entity and held by the entity or its agent. Since the District complies with this law, it has no custodial credit risk for deposits.

Foreign Currency Risk The District limits the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit by not participating in foreign currency transactions.

District Policies and Legal and Contractual Provisions Governing Investments

Compliance with the Public Funds Investment Act

The **Public Funds Investment Act** (Government Code Chapter 2256) contains specific provisions in the areas of investment practices, management reports, and establishment of appropriate policies. Among other things, it requires a governmental entity to adopt, implement, and publicize an investment policy. That policy must address the following areas: (1) safety of principal and liquidity, (2) portfolio diversification, (3) allowable investments, (4) acceptable risk levels, (5) expected rates of return, (6) maximum allowable stated maturity of portfolio investments. (7) maximum average dollar-weighted maturity allowed based on the stated maturity date for the portfolio. (8)

investment staff quality and capabilities. (9) and bid solicitation preferences for certificates of deposit.

Statutes authorize the entity to invest in (1) obligations of U.S. Treasury, certain U.S. agencies, and the State of Texas. (2) certificates of deposit, (3) certain municipal securities. (4) money market savings accounts, (5) repurchase agreements, (6) bankers acceptances. (7) mutual funds, (8) investment pools, (9) guaranteed investment contracts, (10) and common trust funds. The Act also requires the entity to have independent auditors perform test procedures related to investment practices as provided by the Act. The District is in substantial compliance with the requirements of the Act and with local policies.

Additional polices and contractual provisions governing deposits and investments are specified below:

Credit Risk To limit the risk that an issuer or other counterparty to an investment will not fulfill its obligations the District limits investments to depository bank certificates of deposits and state sponsored investment pools.

Custodial Credit Risk for Investments To limit the risk that, in the event of the failure of the counterparty to a transaction, a government will not be able to recover the value of investment or collateral securities that are in possession of an outside party the District requires counterparties to register the securities in the name of the District and hand them over to the District or its designated agent. All of the securities are in the District's name and held by the District or its agent.

Concentration of Credit Risk To limit the risk of loss attributed to the magnitude of a government's investment in a single issuer, the District investments in both depository bank certificates of deposits and state sponsored investment pools.

Interest Rate Risk To limit the risk that changes in interest rates will adversely affect the fair value of investments, the District requires the investment portfolio to have maturities of less than one year on a weighted average maturity basis.

Foreign Currency Risk for investments The District limits the risk that changes in exchange rates will adversely affect the fair value of an investment by not investing in foreign currencies.

NOTE 3 – DUE FROM OTHER GOVERNMENTS

This balance represents taxes and penalty and interest that were collected by the Tax Assessor-Collector, before September 30, 2023, but not remitted to the District.

NOTE 4 – PROPERTY TAXES

Ad valorem taxes and penalties and interest are reported as revenue in the fiscal year in which they become available to finance expenditures of that year. Property taxes attach as an enforceable lien on property as of January 31. Taxes are levied on October 1 and are due and payable at that time. All unpaid taxes levied on October 1 become delinquent on February 1 at which time the applicable property is assessed penalty and interest until paid. On July 1, the property is subject to lien plus penalties and interest until paid. The annual tax levy is recorded as a charge to taxes receivable and a credit to deferred revenues, after subtracting that portion estimated to be uncollectible. As taxes are collected monthly, the deferred revenue account is reduced and revenue from tax collections is recognized. Uncollectible taxes are recorded in such a manner so as to reflect the amount of taxes reasonably estimated to be uncollectible based on prior experience.

NOTE 5 – PENSION PLAN OBLIGATIONS

The District's employees do not participate in a public retirement system, but are covered by Social Security.

Bandera County River Authority and Ground Water District
Notes to the Financial Statements
For the Year Ended September 30, 2023

NOTE 6 - CAPITAL ASSET ACTIVITY

Capital asset activity for the twelve months ended September 30, 2023, was as follows:

	Beginning Balances	Increases	Decreases	Ending Balances
Governmental activities:				
Capital assets not being depreciated:				
Land	150,000	-	-	150,000
Total capital assets not being depreciated	150,000	-	-	150,000
Capital assets being depreciated:				
Buildings and Improvements	172,083	-	-	172,083
Vehicles	117,789	142,452	-	260,241
Monitoring Wells & Equipment	171,002	-	-	171,002
Total capital assets being depreciated	460,874	142,452	-	603,327
Less accumulated depreciation for:				
Buildings and Improvements	55,927	4,302	-	60,229
Vehicles	99,272	24,054	-	123,326
Monitoring Wells & Equipment	144,156	3,120	-	147,276
Total accumulated depreciation	299,355	31,476	-	330,831
Total capital assets being depreciated, net	161,519	110,976	-	272,496
Governmental activities capital assets, net	$ 311,519	$ 110,976	$ -	$ 422,496

