

FY 2021 Annual Report

Bandera County River Authority and Groundwater District

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Published April 2022

*Data Compilation, Content, & Layout by
Charley Curd*

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

MISSION STATEMENT

The principle mission of the Bandera County River Authority and Groundwater District is to protect and preserve the County's water and natural resources for the citizens 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, and Integrity, Public Service, Stewardship, Leadership and Collaboration, Accountability, and Transparency

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Bandera County River Authority
& Groundwater District

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About *the* District

1971

BANDERA COUNTY RIVER
AUTHORITY

- HB 988 of the 62nd Texas Legislature
- Article XVI, Section 59 of the Texas Constitution
- Vested with all of the rights, powers, privileges, authority and duties of the WCID

1989

SPRINGHILLS WATER
MANAGEMENT DISTRICT

- SB 1636 of the 71st Texas Legislature
- Joint surface and groundwater district
- Chapter 50, 52 of Texas Water Code + BCRA
- 9 directors

2003

BANDERA COUNTY RIVER
AUTHORITY & GROUNDWATER
DISTRICT

- TCEQ authorized name change
- Continues all programs and activities of the SWMD
- Chapter 36, 49, and 51 of the Texas Water Code

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 territory contained within Bandera County. The legislation further stipulates that the Board of Directors will be comprised of 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.

Purpose of a 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.



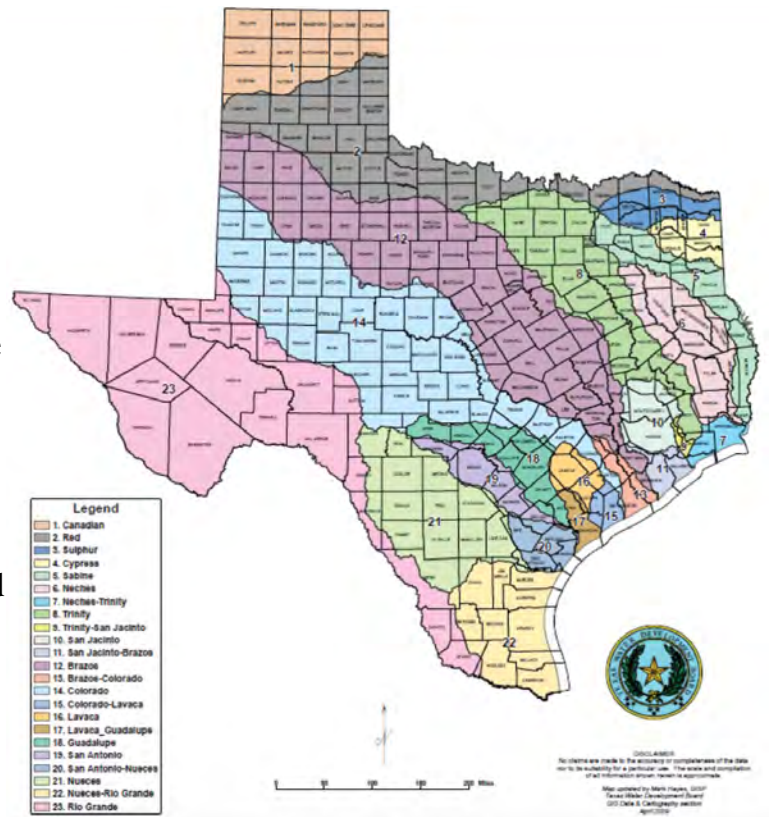
Location

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.



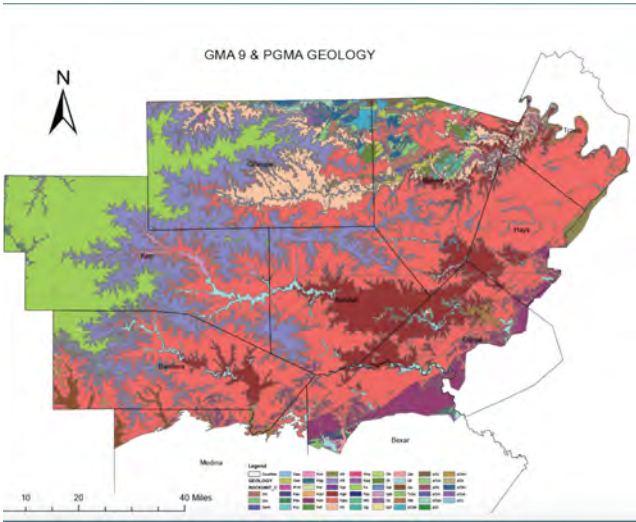
Major Aquifers

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

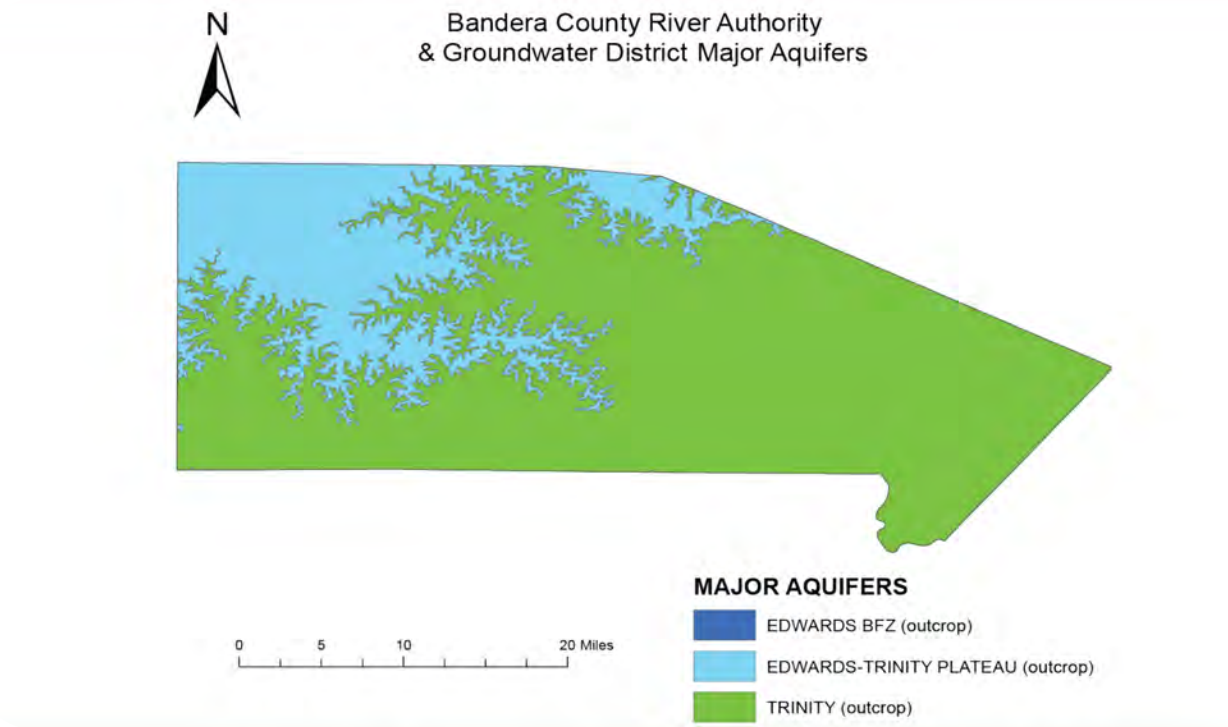
contains the Upper Glen Rose Limestone. The Middle Trinity aquifer contains the Lower Glen Rose Limestone, the Hensell Sand, and the Cow Creek Limestone. The Lower Trinity aquifer is composed of the Sligo Limestone and Hosston Sands. The Trinity Group aquifer yields groundwater from the Upper and Lower 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



General Manager, Dave Mauk, CFM

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.



Finance & Human Resource Manager, Prari Blair, MEd

The Finance & Human Resource Manager is under the direction of the General Manager and requires a high level of executive administration to support the General Manager and to ensure the continuity of District services. The position is primarily responsible for the successful implementation of financial and human resources operations ensuring all policies and procedures follow federal and state laws and regulations. The position also serves as the Records Management Officer and that all District records adhere to the TSLAC retention periods and disposition to compliance. Functional duties include 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, ensuring the District meets Performance & Management Goals, assisting with the Annual Report, implementing Human Resource policies, and disseminating training of district staff during new hire onboarding and throughout the year.



Intergovernmental Affairs Manager, Hayli Hernandez (Phillips)

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. 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 position is also tasked with Board Meeting coordination, meeting minutes, agendas, Public Relations, serving as the District's Election Coordinator, and recording the minutes for Groundwater Management Area 9 meetings. This position is also tasked with providing confidential, complex, and high-level executive assistance to the General Manager.



Aquatic Ecologist, Levi Sparks, M.S., CLM

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, EAA Sampling 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.



Groundwater Science Manager, Alyssa Balzen, PG, M.S., GIT

The Groundwater Science Manager operates under the direction of the General and Assistant General Manager and is responsible for maintaining the Groundwater Monitoring and Protection Programs. The Groundwater District Manager serves as the supervisor for all groundwater operations. Some of the primary duties include implementing the District's Well Permitting and Registration Programs, Monitor Well Program, Well Plugging Program, and assisting the General and Assistant General Manager in the management and planning of groundwater resources and data. The Groundwater Science Manager is currently the District's Professional Geologist, having earned her Professional Geologist license in November 2021.

District Staff



Education & Outreach Manager, Corrina Fox

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.



Field Operations Manager, Clinton Carter

The Field Operations Manager is under the direction of the General Manager and 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 Surface Water and Groundwater Science Managers 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.



Education & Outreach Coordinator, Charley Curd, MPH

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.



Flood Science Manager, Larry B. Tomas, CFM

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

New to the Team



Executive Assistant & Office Manager, Diane Irvin

The Executive Assistant and 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, properly, and in accordance with District, Federal, and State rules, policies, and regulations. Additional 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 work flow.



Assistant General Manager, Luke Whitmire, PhD

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 both 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.



Natural Resource Specialist, Shelby Skittone

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, EAA Sampling 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 ten teams.
Many employees serve on more than one team:

General Management

Office Operations

Groundwater Science Operations

Surface Water Science Operations

Performance Management and Quality Improvement

Water Resource Management and Policy

Field Operations

Education and Community Outreach

Flood Warning and Awareness

Data Management

General Manager's Statement

Bandera County tends to experience either periods of drought or heavy rainfall. Unfortunately, it seems that we are starting to fall back into moderate drought conditions once again.

Additionally, this region is one of the most flash flood prone areas in the world. In recent years, 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. Citizen, stakeholder, and emergency management training for the project occurred throughout FY 2021 and will continue to be available in the future.

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 which is easily spread and can obstruct habitat along our watercourses. The District has partnered with the Nueces River Authority and Texas Parks and Wildlife Department (TPWD) to aggressively control the weed 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 District's discovery of Zebra Mussel colonies and further investigation conducted by TPWD.

The District continues to promote conservation, rainwater harvesting, and drought awareness. District personnel has assisted and counseled landowners on how to protect both their water quantity and quality. This year, Covid-19 prevented a lot of in-person meetings, education events, lectures, etc. for a good portion of the year.

However, BCRAGD personnel quickly adapted to a virtual hybrid manner of communication and remained constantly accessible to the public. Throughout the pandemic, the District continued water quality monitoring, environmental investigations, accepting well registrations and permit applications, as well as our presence on social media. Moving forward, the District will continue to enforce rules and follow our Management Plan. BCRAGD continues to host events and educational talks over water conservation, drought awareness, invasive species management, and riparian information that is open to the public. As the world moves toward a more stable and normalized way of life, the District has resumed operations as usual and continues to be readily available to the public.

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. District personnel is 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.

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 been active participants 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.

Very Respectfully,



Dave Mauk
General Manager



≡ District COVID-19 Response ≡

During the peak of Covid-19, BCRAGD reacted swiftly and diligently to prevent the virus from spreading through the office. During FY 2021, the District continued to follow their COVID-19 public health policy and practice social distancing. The BCRAGD lobby was closed to the public, however, staff was still able to assist through a service window and were reachable by phone or email. Additionally, the BCRAGD Board of Directors met virtually in January and April due to a spike in Covid cases throughout the County. In conjunction with this, the Regional Water Planning Groups that the District is involved with also met virtually throughout the year. This includes Groundwater Management Area 9, Region J (Plateau Water Planning Group), and Region 12 and Region 13 Flood Planning Groups. However, as of September 1, 2021, Governor Abbott suspended the ability to conduct public meetings virtually through an executive order. The District resumed in-person Board Meetings during the summer of 2021 in preparation for this change.

The District staff followed all protocols with respect to social distancing, quarantining when exposed to the virus, and limiting non-essential travel. Due to the pandemic, the District staff halted much of their attendance at large conferences and non-essential meetings. Additionally, the District decided that it was in the best interest of the public to not hold their annual Christmas Conservation event. However, this event did resume for FY 2022 in December 2021 and will continue to carry on to be an annual tradition for the District and the Bandera County community.

As of March 2022, the District has resumed normal operations and is fully open to the public. With this, the District will be resuming in-person regional planning meetings and continue to be a constant presence in the water community to look out for the best interests of the community that we serve.



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
EAA Sampling
Invasive Species Management
Medina Lake Management

Enforcement / Investigations

Enforcement of State and District Rules
Environmental Investigations
 Illegal Dumping Litter Abatement
 Public Safety / Pollution

Education & Community Outreach

USGS Flood Early Warning System (FEWS) Sabinal River- TWDB Flood Protection Grant
USGS Flood Early Warning System (FEWS) Medina River
Public Safety - Flood Preparedness
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 Education Committees
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 and provide training for 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 tool set 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

On August 25, 2016, TWDB awarded \$265,150 in Flood Protection Grant funding to BCRAGD for 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

EAA Sampling, 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
Internship Program

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

Groundwater Programs

Groundwater Management Plan

All Texas Groundwater Conservation Districts are required to develop and implement a TWDB approved management plan to effectively manage their groundwater resources. BCRAGD revised and approved its Management Plan on February 8th, 2018. TWDB approved the Management Plan on March 15th, 2018 and all parties approved the Management Plan on April 12, 2018.

During FY 2021, BCRAGD:

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



Shelby collecting a water sample from a completed new well

Permitted Well Program

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

In order to protect groundwater resources in FY 2021 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.
- 210 Registrations were issued in FY 2021.

Registered/Exempt Well Program

All exempt wells to be drilled are registered, approved, and inspected by the District to ensure compliance with both 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.



Clint collecting a water sample from a completed new well

Groundwater Programs

In order to protect groundwater resources in FY 2021 BCRA GD:

- 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.
- 5 Permits were issued in FY 2021.



Shelby conducting a monitor well measurement.

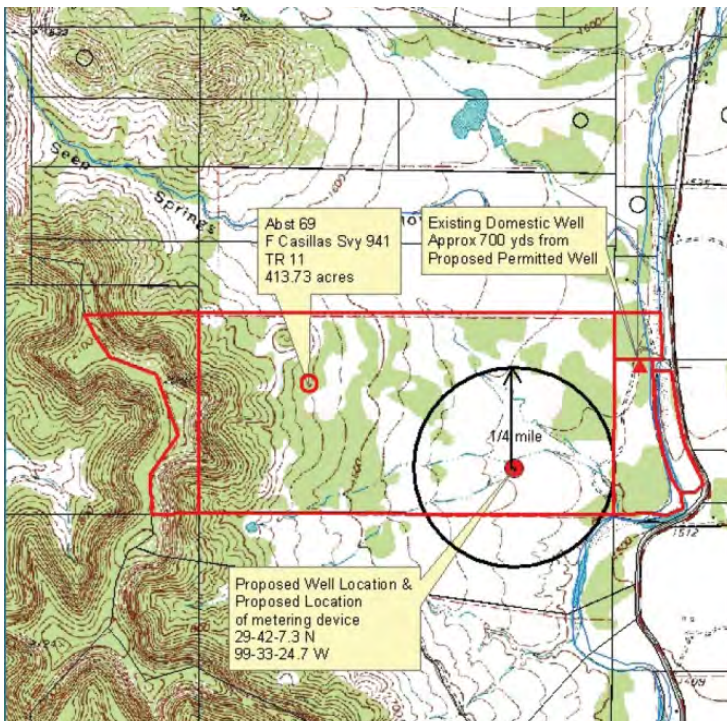
Monitor Well Program

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 2021 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.

Proposed Well Location



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

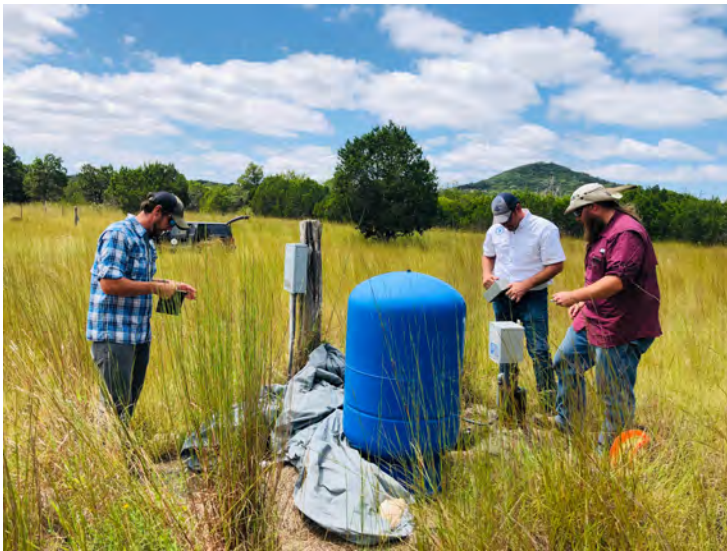
Groundwater Programs

New District Monitor Well

During Fiscal Year 2021, BCRAGD took the initiative to build up the District's monitor wells program. In an open board meeting, the District's board of directors accepted a donation for a new monitor well in the Middle Trinity aquifer. The donation, made by Friends of Hondo Canyon, was accepted on November 12, 2020. However, due to the increased amount of work for water well drillers in the area, the monitor well was not complete until FY 22. This monitor well was added to the District's network of 38 monitor wells.



Clint & Levi conducting a monitor well measurement.



Clint, Luke, & Levi conducting a post drill inspection.



Alyssa Balzen conducting a post drill inspection.



Levi & Clint conducting measuring water level.

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.



Top: Well Logging Equipment

Bottom: C. Carter measuring water level



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.



Alyssa conducting water level measurements.

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, as well as 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 offer groundwater testing services to the public for an at-cost fee.

Below is a breakdown of BCRAGD's efforts during FY 2021:

- 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.



L. Whitmire collecting a water sample from a new completed water well.



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

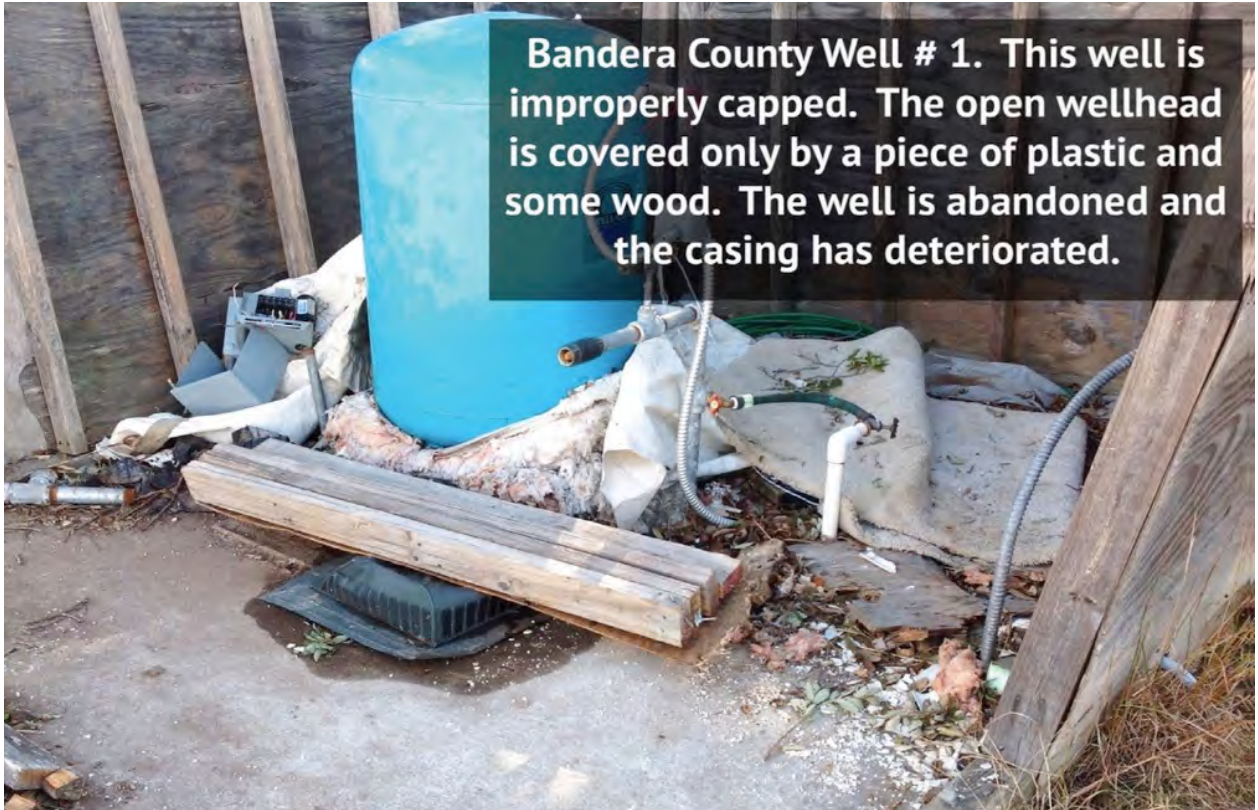


This photo is the water quality of a Monitor Well probe used while in the field. Some of the measurements taken here were temperature, pH, conductivity, and total dissolved solids.

Groundwater Programs

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.



Bandera County Well # 2. This well is abandoned and open to the environment, allowing pollutants to directly enter the aquifer. The casing is deteriorated, allowing the co-mingling of water of different quality from different production zones. Over time, this commingling degrades the water quality in the aquifer.



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

Below are descriptions of the FY2021 Abandoned Well Program accomplishments:

- The District plugged 2 wells for the general public during the Fiscal Year 2021.
- BCRAGD issued violations to well owners to plug or repair abandoned wells.
- The District contributed abandoned well information to presentation and aquifer model components of the Nueces River Authority Water Resource Stewardship Program and other outreach efforts.

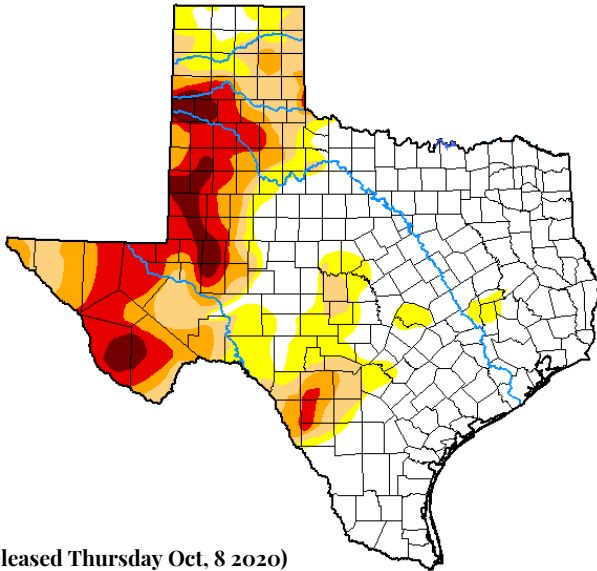
Groundwater Programs

Drought Management Plan

During FY 2021, BCRAGD:

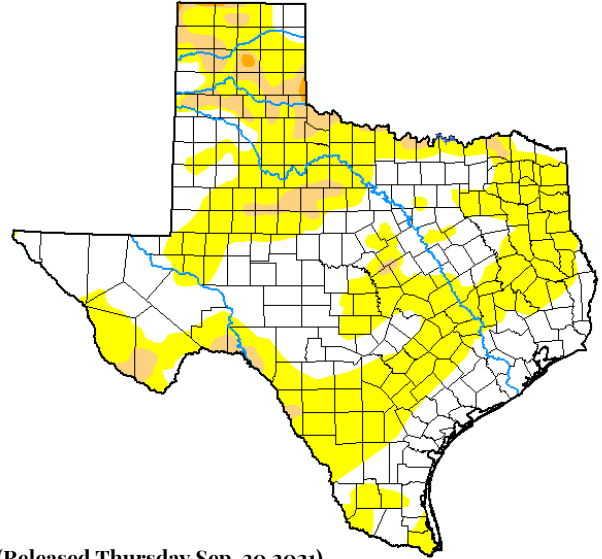
- Implemented drought stages.
- Notified permit holders of drought stages and restrictions.
- Investigated allegations of waste and issued Notices of Violation as warranted.
- Reported drought conditions at quarterly meetings.
- Record the Drought Severity Index each month, and when drought conditions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

October 06, 2020









(Released Thursday Oct, 8 2020)
Valid 8 a.m. EDT

September 28, 2021



(Released Thursday Sep, 30 2021)
Valid 8 a.m. EDT

Drought Classification

	None		Severe Drought
	Abnormally Dry		Extreme Drought
	Moderate Drought		Exceptional Drought



Surface Water 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, allows significant expansion of USGS hydrologic conditions monitoring, resulting in a more comprehensive food 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.

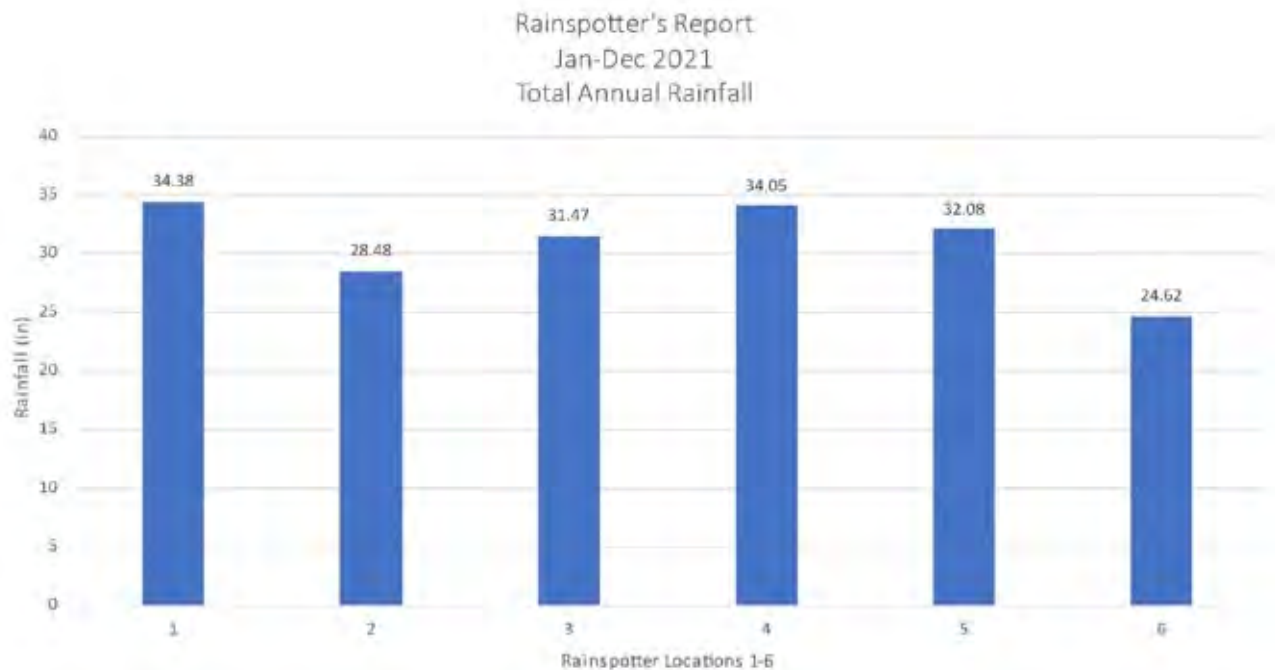
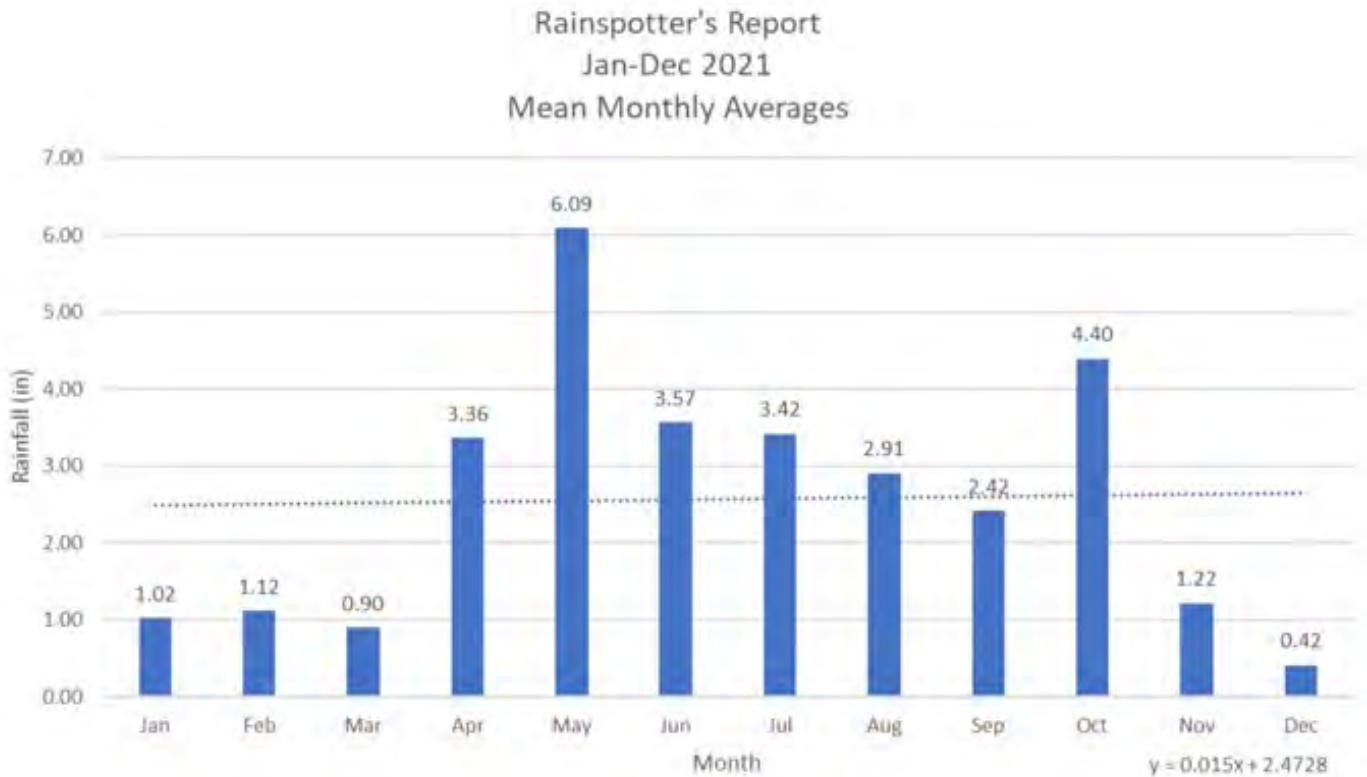


The image above shows the EAA weather station and rain gage that provides information to the HOBOLink.

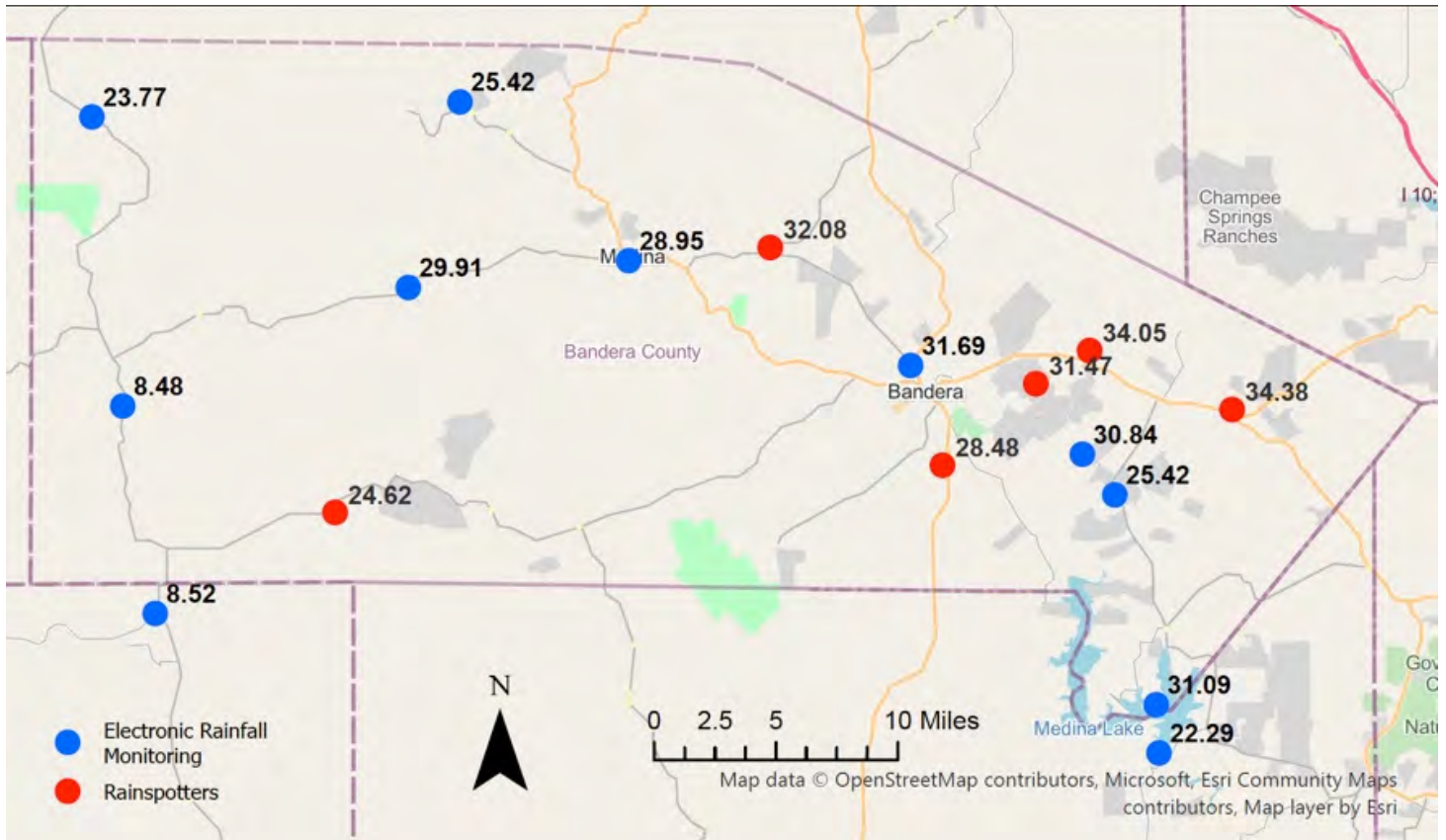
Surface Water Programs

Rainspotters Program

The District continues to support its all-volunteer Rainspotters Program. Bandera County residents report monthly rainfall amounts from their District issued gages on a quarterly basis. The data is presented in a report during each BCRA GD quarterly board meeting.



Surface Water Programs



Bandera County, Texas 2021 Rainspotter Data

Rainspotter	Map Grid	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Totals
1	68-18-04	2021	0.92	0.7	0.82	2.08	9.57	2.92	3.67	3.58	2.37	6.25	1.04	0.46	34.38
2	69-24-05	2021	0.86	0.94	0.86	2.22	5.58	4.57	3.59	2.4	2.21	3.8	0.9	0.55	28.48
3	69-24-03	2021	1.3	1.39	0.84	2.31	7.96	4.13	3.81	1.99	2.1	4.35	0.65	0.64	31.47
4	68-09-05	2021	0.9	0.94	1.27	4.67	5.58	3.3	2.95	3.45	3.41	5.71	1.64	0.23	34.05
5	69-15-06	2021	0.99	1.57	0.64	3.89	6.2	3.54	4.08	2.7	3.15	2.79	2.25	0.28	32.08
6	69-21-05	2021	1.16	1.18	0.99	5.00	1.64	2.95	2.43	3.34	1.27	3.48	0.84	0.34	24.62

2021 Annual Average Total = 30.85 inches
2021 Mean Monthly Average = 2.57 inches

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

Surface Water Programs

TCEQ Texas Clean Rivers Program

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. FY 2021 sample dates were: October 22, 2020; November 04, 2020; November 12, 2020; November 17, 2020; February 9, 2021; February 11, 2021; March 25, 2021; March 30, 2021; May 13, 2021; May 18, 2021; August 12, 2021; and August 19, 2021. The District was audited by SARA for the TCEQ Clean Rivers Program on July 15, 2021.

At the end of FY 2016, BCRAGD added 5 CRP sites on Medina Lake along with 1 CRP site on Diversion Lake, partnering with SARA. BCRAGD added 1 additional site during FY 2021 on Diversion Lake just upstream of Diversion Lake Dam. The sample dates for Medina Lake were: November 04, 2020; November 17, 2020; December 17, 2020; January 21, 2021; March 25, 2021; April 14, 2021; May 06, 2021; August 17, 2021. The sample dates for Diversion Lake were: October 8, 2020; January 14, 2021; May 27, 2021; June 8, 2021; and August 26, 2021.

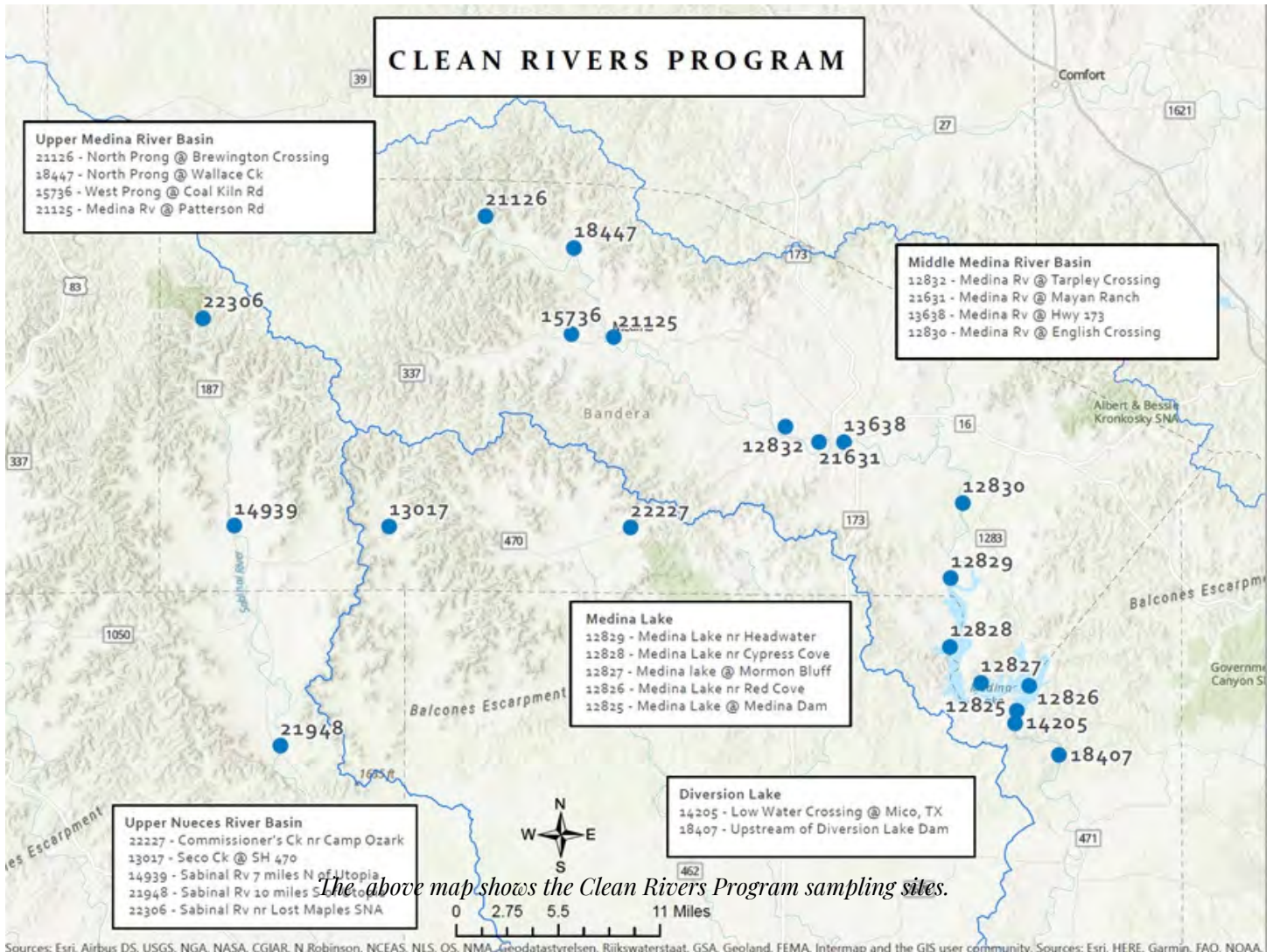
BCRAGD partnered with the Nueces River Authority (NRA) in 2016 to participate in the Clean Rivers Program in the Nueces River Basin. BCRAGD staff is responsible for the 5 sites shown in the chart to the right. The FY2021 sample dates for the Nueces River Basin were November 18, 2020; February 23, 2021; May 20, 2021; and August 24, 2021. BCRAGD added 1 additional CRP site on Sabinal River near Lost Maples SNA, partnering with the NRA.

The table to the right lists all of the CRP sites that BCRAGD sampled each quarter. They are separated into sections as follows: Medina River sites, Medina Lake sites, Diversion Lake sites, and Nueces River / Sabinal Basin sites.

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
18407	Diversion Lake just upstream of Diversion Lake Dam
14205	Medina R. Downstream Medina Lake Dam in Mico, TX @ low water Crossing
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

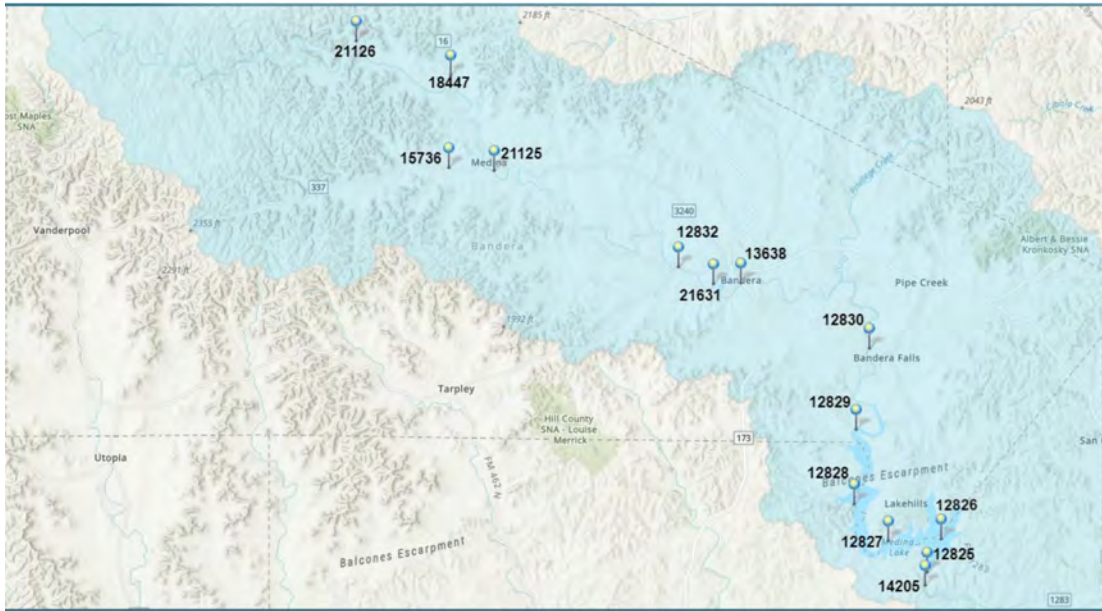
The maps shown in the next two pages show all of the CRP sites covered by the San Antonio River Authority and Nueces River Authority. The sites sampled by BCRAGD are included in both.



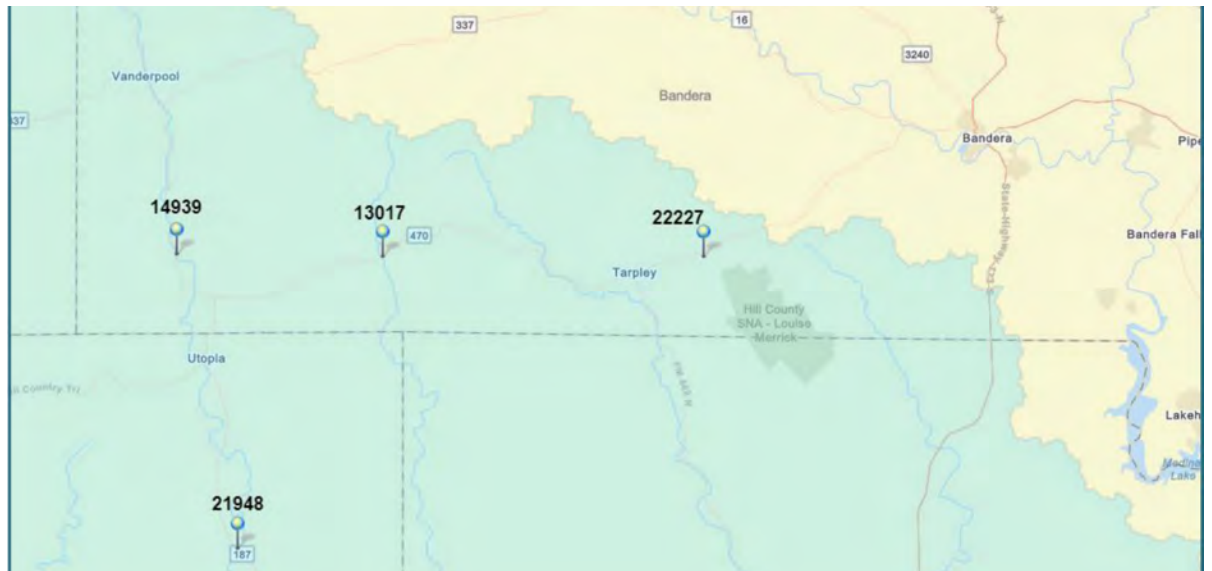
BCRAGD staff Clint
& Levi taking
measurements of the water ways in
different parts of Bandera County.



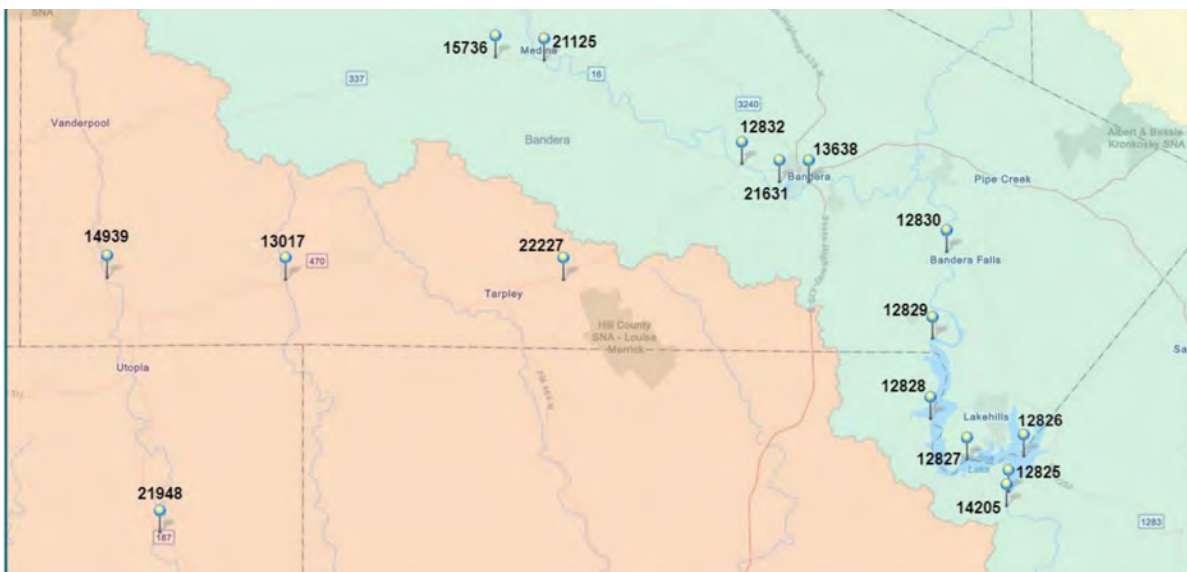
Surface Water Programs



Medina River
Clean Rivers
Program
Sample Sites



Nueces River
Clean Rivers
Program
Sample Sites



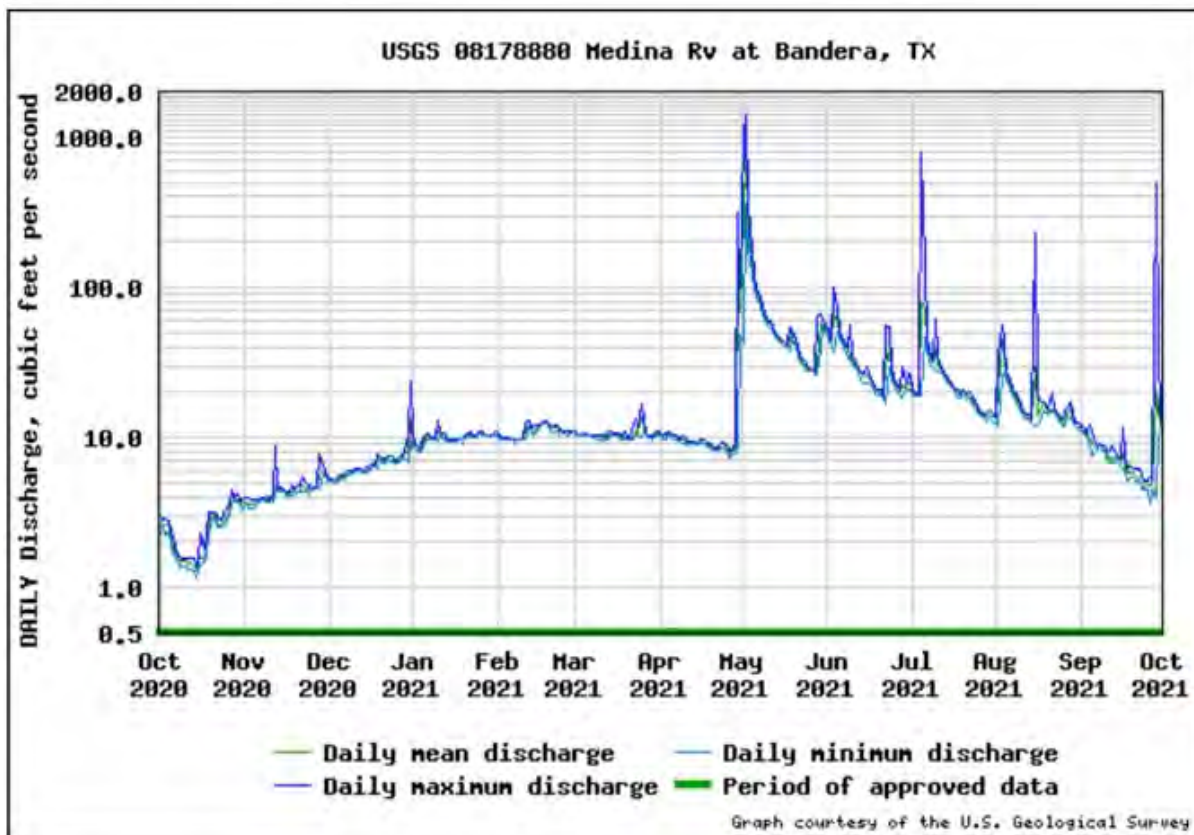
Combined
Clean Rivers
Program
Sample Sites

Surface Water Programs

Water-Data Report 2021 08178880 Medina River at Bandera, TX

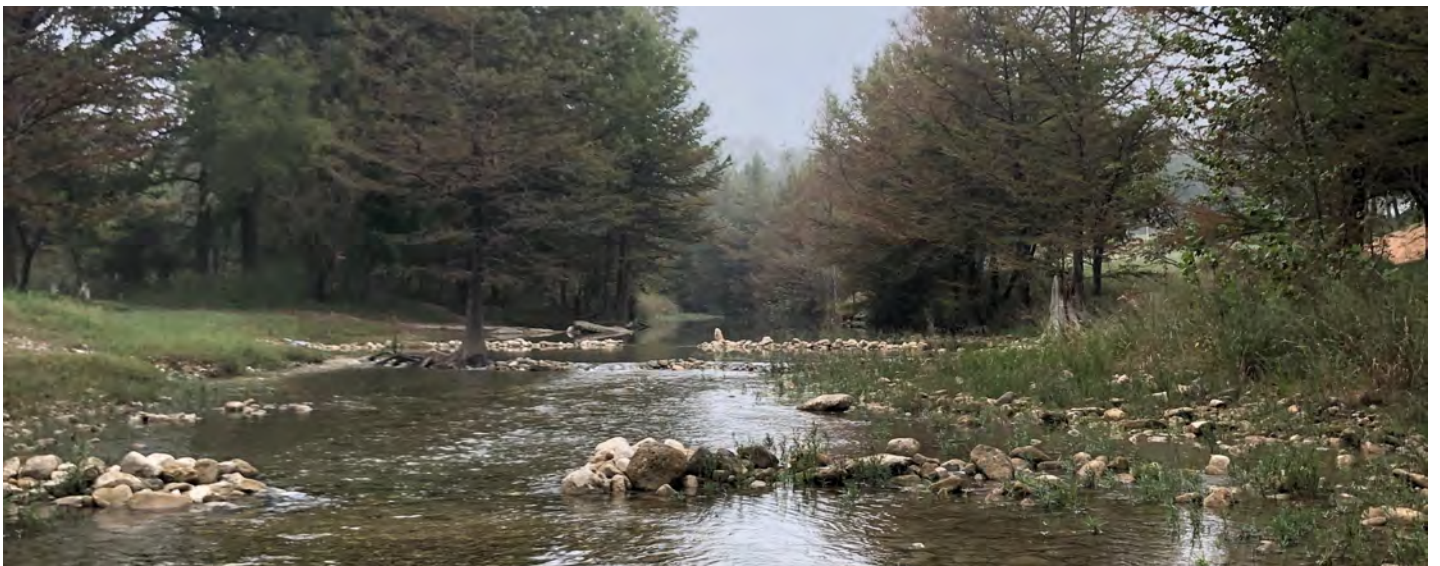
SUMMARY STATISTICS

	Water Year 2021		Water Years 1983 - 2021	
Annual total	7,250			
Annual mean	19.9		137.9	
Highest annual mean			790.7	2002
Lowest annual mean			11.6	2009
Highest daily mean	833.0	May 02	104,000	Jul 05, 2002
Lowest daily mean	1.31	Oct 14	0.0	Aug 04, 1996
Annual 7-day minimum	1.43	Oct 09	0.0	Aug 04, 1996
Maximum peak flow	1,390	May 02	159,000	Jul 05, 2002
Maximum peak stage	8.75	May 02	38.91	Jul 05, 2002
Annual runoff (cfsm)	0.061		0.420	
Annual runoff (inches)	0.822		5.71	
10 percent exceeds	40.3		250.0	
50 percent exceeds	10.3		51.0	
90 percent exceeds	3.83		7.19	



*Data retrieved from usgs.gov on 3/10/2022

Surface Water Programs



Top Image: Was taken at Peaceful Valley Road; Middle Image: Lost Maples State Natural Area; Bottom Image: Moffett Park

Surface Water Programs



Image taken on the North Prong Medina River at Rocky Creek.

During FY 2021, BCRAGD District Staff did the following events related to Surface Water:

- 02.OCT.2020 Attended a Surface Water Committee Meeting.
- 06.OCT.2020 Relocation of County Park Buoys.
- 07.OCT.2020 Attended a Texas Nonpoint Source Management Program.
- 15.OCT.2020 Meeting & Research to Order Sonic Water Level Meter Case for Field.
- 21.OCT.2020 Attended a Texas Watershed Coordinator Roundtable.
- 27.OCT.2020 Met with San Antonio River Authority.
- 27.OCT.2020 West Coast Mussels and eDNA: Freshwater Mussel Conservation.
- 05.NOV.2020 Attended an SCT RETF Virtual Meeting.
- 10.NOV.2020 Attended the Mussel Decline Virtual Event.
- 01.DEC.2020 Made Advancements in Laboratory Toxicity Testing with Freshwater.
- 03.DEC.2020 Attended a Hill Country Watershed meeting.
- 09.DEC.2020 Create Field Map for In-House Sampling.
- 09.DEC.2020 Introduced to new resource management app LandPKS.
- 09.DEC.2020 Attended a Meeting with SARA.
- 09.DEC.2020 Attended a Meeting with NRA.
- 15.DEC.2020 District Staff worked on a fish field guide for Bandera County.
- 16.DEC.2020 Meeting to discuss plant and animal field guides.
- 29.DEC.2020 Created and published web mapping application of our In-House results to the public on the District Website.
- 05.JAN.2021 Attended State Water Implementation Fund and Abridged Application Webinar.
- 15.JAN.2021 Conducted a River Authority Team Meeting.
- 20-22.JAN.2021 Attended a TWI Urban Riparian Restoration Training.
- 20.JAN.2021 Mapped river miles of discharge point to the main stem of the Upper Sabinal River.
- 02-04.FEB.2021 Attended a TCAFS Meeting.
- 03.FEB.2021 Attended the South Texas Regional Task Force Quarterly Meeting.

Surface Water Programs



Photo taken on Medina River at Bridelgate.

- 22.FEB.2021 Attended a Virtual Meeting w/ City, HCA, & TX Parks and Wildlife.
- 07.APR.2021 Attended SAR Basin Science Consortium Meeting.
- 08.APR.2021 San Antonio River Authority FY22 Coordinated Monitoring Meeting.
- 08.APR.2021 Attended the Hill Country Watershed Stewardship: Spring Gathering
- 20-21.APR.2021 Attended the Central TX Water Conservation Symposium.
- 22.APR.2021 Attended the Texas Watershed Coordinator Roundtable.
- 22.APR.2021 Attended National Weather Service Webinar.
- 23.APR.2021 Attended NRA CMM.
- 26.APR.2021 Attended Nueces Regional Flood Planning Group.
- 03.JUN.2021 Consultation as a subject matter expert w/ Canadian Private Env. Consulting Firm & NALMS.
- 07.JUN.2021 Attended Webinar about What's Next for Texas Water.
- 23.JUN.2021 Attended Webinar about Dangerous Liaisons: the Dependence of Pearly Mussels on Fish.
- 15.JUN.2021 Conducted CRP Biological w/ Mayan.
- 17.JUN.2021 Attended a Dam Safety Webinar
- 13.JUL.2021 Attended the Texas Master Naturalist Program – #TMNTuesdays!
- 14.SEP.2021 Attended a SEG Webinar on Geomechanical Storage of CO₂.
- 15.JUL.2021 TCAFS Student Outreach Committee Meeting.
- 15.JUL.2021 CRP Audit.
- 22.SEP.2021 GSA Short Course – 3D Hydro Modeling.
- 29.JUL.2021 CRP Biologicals at the Mayan.
- 30.JUL.2021 Staff attended both the NRA's Clean Rivers Program Lower Basin Steering Committee Meeting & the Clean River's Program Upper Basin Steering Committee Meeting.
- 30.JUL.2021 Attended a Rainwater Harvesting Class.
- 31.AUG.2021 Attended a Webinar on Communicating Uncertainty in Water Planning.
- 27-30.SEP.2021 Attended the Watershed Short Course hosted by the Texas Water Resource Institute.
- 23-25.AUG.2021 Attended Webinars hosted by Texas A&M University and Texas A&M AgriLife Research about ecology.

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. The District added 5 In-house sampling sites to their route in FY 2021. These additional sites are represented in the chart below shaded in blue.

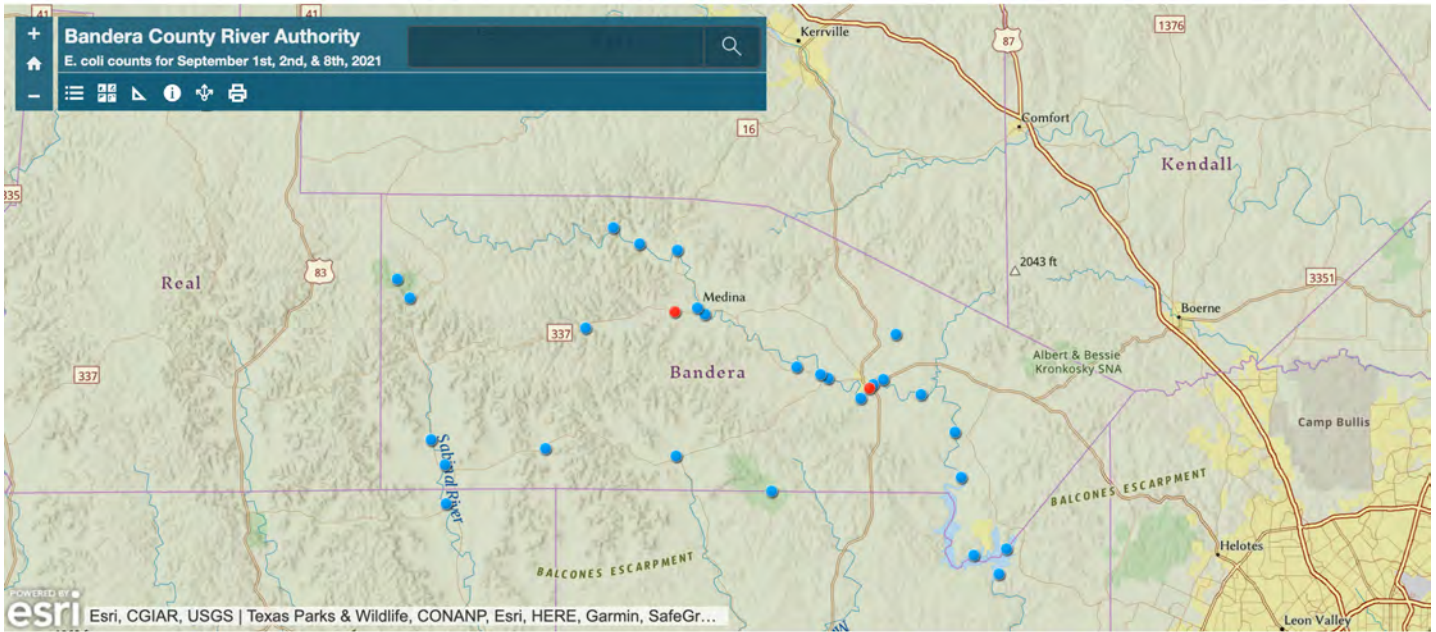
Surface Water Quality Monitoring

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. During FY2021, the District added five new In-House Sampling sites. The new sites are shaded blue in the chart below.

From October 2020 to September 2021, there were 18 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 above map shows the most recent sampling locations and E. coli numbers. The pictures, if clicked, will appear in full screen. [Click here](#) to view map in full screen.

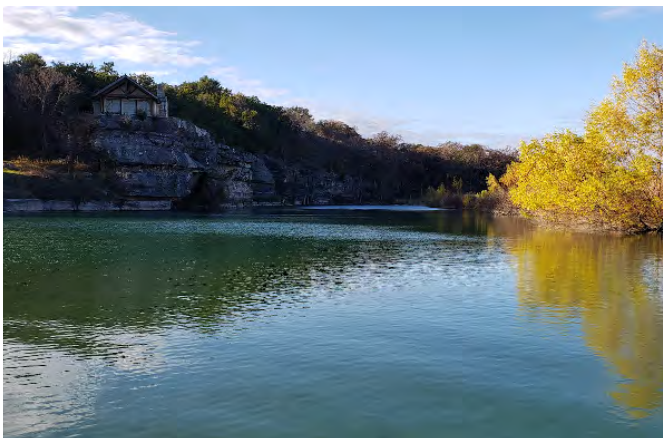
The surface water team built a digital map utilizing ESRI's ArcGIS software to create an interactive web application to allow the public to view water quality results on a mapping platform. Public users have access to the following information: site location, bacteria results, water temperature, and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



EAA SAMPLING

The Bandera County River Authority & Groundwater District has partnered with the Edwards Aquifer Authority to collect water samples along a seven-mile reach of the Medina River. BCRAGD staff collects samples bi-weekly at the following three locations: Bridlegate, Coal Springs, and English Crossing. The EAA is interested in analyzing the stable isotopic structure of the water in this area of the river along with many other segments across the region.