NOTE 6 - CHANGES IN LONG-TERM LIABILITIES

Long-term obligations include debt and other long-term liabilities. Changes in long-term obligations for the year ended September 30, 2023, are as follows:

	Beginning Balance	Increases	Decreases	Ending Balance	Amounts Due Within One Year
Notes Payable	$ -	$ 127,452	$ 13,926	$ 113,526	$ 19,398
Right to Use Lease Liability	5,481	-	3,102	2,378	2,378
Total	$ 3,793,595	$ 127,452	$ 17,029	$ 115,904	$ 21,776

NOTE 7 - NOTES PAYABLE

A summary of notes payable for the year ended September 30, 2023, is as follows:

Description	Date of Issue	Interest Rates	Maturity	Amount Original Issue	Outstanding 08/31/2023	Due Within One Year
Loans payable						
Bandera Bank	12/20/2022	5.00%	12/20/2028	$ 127,452	$ 113,526	$ 19,398

Debt Service Requirements

Debt service requirements on notes payable at September 30, 2023 are as follows:

Year Ending September 30:	Principal	Interest
2024	19,398	5,236
2025	20,390	4,243
2026	21,433	3,200
2027	22,530	2,104
2028	23,683	951
2029	6,093	51
Totals	$ 113,526	$ 15,785

NOTE 8 - RIGHT TO USE LEASE LIABILITY

The District leases a photocopy machine with 60-month terms. Payments of $267 are made monthly which consist of principal and imputed annual interest of 2.50%.

No assets were pledged as collateral for these leases.

A summary of Right-to-Use Lease arrangements for the year ended September 30, 2023, is as follows.

Description	Date of Origination	Discount Rate	Current Year Interest	Principal Balance at 10/1/2022	New Lease Agreements	Principal Paid This Year	Principal Balance at 9/30/2023	Due Within One Year
Copy Machines	6/3/2019	2.5	102	5,481	-	3,102	2,379	2,379
			$ 102	$ 5,481	$ -	$ 3,102	$ 2,379	$ 2,379

Future principal and interest payments due to maturity as of the end of the fiscal year are as follows:

Year Ending September 30	Principal	Interest	Total Requirements
2023	$ 2,378	$ 24	$ 2,402
Totals	$ 2,378	$ 24	$ 2,402

NOTE 9 - RISK MANAGEMENT

The District is exposed to various risks of loss related to intentional and unintentional torts; theft of, damage to and destruction of assets; errors and omissions; natural disasters; health and dental benefits to employees; and employee accidents and injuries for which the District carries commercial insurance. There have been no significant reductions in insurance coverage from the previous year; no settlements have exceeded insurance coverage in any of the past three years. The District participates in the Texas Municipal League Intergovernmental Risk Pool. The District is not aware of any pending claims for which expected liability would exceed the limits of the commercial insurance coverage.

NOTE 10 - CONTINGENCIES

The District is periodically involved in legal actions and claims that arise as a result of events that occur in the normal course of operations. The ultimate resolution of these actions is not expected to have a material adverse effect on the District's financial position.

Required Supplementary Information

BANDERA COUNTY RIVER AUTHORITY AND GROUND WATER DISTRICT
Budgetary Comparison Statement - General Fund
For Year Ended September 30, 2023

	Actual	Original Budget	Final Amended Budget	Variance Positive (Negative)
Revenues:				
Property taxes	$ 1,354,096.86	$ 1,350,000.00	$ 1,350,000.00	$ 4,096.86
Property taxes penalty & interest	17,627.73	-	-	17,627.73
Interest income	1,111.90	750.00	750.00	361.90
Permits and deposits	113,500.00	94,500.00	94,500.00	19,000.00
USGS Gauge Station	6,800.00	6,800.00	6,800.00	-
Miscellaneous	12,523.61	2,500.00	2,500.00	10,023.61
Monitor Well Funding Partners	-	-	-	-
Water analysis	3,776.00	8,500.00	8,500.00	(3,115.00)
Loan Proceeds: Vehicles	127,452.29	-	-	127,452.29
Total revenues	1,636,888.39	1,463,050.00	1,463,050.00	175,447.39
Expenditures:				
Service operations:				
Appraisal District	35,460.81	30,000.00	36,850.00	1,389.19
Bonds & Insurance	9,312.70	11,000.00	11,000.00	1,687.30
Building Maintenance	9,909.27	20,000.00	20,000.00	10,090.73
Dues & Subscriptions	5,160.75	5,000.00	5,000.00	(160.75)
Office Security	7,740.00	8,000.00	8,000.00	260.00
Education	10,676.98	23,000.00	18,500.00	7,823.02
Computer Software and Support	11,004.69	21,000.00	17,000.00	5,995.31
Small Equipment & Supplies	27,475.32	33,000.00	30,000.00	2,524.68
Health Insurance	172,937.41	140,000.00	167,000.00	(5,937.41)
Retirement	22,274.36	30,000.00	30,000.00	7,725.64
Monitoring Units	-	7,500.00	2,500.00	2,500.00
Office Supplies	7,722.37	8,500.00	8,500.00	777.63
Office Rent	9,600.00	9,600.00	9,600.00	-
Payroll Tax	60,265.67	70,000.00	70,000.00	9,734.33
Postage	903.94	850.00	850.00	(53.94)
Professional Services	163,143.82	136,000.00	160,000.00	(3,143.82)
Salaries	754,295.14	733,600.00	748,400.00	(5,895.14)
Tax Collection Exp.	27,417.33	-	-	(27,417.33)
GMA Expense	176.79	5,000.00	1,500.00	1,323.21
Travel & Conferences	14,576.71	15,000.00	15,000.00	423.29
Employee Training	7,661.61	8,000.00	8,000.00	338.39
Utilities	17,333.68	20,000.00	20,000.00	2,666.32
USGS - Gauges	57,100.00	55,000.00	57,100.00	-
Election	-	10,000.00	-	-