Sampling was conducted on October 1 & 23, 2020, November 5 & 19, 2020, and December 4, 18, & 31, 2020.



Medina River at Bridlegate

On December 31, 2020, BCRAGD staff accomplished the final sampling event for a joint project with the Edwards Aquifer Authority. In March of 2019, District staff began collecting water samples in and around Coal Springs on a bi-weekly basis for isotopic analysis. The goal of this project is designed to provide more information on surface water & groundwater interactions within the Coal Springs complex.

Surface Water Programs

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

1st Quarter: (October 2020 – December 2020)

- 01.OCT.2020 EAA Sampling
- 08.OCT.2020 Diversion Lake CRP
- 22.OCT.2020 Medina River CRP
- 23.OCT.2020 EAA Sampling
- 04.NOV.2020 Medina River CRP
- 04.NOV.2020 Medina Lake CRP
- 05.NOV.2020 EAA Sampling
- 12.NOV.2020 Medina River CRP
- 17.NOV.2020 Medina River CRP
- 17.NOV.2020 Medina Lake CRP
- 18.NOV.2020 Sabinal River CRP
- 19.NOV.2020 EAA Sampling
- 04.DEC.2020 EAA Sampling
- 10.DEC.2020 Quarterly In-House Sampling
- 17.DEC.2020 In-House Resampling
- 17.DEC.2020 Medina Lake CRP
- 18.DEC.2020 EAA Sampling
- 29.DEC.2020 Quarterly In-House: Report
- 31.DEC.2020 EAA Sampling

2nd Quarter: (January 2021 – March 2021)

- 14.JAN.2021 Diversion Lake CRP
- 21.JAN.2021 Medina Lake CRP
- 09.FEB.2021 Medina River CRP
- 11.FEB.2021 Medina River CRP
- 23.FEB.2021 Sabinal CRP
- 24.MAR.2021 Quarterly In-house Sampling
- 25.MAR.2021 Medina River CRP
- 26.MAR.2021 Quarterly In-house Sampling
- 30.MAR.2021 In-House Resample



Clinton Cater on the North Prong of the Medina River Conducting a Surface water investigation.

3rd Quarter: (April 2021 – June 2021)

- 14.APR.2021 Medina River CRP
- 06.MAY.2021 Medina Lake CRP
- 13.MAY.2021 Medina River CRP
- 18.MAY.2021 Medina River CRP
- 20.MAY.2021 Sabinal CRP
- 08.JUN.2021 Diversion Lake CRP
- 22.JUN.2021 Quarterly In-House Sampling
- 23.JUN.2021 Quarterly In-House Sampling
- 29.JUN.2021 Quarterly In-House Sampling

4th Quarter: (July 2021 – September 2021)

- 07.JUL.2021 Summer In-house Sampling
- 15.JUL.2021 CRP Audit
- 21.JUL.2021 Summer In-house Sampling
- 22.JUL.2021 Summer In-house Sampling
- 29.JUL.2021 CRP Biologicals – Mayan
- 11.AUG.2021 Summer In-house Sampling
- 12.AUG.2021 Medina River CRP
- 17.AUG.2021 Medina Lake CRP
- 19.AUG.2021 Medina River CRP
- 24.AUG.2021 Sabinal CRP
- 26.AUG.2021 Diversion Lake CRP
- 01.SEP.2021 Quarterly In-House Sampling
- 02.SEP.2021 Quarterly In-House Sampling
- 08.SEP.2021 In-House Resampling



Surface Water Programs



Photo Taken at the Dam at Utopia City Park



Photo Taken on the North Prong Medina River

Surface Water Programs



Clint Carter & Shelby Skittone taking stream discharge measurements. (Training on how to use Flow tracker equipment.)



Clint Carter kayaking on the North Prong of the Medina River to conduct In-House Sampling.



Levi Sparks conducting CRP sampling on the Sabinal River



Levi Sparks conducting an Arundo Survey near Brewington Crossing.

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 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*.

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 offers workshops, no-cost treatment of *Arundo* which began in the summer of 2018, and maintains ongoing monitoring and re-treatment as needed. 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.phtml>.

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, 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.



Levi & Clint on Medina Lake conducting sampling and flow measurements.



Photo taken at Medina Lake.



Luke & Clint on Medina Lake conducting sampling and flow measurements.

Surface Water Programs

Zebra Mussels

On March 16, 2021, the Texas Parks and Wildlife Department (TPWD) designated Medina Lake as “positive” with the invasive species, Zebra Mussels. The first sighting in Medina Lake was on February 11, 2021, by a member of the community who contacted TPWD for verification. Shortly after this, TPWD conducted their own searches and located at least 1 more Zebra Mussel. BCRAGD also conducted a search on February 24, 2021, locating a single Zebra Mussel.

BCRAGD has partnered with TPWD to continue monitoring Medina Lake for the further spread of Zebra Mussels. This is done through both plankton sampling for the larval stages of the Zebra Mussels and through the deployment of settlement samplers in strategic locations on the lake.



Zebra Mussels Workshop
CLEAN – DRAIN – DRY
May 22, 2021
10 AM - 12 PM

Join us for presentations and boat cleaning demonstration on ecological impacts and what you can do to prevent the spread of invasive Zebra Mussels in Medina Lake.

The Lakehills Civic Center
11225 PR 37, Lakehills, TX 78063

To register for the event email
media@bcragd.org
or call (830) 796-7260

Space is limited!

Zebra Mussel Workshop

On May 22, 2021 BCRAGD Staff, in collaboration with Monica McGarrity from Texas Parks and Wildlife, presented Lake Hills residents with information regarding the infestation of Zebra Mussels in Medina Lake and updated the public on prevention efforts and how community members could help. Community members learned how to identify and report Zebra Mussels to TPWD and how to correctly dispose of Zebra Mussels. The public also learned the severe ecological implications of a Zebra Mussel infestation. BCRAGD Staff, Levi Sparks and Clint Carter, demonstrated how to locate Zebra Mussels on a boat and how to properly clean a boat after recreational activities.



Monica McGarrity from TPWL presenting information on Zebra Mussels.

Surface Water Programs

During FY 2021, BCRAGD District Staff did the following for Invasive Species Management:

- BCRAGD District staff conducted a check on the Zebra Mussel Sampler on 06.OCT.2020, 17.NOV.2020, 17.DEC.2020, 20.JAN.2021, 24.FEB.2021, 02.MAR.2021, 04.MAR.2021, 29.APR.2021, & 06.MAY.2021.
- BCRAGD District staff conducted Arundo Surveys on 29.JUN.2021, 01.JUL.2021, 14.JUL.2021, 15.JUL.2021, 21.JUL.2021, 16.SEP.2021, 22.SEP.2021, & 23.SEP.2021.
- 27.OCT.2020 West Coast Mussels and eDNA: Freshwater Mussel Convention.
- 10.NOV.2020 Mussel Decline Virtual Event
- 01.DEC.2020 Attended webinar on advancements in Laboratory Toxicity Testing with Freshwater.
- 03.DEC.2020 Attended Hill Country Alliance Watershed meeting.
- 16.DEC.2020 Created Field Maps for Zebra Mussel sampling.
- 19.JAN.2021 Prepared Field Maps for Zebra Mussel Settlement Sampler check.
- 20-22.JAN.2021 TWI Urban Riparian Restoration Training.
- 02.MAR.2021 Zebra Mussel Shoreline Survey.
- 04.MAR.2021 Presentation Content Development-Illegal Dumping/Zebra Mussel.
- 08.APR.2021 Hill Country Watershed Stewardship - Spring Gathering.

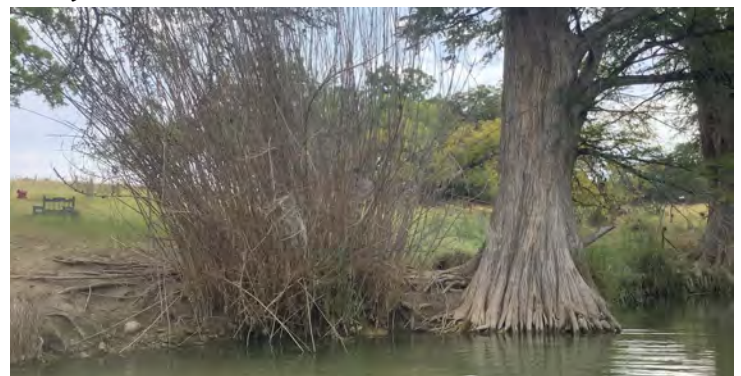
- 17.JUN.2021 Medina Lake Investigation w/ TCEQ
- 23.JUN.2021 Dangerous Liaisons: the Dependence of Pearly Mussels on Fish.
- 05.AUG.2021 Brewington Crossing & Wallace Creek Clean up.
- 23.AUG.2021 Conference Call: Arundo Control & Education Services Amounts/Invoices.
- 23.AUG.2021 Workshop #1 Challenges and Approaches for Estimating Flow-Ecology Relationships and Monitoring.
- 24.AUG.2021 Workshop #2 Recruitment Response of Mussels to Flow Variation.
- 25.AUG.2021, Workshop#3 Future Needs for Estimating Flow-Ecology Relationships in TX Rivers/ Streams.
- 22.SEP.2021 Arundo Postcards Sent Out.



Zebra Mussels found in the District's Settlement Sampler.



Shelby Sckittone Standing next to an Arundo Donax stand in Bandera County.



Arundo Donax stand in Bandera County.

Surface Water Programs

ZEBRA MUSSELS HIDE HERE.

Protect our Lake and Rivers from Invasive Species



IT'S THE LAW: Remove invasive plants and debris and drain all water before leaving this water body.

TexasInvasives.org



CLEAN, DRAIN AND DRY
YOUR BOAT AND GEAR EVERY TIME



Clint checking the District's Zebra Mussel Samplers



Levi Sparks conducting CRP sampling on Diversion Lake

Surface Water Programs

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. In recent years, the organization has created a Zebra Mussel monitoring program in partnership with TPWD. 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 as well. 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.



Photos taken at Medina Lake

Surface Water Programs



Clint & Levi conducting a Medina River CRP Sampling



Shelby conducting CRP surface water sampling at Seco Creek



Clint Carter conducting sampling on Medina River at English Crossing



Clint & Levi conducting CRP sampling at Diversion lake downstream of Medina Lake Dam

Surface Water Programs



Photo taken in Bandera County during a Post Drill Inspection.



Clint & Levi conducting In-House Sampling on North Prong Medina River at Brewington.



Clint conducting a post drill inspection of a new water well in Bandera County.

Surface Water Programs



Clint & Levi conducting CRP at Diversion lake



Clint conducting In-House Sampling at Utopia City Park

Surface Water Programs

Axis Deer Control Project

BCRAGD began a partnership in FY 2020 with the Hill Country Alliance and Texas Tech University's Department of Natural Resources Management along with other select partners to launch a 2021 Axis Deer Control Project throughout the Hill Country. This project aims to help the natural populations of white-tailed deer combat competition with natural resources, provide education to landowners about this exotic species, and assist Texas Tech University with ongoing research projects about Axis Deer. For FY 2021, the project launched on January 27, 2021, then wrapped up on March 16, 2021.



Aquatic Life Monitoring with San Antonio River Authority

On June 15th, 2021 & July 29th, 2021 BCRAGD District Staff assisted the San Antonio River Authority to conduct an Aquatic Life Monitoring event on the Medina River. This assessment is used to identify species diversity and community composition of freshwater fish as well as 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.



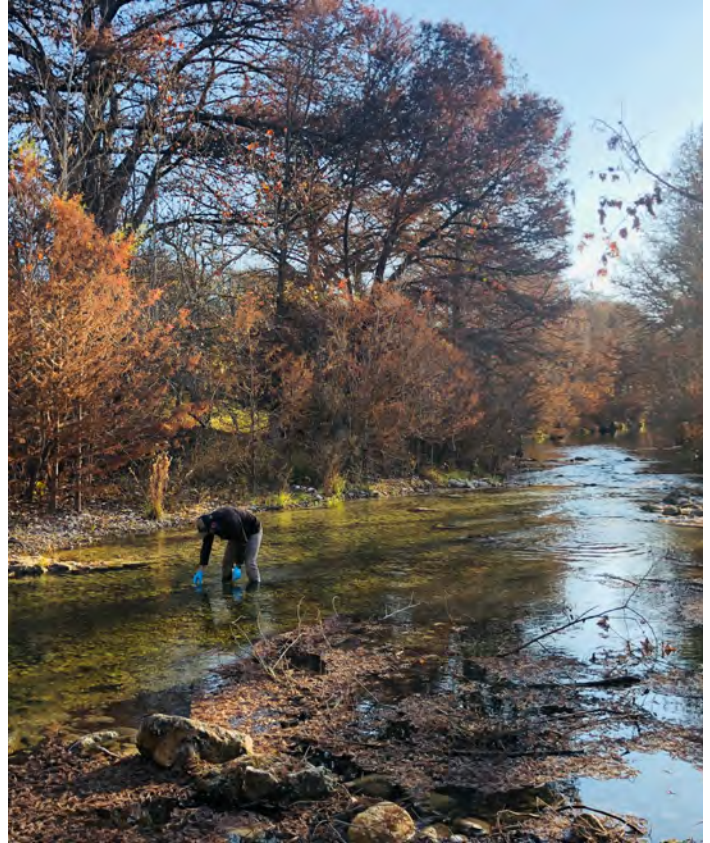
San Antonio River Authority working in conjunction with BCRAGD to conduct Aquatic Life Monitoring.

Surface Water Programs

BCRAGD Surface Water Highlights FY 2021

On December 3, 2020, & April 8, 2021, BCRAGD staff attended the online Hill Country Watershed Stewardship Annual / Spring Gathering. This annual meeting is an important opportunity for agency personnel to bring forth issues in a roundtable discussion format allowing for multiple opinions and opportunities for problems to be resolved throughout the Hill Country.

On February 2-4, 2021, BCRAGD staff Clinton Carter and Levi Sparks attended the Texas Chapter of the American Fisheries Society annual meeting. This meeting allows for important networking opportunities and for staff to keep up to date on current research being accomplished throughout the state.



Clint conducting In-House Sampling at Tarpley Crossing.



Photo taken at Lost Maples State Natural Area.

Enforcement/Investigations



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

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 2021, 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 2021, the District maintained and reviewed policies mandated by Chapter 36 of the Texas Water Code including Public Funds Investment Policy, Ethics Policy, Financial Management Policy, and Travel Policy. Additionally, the District reviewed and adjusted rules and District activities.

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.



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

Enforcement/Investigations

Code Enforcement Training

On January 25-29, 2021, BCRAGD staff Clinton Carter and Levi Sparks attended Code Enforcement Officer Training. This training requires a test by TDLR in order to be a licensed Code Enforcement Officer. This training also ensures staff is up to date on Code Enforcement Laws.

- 05.AUG.2021 Brewington Crossing & Wallace Creek Clean up
- 15.SEP.2021 Brewington Crossing Clean-up,
- District General Manager conducted monthly checks on river crossings in Bandera County.

During FY 2021, BCRAGD attended or conducted the following Illegal Dumping / Environmental Investigation / Regulatory Compliance programs:

- BCRAGD District Staff conducted environmental investigations on the following dates: 05.OCT.2020, 14.OCT.2020, 15.DEC.2020, 28.DEC.2020, 29.DEC.2020, 30.DEC.2020, 28.APR.2021 at four different locations, 27.MAY.2021, 28.MAY.2021, 16.JUN.2021, 18.JUN.2021 at two different locations, 25.JUN.2021, 14.JUL.2021, 03.AUG.2021, 04.AUG.2021, 05.AUG.2021, 09.AUG.2021, 16.AUG.2021, 16.AUG.2021, 30.AUG.2021, 03.SEP.2021, 08.SEP.2021, 09.SEP.2021, & on 16.SEP.2021
- 29.DEC.2020 Team Meeting on a nuisance complaint
- 19.JAN.2021 Environmental Investigation Opened
- 20.JAN.2021 Take Information for Anonymous Nuisance Complaint & Provide to EI Team
- 20.JAN.2020 Follow up on Environmental Investigation Call
- 06.MAY.2021 South Central Texas Regional Environmental Task Force
- 17.JUN.2021 Medina Lake Investigation w/ TCEQ
- 01.JUL.2021 Review Updated Environmental Investigation Forms




Dave Mauk, Levi Sparks, and Clinton Carter conducting Environmental Investigations in 2020.

Enforcement/Investigations

Public Safety / Pollution

BCRAGD serves as a first responder in cases of possible surface water or groundwater pollution or contamination. They investigate and identify the potential problem and refer 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.

 **Bandera County**
River Authority & Groundwater District
Protecting & Preserving our Rivers, Reservoirs

**BCRAGD Public Service Announcement:
Medina River & Sabinal River *E. coli* Counts July 7th, 2021**

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 July 7th, 2021.

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	18 MPN	Bandera City Park @ 1st St	328 MPN	Can Creek @ Lost Maples	2 MPN
English Crossing	816 MPN*	Tarpley Crossing	328 MPN	Privilege Creek @ SH16	113 MPN
Bridlegate Park	594 MPN*	Ranger Crossing	205 MPN	Medina Lake @ Pop's Place	770 MPN*
Bandera River Ranch Park	866 MPN*	Moffett Park in Medina	133 MPN	Medina Lake @ Haby's Cove	17 MPN
W. Prong @ Coalkin Rd	250 MPN	N. Prong, Brewington	91 MPN	Utopia City Park	21 MPN
Medina Lake @ Red Cove	6 MPN	Sabinal R @ Lost Maples	41 MPN	N. Prong, Wallace Ck	28 MPN
Bandera City Park @ SH173	2,420 MPN*				

*Indicates that the sample was over the TCEQ threshold

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.



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

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



Clint on the North Prong Medina River conducting surface water investigations.

Education & Outreach Programs

USGS Flood Early Warning System (FEWS)

August 2016, BCRAGD entered into a 50/50 cost-share contract agreement with The Texas Water Development Board (TWDB) for a Flood Early Warning System (FEWS) of the Medina River to be installed and maintained by the U.S. Geological Survey (third party federal contractor). The total cost of the project was \$530,000. TWDB awarded a 50 percent cost share of \$265,000 in Flood Protection Grant funding to BCRAGD for FEWS in Bandera County. Working with USGS, the Medina River FEWS will greatly enhance the protection of property and the lives of our residents as well as the communities downstream through the use of the Flood Early Warning System. Two additional USGS stream gages (West Prong Medina River at Carpenter Creek Rd, and the North Prong Medina River at Brewington Rd. Crossing) were installed upstream of the existing USGS stream gage located at Medina River at Patterson Rd. Medina, TX. The additional stream gages will provide data of near real-time hydrologic conditions allowing for the best management of flood early warning response time providing emergency responders and general public strategies for planning through the advanced modeling and mapping capabilities. Parts of the Midwest have successfully implemented a similar USGS flood early warning system toolset, and Bandera County FEWS serves as an example to all of Texas. This project is fully functional and data is available online.

The following existing USGS stream-gage stations are of the Medina River Flood Early Warning System (FEWS) (and can be found at www.bcragd.org/early-food-warning-system/). These stations are routinely monitored daily by USGS and by BCRAGD staff during storm-related events and are significant for providing storm-related information of impending storms.



BCRAGD's Flood Science Manager Larry B. Tomas, 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/>

Education & Outreach Programs

USGS Twitter

- #TX RainWatch https://twitter.com/USGS_TexasRain
- #TX FloodWatch https://twitter.com/USGS_TexasFlood
- #USGS[streamgage number]
(e.g. #USGS081978880)

The FEWS includes the development and data calibrations of a ‘Hydrologic Engineering Center’ - ‘River Analysis System’ model (HEC-RAS) and a Flood Inundation Map (FIM) for the Medina River watershed, Bandera County, Texas. In conjunction, a Light Detection and Ranging (LiDAR) data acquisition was developed in 2013 and used to enhance the modeling and mapping capabilities for this Flood Early Warning System (FEWS) toolset. The LiDAR data for Bandera County was the result of a partnership between BCRAGD, Texas Water Development Board, Edwards Aquifer Authority, San Antonio River Authority, Bandera County, and Bandera City EDC. This data improves the accuracy of FEMA’s risk map, food risk, and emergency planning, watershed protection, water resource, and invasive species monitoring.



Image 1: 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.

In addition to the Medina River FEWS, a second 50/50 cost share Flood Protection Grant project proposal with a total cost of \$460,000 was submitted to TWDB in 2018 for a USGS / FEWS of the Sabinal River Western Bandera County. On November 12, 2018, TWDB approved a Grant cost-shared agreement with BCRAGD and was awarded \$230,000. USGS also agreed to supplement a 50/50 project cost-share with BCRAGD as a third-party Federal Contractor for \$115,000. A USGS stream gage was installed at the Sabinal River Bridge located on FM-1050, below Utopia Park at Utopia, TX Station ID:08197970 (see image 1). The Sabinal River FEWS will include the development and data calibrations of a ‘Hydrologic Engineering Center’ - ‘River Analysis System’ model (HEC-RAS) and a Flood Inundation Map (FIM) for the Sabinal River watershed, western Bandera County, Texas.

In addition, the USGS has installed several insitu ‘non-real time’ continuous data loggers at locations along the Sabinal and West Sabinal River (see image 2) from Utopia, TX, and above the existing USGS streamgage located below the confluence of the Sabinal River and Mill Creek.



Image 2: One of Five USGS Insitu Pressure Transducer, Water Level Electronic Data Loggers – Installed Above Utopia, TX, along the Sabinal and West Sabinal River.

Education & Outreach Programs

The planned Flood Inundation Map (FIM) of the river reach study area is from near Lost Maples Texas State Park to Utopia, TX. The insitu data loggers will provide water surface ‘stage’ elevations post-storm-related events for use with the development and calibration of the HEC-RAS model and Flood Inundation Map (FIM). The Sabinal River FEWS will greatly enhance the protection of property and the lives of our Western Bandera County residents as well as residents of Uvalde, County near Utopia, TX.

Due to the below-average rainfall totals and the current severe drought conditions within the State of Texas since pre-2018 and specifically referencing Western Bandera County, TX has caused a lack of opportunity for USGS to collect streamflow and water surface elevation values above low flow conditions of the Sabinal River FEWS. Water surface elevations and streamflow data of greater than minimum base flows are required for the development and calibration of the HEC-RAS model.

In May 2021, USGS requested an extension of the Sabinal River FEWS project completion timeline, in hopes of securing much-needed hydrologic data for the FIM. 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. With current and persistent drought conditions, a second project extension may be requested during May 2022.

BCRAGDs Flood Science Manager Larry Thomas serves as the Project Manager on all Flood Early Warning Systems for Bandera County.

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

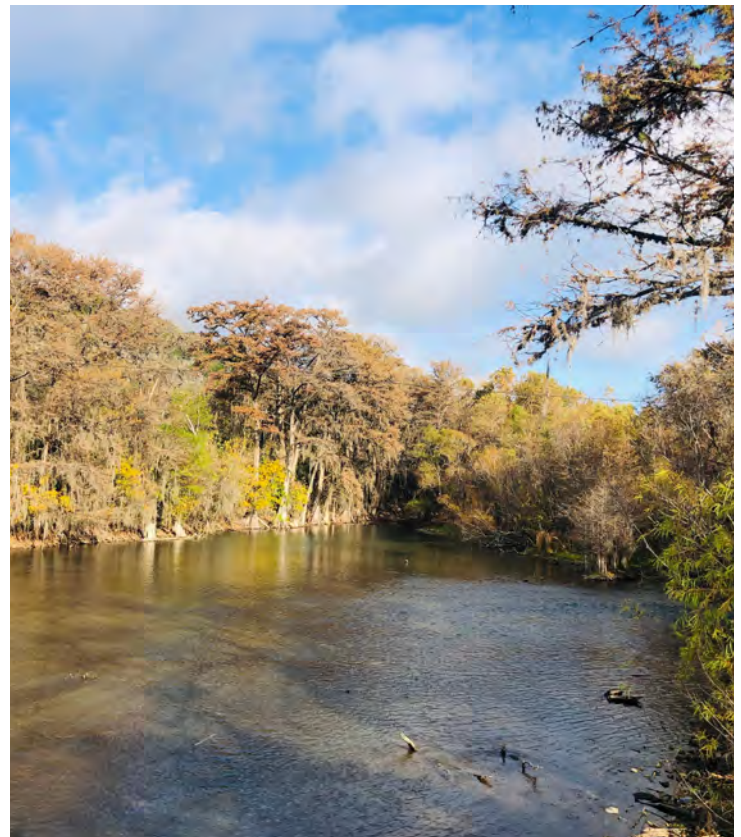


Photo taken of Diversion Lake.

Education & Outreach Programs



Photo taken at the Medina Lake Dam during the 2002 Flood.



Photo taken at the Medina Lake Dam during the 2012 Flood.

Education & Outreach 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:

- 01.OCT.2020 Meeting: City Flood Project
- 05.OCT.2020 Scan Rainfall Monitoring Reports & Email
- 08.OCT.2020 Mtg Conference Call: City Flood Mitigation Project
- 08.OCT.2020 Scan Rainfall Monitoring Reports & Email
- In October of 2020 Flood Science Manager completed & turned in the Sabinal FEWS Quarterly report to TWDB
- 14.OCT.2020 Reviewed Current Drought Management Plan & Designed Drought Restrictions Post Card Mock Up
- 27.OCT.2020 Meeting: Rainspotter Forms
- 09.NOV.2020 Scan Rainfall Monitoring Reports & Email
- In November 2020 Flood Science Manager completed TFMA required Exams for 7 credit hours needed for Certified Floodplain Managers renewal
- In November 2020 Flood Science Manager corresponded with USGS online regarding intermittent errors of rainfall gauges
- 03.DEC.2020 Larry Thomas Completed Certified Floodplain Managers Exams for TFMA
- 07.DEC.2020 Bandera City Council Mtg-Flood Mitigation Grant
- 08.DEC.2020 Larry Thomas completed Certified Floodplain Managers Exams
- 08.DEC.2020 Electronic Rainfall Monitoring
- 31.DEC.2020 Field Operations Manager completed Certified Floodplain Manager exam preparation
- 06.JAN.2021 Correspondence: Data/#s for FY2021 USGS JFA
- 11.JAN.2021 TWDB / USGS Invoicing
- 12.JAN.2021 TWDB / USGS FEWS Reports
- 13.JAN.2021 TWDB / USGS FEWS Reports
- 28.JAN.2021 Sabinal Report Rainspotter data
- 30.JAN.2021 FEWS Reports - TFMA CEC uploads
- 01.FEB.2021 Correspondence USGS Payments for O&M Gage & Bookkeeper
- 02.FEB.2021 Rain Spotter Data
- 01-05.FEB.2021 Sabinal FEWS Qtr. Report and invoicing all week
- 09.FEB.2021 Sabinal FEWS Qtr Report - USGS invoicing
- 15.FEB.2021 Sabinal QTR report Submitted TWDB
- 17.FEB.2021 Medina FEWS Draft Final Report in progress
- 23.FEB.2021 Medina Draft Final Report in progress
- 02.MAR.2021 Draft Final Report for Medina FEWS
- 03.MAR.2021 Sabinal FEWS Draft Plans for Public Meeting
- 08-23.MAR.2021 Worked on Extension email for TWDB on Sabinal FEWS
- 18.MAR.2021 Meeting to Discuss Bandera Billing & Review TWDB Extension Request
- 07.APR.2021 Received Rainfall Monitoring Reports & Meet About Flood Acct Payments
- 08.APR.2021 Review/Edit FEWS Extension Request
- 12.APR.2021 Check USGS Tracking Chk#14509 & Update Email Explanation
- 13.APR.2021 USGS Emails & Organization
- 26.APR.2021 Received Rainfall Monitoring Reports Rainspotters
- 04.MAY.2021 Provide Invoice for 2nd Quarter
- 09.JUN.2021 Edit & Review 2021 Rainfall Monitoring Report
- 16.JUN.2021 Review Flood Inundation Monitoring System Progress Report

Education & Outreach Programs

- 22.JUN.2021 Drought Preparedness Webinar - Session 1
- 13.JUL.2021 Provide Rainspotters Sheets Received in Mail for Data
- 12.AUG.2021 GM JFA FY2022 USGS Approval
- 12.AUG.2021 Scan & Email JFA + FYIs of USGS Check Sent
- 16-19.AUG.2021 Prepared ppt of the Bandera Co. FEWS status and 4.5 year overview to Directors
- AUG.2021 Processed TWDB / USGS payment requests
- AUG.2021 Worked on Medina FEWS annual report
- AUG.2021 Worked on Sabinal FEWS quarterly report
- AUG.2021 Assisted with CRP at Diversion canal and set up Traffic control devices
- 23.SEP.2021 Rainspotters quarterly documents mailed out
- 30.SEP.2021 GoToWebinar - Fall 2021 Climate Outlook for South Central Texas
- BCRAGD internally held meeting for Organizing/Cross Referencing/Corresponding/ FEWS USGS Payments Open Invoices & Paid Invoices: 05.OCT.2020, 08.OCT.2020, 16.NOV.2020, 24.NOV.2020, 03.DEC.2020, 21.JAN.2021, 26.JAN.2021, 27.JAN.2021, 03.FEB.2021, 08.FEB.2021, 25.FEB.2021, 08.MAR.2021, 15.MAR.2021, 18.MAR.2021, 24.MAR.2021, 26.MAR.2021, 29.MAR.2021, 31.MAR.2021, 05.APR.2021, 07.APR.2021, 20.APR.2021, 21.APR.2021, 27.APR.2021, 12.MAY.2021, 17.MAY.2021, 19.MAY.2021, 25.MAY.2021, 28.JUN.2021, 26.JUL.2021, 05.AUG.2021, 12.AUG.2021, 18.AUG.2021, 07.SEP.2021, 13.SEP.2021, 15.SEP.2021, 21.SEP.2021, 22.SEP.2021
- BCRAGD Posted Drought Monitor on 01.OCT.2020, 05.NOV.2020, 10.DEC.2020, 07.JAN.2021, 04.FEB.2021, 08.MAR.2021, 08.APR.2021, 06.MAY.2021, 08.JUN.2021, 15.JUL.2021, 05.AUG.2021, & 13.SEP.2021.
- 20.OCT.2020 Apply to Sit on Region 12: Flood Regional Planning Group Meeting
- BCRAGD attended public meetings on the 02.NOV.2020, 01.DEC.2020, 09.FEB.2021, 20.APR.2021, 14.MAY.2021, 15.JUN.2021, 17.AUG.2021, 21.SEP.2021.
- Larry Thomas was nominated for Flood District Position on Nueces Regional Flood Planning Group on 26.APR.2021
- BCRAGD attended meetings on 16.MAR.2021, 29.MAR.2021, 26.APR.2021, 24.MAY.2021, 28.JUN.2021, 26.JUL.2021, 25.AUG.2021, 08.SEP.2021 & 27.SEP.2021
- 04.JUL.2021 Completed Flood Plan Practices Survey for Regional Flood Plan
- 04.AUG.2021 Review / Edit Flood Plan Practices Survey for Regional Flood Plan



Photo taken at Can Creek at Lost Maples State Natural Area.

Education & Outreach Programs

Public Safety- Flood Preparation Programs

BCRAGD has several Certified Floodplain Managers in its employ and is an active member of the Texas Floodplain Management Association.

BCRAGD Consulted with the City on Flood Mitigation Projects

During FY2021, BCRAGD provided technical assistance and consultation to the City of Bandera for their Flood Mitigation Project. Clinton Carter, Levi Sparks, and Dave Mauk met with City Councilwoman, Rebeca Gibson, and representatives from Hill Country Alliance, and Texas Parks and Wildlife Department to brainstorm flood-related issues and solutions at the Bandera City Park. Following the city's reception of a TWDB grant, BCRAGD continued to provide expertise and technical support throughout the process of the completion of their project.



Moffett Park Patterson Rd: Flood photo taken on March 20, 2012



North Prong Medina River at Brewington

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.

After a year of no in person contact with community school districts, BCRAGD is getting back to work teaching and bringing water quality, water conservation, and water preservation awareness to community members. These outreach events have served approximately 200 people.

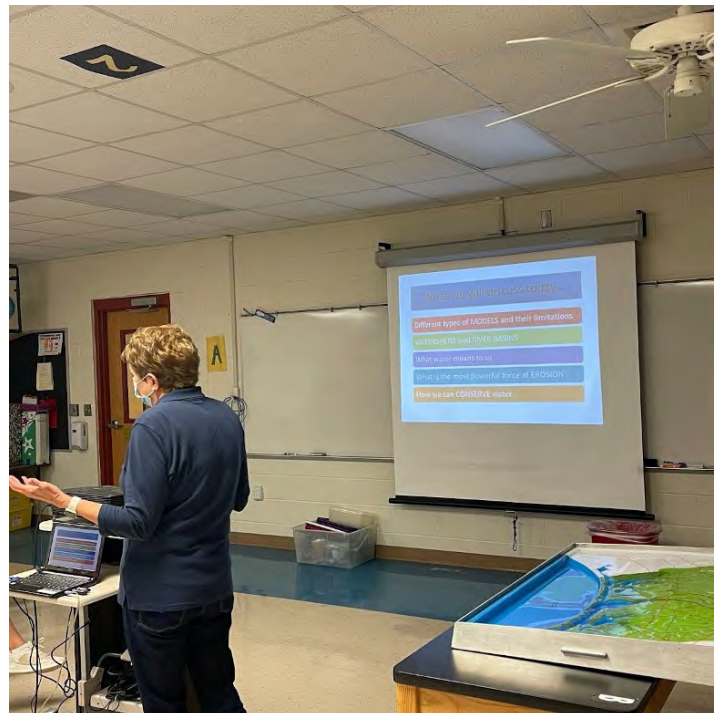


Mary Bales with NRA at Utopia ISD: April 13, 2021

The education team attended several workshops from Texas in Children's in Nature Network (TCINN). The Bandera County River Authority & Groundwater District became regional partners with the San Antonio Region of Texas in Children's in Nature Network. TCINN is a network of nonprofits, government agencies, businesses, and concerned individuals whose goal is to connect children and families with nature.



Mary Bales with NRA at Utopia ISD: April 13, 2021



Mary Bales with NRA at Alkek Elementary School Visit April 21-22, 2021

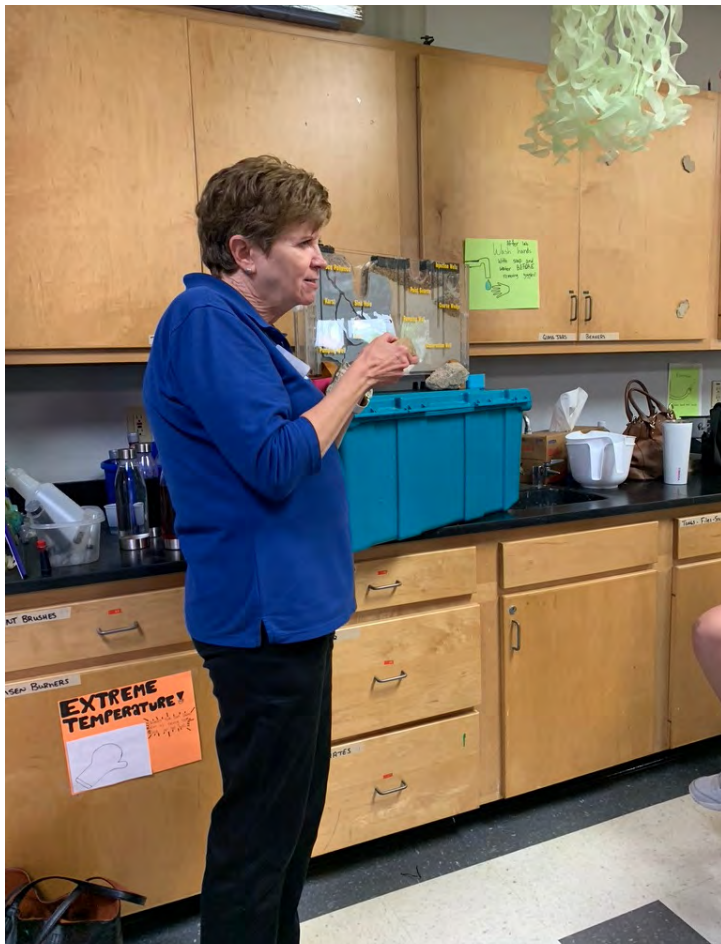
Education & Outreach Programs

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 school students. The program features a water use and conservation presentation, and presented the demonstration of a surface water runoff model and an aquifer model, with an emphasis on 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. 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 and waterways.

The BCRAGD Education & Outreach Manager and the Education & Outreach Coordinator held Educational Programs with NRA during the following dates: April 14, 2021, at Utopia ISD, April 21 & 22, 2021 Bandera ISD @ Alkek Elementary School, & May 3, 2021, @ Hill Country Elementary School.



Mary Bales with NRA at Utopia ISD: April 13, 2021

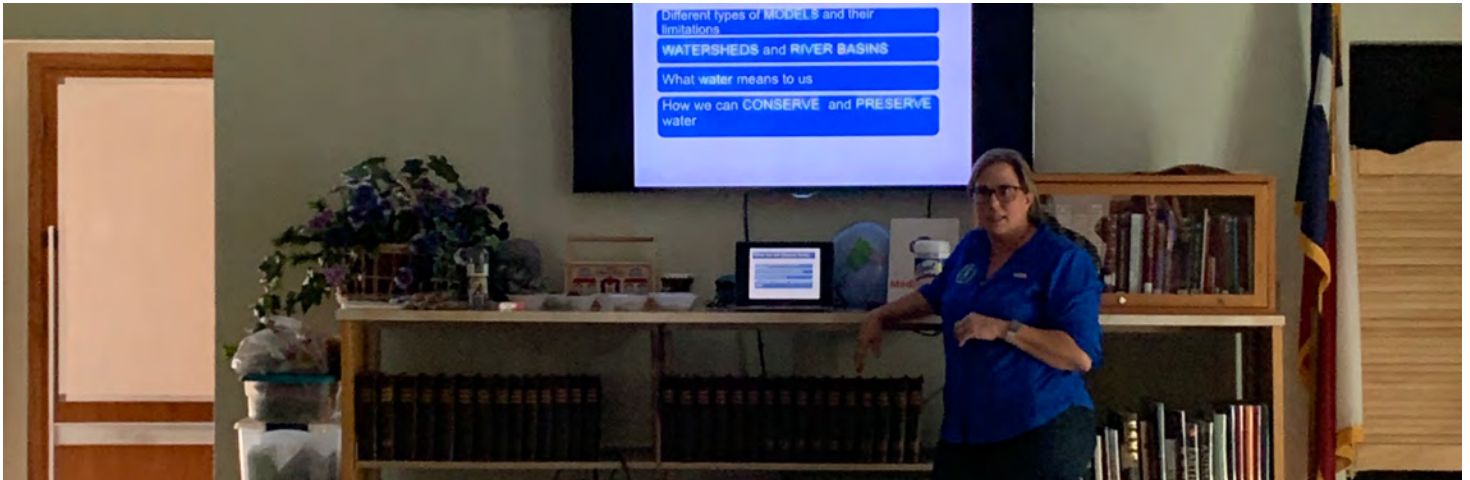


Education & Outreach Programs

On July 27, 2021 the Education Team - Charley and Corrina, presented to the Medina Library youth. There, the Education Team taught how “Rowdy the Raindrop” moves through the Water Cycle. The team used an interactive felt storyboard to teach a group of children all under the age of 5 years old. In the afternoon, the team taught about water conservation and how pollution moves through a watershed. Here, the older children were able to design and build a watershed model showing the importance of riparian plants and created a rain event to show how water flows through the watershed, and how pollution moves from each body of water, to ultimately end up in the ocean.



Charley & Corrina presenting the Water Cycle presentation for children under 5 years of age.



Top image: Corrina presenting a water conservation presentation at Medina Library for the older children.

Bottom Images are of the Build Your Own Watershed Activity at Medina Library.

Education & Outreach Programs

For FY2021, the District did the following for Education & Community Outreach:

- 10.01.2020 Newsletter Development
- 10.07.2020 Education Material organization
- 10.14.2020 Educational Resources Research
- 10.20.2020 Newsletter Posted
- 10.24.2020 Hill Country Living and Rainwater Revival: Online
- 11.03.2020 Creation of Educational Material
- 11.10.2020 Meeting with GM Internship Structure and Planning
- 11.11.2020 Veteran's Day Social Media Post
- 11.18-19.2020 Pryor Training: Social Media Marketing
- 11.24.2020 Schedule Social Media Posts
- 11.24.2020 Research of Virtual Activities
- 12.01.2020 Phone Conference with GM
- 12.01.2020 Contact with Dr. Distal, Schreiner University Intern Presentation
- 12.01.2020 Retrieved Materials from Storage/ Decorated Office for Holiday Morale
- 12.02.2020 Development of Internship Application Process
- 12.03.2020 Research Water Facts for Social Media Content
- 12.07.2020 Conference Calls Education Team and GM
- 12.07.2020 Review Social Media Graphics
- 12.07.2020 Drought Posted to Social Media
- 12.08.2020 Education Team Planning for Social Media Plan
- 12.15.2020 Social Media Planning/Tracking System Formatted/Social Media Post-approval
- 12.16.2020 Meeting: Present Social Media Content Created by C.C. for District
- 12.16.2020 Training Canva Platform
- 12.22.2020 Content Creation for Social Media
- 12.29.2020 Created and published web mapping application of our In-House results to our website
- 07.JAN.2021 Social Media Content
- 07.JAN.2021 Digital Newsletter Preparation
- 14.JAN.2021 Social Media Content Mapping
- 20.JAN.2021 Newsletter posted to outlets
- 21.JAN.2021 Phone Conference: Social Media Mapping/ Planning
- 21.JAN.2021 Phone Conference: Upcoming Events, Ideas, Supplies Needed, Office Updates
- 27.JAN.2021 Research Illegal Dumping- Statistics and Impacts
- 28.JAN.2021 Content Research/ Education Topics
- 04.FEB.2021 Website Updates & Contacted Bandera Bulletin re: Newspaper Publications
- 11.FEB.2021 HR: Send Interview Questions Best Practices Guide for Intern Selection
- 11.FEB.2021 Internship Presentation & Social Media content work
- 16.FEB.2021 Correspondence: Education & Upcoming Events
- 22.FEB.2021 Released Statement Re: free bacteria sampling
- 23.FEB.2021 Internship Meeting with Schreiner University
- 24.FEB.2021 Follow up with Dr. Distal Schreiner University
- 02.MAR.2021 GM and Ed Manager Strategic Planning Meeting
- 03.MAR.2021 Creation of Invasive Species presentation
- 03.MAR.2021 Board Member Training Meeting
- 03.MAR.2021 Confirmation of School Visits with NRA/Mary Bales
- 04.MAR.2021 Presentation Content Development-Illegal Dumping/Zebra Mussels
- 04.MAR.2021 Zebra Mussel Presentation Review/Edit
- 23.MAR.2021 Newsletter Preparation
- 25.MAR.2021 Annual Report: Meeting- Edit Proof of Education & Outreach Section
- 31.MAR.2021 Education Quarterly Meeting Doc

Education & Outreach Programs

- 13.APR.2021 Lakehills Civic Center Walk Through
- 14.APR.2021 Utopia ISD School Visit with NRA
- 21-22.APR.2021 Bandera ISD - Alkek School Visit with NRA
- 21.APR.2021 Earth Day Social Media Content Creation & Scheduling
- 22.APR.2021 Zebra Mussel Flyer creation
- 27.APR.2021 Education Team Call to Finalize SM Content for Flood Awareness Month
- 03.MAY.2021 Hill Country Elementary NRA School Visits
- 11.MAY.2021 Medina Library Contact for Event
- 22.MAY.2021 Zebra Mussels Workshop
- 22.MAY.2021 Texas Water Foundation
- 25.MAY.2021 Education Inventory/Storage Clean Out
- 01.JUN.2021 Confirmation of Intern Interview Date
- 02.JUN.2021 Internship Interview: Shelby
- 15.JUN.2021 Materials List for Medina Library Visit
- 17.JUN.2021 Lesson Plan Water Cycle/Material Preparation
- 22.JUN.2021 Lesson Plan Watershed/Material Preparation
- 23.JUN.2021 Social Media Mapping
- 29.JUN.2021 Ed. Quarterly Information Work
- 13.JUL.2021 Medina Library Prep
- 13.JUL.2021 Newsletter Completion and Social Media Prep
- 27.JUL.2021 Medina Library Material Gathered and Picked-Up
- 27.JUL.2021 Medina Library: Story Time & Conservation Workshop
- 03.AUG.2021 Back to School Bash Donation Shopping
- 09.AUG.2021 Phone Conference: Future Dates, Scheduling, Possible Materials
- 17.AUG.2021 TCINN Partnership Application Meeting
- 20.AUG.2021 Edible Landscapes project design
- 23.AUG.2021 Conference Call: Arundo Control & Education Services Amounts/Invoices
- 24.AUG.2021 Reviewed and Completed Website Updates
- 24.AUG.2021 Sunset SER Report Education Section Meeting
- 26.AUG.2021 Website Updates & content scheduled to post
- 07.SEP.2021 Conference Call: Annual Report FY2020 + NRA Education Packet
- 08.SEP.2021 Meeting: New Bios for Website FY2022
- 09.SEP.2021 Content Creating: Rainwater Harvesting Campaign
- 14.SEP.2021 Call from SU- Women's Leadership Opportunity Outreach, Forward Info
- 14.SEP.2021 Schedule Posts for Rainwater Harvesting Media Posts
- 14.SEP.2021 Eduscape Talk and Tour: Save our Sabinal
- 16.SEP.2021 TPWD Recreation Grant Opportunities
- 20.SEP.2021 BCRA GD Brochure Creation
- 21.SEP.2021 Rainwater Harvesting PowerPoint Presentation design and completion
- 21.SEP.2021 Rainwater Harvesting Presentation edited and posted to social media & website
- 21.SEP.2021 Eduscape Talk and Tour: Texas Runs on Water
- 22.SEP.2021 Arundo Postcards Sent Out
- 28.SEP.2021 Ed. Mtg. Upcoming events, trainings, & projects
- 28.SEP.2021 Eduscape Talk and Tour: Rainwater Harvesting
- 30.SEP.2021 Watershed Curriculum Review & Development
- 30.SEP.2021 Website Updates

Education & Outreach Programs

- BCRAGD Education and Outreach Team met internally to discuss outreach content & educational event preparations on 20.OCT.2020, 10.NOV.2020, 11.12.2020 , 12.01.2020, 12.02.2020, 12.03.2020, 12.09.2020 , 12.10.2020 , 12.16.2020 12.30.2020, 07.JAN.2021, 3.JAN.2021, 14.JAN.2021, 20.JAN.2021, 20.JAN.2021, 28.JAN.2021, 03.FEB.2021, 04.FEB.2021, 22.FEB.2021, 25.FEB.2021, 04.MAR.2021, 09.MAR.2021, 18.MAR.2021, 25.MAR.2021, 08.APR.2021, 22.APR.2021, 29.APR.2021, 04.MAY.2021, 20.MAY.2021, 16.JUN.2021, 30.JUN.2021, 06.JUL.2021, 11.AUG.2021, 18.AUG.2021, 25.AUG.2021, 30.AUG.2021, 02.SEP.2021, 07.SEP.2021.



Charley working with children at the Medina Library watershed event.

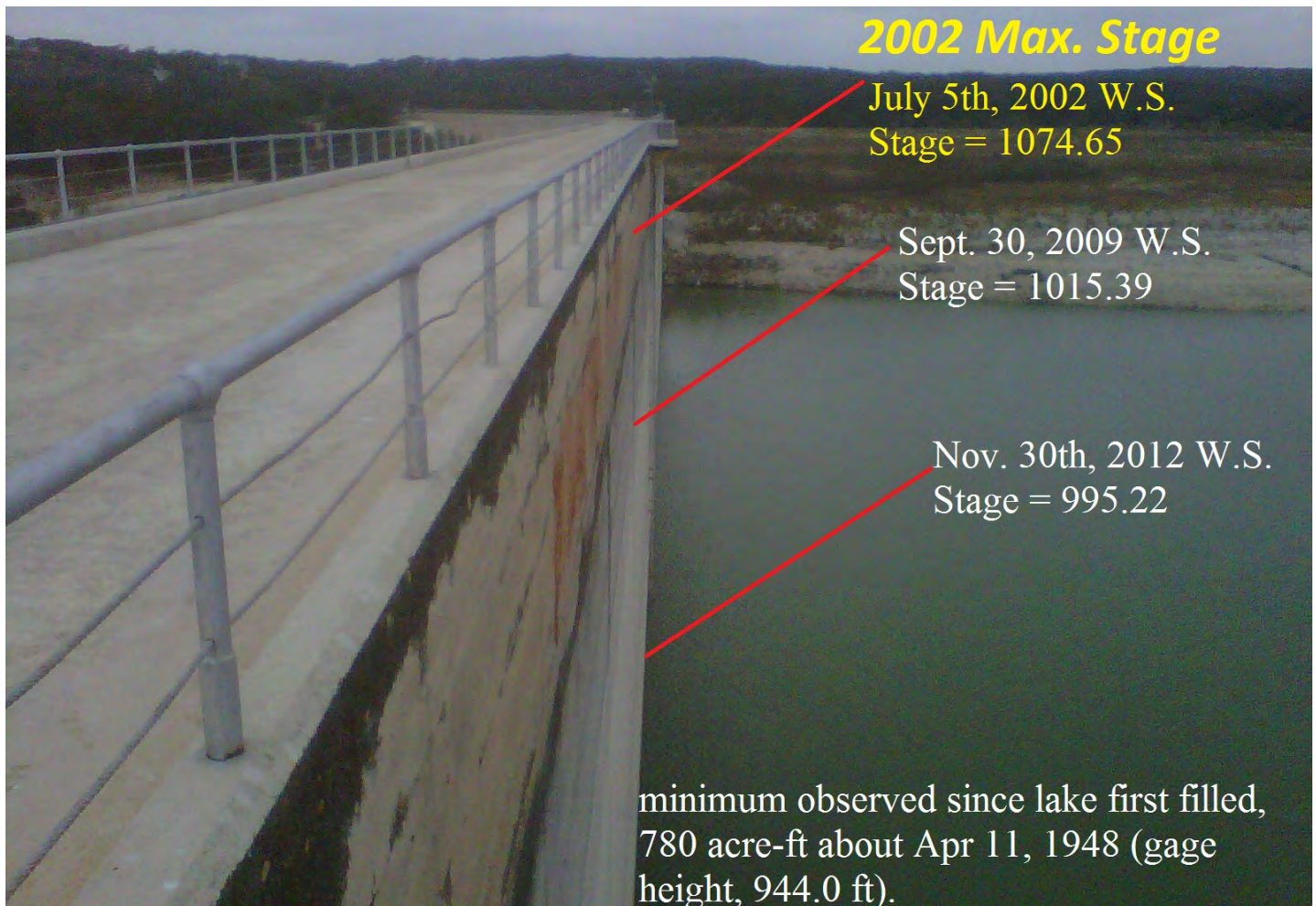


Photo shows that water levels for 2002, 2009, & 2012 flood levels.

Education & Outreach Programs

Internship Program

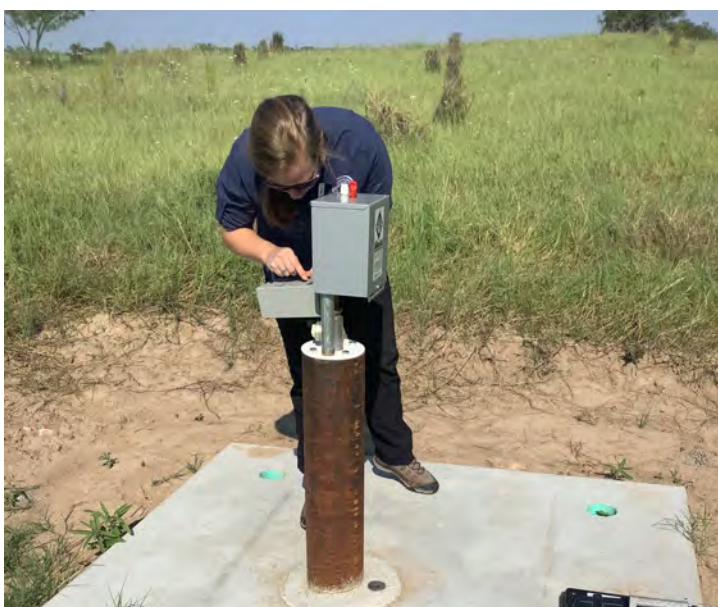
Bandera County River Authority and Groundwater District actively participates in the Schreiner University Community Internship Program (CIP). This allows a qualified student the opportunity to work and learn at the District. The work includes both laboratory and field work. BCRAGD reviews resumes and interviews candidates annually to hire a Schreiner University (or other University) intern for the District to work during the Summer Months.

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 hired an intern, Shelby Sckittone, on June 7, 2021. Shelby has a Bachelor's Degree in Geological Science from the University of Texas at San Antonio. She came to the District with experience in research, and plans to attend graduate school. She prepares for a career in hydrologic conservation, and also writes the monthly bulletin for the South Texas Geological Society.

While interning with the District, Shelby gained exposure to a variety of fields. She performed tasks such as collecting flow measurement data, assisting with collecting samples for BCRAGD's In-House Surface Water Quality Monitoring Study, completing fieldwork, and assisting with BCRAGD's Monitor Wells Program, Well Plugging Program, and Clean Rivers Program. In addition to these, she also conducted laboratory analysis. The Internship Program helped Shelby build real life applicable skills in the field of water conservation.

After interning with the District for three months, Shelby transitioned into a full time staff member as a Natural Resource Specialist, working under BCRAGD's Field Operations Manager.



Education & Outreach Programs



On May 22, 2021 BCRAGD Staff, in collaboration with Monica McGarrity from Texas Parks and Wildlife, presented Lake Hills residents with information regarding the infestation of Zebra Mussels in Medina Lake and updated the public on prevention efforts and how community members could help. Community members learned how to identify and report Zebra Mussels to TPWD and how to correctly dispose of Zebra Mussels. The public also learned the severe ecological implications of a Zebra Mussel infestation. BCRAGD Staff, Levi Sparks and Clint Carter, demonstrated how to locate Zebra Mussels on a boat and how to properly clean a boat after recreational activities.



Zebra Mussels Workshop

CLEAN – DRAIN – DRY

May 22, 2021



10 AM - 12 PM

Join us for presentations and boat cleaning demonstration on ecological impacts and what you can do to prevent the spread of invasive Zebra Mussels in Medina Lake.

The Lakehills Civic Center
11225 PR 37, Lakehills, TX 78063

To register for the event email
media@bcragd.org
or call (830) 796-7260

Space is limited!



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:

- 27.OCT.2020 West Coast Mussels and eDNA: Freshwater Mussel Convention
- 10.NOV.2020 Mussel Decline Virtual Event
- 01.DEC.2020 Attended webinar on advancements in Laboratory Toxicity Testing with Freshwater.
- 03.DEC. 2020 Attended Hill Country Alliance Watershed meeting
- 16.DEC.2020 Created field maps for Zebra Mussel sampling
- 19.JAN.2021 Prepared Field Maps for Zebra Mussel Settlement Sampler check
- 20-22.JAN.2021 TWI Urban Riparian Restoration Training
- 02.MAR.2021 Zebra Mussel Shoreline Survey
- 04.MAR.2021 Presentation Content Development-Illegal Dumping/Zebra Mussel
- 09.APR.2021 Hill Country Watershed Stewardship - Spring Gathering
- 17.JUN.2021 Medina Lake Investigation w/ TCEQ
- 23.JUN.2021 Dangerous liaisons: the dependence of pearly mussels on fish
- 05.AUG.2021 Brewington Crossing & Wallace Creek Clean up
- 23.AUG.2021 Conference Call: Arundo Control & Education Services Amounts/Invoices
- 24.AUG.2021 Workshop #2 Recruitment Response of Mussels to Flow Variation
- 22.SEP.2021 Arundo Postcards Sent Out
- On December 3, 2020, & April 8, 2021, BCRAGD staff attended the online Hill Country Watershed Stewardship Annual / Spring Gathering.

- BCRAGD Districts staff conducted a check on the Zebra Mussel Sampler on 06.OCT.2020, 17.NOV.2020, 17.DEC.2020, 17.DEC.2020, 20.JAN.2021, 24.FEB.2021, 02.MAR.2021, 04.MAR.2021, 29.APR.2021, & 06.MAY.2021.
- BCRAGD Districts staff conducted Arundo Surveys on 29.JUN.2021, 01.JUL.2021, 14.JUL.2021, 15.JUL.2021, 21.JUL.2021, 16.SEP.2021, 22.SEP.2021, & 23.SEP.2021.

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.



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, as well as 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 better provide services to the community, as well as to provide Water Conservation information to the public. However, due to the COVID-19 pandemic, the district did not host this event during FY 2021 and hopes to host the event in FY 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) and 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.

For FY 2021, what would have been the 21st annual Medina River Clean Up, unfortunately was canceled due to the COVID-19 Pandemic. Typically, our District staff volunteers, along with BCRAGD 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.

Prior to the COVID-19 Pandemic, 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 FY2020's Medina River Cleanup Event was canceled due to the COVID-19 Pandemic, we are hopeful that it will resume in FY2022. For more information or if you would like to become a volunteer please visit <http://www.medinariver.net/>.



Education & Outreach Programs

District Highlights: Texas Water Leaders Program

Our Groundwater Science Manager, Alyssa Balzen, recently completed Texas Water Foundation's Texas Water Leaders Program. This program is an annual leadership program that provides water professionals stepping into positions of leadership with the tools, training, and opportunities to expand their potential. Alyssa applied for, and was selected to become a part of the program.

To help lead Texas into a sustainable water future, it is imperative that employees in the water sector are prepared to be the best they can be. The Texas Water Leaders program provided tools and valuable insight on ways I can become a better leader and person, all-around. As the poet, Rumi stated, "Yesterday, I was clever, so I wanted to change the world. Today I am wise, so I am changing myself." I hope to use these skills to make a difference in the water industry and promote sustainable and equitable access to water across the State of Texas. -Alyssa Balzen



The photos shown are of the 2021 Texas Water Leaders Programs certificate recipients.

Education & Outreach Programs

District Highlights: Texas Comptrollers Transparency Stars

BCRAGD gladly complies with Texas transparency standards set by the Texas Comptroller's office. The District was recognized for its efforts in 2021 by being awarded the Traditional Finance Star for financial transparency. In continuation of this practice, BCRAGD is actively working on achieving one of the new Texas Transparency Stars.



The Texas Comptroller of Public Accounts awards
**Bandera County River Authority
and Groundwater District**
the **Traditional Finances Star**

for exemplary efforts in creating financial transparency around public services and spending decisions. The Transparency Stars program recognizes local governments across Texas that are striving to meet a high standard for financial transparency online. These efforts provide citizens with clear, consistent information about public spending in user-friendly formats.



July 1, 2021



Education & Outreach Programs

District Highlights: State Audit conducted by the Texas State Auditor's Office

BCRAGD underwent a State Audit conducted by the Texas State Auditor's Office, which lasted from July 2020 through January 2021. The audit team was led by Hayli Hernandez (Phillips) and was a team effort amongst District Management. For approximately seven months the Texas State Auditor's Office requested and reviewed District finances, policies and legislative compliance during Fiscal Year 2019. The State Auditors published their final report in January 2021, prior to which the District had the opportunity to respond to their findings in a Draft Report. The District fully complied with 8 out of 10 of the applicable statutory requirements and partially complied with 2 out of 10. The District scored a low risk overall and concluded this project with a presentation to the Board of Directors and inclusion on the District's website. The chart below demonstrates the District's compliance:

Summary of Texas Water Code, Chapter 36 Compliance Requirements Audited			
Compliance Area	Criteria	Additional Criteria Information	Compliance
1. Board Meetings	<p>Texas Water Code, Section 36.064</p> <p>Texas Government Code, Section 551.054(a)</p>	<p>The board is required to provide notice of and conduct meetings at least quarterly.</p> <p>The governing body of a water district that extends into fewer than four counties shall:</p> <ol style="list-style-type: none"> 1) post notice of each meeting at a place convenient to the public in the administrative office of the district or political subdivision; and 2) either provide notice of each meeting to the county clerk of each county in which the district or political subdivision is located or post notice of each meeting on the district's or political subdivision's Internet website. 	Fully Complied
2. Directors' Bonds	Texas Water Code, Section 36.055(c)	Each director is required to execute a bond for \$10,000 payable to the district and conditioned on the faithful performance of that director's duties before beginning to perform the duties of office.	Partially Complied ^a
3. Employee Bonds	Texas Water Code, Section 36.057(d)	The district is required to obtain bonds in an amount determined by the board to be sufficient to safeguard the district for officers, employees, or consultants who collect, pay, or handle district funds.	Partially Complied ^b
4. District Policies	Texas Water Code, Section 36.061(a)	<p>The district shall adopt in writing the following related to:</p> <ol style="list-style-type: none"> 1) Ethics 2) Travel 3) Investments 4) Professional Services 5) Management Information such as budgets in planning and controlling costs and an audit or finance committee of the board. 	Fully Complied

Education & Outreach Programs

Summary of Texas Water Code, Chapter 36 Compliance Requirements Audited			
Compliance Area	Criteria	Additional Criteria Information	Compliance
5. Management Plan Goals	Texas Water Code, Section 36.1071	For each applicable goal in its Texas Water Development Board approved groundwater management plan, the District must develop objectives and performance standards. Management plan goals relate to: <ul style="list-style-type: none"> a. Efficient use of groundwater; b. Controlling and preventing waste of groundwater; c. Controlling and preventing subsidence; d. Addressing conjunctive surface water management issues; e. Addressing natural resource issues; f. Addressing drought conditions; g. Addressing conservation, recharge enhancement, rainwater harvesting, precipitation enhancement, or brush control, where appropriate and cost-effective; and h. Addressing the desired future conditions adopted under Section 36.108 	Fully Complied
6. Joint Planning	Texas Water Code, Section 36.108(c)	The district representative shall meet at least annually to conduct joint planning with the other districts in the management area and to review the management plans.	Fully Complied
7. Rules of Enforcement	Texas Water Code, Section 36.101(b)	The board shall adopt and enforce rules to implement Texas Water Code, Chapter 36, including rules governing procedure before the board.	Fully Complied
8. Directors' Expenditures	Texas Water Code, Section 36.060	In order to receive fees of office and to receive reimbursement for expenses, each director shall file with the district a verified statement showing the number of days actually spent in the service of the district and a general description of the duties performed for each day of service. In addition, the district payments for Director's payments for fee of office should not be more than \$250/day and shall not exceed \$9,000 for fiscal year 2019.	Not Applicable ^c
9. Annual Audit	Texas Water Code, Section 36.153	The district shall have an annual audit made of the financial condition of the district and shall be performed according to the generally accepted government auditing standards adopted by the American Institute of Certified Public Accountants.	Fully Complied
10. Annual Budget	Texas Water Code, Section 36.154	The district's board shall prepare and approve an annual budget and the budget should contain a complete financial statement.	Fully Complied
11. Depository Bank Requirements	Texas Water Code, Section 36.155	The board shall name one or more banks to serve as depository for the district funds.	Fully Complied

^a The District ensured that each director executed a bond payable to the district in the amount of \$10,000 and conditioned on the faithful performance of that director's duties before the director began to perform the duties of the office; however, the District was not able to provide documentation that the bonds were approved by the Board as required by Texas Water Code, Section 36.055(c). As a result, auditors determined the District partially complied with the directors' bonds requirement.

^b The District ensured that the District's officers, employees, or consultants who collected, paid, or handled funds of the district were bonded and had those bonds made payable to the District; however, the District was unable to provide documentation that the Board determined the bond amount to be sufficient to safeguard the district as required by Texas Water Code, Section 36.057(d). As a result, auditors determined the District partially complied with the employee bonds requirement.

^c The requirement related to directors' expenditures was not tested because the district did not have this type of expenditure in fiscal year 2019.

To see the State Auditors report in its entirety please visit: <https://www.bcragd.org/wp-content/uploads/2021/04/Texas-State-Audit-Report.pdf>

Education & Outreach Programs

Social Media Highlights

For FY2021, 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 the channel of social media, which also provides additional open lines of communication between the District and the general public. Social Media outlets allow for 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.