BANDERA COUNTY RIVER AUTHORITY AND GROUND WATER DISTRICT
Budgetary Comparison Statement - General Fund
For Year Ended September 30, 2023

	Actual	Original Budget	Final Amended Budget	Variance Positive (Negative)
Expenditures: (Continued)				
Vehicle Operations	13,662.64	20,000.00	30,000.00	16,337.36
Capital Outlay: New Vehicles	142,452.29	-	-	(142,452.29)
Vehicle Loan Principal	13,926.15	-	-	(13,926.15)
Vehicle Loan Interest	4,548.96	-	-	(4,548.96)
Water Quality Project	1,238.86	9,000.00	4,000.00	2,761.14
Water Samples Exp.	8,114.87	10,000.00	10,000.00	1,885.13
Well Plugging & Logging	-	3,000.00	1,000.00	1,000.00
Clean Rivers Program	2,130.38	9,000.00	9,000.00	6,869.62
ASR & Water Catchment Projects	-	1,000.00	500.00	500.00
Brush Control	-	5,000.00	1,500.00	1,500.00
Illegal Dumping -Litter Abatement	96.90	1,000.00	1,000.00	903.10
Invasive - Zebra Mussels	-	1,000.00	500.00	500.00
Riparian Project	288.03	1,000.00	500.00	211.97
Contingences	-	1,000.00	1,000.00	1,000.00
Miscellanous	-	-	-	-
	1,618,608.43	1,461,050.00	1,503,800.00	(114,808.43)
Excess (deficiency) of revenues over expenditures	18,279.96	2,000.00	(40,750.00)	60,638.96
Other financing sources (uses)				
Transfers out	-	-	-	-
Total other financing sources (uses)	-	-	-	-
Change in fund balance/net position	18,279.96	2,000.00	(40,750.00)	60,638.96
Fund balance:				
Beginning of the year	236,217.47	236,217.47	236,217.47	-
End of the year	$ 254,497.43	$ 238,217.47	$ 195,467.47	$ 60,638.96

Other Schedules

BANDERA COUNTY RIVER AUTHORITY AND GROUND WATER DISTRICT

Schedule of Delinquent Taxes Receivable

For the Year Ended September 30, 2023

LAST TEN YEARS ENDED SEPTEMBER 30,	TAX RATE	ASSESSED VALUE FOR TAX PURPOSES (in thousands)	BEGINNING BALANCE 10/1/22	CURRENT YEAR TOTAL LEVY	ENTIRE YEAR'S ADJUSTMENTS	TOTAL COLLECTIONS	BALANCE 9/30/23
2013 & Prior	Var	Var	$ 7,066.74		$ (474.20)	485.63	$ 6,106.91
2014	.034739	1,903,192	1,857.45		9.84	101.26	1,766.03
2015	.037300	2,015,732	2,795.17		12.10	250.44	2,556.83
2016	.039280	2,088,705	3,792.22		15.10	423.52	3,383.80
2017	.040339	2,151,203	4,779.63		4.79	671.96	4,112.46
2018	.042165	2,245,731	5,890.85		11.29	913.91	4,988.23
2019	.044890	2,245,731	8,317.45		(193.13)	1,401.86	6,722.46
2020	.045016	2,335,405	12,872.67		(350.78)	2,765.26	9,756.63
2021	.045016	2,670,162	31,130.76		(3,060.80)	9,688.80	18,381.16
Current	.04299	3,128,364		1,344,883.84	29,511.08	1,337,394.22	37,000.70
			$ 78,502.94	$ 1,344,883.84	$ 25,485.29	$ 1,354,096.86	$ 94,775.21