Follow us!



@bcragd



@bcragd_tx



Bandera County River Authority
& Groundwater District



Bandera County River Authority
& Groundwater District



@bcragd_tx



@BCRAGD_TX



Quarterly Newsletter

Check out our website
for our 2020 Annual
Report.

Sign up to receive
newsletters directly to

Mission Statement

The principle 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.

Connect With Us!

To sign up for the
newsletters scan the
QR code or email
media@bcragd.org



Digital Newsletter Revival

BCRAGD revived the use of a digital newsletter. The digital newsletter is a quarterly publication that contains information regarding district policies, projects, and other service information that is pertinent for the Bandera County community. This platform provides a direct connection of the District to the public.

Education & Outreach Programs

Social Media Outlets Used to Share important information about Drought Conditions 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 for the state of 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.

Follow us!



@bcragd



@bcragd_tx



Bandera County River Authority & Groundwater District



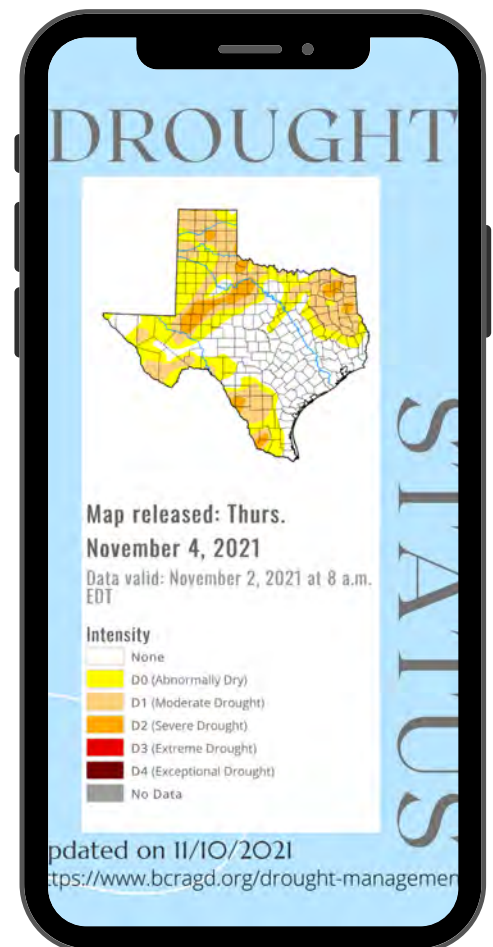
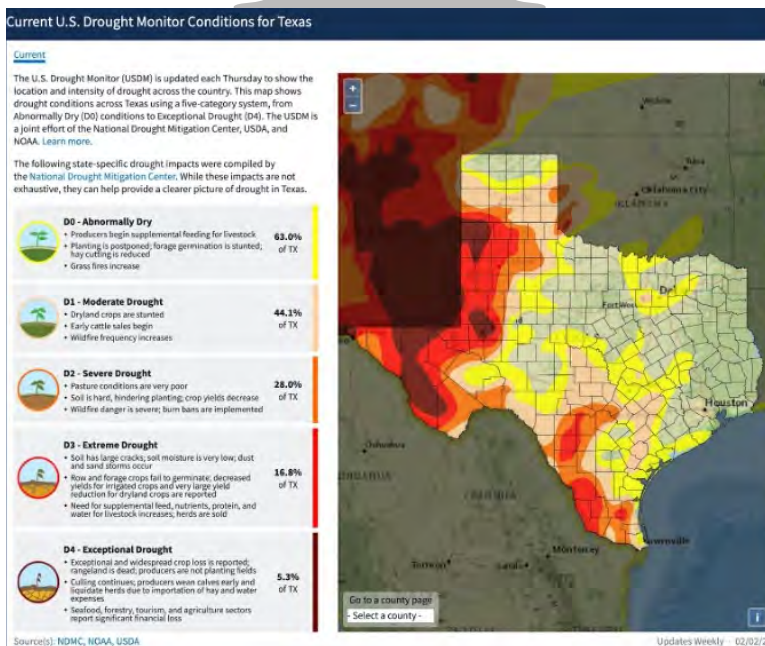
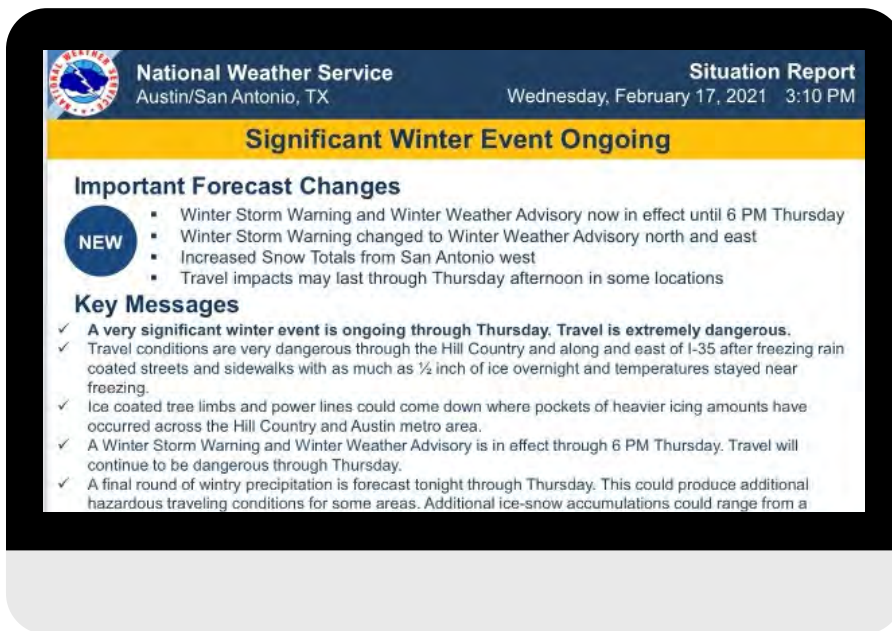
Bandera County River Authority & Groundwater District



@bcragd_tx



@BCRAGD_TX



Education & Outreach Programs

BCRAGD Education and Outreach Team is diligently working to provide content and information about the natural resources that are relevant to Bandera County. One of the social media highlights was the Bald Cypress tree that is commonly found along the river and how important its role is in the water ecosystem.



@bcragd



@bcragd_tx



Bandera County River Authority
& Groundwater District



Bandera County River Authority
& Groundwater District



@bcragd_tx



@BCRAGD_TX

Building Your Own Watershed

Materials:	Procedure:
<ul style="list-style-type: none">Aluminum trayPlastic sheetRocksSandGreeneryModeling clayCupsBowlsGreen foam bricksFood coloringSpray bottle	<ol style="list-style-type: none">Get Aluminum tray. Place Cups, bowls, and foam bricks to create ridges and different depths.Cover with plastic sheetUse modeling clay to create either a river bed, stream bed, or lake bedCover your terrain with greenery, rocks, and sandPlace drops of food coloring (use two colors) in multiple places . Be sure not to mix colorsUse spray bottle to create a rain event.

YOUTH ACTIVITY

On October 24, 2020 BCRAGD participated in the Hill Country Living Festival and Rainwater Revival event. This event was entirely virtual. The Education team developed a short video containing information about watersheds and the importance of conserving and preserving watershed resources. The video also contained detailed instructions on an activity for kids to construct their own watershed to give them an opportunity to gain a better understanding of the ecology of watersheds and how pollution moves through them.



WATER RECREATION SAFETY TIPS

- CHECK THE WATER TEMPERATURE AND WEATHER CONDITIONS BEFORE HITTING THE WATER
- SWIM IN A DESIGNATED SWIMMING AREA
- WEAR USCG-APPROVED LIFE VEST FOR BOATING
- NEVER SWIM ALONE
- HAVE A PLAN FOR EMERGENCIES



**Life is better when everyone
is safe!**

Education & Outreach Programs

During the 3rd quarter, BCRAGD utilizes Facebook and Instagram to provide pertinent information regarding workshops, outreach events, conservation initiatives, water quality, and flood awareness.



05/14/2021 12:31 PM	Join BCRAGD and TPWD on May 22nd for a workshop about the			480		6	19
05/12/2021 2:43 PM	WAIT!			153		16	1
05/11/2021 9:20 AM	Join BCRAGD and TPWD on May 22nd for a workshop about the			116		4	2
05/10/2021 9:18 PM	From our friends at The National Weather Service			121		7	3
05/03/2021 9:32 PM	Good Afternoon Bandera County Residents! Unfortunately there			135		2	5
05/03/2021 10:27 AM	BCRAGD and the Nueces River Authority are rocking it out with the			142		0	10
05/01/2021 10:41 AM	The rain is good! National Weather Service is reminding us that			153		0	8
04/30/2021 8:02 PM	BCRAGD and the USGS have gauges in the county to help alert to			115		9	7
04/30/2021 6:40 PM	Be prepared everyone. We may be getting a great deal of rain! Here is			293		15	7
04/26/2021 8:57 PM	From our friends at the National Weather Service:			148		7	2
04/22/2021 12:01 PM	Celebrate Earth Day by finding a new way to conserve water! Visit			126		7	11
04/21/2021 11:12 AM	We are out here with our friends from the Nueces River Authority at			207		2	17
04/21/2021 11:00 AM	Heads up Bandera County! Information from our friends at the			131		6	2



@bcragd



@bcragd_tx



Bandera County River Authority & Groundwater District



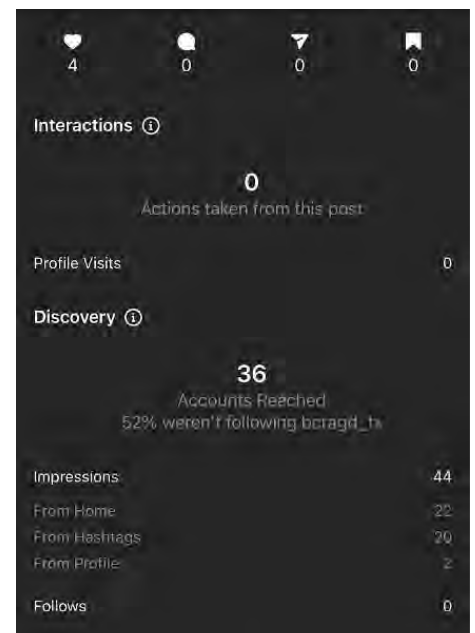
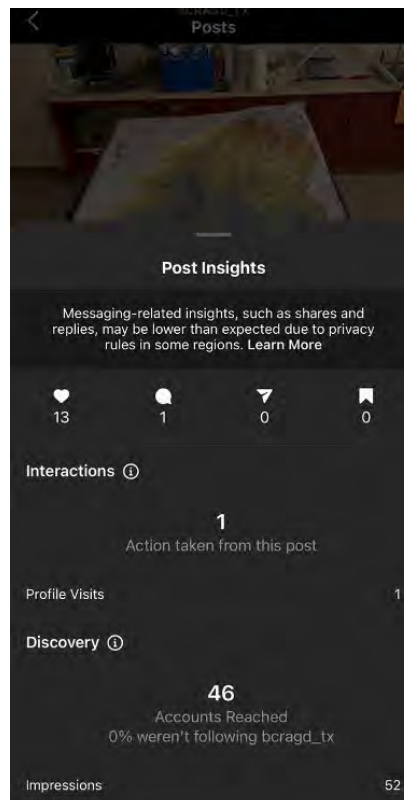
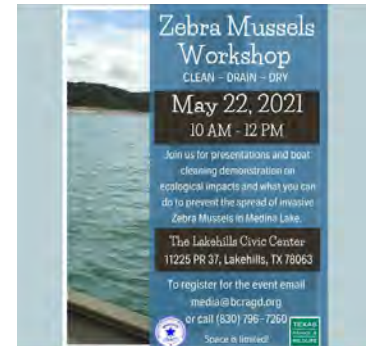
Bandera County River Authority & Groundwater District



@bcragd_tx



@BCRAGD_TX



Education & Outreach Programs

The BCRAGD Education team conducted a month-long Rainwater Harvesting Campaign that consisted of information posted via social media sites across several weeks in September. This campaign concluded with a virtual presentation of an introduction to Rainwater Harvesting.

Follow us!



@bcragd



@bcragd_tx



Bandera County River Authority & Groundwater District



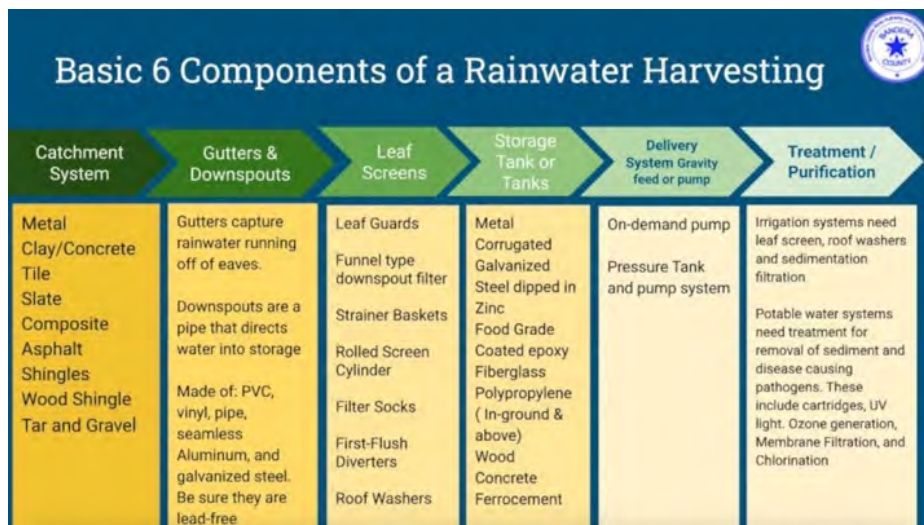
Bandera County River Authority & Groundwater District



@bcragd_tx



@BCRAGD_TX



BCRAGD made a donation of school supply baskets to the Back to School Bash hosted by the Hill Country Good Samaritans. The Back to School Bash campaign gets the community together to provide needed school supplies and connect families with useful resources.

This year, the event was held in Lake Hills and in Medina to reach more families in Bandera County.



Education & Outreach Programs

During the 4th quarter, BCRAGD used social media to share information on a variety of important topics. One crucial topic was the weather; including information on current weather conditions on potentially dangerous storms, flash floods, and drought conditions. Another topic was invasive species; particularly *Arundo Donax* and how to identify it and the issues it causes in our ecosystem. BCRAGD also put out information on water recreation safety and shared other vital information from collaborative partners.

Follow us!



@bcragd



@bcragd_tx



Bandera County River Authority & Groundwater District



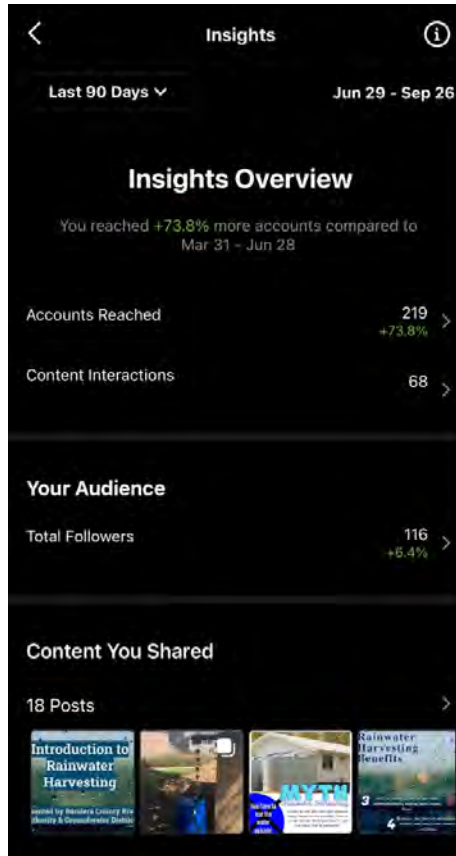
Bandera County River Authority & Groundwater District



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@BCRAGD_TX



Resource Planning & Collaboration

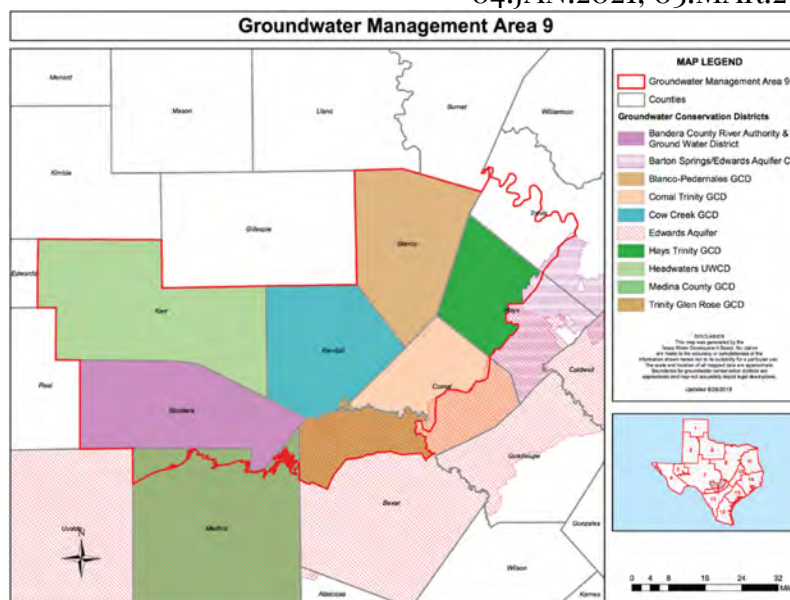
Groundwater Management Area 9 (GMA-9) Representative

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 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 Groundwater Science Manager attended and represented the District at the GMA-9 Joint Planning Meeting to approve the proposed DFCs for this next planning cycle on 14.DEC.2020.
- BCRAGD's General Manager, Finance Manager, and Intergovernmental Affairs Manager met to discuss GMA-9 Dues Owed for Invoicing on 14.DEC.2020.
- BCRAGD's General Manager, Finance Manager, and Intergovernmental Affairs Manager met to discuss GMA-9 Billing and Invoicing on 25.JAN.2021 & 22.MAR.2021. Additional correspondence Over Outstanding GMA-9 Invoices on 04.MAR.2021.
- On 29.DEC.2020 BCRAGD's Intergovernmental Affairs Manager Set up Facilitated Zoom Meeting with GMA 9 for DFC billing.
- BCRAGD's Intergovernmental Affairs Manager coordinated with other GMA-9 Groundwater Districts for DFC Billing on 06.JAN.2021.
- BCRAGD's Finance Manager completed the deposit GMA 9 Invoice#4 received From GWDs on 10.FEB.2021 and completed the deposit GMA-9 Invoice#4 received From GWDs Phase 2 Part 3 on 25.FEB.2021.
- BCRAGD attended and represented the District at the GMA-9 Public Meeting on 25.JAN.2021, 22.MAR.2021 & 27.SEP.2021.
- BCRAGD's Intergovernmental Affairs Manager prepared the GMA-9 meeting minutes on 04.JAN.2021, 03.MAR.2021, & 14.SEP.2021.



Resource Planning & Collaboration

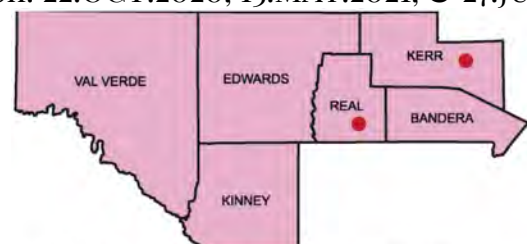
- BCRAGD's Intergovernmental Affairs Manager & Finance Manager completed GMA-9 Invoicing System & GMA-9 Deposits on 27.JAN.2021, 10.FEB.2021, 25.FEB.2021, 26.APR.2021, 27.APR.2021.
- BCRAGD's Finance Manager wrote GMA-9 DFC Check to Blanton & Updated GMA Ledger Log on 27.APR.2021.
- BCRAGD's Intergovernmental Affairs Manager coordinated the GMA-9 public meeting in Bandera, TX. On 13.SEP.2021 the venue was set up, on 14.SEP.2021 the GMA-9 Minutes were sent to the GMA-9 Chairman and on 22.SEP.2021 Public Comment was reviewed GMA-9.
- BCRAGD's Intergovernmental Affairs Manager corresponded, and data was shared with GMA 9 Consultants & organized GMA 9 Files on 28.SEP.2021.
- GMA-9 re-adopted the DFC on November 19, 2021. The DFC is currently before the Texas Water Development Board for approval. During this planning cycle, BCRAGD took on the administration of the financial contract between GMA-9 and their consultants.

Our District's involvement is summarized below:

- BCRAGD's Intergovernmental Affairs Manager attended the TWDB Board Meeting on 01.OCT.2020, 15.OCT.2020, 05.NOV.2020, 03.DEC.2020.
- BCRAGD's Groundwater Science Manager attended the TWDB Board Meeting on 25.FEB.2021, 15.MAR.2021, 08.APR.2021, 22.APR.2021, 20.MAY.2021, 24.JUN.2021, 07.JUL.2021, 22.JUL.2021, & 30.SEP.2021.
- BCRAGD's Groundwater Science Manager collaborated on the Regional Water Plan 13.NOV.2020.
- BCRAGD's Groundwater Science Manager attended the TWDB Aquifer Storage and Recovery Webinar on 08.APR.2021.
- BCRAGD supplied groundwater data to TWDB for the determination of aquifer conditions.
- BCRAGD maintained a program to require measurement of permitted well usage as required by the State to determine water usage for the county.
- The District's Management Plan was approved by TWDB on 3/15/18.

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: 22.OCT.2020, 13.MAY.2021, & 27.JUL.2021.



Map of Region J - Plateau Regional Water Planning Group.

Texas Water Development Board

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>

Resource Planning & Collaboration



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/>).

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

During FY 2021, BCRAGD remained an active member:

- BCRAGD’s General Manager & Groundwater Science Manager attended the TAGD Legislative Committee conference calls on 05.NOV.2020, 24.FEB.2021, 06.MAY.2021.
- BCRAGD’s Groundwater Science Manager attended TAGD Meetings 02.DEC.2020, 07.JAN.2021, 12.MAR.2021.
- BCRAGD’s Groundwater Science Manager attended the TAGD Groundwater Summit on 31.AUG.2021 – 02.SEP.2021.

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:

https://www.tceq.texas.gov/permitting/water_rights/wr_technicalresources/eflows/guadalupesana-ntonio-bbasc-bbest

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



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

Resource Planning & Collaboration



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 Managers Meeting on 28.JAN.2021, 26.MAR.2021, 30.APR.2021.
- BCRAGD's Intergovernmental Affairs Manager attended the TWCA Water Law Seminar on 21-22.JAN.2021
- BCRAGD's Groundwater Science Manager attended the TWCA's One Water Webinar on 15.JUL.2021



TEXAS WATER
FOUNDATION

Texas Water Foundation (TWF)

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 is an annual leadership program that provides water professionals stepping into positions of leadership 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. The second Texas Water Leaders class launched early 2021 and included 19 emerging water leaders from diverse parts of the Texas water sector.

Bandera County River Authority and Groundwater District's Groundwater Science Manager, Alyssa Balzen, applied for, and was selected, to become a part of the Texas Water Leadership Certification Program and graduated from the full curriculum with the other 19 water leaders in November of 2021.

Our District's involvement is summarized below:

- BCRAGD's General Manager attended Meetings with Texas Water Foundation on 27.NOV.2020, 05.JAN.2021, & 22.MAY.2021.
- BCRAGD's Intergovernmental Affairs Manager attended the TWCA Water Law Seminar to attend the Texas Water Leader Program Sessions 21-22.JAN.2021.
- BCRAGD's Groundwater Science Manager attended the Texas Water Leader Program Sessions on 06.APR.2021, 08.SEP.2021, 09.SEP.2021, 10.SEP.2021, 14.SEP.2021, 07-08.OCT.2021, 20-22.OCT.2021, 04-05.NOV.2021, & 16-17.NOV.2021.

Resource Planning & Collaboration



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 both 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, is the representative for Bandera County.

Our District's involvement is summarized below:

- 20.OCT.2020 Apply to Sit on Region 12: Flood Regional Planning Group Meeting
- BCRAGD attended public meetings on the 02.NOV.2020, 01.DEC.2020, 09.FEB.2021, 20.APR.2021, 14.MAY.2021, 15.JUN.2021, 17.AUG.2021, 21.SEP.2021.



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, is the representative for Bandera County.

Our District's involvement is summarized below:

- Larry Thomas, CFM was nominated and approved as the representative of the Region 13 Flood Districts on Nueces Regional Flood Planning Group on 26.APR.2021
- BCRAGD attended meetings on 16.MAR.2021, 29.MAR.2021, 26.APR.2021, 24.MAY.2021, 28.JUN.2021, 26.JUL.2021, 25.AUG.2021, 08.SEP.2021 & 27.SEP.2021.
- 04.JUL.2021 Complete Flood Plan Practices Survey for Regional Flood Plan
- 04.AUG.2021 Review / Edit Flood Plan Practices Survey for Regional Flood Plan

Resource Planning & Collaboration

Other noteworthy Resource Planning & Collaboration events that the District attended in FY 2021 are as follows:

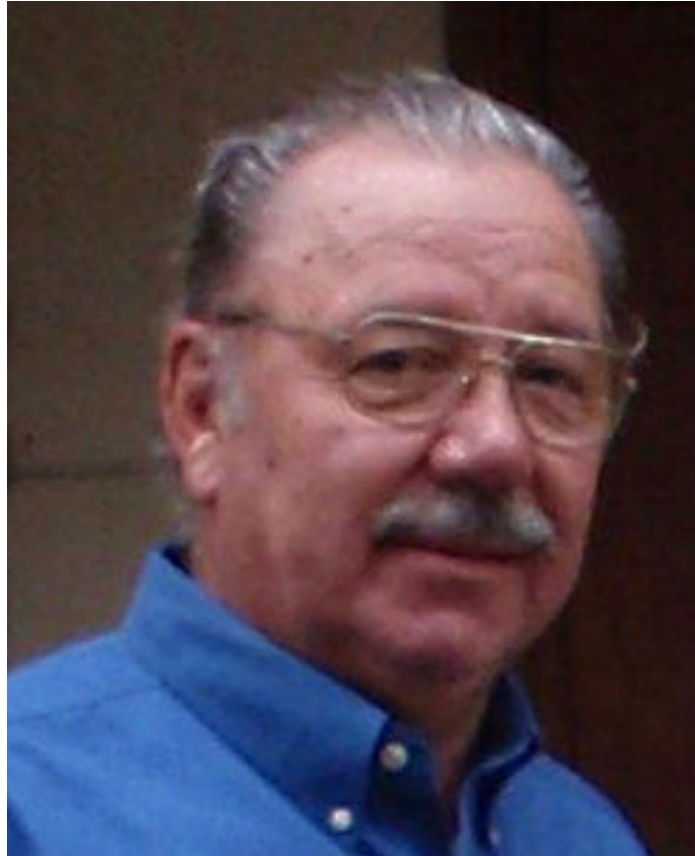
- 24.OCT.2020 Hill Country Living and Rainwater Revival: Online
- 03.DEC.2020 Hill Country Watershed meeting
- 20-22.JAN.2021 TWI Urban Riparian Restoration Training
- On January 25-29, 2021, BCRA GD staff Clinton Carter and Levi Sparks attended Code Enforcement Officer Training. This training requires a test by TDLR in order to be a licensed Code Enforcement Officer. This training also ensures staff is up to date on Code Enforcement Laws.
- 23.FEB.2021 Internship Meeting with Schreiner University
- 17.AUG.2021 TCINN Partnership Application Meeting
- 14.SEP.2021 Call from SU- Women's Leadership Opportunity Outreach

Other noteworthy Administrative Events, Training, & BCRA GD Highlights for FY2021 Include:

- 06.OCT.2020 Pryor Training: Leadership
- 21.OCT.2020 Pryor Training: Admin Professional
- 22.OCT.2020 Pryor Training: Leadership & Management Skills for Women
- 28.OCT.2020 Pryor Training
- 03.NOV.2020 Pryor Training
- 07.NOV.2020 Pryor Training: Interpersonal Communications
- 09.NOV.2020 Pryor Training: Microsoft Excel Basics
- 07.NOV.2020 Pryor Training: Interpersonal Communications
- 09.NOV.2020 Pryor Training: Microsoft Excel Basics
- 18-19.NOV.2020 Pryor Training: Social Media Marketing
- 19.NOV.2020 Webinar: "Setting Up Systems in Business"
- 24.NOV.2020 Webinar: "Confidence & Clarity in Business Setting"
- 03.DEC.2020 Pryor Training
- 08.DEC.2020 Pryor Training
- 17.DEC.2020 Pryor Training
- 29.DEC.2020 Update website re: Annual Groundwater Usage Form
- 05.JAN.2021 Webinar: Covid-19 Prevention in the Workplace & Holiday Management
- 05.JAN.2021 Webinar: Work Shield Workplace Harassment & Discrimination Solutions
- 11.JAN.2021 Worked on Gathering News Articles for Annual Report FY 2020
- 21.JAN.2021 Webinar: 3 Things That Will Help You Be a Better Supervisor
- 20-22.JAN.2021 TWI Urban Riparian Restoration Training for CEUs
- 27.JAN.2021 Webinar: Overcoming Blocks in Workplace
- 28.JAN.2021 Webinar: Accountability in the Remote Working Environment by Energage
- 28.JAN.2021 Pryor Training - How to Supervise People
- 10.FEB.2021 SOP: Departure Checklist
- 11.FEB.2021 Review OSHA Guidance for Workplace in Covid
- 06.APR.2021 Review TSLAC Articles; Upcoming Pryor Training
- 20-21.APR.2021 Central TX Water Conservation Symposium
- 22.APR.2021 National Weather Service Webinar
- 19.MAY.2021 Corpus Christi Geological Society

Resource Planning & Collaboration

- BCRAGD worked records management on the following dates: 07.OCT.2020, 08.OCT.2020, 13.OCT.2020, 14.OCT.2020, 15.OCT.2020, 19.OCT.2020, 20.OCT.2020, 10.21.2020, 10.27.2020, 11.23.2020, 11.JAN.2021, 14.JUN.2021, 15.JUN.2021, 16.JUN.2021, & 21.JUN.2021.
- BCRAGD attended training regarding Records Management on 18.NOV.2020 – 19.NOV.2020 E-Records Zoom TSLAC Day Conference: Pivoting in a Pandemic, Archives, PIR, PDFs, & 2020 Vision, 23.MAR.2021 Attended TSLAC Records Management Training, 30.MAR.2021 TSLAC Webinar: Achieving Compliance & Copyright Records, 17.AUG.2021 TSLAC Records Management Training- Email, Maintenance, Storage, Disposition, 05.JAN.2021 Webinar: TSLAC Interstate Correspondence Email & Management, & 21.JAN.2021 Webinar: TSLAC Email Management Basics.
- BCRAGD worked throughout the Months of February & March of 2021 to gather, design, and complete the FY 2020 Annual Report.
- BCRAGD worked toward transparency standards set by the Texas Comptroller's office, having meetings, designing charts, & gathering data on 09.MAR.2021, 12.APR.2021, 10.MAY.2021, 18.MAY.2021, 26.MAY.2021, 01.JUN.2021, & 02.JUN.2021. The district was awarded the Texas Comptrollers Traditional Finance Transparency Starts on July 1, 2021.
- BCRAGD conducted staff meetings to update all staff on upcoming projects, tasks, protocols, and procedures on the following dates: 09.DEC.2020, 16.DEC.2020, 30.DEC.2020, 06.JAN.2021, 13.JAN.2021, 20.JAN.2021, 27.JAN.2021, 03.FEB.2021, 10.FEB.2021, 24.FEB.2021, 03.MAR.2021, 11.MAR.2021, 17.MAR.2021, 24.MAR.2021, 07.APR.2021, 16.JUN.2021, 14.JUL.2021, 15.JUL.2021, 18.AUG.2021, & 15.SEP.2021.
- BCRAGD Human Resources (HR) conducted Communications, Meetings, employee timesheets, wellness logs, and completed other HR administrative & employee related tasks on 20.OCT.2020, 21.OCT.2020, 22.OCT.2020, 27.OCT.2020, 02.NOV.2020, 04.NOV.2020, 10.NOV.2020, 12.NOV.2020, 23.NOV.2020, 16.DEC.2020, 12.14.DEC.2020, 30.DEC.2020, 01.FEB.2021, 03.FEB.2021, 04.FEB.2021, 08.FEB.2021, 10.FEB.2021, 11.FEB.2021, 08.MAR.2021, 01.JUN.2021, 02.JUN.2021, 07.JUN.2021, 08.JUN.2021, 13.JUL.2021, 14.JUL.2021, 19.JUL.2021, 20.JUL.2021, 21.JUL.2021, 22.JUL.2021, 26.JUL.2021, 27.JUL.2021, 28.JUL.2021, 29.JUL.2021, 02.AUG.2021, 03.AUG.2021, 04.AUG.2021, 05.AUG.2021, 09.AUG.2021, 10.AUG.2021, 11.AUG.2021, 12.AUG.2021, 16.AUG.2021, 17.AUG.2021, 18.AUG.2021, 19.AUG.2021, 23.AUG.2021, 24.AUG.2021, 25.AUG.2021, 31.AUG.2021, 01.SEP.2021, 02.SEP.2021, 07.SEP.2021, 08.SEP.2021, 09.SEP.2021, 13.SEP.2021, 14.SEP.2021, 15.SEP.2021, 20.SEP.2021, 27.SEP.2021, 28.SEP.2021, & 30.SEP.2021.
- BCRAGD Human Resources Manager attended training, on 22.OCT. 2020 Pryor Training: HR Law & 29.OCT.2020 Pryor Training: HR Role in Covid.
- Prepared documents for the annual finance audit 27.OCT.2020, 28.OCT.2020, 11.05.2020, 18.NOV.2020, 24.NOV.2020, 15.DEC.2020, 21.DEC.2020, 22.DEC.2020, 28.DEC.2020, 30.DEC.2020, 06.JAN.2021, 07.JAN.2021, & 14.JAN.2020. BCRAGD received a Score of "Unmodified" (highest possible) in Quarterly Meeting.
- BCRAGD prepared for the "Sunset Commission" audit of the district throughout March – July of 2021.



Marvin "Gene" Wehmeyer

In Loving Memory

Dedicated & Loyal Board Member for
Bandera County River Authority
& Groundwater District from 2009 - 2021.

December 18, 1944 ~ July 31, 2021

A scenic landscape photograph of a river flowing through a forest. The river is calm, and the surrounding trees, which have green and yellow foliage, are reflected in the water. The sky is blue with some white clouds. The text "Articles, Publications & Press Releases" is overlaid on the top half of the image in a large, bold, black serif font.

Articles, Publications & Press Releases

Newspaper Articles

Date	Article Title- Bandera Bulletin
04.NOV.2020	Chief Named to Flood Planning Group
07.OCT.2020	Early Voting Begins Tuesday
25.NOV.2020	Drought Expected Through 2021
05.MAY.2021	Notice of Public Hearing - Proposed Future Conditions
02.JUN.2021	Appraisal District Gives Refunds to County Taxing Entities
02.JUN.2021	Vehicle Auction Notice
23.JUN.2021	Lake Medina Fully Infested with Zebra Mussels
21.JUL.2021	River's E. coli Levels High at City Park
28.JUL.2021	E. coli Levels Remain High at Bandera City park
18.AUG.2021	E. coli Levels Return to Safe Levels at Park
18.AUG.2021	Obituary for Marvin Gene Wehmeyer
Date	Article Title- Bandera Prophet
06.APR.2021	BCRAGD Board of Directors will reconsider the Young Life Water Well Permit Application at their meeting on Thursday, April 8, at 9 a.m...
Date	Article Title- Texas Parks and Wildlife
16.MAR.2021	Zebra Mussels Detected at Medina Lake, Lake Placid Designated as "Infested"
Date	Article Title- San Antonio Report
20.DEC.2020	Deal Near in Bandera County Waste- Water fight; Honey Creek Dispute to go Before Judge.



Featured Newspaper Articles

October 1, 2020 - September 30, 2021

Chief named to flood planning group

Special to the Bulletin

David Mauk, general manager of the Bandera County River Authority & Groundwater District, was one of 11 voting members named by the Texas Water Development Board (TWDB) to the initial Regional Flood Planning Group for the San Antonio River, according to a recent release by the development board.

The board identified the initial voting members for the first-ever regional flood planning groups representing the state's 15 flood planning regions.

"Local leaders and community members know their areas best, and the regional flood planning process enables them to coordinate with their neighbors up and down a basin," said TWDB Chairman Peter Lake.

"This process will ensure Texas is evaluating flood risk across the state and working between communities to identify state flood plan projects, which will be eligible for potential funding through the Flood Infrastructure Fund."

The regional planning

groups, formed around river basin boundaries, comprise representatives from specific interest categories, including agriculture, industries, river authorities, counties, municipalities, water districts, flood districts, electric generating utilities, water utilities, environmental interests, small businesses and the public.

"The initial members were selected for their commitment to public service, understanding of flood risks and issues, affiliation with the interest category for which they were nominated and willingness to work cooperatively in a leadership role to protect communities from the effects of flooding," said TWDB Board Member Kathleen Jackson.

The groups are responsible for developing regional flood plans, due to the TWDB by January 2023.

The regional plans will culminate in the state's inaugural flood plan by September 2024.

The TWDB will convene the initial planning group meetings this fall. Meetings will include an opportunity for public comment.

Drought expected through 2021

Special to the Bulletin

As of November 17, 75 percent of Texas is experiencing some form of drought conditions, up 33 percent from this time last year and the largest one-week increase in drought since 2010.

According to the Texas Water Development Board La Nina conditions are expected to persist into next spring, bringing hotter and drier-than-average conditions to Texas and the surrounding southern area.

Given these conditions, the National

Weather Services doesn't expect any drought relief in the state through the end of February.

More information about state drought conditions can be found by visiting www.twdb.texas.gov.

Bandera county remains under severe drought restrictions as put in place by the Bandera County River Authority and Groundwater District.

Water permit users are to limit irrigation to every other day before 8:00 a.m. and after 8:00 p.m.

Washing down side-

walks, driveways and other hard-surface areas is prohibited. Washing down buildings or structures for purposes other than immediate fire protection is prohibited.

Failure to repair a controllable leak within a reasonable period after having been given notice to repair it is prohibited.

Washing any vehicle other than a public safety vehicle on a premises other than commercial car wash or service station is prohibited unless in the immediate interest of public health, safety and welfare.

Permittees with wells permitted to pump into surface impoundments are to discontinue pumping. This does not apply to those wells permitted for non-domestic irrigation.

The filling of swimming pools is prohibited, but pool levels may be maintained because of evaporation.

Bandera County's burn ban remains in effect.

For more information about the burn ban, contact Bandera Fire marshal John Stith at 830-460-8183.

Agenda Item # VI

PUBLIC HEARING

Groundwater Management Area 9
Proposed Desired Future Conditions and Proposed
Non-Relevant Aquifer Classifications

**9am on May 20, 2021 at 440 FM 3240,
Bandera, Texas 78003**

At an open meeting of the **Groundwater Management Area 9 Joint Planning Committee (GMA 9)** held virtually on March 22, 2021 via a Zoom Meeting and attended by representatives from the following groundwater conservation districts located wholly or partially within Groundwater Management Area 9: Bandera County River Authority and Groundwater District, Barton Springs/Edwards Aquifer Conservation District, Blanco-Pedernales Groundwater Conservation District, Comal Trinity Groundwater Conservation District, Cow Creek Groundwater Conservation District, Headwaters Groundwater Conservation District, Hays Trinity Groundwater Conservation District, , Southwestern Travis County Groundwater Conservation District, and Trinity-Glen Rose Groundwater Conservation District; GMA 9 considered and adopted the following Proposed Desired Future Conditions (DFCs) and Proposed Non-Relevant Aquifer Classifications for GMA 9:

Proposed Desired Future Conditions*

Trinity Aquifer

Allow for An Increase in Average Drawdown of Approximately 30 Feet through 2060 (throughout GMA 9) Consistent with "Scenario 6" in TWDB GAM Task 10-005.

Edwards-Trinity (Plateau) Aquifer

Allow for No Net Increase in Average Drawdown in Bandera and Kendall Counties through 2080.

Ellenburger-San Saba Aquifer

Allow for An Increase in Average Drawdown of No More Than 7 Feet in Kendall County through 2080.

Hickory Aquifer

Allow for An Increase in Average Drawdown of No More Than 7 Feet in Kendall County through 2080.

*Allow for DFC variance of up to five percent when comparing DFCs to average drawdown calculations from model files.

Proposed Non-Relevant Aquifer Classifications

Edwards Aquifer (Balcones Fault Zone)	Bexar, Comal, Hays, and Travis Counties
Edwards-Trinity (Plateau)	Blanco and Kerr Counties
Ellenburger-San Saba	Blanco and Kerr Counties
Hickory	Blanco, Hays, Kerr, and Travis Counties
Marble Falls	Blanco County

Members of the public are invited to attend and provide oral comment, testimony, and/or submit other documentation and information relevant to the Proposed DFCs and Non-Relevant Aquifer Classifications to the Board of Directors at this Public Hearing.

If unable to attend the Public Hearing, members of the public are invited to submit written comments, testimony, and/or other documentation and information relevant to the Proposed DFCs and Non-Relevant Aquifer Classifications to the Board of Directors at the District Office located at:

440 FM 3240, Bandera, Texas 78003
P.O. Box 177, Bandera, Texas 78003

GMA 9 has prepared standardized Public Comment Forms to help you organize and substantiate your submission. This form is available at the address above and on our website: www.bcragd.org

The Public Comment period runs from April 1, 2021 through June 30, 2021.

The District will prepare a report of any relevant comments received at the Public Hearing and attach any written comments, testimony, and/or other documentation and information relevant to the Proposed DFCs and Non-Relevant Aquifer Classifications received through June 30, 2021. This report and attachments will be provided to the GMA 9 Committee for their review, consideration, and incorporation into the DFC decision-making process.

Questions or requests for additional information may be submitted to:

Hayli Phillips
(830)796-7260
hphillips@bcragd.org

Lake Medina fully infested with zebra mussels

By DANIEL TUCKER

editor@banderabulletin.com

Medina Lake is one of 27 lakes in Texas designated by the Texas Parks and Wildlife Department (TPWD) as being fully infested with zebra mussels.

Infested status means there is an established, reproducing population of zebra mussels in the lake.

That designation follows event sampling efforts revealing evidence that zebra mussels in Medina Lake are now fully established and reproducing and detection of a new infestation in

Inks Lake.

According to a TPWD release, a sighting by a member of the public in February and subsequent surveys uncovered a total of three zebra mussels at multiple sites on Medina Lake, leading to an initial designation of the lake as positive for zebra mussels.

In late May, a lakefront landowner reported a larger mussel at their dock on the lake near Elm Cove and provided a specimen.

The Bandera County River Authority & Groundwater District followed up by conducting intensive shoreline and snorkeling surveys, locating numerous

zebra mussels at sites near Echo Point and Elm Cove.

"The most recent discoveries, combined with the initial sightings in February, revealed numerous mussels of different sizes in multiple locations, indicating the presence of an established, reproducing population and Medina Lake is now designated as fully infested," read a release from TPWD.

"Unfortunately, zebra mussels have now spread to 32 Texas lakes, with 27 fully infested, but there are far more lakes that still haven't been invaded and are at risk," said Brian Van Zee, TPWD

Inland Fisheries Regional Director.

Roughly the size of a fingernail and featuring dark striped shells, zebra mussels filter out algae needed by native species for food and incapacitate native mussels.

They attach to boats and anything left in the water, including anchors, and can survive for days out of water, often hiding in crevices where they may not be seen easily. Their larvae are microscopic and invisible to the naked eye and can be unknowingly transported in residual water in boats.

SEE MUSSELS, PAGE 7

According to TPWD biologists, there is no effective way to eradicate zebra mussels once they have become established in a water body, and opportunities for rapid response are extremely rare, since by the time they are detected it is usually too late because they have begun to spread.

Zebra mussels also spread by downstream dispersal, but unfortunately nothing can be done to prevent this as their larvae are microscopic and free-floating in the water, according to TPWD biologists.

This is why introductions to new river basins such as the San Antonio River Basin is a concern, as it puts downstream water bodies at risk.

"As zebra mussels are continuing to spread westward and southward to new areas in Texas and as those lakes become fully infested, nearby lakes have an increased risk of being invaded and it is vital that

boaters take steps to clean, drain, and dry boats to help slow the spread," said Monica McGarrity, Senior Scientist for Aquatic Invasive Species.

"Boats owned or recently purchased that have been stored in the water must be decontaminated before moving them to another lake to prevent the spread of these highly invasive mussels," she said.

TPWD is urging boaters to clean, drain and dry their boats and gear before traveling from lake to lake, remove plants, mud and debris, drain all the water from the boat and gear, and then open up compartments at home to allow everything to dry completely for at least a week.

The transport of aquatic invasive species is punishable with a fine of up to \$500 per violation.

Additionally, anyone who spots zebra mussels on boats, trailers or equipment being moved is asked to immediately report the sighting to TPWD at 512-389-4848.

River's E. coli levels high at city park

By **DANIEL TUCKER**
editor@banderabulletin.com

Surface water sampling conducted by the Bandera County River Authority and Groundwater District (BCRAGD) showed *E. coli* levels at Bandera City Park, Bandera River Ranch Park, Bridlegate Park, English Crossing and Medina Lake at Pop's Place were over the standard considered safe by the Texas Commission on Environmental Quality (TCEQ).

E. COLI, CONTINUED *from 1*

BCRAGD conducted sampling on July 7 along the Medina River, Medina Lake, Sabinal River and their tributaries to assess levels of *E. Coli*, a bacteria found in the gut of warm-blooded animals known to potentially cause illness in humans if ingested.

The standard set by TCEQ lists the safe level of *E. Coli* at a maximum of 399 most probable number (MPN) per 100 mL of water.

Results at Bandera City Park at Hwy 173 showed

levels at 2,420 MPN, an increase from last month when levels at the park were listed at 1,120 MPN on June 29.

Tests for Bandera City Park at 1st Street returned safe levels of 328 MPN.

BCRAGD's test results also listed Bandera River Ranch Park at 866 MPN, English Crossing at 816 MPN, Medina Lake at Pop's Place at 770 and Bridlegate Park at 594 MPN.

Certified Lake Manager Levi Sparks, BCRAGD's

River Authority Operations Manager, said that recent rain is the most likely cause of the high bacteria counts, and there aren't solutions to the levels beyond waiting it out.

"As of right now, this would be more of a 'waiting game' of letting the rivers settle out to reduce bacteria loads in the Medina River," Sparks said.

Sparks said there is not a wastewater treatment plant upstream of the park, and the one downstream would most likely not be a contrib-

uting factor to the bacteria counts.

During that waiting game, TCEQ and BCRAGD advise against participating in activities that could result in total submersion of the head underwater.

"We always advise to swim at your own risk, especially after major rain events where enough runoff has caused discoloration of the water," said Sparks.

Full results of July's sample water testing are available at www.bcragd.org.

E. Coli levels return to safe levels at park

By DANIEL TUCKER
editor@banderabulletin.com

E. Coli levels at Bandera City Park have returned to levels considered safe by the Texas Commission on Environmental Quality (TCEQ), according to water samples collected and analyzed by Surface Water Staff from the Bandera County River Authority and

Groundwater District (BCRAGD) on August 11 and released on August 17.

Bandera City Park at Hwy 173, listed last month at a hazardous level of 2,420 most probable number (MPN), returned a 248 MPN level in BCRAGD's most recent tests.

The standard set by TCEQ considers anything past 399 MPN as unsuitable for primary contact.

2,420 MPN is the highest possible result.

"There is ALWAYS a possibility of infection from E. Coli or waterborne illness," read a release from BCRAGD accompanying their recent test results. "Never drink or ingest river water without proper disinfection, and always swim at your own risk."

Elsewhere in Bandera County,

locations such as Bandera River Ranch, Bridlegate Park, Medina Lake at Red Cove, Sabinal River at Lost Maples and English Crossing all returned safe MPN levels.

In total, 20 locations were tested for E. Coli levels, each returning results under the 399 MPN threshold.

Full test results are available at www.bcragd.org.

Zebra Mussels Detected at Medina Lake, Lake Placid Designated as “Infested”

March 16, 2021

Media Contact: [TPWD News](#), Business Hours, 512-389-8030

 News Image  Share on Facebook  Share Release URL

AUSTIN – The Texas Parks and Wildlife Department (TPWD) has detected invasive zebra mussels at Medina Lake and Lake Placid will be re-classified as “fully infested.” Infested status signifies that there is now evidence of an established, reproducing population of zebra mussels in the lake.

The detection in Medina Lake, located near Bandera, marks the first introduction of invasive zebra mussels in the San Antonio River Basin. On Feb. 11, a member of the public submitted a report with a photo to TPWD of a zebra mussel located at a boat ramp near the mouth of Haby's Cove. Shortly after the winter storms, TPWD staff conducted searches at the site where the original mussel was found and near Red Cove Marina. Biologists located two zebra mussels attached to rocks along the shoreline near the site where the first mussel was discovered.

Bandera County River Authority & Groundwater District (BCRAGD) conducted a search on Feb. 24 and located a single zebra mussel attached to a settlement sampler at a dock approximately three miles upstream from the first location where zebra mussels were detected. The BCRAGD later conducted additional surveys of shorelines, boat docks, boat hulls and engines at numerous sites around the lake; no additional zebra mussels were found.

Due to these discoveries, Medina Lake will be designated "positive" for zebra mussels, which means there have been multiple detections, but evidence of a reproducing population has yet to be discovered. Plankton sampling for zebra mussel larvae will take place in May/June when they begin spawning, and settlement sampler monitoring and shoreline surveys will continue to determine if an established, reproducing population is already present or monitor its development.

"This is the first detection of zebra mussels in the San Antonio River Basin and could result not only in impacts on infrastructure, boats, and other property but also in downstream spread within the basin and introductions by boats moving from Medina Lake to other nearby lakes," said Monica McGarrity, TPWD Senior Scientist for Aquatic Invasive Species. "Finding zebra mussels in a new river basin unfortunately means that they've most likely been transported there by boats, barges, or other equipment that didn't take appropriate precautions to prevent their spread. The vigilance of all boaters and anglers is needed to stop or slow the further spread of zebra mussels in Texas lakes."

Lake Placid, located near Seguin in the Guadalupe River Basin, was previously designated as "positive" for zebra mussels, but will now be upgraded to "fully infested" status. In May 2019, zebra mussel larvae and a single adult were documented at Lake Placid, but biologists had not yet found evidence of an established, reproducing population in the lake. However, in early February 2021, during some routine maintenance activities at the Lake Placid dam, Guadalupe-Blanco River Authority employees discovered a population of adult zebra mussels in the hydroelectric turbine near the bottom of the dam. Numerous mussels of different size classes were found, indicating the presence of an established, reproducing population.

TPWD is encouraging boaters and homeowners on Medina Lake and Lake Placid to keep an eye out for settled zebra mussels on shoreline rocks and structures or boats stored in the water and report any suspected organisms with photos to aquaticinvasives@tpwd.texas.gov. Zebra mussels grow to approximately 1-1.5 inches in length and have triangular, typically striped brown/tan shells. Unlike native mussels or non-native Asian clams, zebra mussels adhere strongly to hard surfaces.

"Although zebra mussels are now found in 31 Texas lakes, there are still many other lakes in the state that they haven't invaded. Boaters play a critical role in preventing them from spreading to new lakes. Before traveling from lake to lake, clean, drain and dry your boat and gear. Remove plants, mud and debris, drain all the water from the boat and gear, and then open up compartments once you get home and allow everything to dry completely," advises Brian Van Zee, TPWD Inland Fisheries Regional Director.

If you have stored your boat in the water at a lake with zebra mussels, it is likely infested with zebra mussels and poses an extremely high risk for moving this invasive species to a new lake. Before moving your boat to another lake, call TPWD at (512) 389-4848 for guidance on decontamination. The transport of aquatic invasive species can result in legal trouble for boaters or transporters. Transporting prohibited invasive species in Texas is illegal and punishable with a fine of up to \$500 per violation. Boaters are also required to drain all water from their boat and onboard receptacles, including bait buckets, before leaving or approaching a body of fresh water.

A status map showing all lakes where zebra mussels have been found in Texas is online at tpwd.texas.gov/zebramussels. For more information on how to properly clean, drain and dry boats and equipment, visit the TPWD YouTube channel for a **short instructional video**. TPWD and partners monitor for zebra mussels in Texas lakes, but anyone who finds them in lakes where they haven't been found before should report them by emailing photos and location information to aquaticinvasives@tpwd.texas.gov to help identify new introductions. Anyone who spots them on boats, trailers or equipment that is being moved should immediately report the sighting to TPWD at (512) 389-4848.

To learn more about zebra mussels and other invasive species in Texas, visit tpwd.texas.gov/StopInvasives. Information for marinas and owners of boats stored in the water on lakes with zebra mussels can be found on the **TPWD website**.

The Bandera PROPHECY

April 6, 2021

The Bandera County River Authority and Groundwater District (BCRAGD) Board of Directors will reconsider the Young Life Water Well Permit Application at their meeting on Thursday, April 8, at 9 a.m. The item was tabled at the BCRAGD January meeting citing the need to get more information and clarity from Young Life officials on what they are planning for this Public Water Supply well.

Here's how to join the meeting:

[Click here for the Zoom link](#)

Meeting ID: 846 0924 2465

Passcode: BCRAGD

Or

+1 346 248 7799 US

Meeting ID: 846 0924 2465

Passcode: 470167

Uvalde County commissioners unanimously approve resolution opposing Young Life Wastewater Discharge permit

The Uvalde County Commissioners Court voted unanimously to support a resolution opposing the release of wastewater into the Sabinal River by the Colorado-based Young Life organization. The vote was conducted at their regular meeting on Monday, March 22.

The Young Life Organization purchased the Lone Hollow Ranch property between Utopia and Vanderpool and is seeking a Texas Pollutant Discharge Elimination System permit that would allow them to build a wastewater treatment plant and legally release up to 60,000 gallons of treated sewage each day into creeks that lead to the Sabinal River at a point just north of the northern Uvalde County line. The

permit application is still pending before the Texas Commission on Environmental Quality.

After learning about the issue and the potential impact on small businesses that depend on recreational tourists, Uvalde County Pct. 3 Commissioner Jerry W. Bates introduced the resolution.

"I do not want any outside water coming into the Sabinal River, or any of our rivers in Uvalde County. I don't think we need it and it's going to create a lot of problems...I am totally against it," Bates said.

The Upper Sabinal River is one of the last remaining pure and pristine rivers in Texas with no existing wastewater discharge permits. If approved, the Young Life permit would set a dangerous precedent as the first of its kind that would allow wastewater to be discharged into the waters of the Upper Nueces River Basin. Wastewater released into the river would cloud the clear water and cause algae blooms that could become toxic to fish and wildlife. Nutrients in wastewater have been shown to make other rivers un-swimmable and unsightly.

"The best way to keep our rivers clean, keep our rivers flowing and to continue the great economic benefits that we get from these waters is to require a no discharge permit," Nueces River Authority Executive Director John Byrum said.

The Uvalde County Commissioners Court joins Texas Parks & Wildlife, Friends of Lost Maples, Keep Utopia Beautiful, the Nueces River Authority and the Bandera Canyonlands Alliance in either opposing or raising serious questions about the Young Life Wastewater Discharge Permit.

"The opposition is growing as more people learn about what's being proposed and the economic and environmental damage that could result. We appreciate the Uvalde County Commissioners Court for taking a stand against the current Young Life plans. We are asking Young Life to adopt an iron-clad Zero Discharge method for disposing of the wastewater by using it for irrigation or other approved beneficial reuses," Bandera Canyonlands Alliance President Merry Langlinalis said.

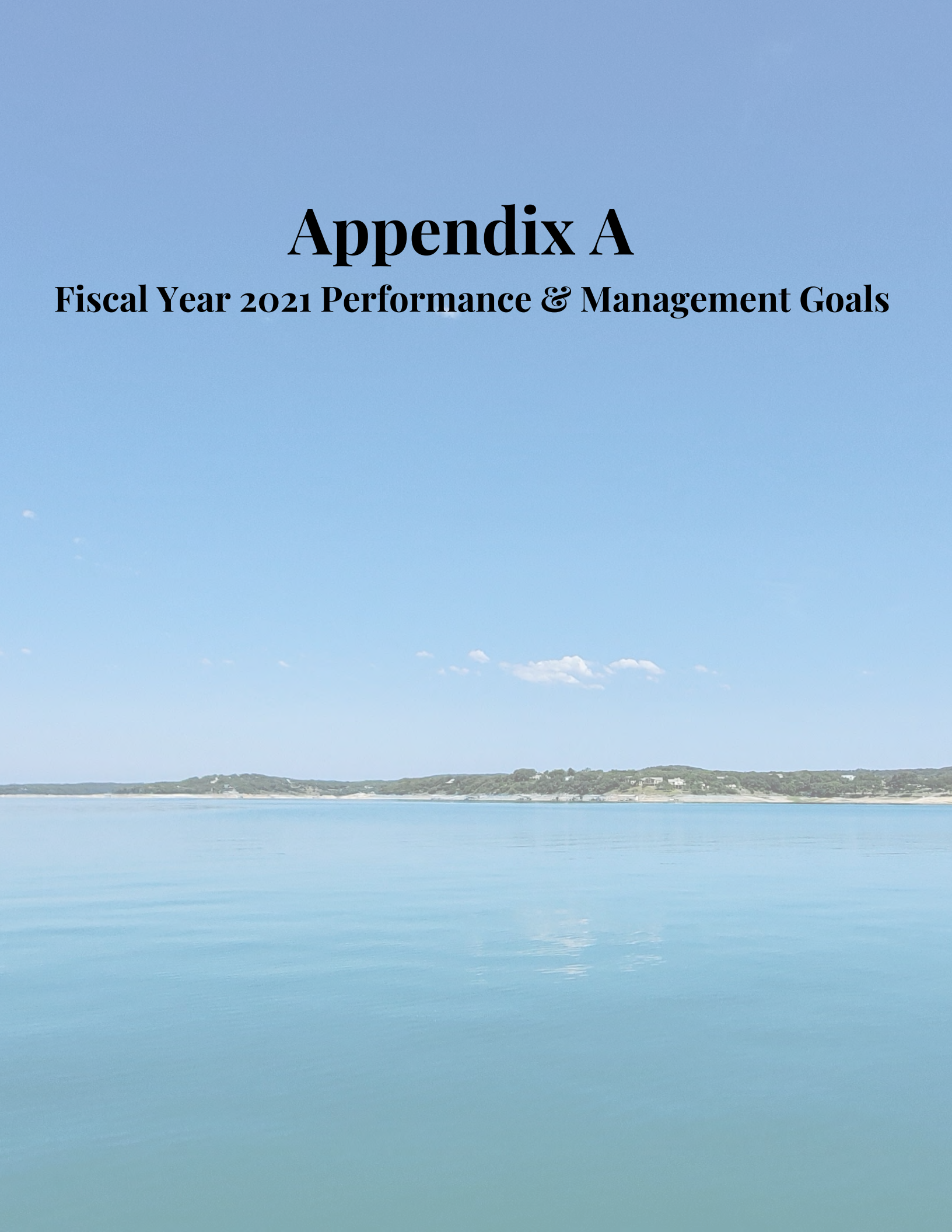
Almost 500 landowners have filed official written comments with the TCEQ opposing the permit and asking that a public meeting be held to address citizen concerns and questions. Also, more than 21,000 people have signed a Change.org petition asking Young Life to change from a discharge permit to a Zero Discharge plan to prevent any wastewater from reaching the creeks and river.

A video outlining the issue is available for viewing at: <https://vimeo.com/526591042> The petition can be signed at <http://chng.it/d4YPgc8rdS>

Additional information is also available at www.banderacanyonlandsalliance.org

Appendix A

Fiscal Year 2021 Performance & Management Goals



The Necessity for Setting and Achieving Goals

The 75th Texas Legislature in 1997 enacted Senate Bill 1 (“SB1”) to establish a comprehensive statewide water planning process. In particular, SB1 contained provisions that required groundwater conservation districts to prepare management plans to identify the water supply resources and water demands that will shape the decisions of each district. SB1 designed the management plans to include management goals for each district to manage and conserve the groundwater resources within their boundaries.

Each year the Bandera County River Authority and Groundwater District’s staff prepares an annual report for the Board of Directors. This report outlines District activities and documents progress with fulfilling these management goals. Copies of this report are available for the public at the District’s office.

Management Goal 1

1.0.0 Manage groundwater in order 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.

➤ **0 pump tests were conducted for subdivision test wells in Fiscal Year 2021 because there were no pump tests conducted on subdivision test wells, therefore no data could be obtained.**

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

Middle Trinity Aquifer				
Depth to Water Below Land Surface (BLS) (ft)				
<i>Well</i>	<i>Qtr 1 - Dec 2020</i>	<i>Qtr 2 - Mar 2021</i>	<i>Qtr 3 - May 2021</i>	<i>Qtr 4 - Sept 2021</i>
Bandera County Park	106.17	111.87	110.87	121.87
Bandera Sports Complex	115.25	N/A	130.25	137.75
Basinger	309.02	316.00	321.72	322.52
BCRAGD CC	198.54	202.84	195.44	192.93
BCRAGD LGR	193.94	197.36	191.44	185.52
Bowie	218.42	217.62	216.42	236.42
Boultinghouse	350.70	348.70	381.20	373.20

Boyle	183.70	190.80	184.10	176.90
Bridlegate	236.50	232.50	231.80	204.40
Cielo Rio	203.42	203.52	206.92	205.22
Erfurt	41.40	45.80	37.10	29.80
Evans	202.80	204.30	202.90	206.70
Jeffery (yellow house)	188.64	188.64	167.94	159.84
Jeffery (House)	197.30	195.60	174.50	167.00
Jeffery (Shallow)	35.02	34.62	31.62	33.42
Jilson	188.50	189.70	187.90	186.70
Lakehills Co Yard	143.85	140.15	124.85	132.85
Lakeshore VFD	61.00	N/A	N/A	N/A
Mason Creek Deep	242.60	212.00	262.60	228.80
Mason Creek Shallow	199.50	185.00	201.60	194.30
Medina Springs	158.00	141.92	160.04	161.71
Ol Larry B	370.20	376.10	373.00	398.20
Orchard Park	37.34	37.24	37.24	N/A
Sidney Shores	126.68	133.08	131.88	138.48
Tarpley VFD	65.55	67.95	67.95	60.75
Tecon	95.64	99.74	N/A	102.64
Vanderpool VFD	180.00	186.83	N/A	187.25

Lower Trinity Aquifer				
Depth to Water Below Land Surface (BLS) (ft)				
<i>Well</i>	<i>Qtr 1 - Dec 2020</i>	<i>Qtr 2 - Mar 2021</i>	<i>Qtr 3 - May 2021</i>	<i>Qtr 4 - Sept 2021</i>
Alkek	427.45	391.25	397.15	454.85
Bandera City	N/A	440.01	438.63	439.57
Bandera Sports	361.00	368.90	365.30	367.50
Bridlegate LT	383.00	371.40	371.00	370.75
Cielo Rio LT	304.25	302.42	306.84	342.17
Latigo	N/A	442.54	442.14	455.74

Edwards-Trinity Aquifer				
Depth to Water Below Land Surface (BLS) (ft)				
<i>Well</i>	<i>Qtr 1 - Dec 2020</i>	<i>Qtr 2 - Mar 2021</i>	<i>Qtr 3 - May 2021</i>	<i>Qtr 4 - Sept 2021</i>
Edwards	249.35	249.72	249.93	247.19

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.

- **5 Permits Issued**
- **210 Registrations Issued**

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 a total of 5 well permits and a total of 210 well registrations issued in the 2021 fiscal year.**
- 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 at all District public meetings. (8 meetings): 10/08/2020, 11/12/2020, 01/14/2021, 04/08/2021, 05/20/2021, 07/08/2021, 08/19/2021, 09/09/2021.**
 - **On October 24, 2020, BCRA GD participated in the Hill Country Living Festival and Rainwater Revival event. This event was entirely virtual. The Education team developed a short video containing information about watersheds and the importance of conserving and preserving watershed resources. The video also contained detailed instructions on an activity for kids to construct their own watershed to give them an opportunity to gain a better understanding of the ecology of watersheds and how pollution moves through them.**

- On April 14, 2021, at Utopia ISD, The BCRA GD Education & Outreach Manager and the Education & Outreach Coordinator held Educational Programs with NRA. The Nueces River Authority Water Resource Stewardship Program, in collaboration with BCRA GD, 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.
- On April 21-22, 2021, at Bandera ISD at Alkek Elementary School, The BCRA GD Education & Outreach Manager and the Education & Outreach Coordinator held Educational Programs with NRA. The Nueces River Authority Water Resource Stewardship Program, in collaboration with BCRA GD, 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.
- On May 3, 2021, at Hill Country Elementary School, The BCRA GD Education & Outreach Manager and the Education & Outreach Coordinator held Educational Programs with NRA. The Nueces River Authority Water Resource Stewardship Program, in collaboration with BCRA GD, 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.
- On May 22, 2021, BCRA GD Staff, in collaboration with Monica McGarrity from Texas Parks and Wildlife, presented Lake Hills residents with information regarding the infestation of Zebra Mussels in Medina Lake and updated the public on prevention efforts and how community members could help. Community members learned how to identify and report Zebra Mussels to TPWD and how to correctly dispose of Zebra Mussels. The public also learned the severe ecological implications of a Zebra Mussel infestation. BCRA GD

Aquatic Ecologist and Field Operations Manager demonstrated how to locate Zebra Mussels on a boat and how to properly clean a boat after recreational activities. This public presentation is part of the District's goal to promote invasive species management information.

- On July 27, 2021 BCragd's Education Team presented to the Medina Library youth. There, the Education Team taught how "Rowdy the Raindrop" moves through the Water Cycle. The team used an interactive felt storyboard to teach a group of children all under the age of 5 years old. In the afternoon, the team taught about water conservation and how pollution moves through a watershed. Here, the older children were able to design and build a watershed model showing the importance of riparian plants and created a rain event to show how water flows through the watershed, and how pollution moves from each body of water, to ultimately end up in the ocean.
- On September 21, 2021, BCragd Education Team posted BCragd's public virtual PowerPoint Presentation, Rainwater Harvesting, to the District social media pages and website.
- On September 22, 2021, Arundo Donax Awareness Informative Postcards created by the District were mailed to Bandera County Citizens.
- Additional information is posted regularly on the District's website at www.bcragd.org and on BCragd's Social Media Pages including Facebook, Twitter, and Instagram as well as the BCragd Newsletter. The District has also implemented educational content on YouTube & Pinterest, as well as created a LinkedIn page for FY2021.

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 control and prevention of subsidence is not a concern of this District as the formations are carbonates and do not contain the water saturated clays which can cause subsidence if dewatered; therefore, this management goal is not applicable to the District.

Management Goal 4

4.1.0 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.

- **The General Manager gives a District Report of Groundwater Resources and the Surface Water Quality to the Board at every Quarterly Meeting. (4 meetings total in FY 2021- 10/08/2020, 01/14/2021, 04/08/2021, 07/08/2021.)**
- **The General Manager gives a complete Groundwater Resources and Surface Water Quality Report every fiscal year to the Board of Directors during the April Quarterly Meeting.**
- **For a complete Groundwater Annual Evaluation Report, please refer to Management Goal 13.1.2.**

Annual Evaluation of the Surface Water Quality in Bandera County FY 2021

Summary of Surface Water Sampling Events: From October 2020 to September 2021, there were 280 samples taken between the Clean Rivers Program, District's In-House Surface Water Quality Testing Program, and EAA Sampling. There were 18 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 43.5% on November 30, 2020, and ended at 29.1.% on September 30, 2021.

Medina Lake Evaluation:

Per Texas Water Development Board's Water Data for Texas website:

FY 2021 Quarter	Date	Capacity (% full)
1st	November 30, 2020 December 30, 2020	43.5% 41.7%
2nd	February, 28, 2021 March 31, 2021	39.0% 37.0%
3rd	May 30, 2021 June 30, 2021	35.5% 34.0%
4th	August 30, 2021 September 30, 2021	32.3% 29.1%

Clean Rivers Program:

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. FY 2021 sample dates were: October 22, 2020; November 04, 2020; November 12, 2020; November 17, 2020; February 09, 2021; February 11, 2021; March 25, 2021; March 30, 2021; May 13, 2021; May 18, 2021; August 12, 2021; and August 19, 2021. The District was audited by SARA for the TCEQ Clean Rivers Program on July 15, 2021.

At the end of FY 2016, BCRAGD added 5 CRP sites on Medina Lake along with 1 CRP site on Diversion Lake, partnering with SARA. BCRAGD added 1 additional site during FY2021 on Diversion Lake just upstream of Diversion Lake Dam. The sample dates for Medina Lake were: November 04, 2020; November 17, 2020; December 17, 2020; January 21, 2021; March 25, 2021; April 14, 2021; May 06, 2021; and August 17, 2021. The sample dates for Diversion Lake were October 08, 2020; January 14, 2021; May 27, 2021; June 08, 2021; and August 26, 2021.

Station ID	Site Name
	<u>Medina River CRP</u>
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. @ Mayan Ranch
15736	W. Prong Medina R. @ Coalkiln Rd.
	<u>Medina Lake CRP</u>
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

BCRAGD partnered with the Nueces River Authority (NRA) in 2016 to participate in the Clean Rivers Program in the Nueces River Basin. BCRAGD staff are responsible for 5 sites shown in the chart to the right. The FY2021 sample dates for the Nueces River Basin were November 18, 2020; February 23, 2021; May 20, 2021; and August 24, 2021. BCRAGD added 1 additional CRP site on Sabinal River near Lost Maples SNA, partnering with the NRA.

	<u>Diversion Lake CRP</u>
18407	Diversion Lake just upstream of Diversion Lake Dam
14205	Medina R. Downstream Medina Lake Dam in Mico, TX @ low water crossing
	<u>Nueces River CRP</u>
21948	Sabinal R. @ FM 187 S. of Utopia Onion Ck
13017	Seco Creek @ RR 470
14939	Sabinal River @ FM 187
22227	Commissioner's Creek Downstream of Camp Ozark
22306	Sabinal River near Lost Maples SNA

CRP water quality data can be viewed at:

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

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. During FY2021, the District added five new In-House Sampling sites. From October 2020 to September 2021, there were 18 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).

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		

EAA Sampling: The Bandera County River Authority & Groundwater District has partnered with the Edwards Aquifer Authority to collect water samples along a seven-mile reach of the Medina River. BCRAGD staff collects samples bi-weekly at the following three locations: Bridlegate, Coal Springs, and English Crossing. The EAA is interested in analyzing the stable isotopic structure of the water in this area of the river along with many other segments across the region. Sampling was conducted on October 1 & 23, 2020, November 5 & 19, 2020, and December 4, 18, & 31, 2020. On December 31, 2020, BCRAGD staff accomplished the final sampling event for a joint project with the Edwards Aquifer Authority. In March of 2019, District staff began collecting water samples in and around Coal Springs on a bi-weekly basis for isotopic analysis. The goal of this project is designed to provide more information on surface water & groundwater interactions within the Coal Springs complex.

Annual Evaluation of the Groundwater Resources in Bandera County FY 2021

INTRODUCTION

The desired future condition (DFC) of the Trinity Aquifer for Bandera County was adopted by the District's Board based on the Texas Water Development Board's (TWDB) 2008 model run and Groundwater Availability Model (GAM) Run 10-005. A maximum of 30 ft. of drawdown after 50 years (Year 2058) for the Trinity Aquifer was adopted, which was a total for both the Middle and Lower Aquifers. The Upper Trinity Aquifer does not supply sufficient water and is generally not used in Bandera County, therefore, it was not used in the TWDB 2008 model run or the GAM Run 10-005. The District's Board readopted the above DFC's in 2015 and was provided GAM Run 16-023.

Also included in this groundwater evaluation report are the reports of non-exempt and exempt use. The non-exempt use estimate is provided by groundwater permit holders on an annual basis, which is attached. The exempt use estimate is provided by TWDB and can be found in the District's Management Plan adopted March 18, 2018.

FY 2021 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. An average level was calculated for each monitor well using data points taken throughout FY 2021. These averages were then compared to the 2008 water level measurements and these differences were recorded in the “Annual Report DFC Compliance FY 2021” excel sheet. New monitor wells that were added to the network before the beginning of FY 2021 use the first well measurement and then compared to the FY 2021 average.

There is only one monitor well for the Edwards-Trinity Plateau DFC evaluation because the aquifer is located in high elevations, so very few residential wells are utilizing it for water needs. Therefore, the estimates for domestic (exempt) use in the aquifer are small. In addition, District rules prohibit production permits for the use of Edwards-Trinity Plateau aquifer. The DFC evaluation for the Edwards-Trinity Plateau can be found in the “Annual Report DFC Compliance FY 2021” excel sheet.

The USGS 7.5 grid was used to obtain a better County-wide average. The majority of the monitoring well data is located in the eastern part of the County. To improve the evaluation of the County as a whole, water levels in each grid were averaged, and the average of all the grids was taken for the Hill Country Trinity Aquifer total average within Bandera County.

RESULTS OF THE DFC EVALUATION

The average loss or gain for monitor wells in their respective grids are shown in the “Annual Report DFC Compliance FY 2021” excel sheet. County maps with the grid averages are found in Figure 1 (Middle Trinity) and Figure 2 (Lower Trinity) for each Aquifer. Compared to 2008 water levels, the Middle Trinity Aquifer had a cumulative loss of 11.6 ft and the Lower Trinity Aquifer had a loss of 23 ft for FY 2021. The whole Trinity Aquifer had a cumulative average loss of 10.1 ft since FY 2008 for compliance of the DFC.

The average loss or gain for the monitor well that is located in the Edwards-Trinity can be located in the “Annual Report DFC Compliance FY 2021” excel sheet. Figure 3 depicts the gain or loss of the Edwards Monitor Well. From when water level observations began in 2012, the Edwards Well showed a drop of 1.65 ft.

FUTURE CONSIDERATIONS

- The abundance of groundwater data in East Bandera County could bias the results of this evaluation. However, the grid system attempts to minimize this bias.
- Only monitor wells that have historic data dating back to 2008 are included in these graphs. The Edwards Monitor well historic data begins in 2012, so it cannot be compared to 2008 water levels.
- These graphs show the groundwater level changes for FY 2021 compared to 2008, not the cumulative, overall groundwater level change that includes every year since 2008.

*****For a complete Groundwater Annual Evaluation Report, please refer to Management Goal 13.1.2.*****

b. Maintain at the District Office an annual report of District activities available to the public.

- **The annual report, annual financial audit, and the budget are readily available at the District and on the District's website for the public to view or copy.**

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 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.**
- **On October 22, 2020, the BCRAGD General Manager and Intergovernmental Affairs Manager attended the Region J Meeting virtually due to the Covid 19 Pandemic.**
- **On May 13, 2021, the BCRAGD General Manager and Intergovernmental Affairs Manager attended the Region J Meeting virtually due to the Covid 19 Pandemic.**
- **On July 27, 2021, the BCRAGD General Manager and Intergovernmental Affairs Manager attended the Region J Meeting virtually due to the Covid 19 Pandemic.**

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. The District also tests groundwater from newly drilled wells and existing wells. 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.

5.1.2 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: 39**
- **Notices of Violation: 3**
- **Illegal Dumping Mitigation Cases Resolved: 39 total**
- **Total Surface Water Test samples taken (including CRP): 280; see 4.1.2B**
- **Total number of Groundwater Tests: 320**
- **Both (Bacteria & Mineral): 147**
- **Bacteria Only: 165**
- **Mineral Only: 8**

Management Goal 6

6.0.0 Address drought conditions.

6.1.1 Management Objective

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.

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 appropriate drought stage is implemented when warranted by the Drought Management Plan. The Drought Stage is posted on the District's website, bulletin board, and on the sign at the road in front of the District's office. The appropriate drought stage is continuously posted at the Bandera County Courthouse. The drought stage is presented to the Board at every 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 38 monitor wells that are monitored 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.

- Everytime the District provides a public show, demonstration, event or educational talk, water conservation is either discussed or water conservation literature and/or information is provided.
- Water conservation literature is provided at all District public meetings. (8 meetings): 10/08/2020, 11/12/2020, 01/14/2021, 04/08/2021, 05/20/2021, 07/08/2021, 08/19/2021, 09/09/2021.
- Water conservation literature can be found on the District's website by clicking on "Tools for Sustainability" found under the "Education" tab. There, the public can access comprehensive literature on conserving water indoors, conserving water outdoors, water conservation tips, water conservation for industries, businesses, and institutions, a Texas landscape watering guide, a well owner's guide to water supply, ASR, irrigation, leak detection, water reuse, and more.
- On October 24, 2020 BCRA GD participated in the Hill Country Living Festival and Rainwater Revival event. This event was entirely virtual. The Education team developed a short video containing information about watersheds and the importance of conserving and preserving watershed resources. The video also contained detailed instructions on an activity for kids to construct their own watershed to give them an opportunity to gain a better understanding of the ecology of watersheds and how pollution moves through them.
- On December 3, 2020, BCRA GD staff attended the online Hill Country Watershed Stewardship Annual Gathering. This annual meeting is an important opportunity for agency personnel to bring forth issues in a roundtable discussion format allowing for multiple opinions and opportunities for problems

to be resolved throughout the Hill Country. These topics include addressing brush control, riparian health, and invasive species management.

- On December 3, 2020, BCRAGD's Education Team compiled research over Water Facts for Social Media Content that address water conservation.
- On April 8, 2021, BCRAGD staff attended the online Hill Country Watershed Stewardship Spring Gathering. This annual meeting is an important opportunity for agency personnel to bring forth issues in a roundtable discussion format allowing for multiple opinions and opportunities for problems to be resolved throughout the Hill Country. These topics include addressing brush control and invasive species management.
- On April 14, 2021, at Utopia ISD, The BCRAGD Education & Outreach Manager and the Education & Outreach Coordinator held Educational Programs with NRA. 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.
- On April 20-21, 2021, BCRAGD staff Attended the Central TX Water Conservation Symposium that discussed riparian health and water conservation.
- On April 21-22, 2021, at Bandera ISD at Alkek Elementary School, The BCRAGD Education & Outreach Manager and the Education & Outreach Coordinator held Educational Programs with NRA. 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.
- On May 3, 2021, at Hill Country Elementary School, The BCRAGD Education & Outreach Manager and the Education & Outreach Coordinator held Educational Programs with NRA. The Nueces River Authority Water Resource

Stewardship Program, in collaboration with BCRA GD, 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.

- On May 22, 2021, BCRA GD Staff, in collaboration with Monica McGarrity from Texas Parks and Wildlife, presented Lake Hills residents with information regarding the infestation of Zebra Mussels in Medina Lake and updated the public on prevention efforts and how community members could help. Community members learned how to identify and report Zebra Mussels to TPWD and how to correctly dispose of Zebra Mussels. The public also learned the severe ecological implications of a Zebra Mussel infestation. BCRA GD Aquatic Ecologist and Field Operations Manager demonstrated how to locate Zebra Mussels on a boat and how to properly clean a boat after recreational activities. This public presentation is part of the District's goal to promote invasive species management information.
- On June 7, 2021 BCRA GD staff attended a Webinar entitled, "What's Next for Texas Water?" which discussed water conservation.
- On June 22, 2021, BCRA GD staff attended a Drought Preparedness Webinar - Session 1 which discussed water conservation.
- On July 27, 2021 BCRA GD's Education Team presented to the Medina Library youth. There, the Education Team taught how "Rowdy the Raindrop" moves through the Water Cycle. The team used an interactive felt storyboard to teach a group of children all under the age of 5 years old. In the afternoon, the team taught about water conservation and how pollution moves through a watershed. Here, the older children were able to design and build a watershed model showing the importance of riparian plants and created a rain event to show how water flows through the watershed, and how pollution moves from each body of water, to ultimately end up in the ocean.
- On August 5, 2021, BCRA GD General Manager & Aquatic Ecologist completed a Brewington Crossing & Wallace Creek Clean Up event to clean up litter to promote improved riparian health.
- On August 31, 2021, District staff attended a Webinar on Communicating Uncertainty in Water Planning. This webinar discussed water conservation.

- On September 14, 2021, the BCragd Education Team completed an Eduscape Talk and Tour: Save our Sabinal which addressed water conservation.
- On September 21, 2021, the BCragd Education Team completed an Eduscape Talk and Tour: Texas Runs on Water which addressed water conservation.
- On September 21, 2021, BCragd Education Team Posted BCragd's public virtual PowerPoint Presentation, Rainwater Harvesting, to the District social media pages and website.
- Additional information is posted regularly on the District's website at www.bcragd.org and on BCragd's Social Media Pages including Facebook, Twitter, and Instagram as well as the BCragd Newsletter. The District has also implemented educational content on YouTube & Pinterest, as well as created a LinkedIn page for FY2021.

-See 2.1.2 B

7.2.1 Management Objective

The District will contract with Nueces River Authority (NRA) or similar organizations to 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 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 learn 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 have a thorough discussion on ways to be good stewards of our streams and waterways. 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 school students. The program features a water use and conservation presentation, and presented the demonstration of a surface water

runoff model and an aquifer model, with an emphasis on non-point source pollution.

- On October 24, 2020 BCRAGD participated in the Hill Country Living Festival and Rainwater Revival event. This event was entirely virtual. The Education team developed a short video containing information about watersheds and the importance of conserving and preserving watershed resources. The video also contained detailed instructions on an activity for kids to construct their own watershed to give them an opportunity to gain a better understanding of the ecology of watersheds and how pollution moves through them.
- On April 14, 2021, at Utopia ISD, The BCRAGD Education & Outreach Manager and the Education & Outreach Coordinator held Educational Programs with NRA. 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.
- On April 21-22, 2021, at Bandera ISD at Alkek Elementary School, The BCRAGD Education & Outreach Manager and the Education & Outreach Coordinator held Educational Programs with NRA. 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.
- On May 3, 2021, at Hill Country Elementary School, The BCRAGD Education & Outreach Manager and the Education & Outreach Coordinator held Educational Programs with NRA. 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.

- On May 22, 2021, BCRAGD Staff, in collaboration with Monica McGarrity from Texas Parks and Wildlife, presented Lake Hills residents with information regarding the infestation of Zebra Mussels in Medina Lake and updated the public on prevention efforts and how community members could help. Community members learned how to identify and report Zebra Mussels to TPWD and how to correctly dispose of Zebra Mussels. The public also learned the severe ecological implications of a Zebra Mussel infestation. BCRAGD Aquatic Ecologist and Field Operations Manager demonstrated how to locate Zebra Mussels on a boat and how to properly clean a boat after recreational activities. This public presentation is part of the District's goal to promote invasive species management information.
- On July 27, 2021 BCRAGD's Education Team presented to the Medina Library youth. There, the Education Team taught how "Rowdy the Raindrop" moves through the Water Cycle. The team used an interactive felt storyboard to teach a group of children all under the age of 5 years old. In the afternoon, the team taught about water conservation and how pollution moves through a watershed. Here, the older children were able to design and build a watershed model showing the importance of riparian plants and created a rain event to show how water flows through the watershed, and how pollution moves from each body of water, to ultimately end up in the ocean.
- On September 21, 2021, BCRAGD Education Team Posted BCRAGD's public virtual PowerPoint Presentation, Rainwater Harvesting, to the District social media pages and website.
- The Education Team attended several workshops from Texas in Children's in Nature Network (TCINN). The Bandera County River Authority & Groundwater District became regional partners with the San Antonio Region of Texas in Children's in Nature Network. TCINN is a network of nonprofits, government agencies, businesses, and concerned individuals whose goal is to connect children and families with nature. This will be beneficial in providing educational conservation information to even more students in Bandera County.
- Additional information is posted regularly on the District's website at www.bcragd.org and on BCRAGD's Social Media Pages including Facebook, Twitter, and Instagram as well as the BCRAGD Newsletter. The District has also implemented educational content on YouTube & Pinterest, as well as created a LinkedIn page for FY2021.

- The District gave educational water related talks to local groups when requested.

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:

- 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 booth

- Rainwater Harvesting Materials and literature is provided at all District public meetings. (8 meetings): 10/08/2020, 11/12/2020, 01/14/2021, 04/08/2021, 05/20/2021, 07/08/2021, 08/19/2021, 09/09/2021.
- Rainwater Harvesting Materials are always available on the website by clicking on the “Tools for Sustainability” tab under the Education tab, including a Rainwater Harvesting Informational Video for the Public created for FY2021.
- On October 24, 2020 BCRAGD participated in the Hill Country Living Festival and Rainwater Revival event. This event was entirely virtual. The Education team developed a short video containing information about watersheds and the importance of conserving and preserving watershed resources. The video also contained detailed instructions on an activity for kids to construct their own watershed to give them an opportunity to gain a better understanding of the ecology of watersheds and how pollution moves through them.
- On July 30, 2021, BCRAGD Staff attended a Rainwater Harvesting Class.
- On September 21, 2021, BCRAGD Education Team edited, designed, and completed BCRAGD’s public virtual PowerPoint Presentation, Rainwater Harvesting.
- On September 21, 2021, BCRAGD Education Team Posted BCRAGD’s public virtual PowerPoint Presentation, Rainwater Harvesting, to the District social media pages and website.

- **On September 21, 2021, BCRA GD Education and Outreach Manager and Assistant General Manager attended the virtual Eduscape Talk and Tour: Texas Runs on Water at which Rainwater Harvesting was discussed.**
- **On September 28, 2021, BCRA GD’s Education & Outreach Manager and Coordinator attended the virtual Eduscape Talk and Tour: 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 10

10.0.0 Address precipitation enhancement.

Precipitation enhancement over Bandera County is financed by the Edwards 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 newspaper
 - distribution of conservation literature handouts
 - public presentation by District Staff
 - information on District’s website
 - District exhibit/display booth at a public event
- **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.**
 - **On October 7, 2020, BCRA GD’s Aquatic Ecologist attended a Texas Nonpoint Source Management Program at which riparian health was addressed, as well as brush control and invasive species management.**

- On October 21, 2020 BCRAGD's Aquatic Ecologist Attended a Texas Watershed Coordinator Roundtable meeting at which riparian health was discussed.
- On October 24, 2020 BCRAGD participated in the Hill Country Living Festival and Rainwater Revival event. This event was entirely virtual. The Education team developed a short video containing information about watersheds and the importance of conserving and preserving watershed resources. The video also contained detailed instructions on an activity for kids to construct their own watershed to give them an opportunity to gain a better understanding of the ecology of watersheds and how pollution moves through them.
- On October 27, 2020, BCRAGD's Aquatic Ecologist joined a West Coast Mussels and eDNA: Freshwater Mussel Convention Webinar.
- On November 10, 2020, BCRAGD's Aquatic Ecologist attended a Mussel Decline Virtual Event Webinar.
- On December 1, 2020, BCRAGD's Aquatic Ecologist attended a Webinar on Advancements in Laboratory Toxicity Testing with Freshwater.
- On December 3, 2020, BCRAGD staff attended the online Hill Country Watershed Stewardship Annual Gathering. This annual meeting is an important opportunity for agency personnel to bring forth issues in a roundtable discussion format allowing for multiple opinions and opportunities for problems to be resolved throughout the Hill Country. These topics include addressing brush control, riparian health, and invasive species management.
- On December 16, 2020, BCRAGD's Field Operations Manager created field maps for Zebra Mussel sampling and other plant and animal field guides.
- On January 19, 2021, BCRAGD's Field Operations Manager prepared field maps for the Zebra Mussel Settlement Sample check.
- On January 20-22, 2021, BCRAGD's General Manager completed training with the TWI Urban Riparian Restoration Training online event at which riparian health, brush control, and invasive species management, along with other topics, was discussed and training was conducted.
- On February 2-4, 2021, BCRAGD's Aquatic Ecologist attended a Texas Chapter of the American Fisheries Society Meeting that discussed invasive species management. This meeting allows for important networking opportunities and for staff to keep up to date on current research being accomplished throughout the state.

- On February 22, 2021 BCRAGD's Field Operations Manager, Aquatic Ecologist, and General Manager Attended a Virtual Meeting w/ City, HCA, & TX Parks and Wildlife. Topics included riparian health, invasive species management, and brush control efforts and planning.
- On March 2, 2021, BCRAGD staff performed a Zebra Mussel Shoreline Survey.
- On March 3, 2021, BCRAGD Education & Outreach Coordinator created an Invasive Species presentation.
- On March 4, 2021, BCRAGD staff gave a presentation over Content Development-Illegal Dumping / Zebra Mussels.
- On March 16, 2021, the Texas Parks and Wildlife Department (TPWD) designated Medina Lake as "positive" with the invasive species, Zebra Mussels. The first sighting in Medina Lake was on February 11, 2021, by a member of the community who contacted TPWD for verification. Shortly after this, TPWD conducted their own searches and located at least 1 more Zebra Mussel. BCRAGD also conducted a search on February 24, 2021, locating a single Zebra Mussel. BCRAGD has partnered with TPWD to continue monitoring Medina Lake for the further spread of Zebra Mussels. This is done through both plankton sampling for the larval stages of the Zebra Mussels and through the deployment of settlement samplers in strategic locations on the lake.
- On April 7, 2021, BCRAGD staff attended the SAR Basin Science Consortium Meeting. Topics included brush control and riparian health.
- On April 8, 2021, BCRAGD staff attended the online Hill Country Watershed Stewardship Spring Gathering. This annual meeting is an important opportunity for agency personnel to bring forth issues in a roundtable discussion format allowing for multiple opinions and opportunities for problems to be resolved throughout the Hill Country. These topics include addressing brush control and invasive species management.
- On April 8, 2021, BCRAGD's Field Operations Manager and Aquatic Ecologist attended the San Antonio River Authority FY22 Coordinated Monitoring Meeting. This meeting occurs annually to schedule and plan sampling which promotes riparian health with clean river monitoring.
- On April 14, 2021, at Utopia ISD, The BCRAGD Education & Outreach Manager and the Education & Outreach Coordinator held Educational Programs with NRA. 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.

- On April 20-21, 2021, BCragd staff Attended the Central TX Water Conservation Symposium that discussed riparian health.
- On April 21-22, 2021, at Bandera ISD at Alkek Elementary School, The BCragd Education & Outreach Manager and the Education & Outreach Coordinator held Educational Programs with NRA. 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.
- On April 22, 2021, BCragd staff Attended the Texas Watershed Coordinator Roundtable at which brush control and riparian health were discussed.
- On May 3, 2021, at Hill Country Elementary School, The BCragd Education & Outreach Manager and the Education & Outreach Coordinator held Educational Programs with NRA. 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.
- On May 22, 2021, BCragd Staff, in collaboration with Monica McGarrity from Texas Parks and Wildlife, presented Lake Hills residents with information regarding the infestation of Zebra Mussels in Medina Lake and updated the public on prevention efforts and how community members could help. Community members learned how to identify and report Zebra Mussels to TPWD and how to correctly dispose of Zebra Mussels. The public also learned the severe ecological

implications of a Zebra Mussel infestation. BCRAGD Aquatic Ecologist and Field Operations Manager demonstrated how to locate Zebra Mussels on a boat and how to properly clean a boat after recreational activities. This public presentation is part of the District's goal to promote invasive species management information.

- On June 15, 2021, BCRAGD District Staff assisted the San Antonio River Authority to conduct an Aquatic Life Monitoring event on the Medina River as a CRP Biologicals event at the Mayan. This assessment is used to identify species diversity and community composition of freshwater fish as well as 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. In turn, this event promotes improved riparian health.
- On June 17, 2021, BCRAGD General Manager & Groundwater Science Manager joined TCEO for a Medina Lake Investigation for riparian health.
- On June 23, 2021, BCRAGD Aquatic Ecologist joined a Webinar over Dangerous Liaisons: The Dependence of Pearly Mussels on fish.
- On July 13, 2021, BCRAGD Aquatic Ecologist attended the Texas Master Naturalist Program – #TMNTuesdays! This virtual meeting discussed topics related to riparian health overall.
- On July 15, 2021, BCRAGD Aquatic Ecologist attended the Texas Chapter of the American Fisheries Society Student Outreach Committee Meeting.
- On July 27, 2021, the BCRAGD Education & Outreach Manager & Coordinator presented to the Medina Library youth. There, the Education Team taught how “Rowdy the Raindrop” moves through the Water Cycle. The team used an interactive felt storyboard to teach a group of children all under the age of 5 years old. In the afternoon, the team taught about water conservation and how pollution moves through a watershed. Here, the older children were able to design and build a watershed model showing the importance of riparian plants and created a rain event to show how water flows through the watershed, and how pollution moves from each body of water, to ultimately end up in the ocean.
- On July 29, 2021 BCRAGD District Staff assisted the San Antonio River Authority to conduct an Aquatic Life Monitoring event on the Medina River as a CRP Biologicals event at the Mayan. This assessment is used to identify species diversity and community composition of freshwater fish as well as 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.

- On July 30, 2021, District Staff attended both the NRA's Clean Rivers Program Lower Basin Steering Committee Meeting & the Clean River's Program Upper Basin Steering Committee Meeting. This meeting discusses and plans sampling events to promote improved riparian health.
- On August 5, 2021, BCRA GD General Manager & Aquatic Ecologist completed a Brewington Crossing & Wallace Creek Clean Up event to clean up litter to promote improved riparian health.
- On August 23, 2021, BCRA GD Finance & HR Manager completed a conference call over Arundo Control & Education Services for Amounts / Invoices.
- On August 23, 2021, BCRA GD Assistant General Manager joined a Webinar hosted by Texas A&M University and Texas A&M AgriLife Research about ecology-Workshop #1 Challenges and Approaches for Estimating Flow-Ecology Relationships and Monitoring.
- On August 24, 2021, BCRA GD Assistant General Manager joined a Webinar hosted by Texas A&M University and Texas A&M AgriLife Research about ecology-Workshop#2 Recruitment Response of Mussels to Flow Variation.
- On August 25, 2021, BCRA GD Assistant General Manager joined a Webinar hosted by Texas A&M University and Texas A&M AgriLife Research about ecology-Workshop#3 Discussions: Strengths, Limitations, and Future Needs for Estimating Flow-Ecology Relationships in Texas Rivers and Streams.
- On September 22, 2021, Arundo Donax Awareness Informative Postcards created by the District were mailed to Bandera County Citizens.
- On September 30, 2021, BCRA GD Education Team created a Watershed Curriculum Review & Development.
- Arundo site visits occurred over the course of several days. These days were: 29-JUN-2021; 01-JUL-2021; 14-JUL-2021; 15-JUL-2021; 21-JUL-2021; 16-SEP-2021; 22-SEP-2021; & 23-SEP-2021.
- Zebra Mussel sampling / monitoring occurred over the course of several days. These days were: 06-OCT-2020; 17-NOV-2020; 17-DEC-2020; 20-JAN-2021; 24-FEB-2021; 02-MAR-2021; 04-MAR-2021; 29-APR-2021 & 06-MAY-2021.

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: 23 total**
- **Water Analysis Performed on New Wells: 89 total**

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.

BCRAGD continued its partnership with San Antonio River Authority (SARA) to participate in the Clean Rivers Program in the Bandera County portion of San Antonio River Basin. BCRAGD is responsible for sampling 8 sites along the Medina River, 5 sites on Medina Lake, and 2 sites total on Diversion Lake (the District added 1 new site for FY2021 at Diversion Lake just upstream of Diversion Lake Dam). BCRAGD continues its partnership with the Nueces River Authority (NRA) to participate in the CRP in the Nueces River Basin; BCRAGD is responsible for 5 sites total along the Sabinal River in Bandera County, (with a new addition of 1 CRP site for FY2021 at Sabinal River near Lost Maples SNA), partnering with NRA. The District continued its In-House Surface Water Quality Testing Program along the Medina and Sabinal rivers for the protection of the citizens of Bandera County. In addition, BCRAGD continued and completed the EAA Sampling program (See 4.1.2) for FY 2021. 280 total samples were taken between these programs during FY 2021 and are summarized below:

1st Quarter Oct. 2020-Dec. 2020

Oct 1st- EAA Sampling (3 sites)
Oct 8th- Diversion Lake CRP (1 site)
Oct 22nd- Medina River CRP (4 sites)
Oct 23rd- EAA Sampling (3 sites)
Nov 4th- Medina Lake CRP (3 sites)
Nov 4th- Medina River CRP (1 site)
Nov 5th- EAA Sampling (3 sites)
Nov 12th- Medina River CRP (3 sites)
Nov 17th- Medina River CRP (1 site)
Nov 17th- Medina Lake CRP (2 sites)
Nov 18th- Sabinal River CRP (4 sites)
Nov 19th- EAA Sampling (3 sites)
Dec 4th- EAA Sampling (3 sites)
Dec 10th- Quarterly In-House Sampling (26 sites)
Dec 17th- In-House Resample (3 sites)
Dec 17th- Medina Lake CRP (2 sites)
Dec 18th- EAA Sampling (3 sites)
Dec 29th- Quarterly In-House: Report
Dec 31st- EAA Sampling (3 sites)

2nd Quarter Jan. 2021-Mar. 2021

Jan 14th- Diversion Lake CRP (1 site)
Jan 21st- Medina Lake CRP (3 sites)
Feb 9th- Medina River CRP (4 sites)
Feb 11th- Medina River CRP (4 sites)
Feb 23rd- Sabinal CRP (4 sites)
Mar 25th- Quarterly In-House Sampling (14 sites)
Mar 25th- Medina Lake CRP (2 sites)
Mar 26th- Quarterly In-House Sampling (16 sites)
Mar 30th- In-House Resample (1 site)

3rd Quarter Apr. 2021-June 2021

Apr 14th- Medina Lake CRP (3 sites)
May 6th- Medina Lake CRP (2 sites)
May 13th- Medina River CRP (4 sites)
May 18th- Medina River CRP (4 sites)
May 20th- Sabinal CRP (4 sites)
May 27th- Diversion Lake CRP (1 site)
Jun 8th- Diversion Lake CRP (1 site)
Jun 22nd- Quarterly In-House Sampling (14 sites)
Jun 23rd- Quarterly In-House Sampling (16 sites)
Jun 29th- In-House Resampling (2 sites)

4th Quarter Jul. 2021-Sep. 2021

Jul 7th- Quarterly/Summer In-House Sampling (19 sites)
Jul 15th- CRP Audit
Jul 21st- Quarterly/Summer In-House Sampling (10 sites)
Jul 22nd- Quarterly/Summer In-House Sampling (9 sites)
Jul 29th- CRP Biologicals- Mayan (1 site)
Aug 11th- Quarterly/Summer In-House Sampling (20 sites)
Aug 12th- Medina River CRP (4 sites)
Aug 17th- Medina Lake CRP (5 sites)
Aug 19th- Medina River CRP (3 sites)
Aug 24th- Sabinal CRP (4 sites)
Aug 26th- Diversion Lake CRP (2 sites)
Sep 1st- Quarterly In-House Sampling (14 sites)
Sep 2nd- Quarterly In-House Sampling (17 sites)
Sep 8th- In-House Resample (1 site)

Management Goal 13

13.0.0 Addressing in a Quantitative Manner 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 the 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.

Annual Evaluation of the Groundwater Resources in Bandera County FY 2021

INTRODUCTION

The desired future condition (DFC) of the Trinity Aquifer for Bandera County was adopted by the District's Board based on the Texas Water Development Board's (TWDB) 2008 model run and Groundwater Availability Model (GAM) Run 10-005. A maximum of 30 ft. of drawdown after 50 years (Year 2058) for the Trinity Aquifer was adopted, which was a total for both the Middle and Lower Aquifers. The Upper Trinity Aquifer does not supply sufficient water and is generally not used in Bandera County, therefore, it was not used in the TWDB 2008 model run or the GAM Run 10-005. The District's Board readopted the above DFC's in 2015 and was provided GAM Run 16-023.

Also included in this groundwater evaluation report are the reports of non-exempt and exempt use. The non-exempt use estimate is provided by groundwater permit holders on an annual basis, which is attached. The exempt use estimate is provided by TWDB and can be found in the District's Management Plan adopted March 18, 2018.

FY 2021 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. An average level was calculated for each monitor well using data points taken throughout FY 2021. These averages were then compared to the 2008 water level measurements and these differences were recorded in the "Annual Report DFC Compliance FY 2021" excel sheet. New monitor wells that were added to the network before the beginning of FY 2021 use the first well measurement and then compared to the FY 2021 average.

There is only one monitor well for the Edwards-Trinity Plateau DFC evaluation because the aquifer is located in high elevations, so very few residential wells are utilizing it for water needs. Therefore, the estimates for domestic (exempt) use in the aquifer are small. In addition, District rules

prohibit production permits for the use of Edwards-Trinity Plateau aquifer. The DFC evaluation for the Edwards-Trinity Plateau can be found in the “Annual Report DFC Compliance FY 2021” excel sheet.

The USGS 7.5 grid was used to obtain a better County-wide average. The majority of the monitoring well data is located in the eastern part of the County. To improve the evaluation of the County as a whole, water levels in each grid were averaged, and the average of all the grids was taken for the Hill Country Trinity Aquifer total average within Bandera County.

RESULTS OF THE DFC EVALUATION

The average loss or gain for monitor wells in their respective grids are shown in the “Annual Report DFC Compliance FY 2021” excel sheet. County maps with the grid averages are found in Figure 1 (Middle Trinity) and Figure 2 (Lower Trinity) for each Aquifer. Compared to 2008 water levels, the Middle Trinity Aquifer had a cumulative loss of 11.6 ft and the Lower Trinity Aquifer had a loss of 23 ft for FY 2021. The whole Trinity Aquifer had a cumulative average loss of 10.1 ft since FY 2008 for compliance of the DFC.

The average loss or gain for the monitor well that is located in the Edwards-Trinity can be located in the “Annual Report DFC Compliance FY 2021” excel sheet. Figure 3 depicts the gain or loss of the Edwards Monitor Well. From when water level observations began in 2012, the Edwards Well showed a drop of 1.65 ft.

FUTURE CONSIDERATIONS

- The abundance of groundwater data in East Bandera County could bias the results of this evaluation. However, the grid system attempts to minimize this bias.
- Only monitor wells that have historic data dating back to 2008 are included in these graphs. The Edwards Monitor well historic data begins in 2012, so it cannot be compared to 2008 water levels.
- These graphs show the groundwater level changes for FY 2021 compared to 2008, not the cumulative, overall groundwater level change that includes every year since 2008.

Figure 1. Middle Trinity Map

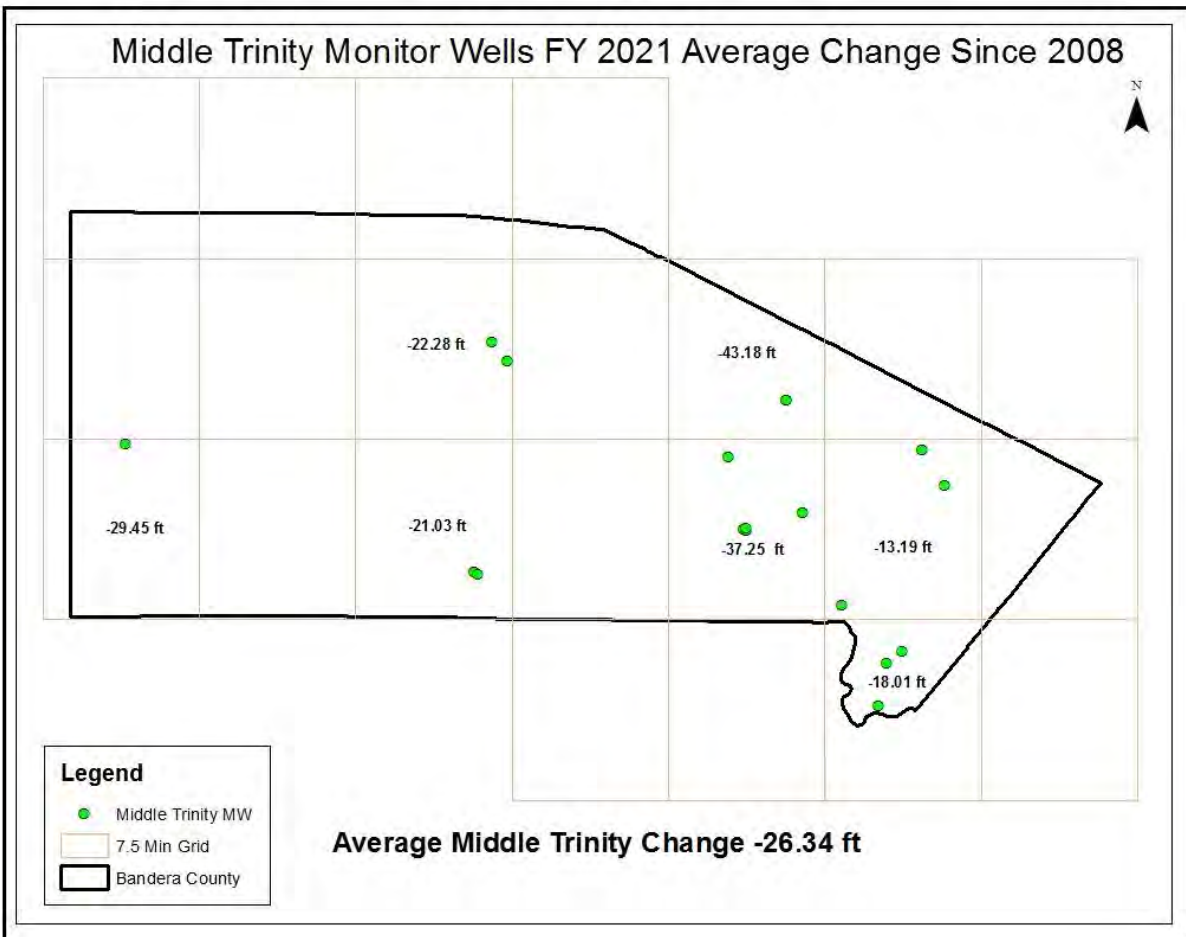


Figure 2. Lower Trinity Map

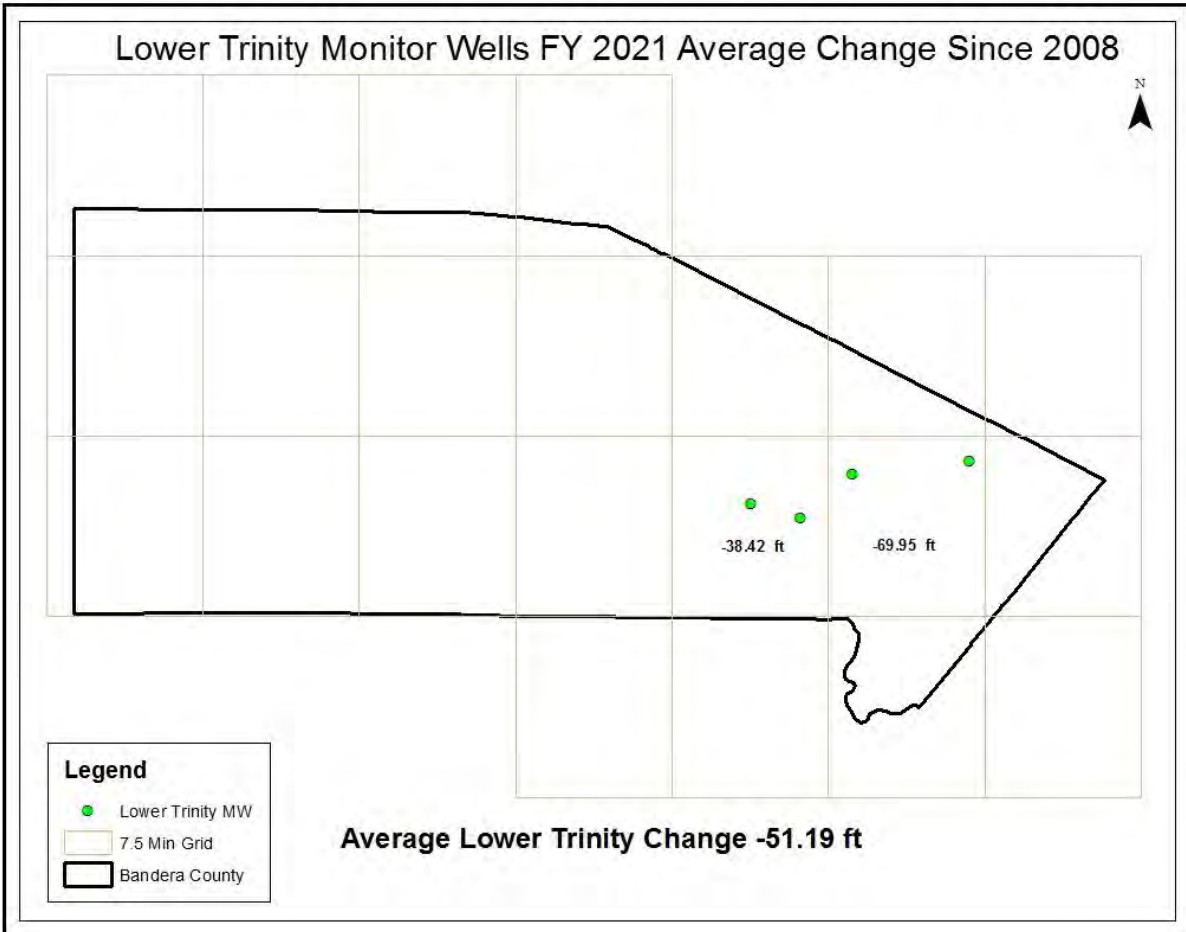
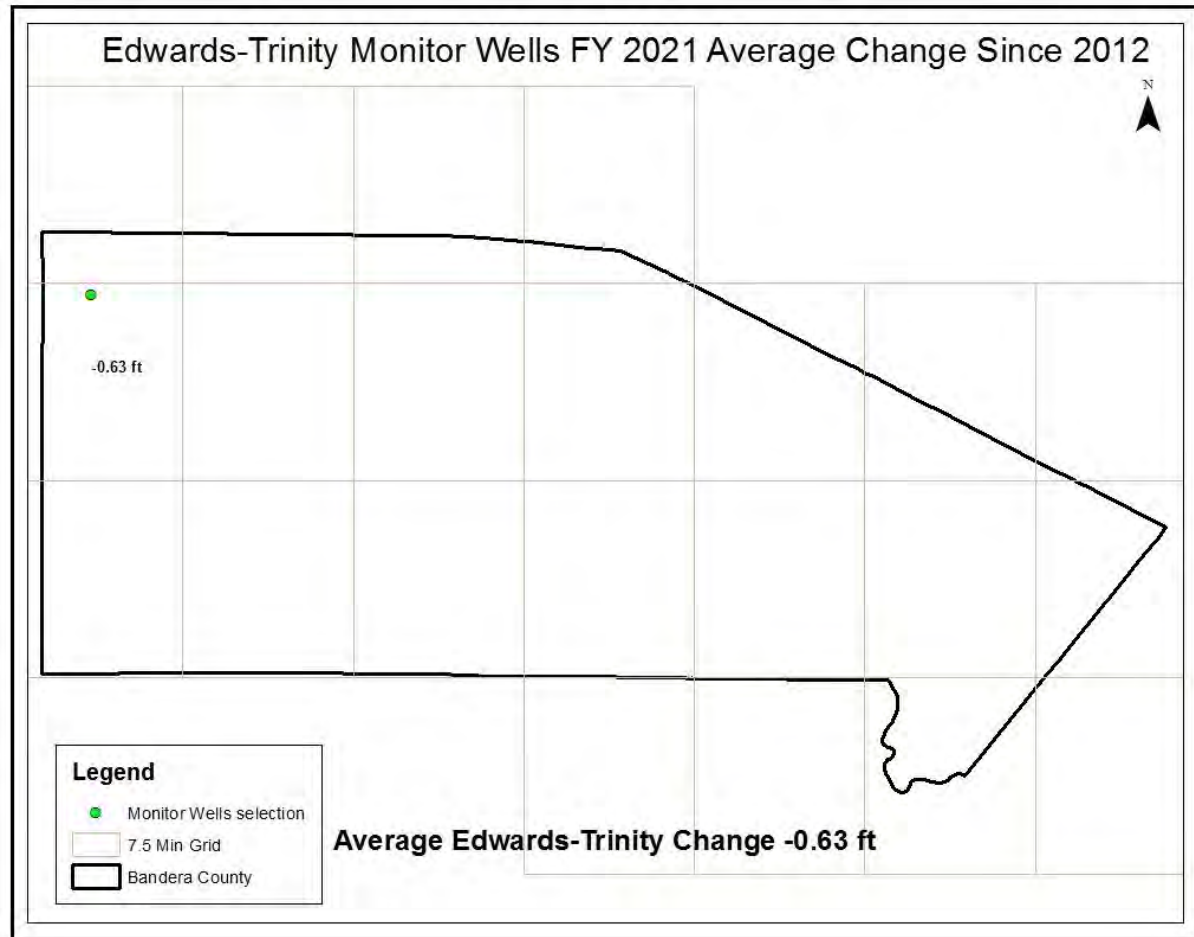


Figure 3. Edwards-Trinity Map



2021 Annual Pumping Amounts for Permitted (Non-Exempt) Wells

Permit	Acre-Feet	Permit	Acre-Feet	Permit	Acre-Feet	Permit	Acre-Feet	Permit	Acre-Feet
P-1001	0	P-1045	ND	P-1090	122.8	P-1121	ND	P-1159	ND
P-1002	13.4	P-1046	0.957	P-1091	0.797	P-1123	0.016	P-1160	0
P-1003	0.004	P-1047	ND	P-1092	0.175	P-1124	0.648	P-1161	2.27
P-1008	ND	P-1048	19.2	P-1093	0	P-1125	0.004	P-1162	2.16
P-1011	0	P-1049	ND	P-1095	0.734	P-1128	12.2	P-1164	86.86
P-1012	0	P-1050	ND	P-1096	ND	P-1129	23.1	P-1165	0.248

P-1013	18.1	P-1052	31.3	P-1098	0.163	P-1131	16.6	P-1166	5.37
P-1014	ND	P-1053	0	P-1100	ND	P-1133	29.2	P-1167	0.647
P-1015	25.5	P-1055	20.3	P-1101	0	P-1134	70.2	P-1168	0.096
P-1016	0.005	P-1056	42.4	P-1102	0.002	P-1135	110.4	P-1169	3.46
P-1017	0.005	P-1058	ND	P-1103	0	P-1137	2.88	P-1170	0
P-1018	7.75	P-1062	13.9	P-1104	1.21	P-1138	19.7	P-1172	0
P-1019	ND	P-1064	19.8	P-1105	0	P-1140	0.664	P-1173	1.83
P-1020	16.6	P-1067	0	P-1106	7.01	P-1141	14.7	P-1174	0.261
P-1023	0.073	P-1068	ND	P-1107	0	P-1143	1.04	P-1175	1.36
P-1025	11.6	P-1071	22.9	P-1108	0	P-1144	9.24		
P-1026	ND	P-1072	ND	P-1109	0.005	P-1145	22.5		
P-1027	0.018	P-1073	17.6	P-1110	0.506	P-1146	2.61		
P-1028	68.6	P-1074	10.26	P-1112	5.52	P-1147	8.71		
P-1029	ND	P-1075	13.9	P-1113	5.85	P-1149	13.6		
P-1031	ND	P-1078	9.99	P-1114	55.0	P-1150	13.2		
P-1032	ND	P-1079	ND	P-1115	6.53	P-1153	3.71		
P-1035	ND	P-1084	ND	P-1116	10.0	P-1154	0.167		
P-1038	3.16	P-1085	ND	P-1118	11.37	P-1155	93.5		
P-1042	ND	P-1088	1.58	P-1119	3.55	P-1157	ND		
P-1044	11.5	P-1089	2.17	P-1120	ND	P-1158	ND		

* ND = No Data Available



Appendix B

Annual Financial Report by Ede & Company, LLC

Bandera County River Authority and Groundwater District

**Annual Financial Report
For the Year Ended September 30, 2021**

Ede & Company, LLC
Certified Public Accountants

**BANDERA COUNTY RIVER AUTHORITY
AND GROUND WATER DISTRICT
Annual Financial Report
For the Year Ended September 30, 2021**

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ANNUAL FILING AFFIDAVIT

THE STATE OF TEXAS X
 X
COUNTY OF BANDERA X

I, Don 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 27th day of January, 2022, its annual audit report for the year ended September 30, 2021 and that copies of the annual report have been filed in the district office located, at BANDERA, TX.

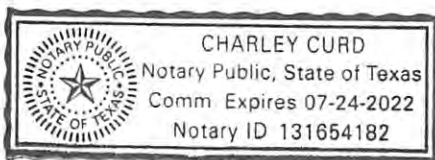
This annual filing affidavit and the attached copy of the annual audit report are being submitted to the Texas Commission on Environmental Quality in satisfaction of all annual filing requirements within Section 49.194 of the Texas Water Code.

Dated 01 / 27, 2022

By: Don Sloan
(Signature of District Representative)

Don Sloan, President
(Type Name & Title of above District Representative)

Sworn to and Subscribed to before me this 27 day of January, 2022



Charley Curd
(Signature of Notary)

Commission Expires on 7/24/2022

Charley Curd
(Print Name of Notary)

Notary Public in and for the State of Texas.

EDE & COMPANY, LLC

Certified Public Accountants

Eric Ede
Donna Ede Jones

P. O. Box 219
Knippa, Texas 78870
Telephone (830) 934-2148
Fax (830) 934-2799
Email: edecpa@hotmail.com

INDEPENDENT AUDITOR'S REPORT

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

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, 2021 and the related notes to the financial statements, which collectively comprise the District's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes 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.

Auditor's Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements 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 entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

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, 2021, and the respective changes in financial position and, where applicable, cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

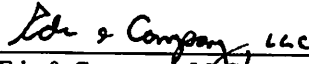
Other Matters

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 as listed in the table of contents, be presented to supplement the basic financial statements. Such information, 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

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the Bandera County River Authority and Groundwater District's basic financial statements. The analysis of taxes receivable is presented for purposes of additional analysis and are not a required part of the basic financial statements. The Schedule of Delinquent Taxes Receivable has not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on it.



Ede & Company, LLC
Certified Public Accountants
Knippa, Texas

January 25, 2022

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, 2021. 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 \$572,187.70 at September 30, 2021.
- During the year, the District's expenses were \$102,443.16 less than the \$1,213,056.35 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 \$200,835.32.
- The District's net position increased \$102,443.16 which represents a 29.4 percent increase from 2020

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 \$572.2 thousand at September 30, 2021. (See Table A-1).

Table A-1
BANDERA COUNTY RIVER AUTHORITY AND
GROUND WATER DISTRICT

	Governmental Activities		Total Percentage Change
	2021	2020	2021 - 2020
Current assets:			
Cash and cash equivalents	\$ 219.7	\$ 173.4	26.70%
Accounts receivable	-	1.4	-100.00%
Property taxes receivable (net)	66.1	79.8	-17.17%
Due from other governments	2.2	1.3	69.23%
Prepayments	7.6	7.8	-2.56%
Total current assets	<u>295.6</u>	<u>263.7</u>	<u>12.10%</u>
Noncurrent assets:			
Capital Assets	594.5	590.9	0.61%
Less accumulated depreciation	(289.2)	(296.1)	-2.33%
Total noncurrent assets	<u>305.3</u>	<u>294.8</u>	<u>3.56%</u>
Total Assets	<u>600.9</u>	<u>558.5</u>	<u>7.59%</u>
Current liabilities:			
Accounts payable and accrued liabilities	28.7	92.7	-69.04%
Total Liabilities	<u>28.7</u>	<u>92.7</u>	<u>-69.04%</u>
Net Position:			
Invested in capital assets	305.3	271.4	12.49%
Unrestricted	<u>266.9</u>	<u>170.8</u>	<u>56.26%</u>
Total Net Position	<u>\$ 572.2</u>	<u>\$ 442.2</u>	<u>29.40%</u>

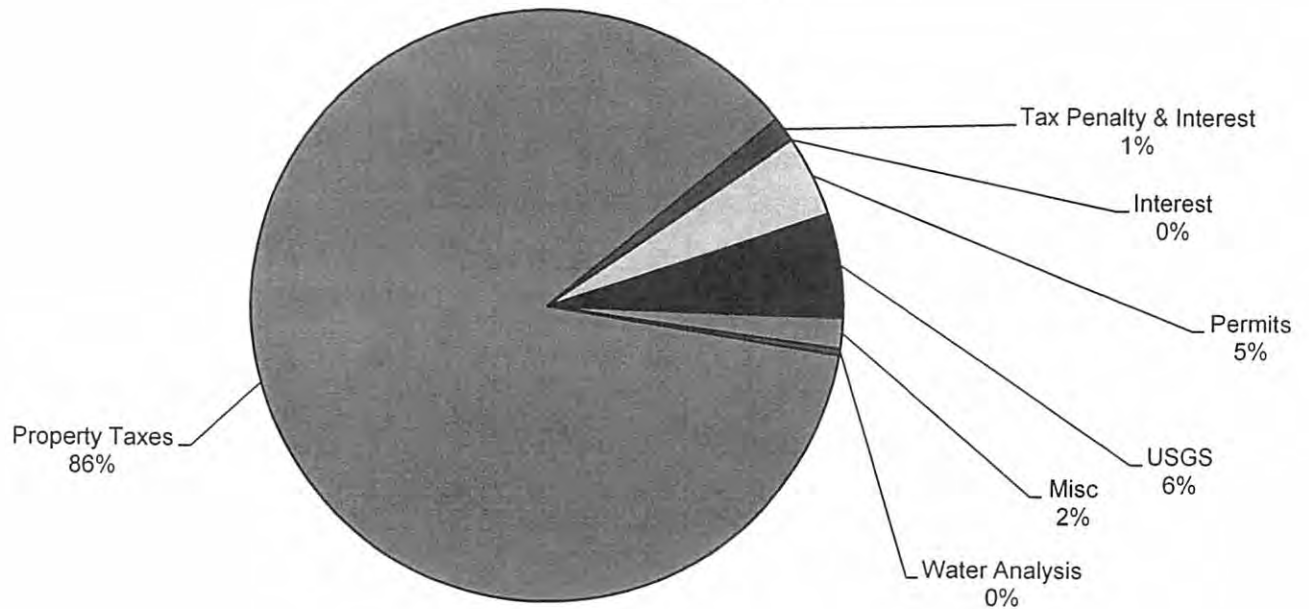
Changes in net position. The District's total revenues were 1,213.1 thousand. A significant portion, 86 percent, of the District's revenue comes from property taxes. (See Figure A-3.) and 5% from permits on new wells.

The total cost of all programs and services was \$1,110.5 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 2021-2020
	2021	2020	
General Revenue			
Property Taxes	1,048.4	971.9	7.87%
Penalty & Interest	16.4	12.3	33.33%
USGS	69.1	194.3	-64.44%
New Well Applications & Permits	53.7	23.7	126.58%
Other	25.4	6.9	268.12%
Total Revenue	<u>1,213.0</u>	<u>1,209.1</u>	<u>0.32%</u>
Program Expenses			
General Government	<u>1,110.5</u>	<u>1,259.5</u>	<u>-11.83%</u>
Total Expense	<u>1,110.5</u>	<u>1,259.5</u>	<u>-11.83%</u>
Increase (Decrease) in Net Position	<u>\$ 102.5</u>	<u>\$ (50.4)</u>	<u>-303.37%</u>

2021 Revenue Sources



2021 Expenses

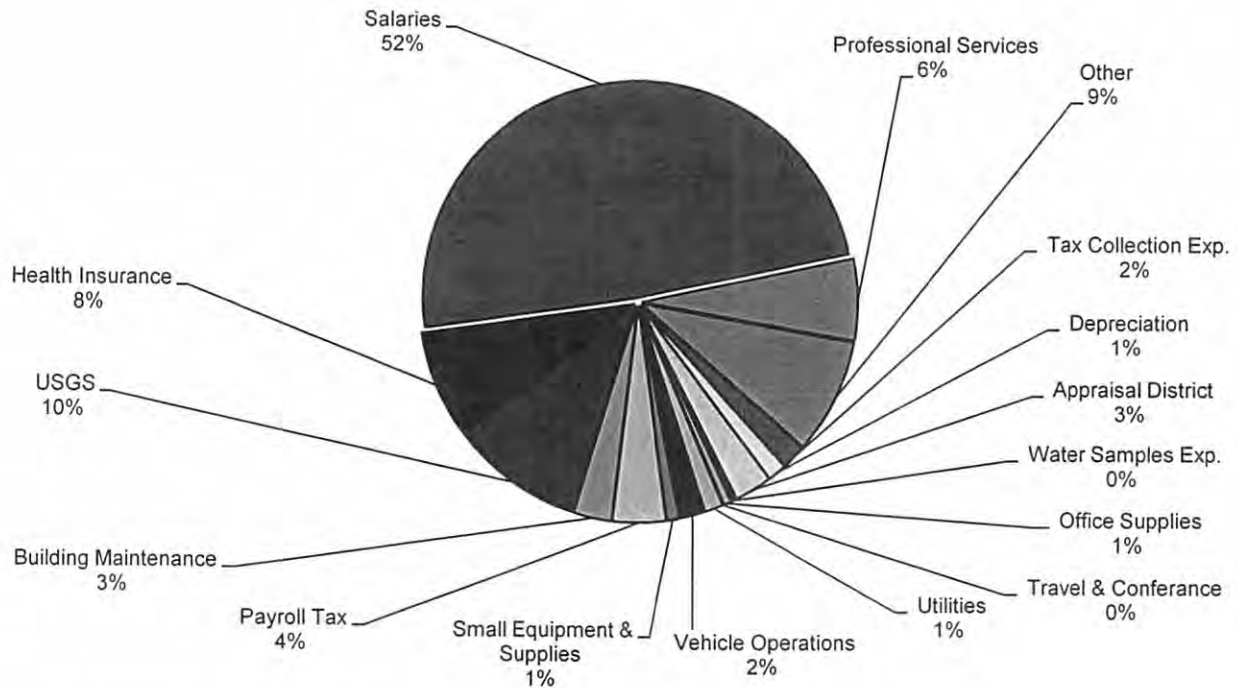


Table A-3 presents the cost of each of the District's largest functions as well as the major administrative categories.

- The cost of all *governmental* activities this year was 1,259.5 thousand.

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

	Total Costs of Services		
	2021	2020	Percent Change
Salaries	543.9	504.0	7.92%
Professional Services	67.4	94.6	-28.75%
Health Insurance	88.4	99.6	-11.24%
Small Equipment & Supplies	10.2	8.6	18.60%
Vehicle Operations	21.8	19.6	11.22%
Utilities	14.8	16.1	-8.07%
Travel & Conference	1.5	12.3	-87.80%
Office Supplies	5.9	5.4	9.26%
Water Samples Exp.	5.0	5.5	-9.09%
Appraisal District	30.7	29.5	4.07%
Depreciation	15.5	17.5	-11.43%
Tax Collection Exp.	21.3	19.5	9.23%

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 \$147,220.21 below final budget amounts. Resources available were \$35,614.13 above the final budgeted amount.

CAPITAL ASSETS AND DEBT ADMINISTRATION

Capital Assets

At the end of 2021, the District had invested \$594.5 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 0.6 percent over last year.

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

	Governmental Activities		Percentage
	2021	2020	Change
			2021-2020
Land	\$ 150.0	\$ 150.0	0.0%
Building and Improvements	172.1	172.1	0.0%
Vehicles	117.8	114.3	3.1%
Monitoring Wells & Equipment	154.6	154.6	0.0%
Totals at historical cost	594.5	591.0	0.6%
Total Accumulated Depreciation	(289.2)	(296.1)	-2.3%
Net Capital Assets	\$ 305.3	\$ 294.9	3.5%

Debt Administration

At the end of the year the district had no Debt..

ECONOMIC FACTORS AND NEXT YEAR'S BUDGETS AND RATES

- Appraised value used for the 2022 budget preparation increase approximately 1.6% from 2021.
- Tax rates for 2022 will increase to \$0.045096.

These indicators were taken into account when adopting the general fund budget for 2022. Amounts available for appropriation are approximately \$1.30 million.

Expenditures are budgeted at approximately \$1.30 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 2022

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.

Basic Financial Statements

**BANDERA COUNTY RIVER AUTHORITY
AND GROUND WATER DISTRICT**
Statement of Net Position and Governmental Funds Balance Sheet
September 30, 2021

	General Fund	Special Revenue Fund	Total Governmental Funds	Adjustments	Statement of Net Position
ASSETS					
Cash and investments	\$ 219,639.87	\$ 24.98	\$ 219,664.85	\$ -	\$ 219,664.85
Accounts receivable	39.99	-	39.99	-	39.99
Taxes receivable (net)	66,077.73	-	66,077.73	-	66,077.73
Due from other governments	2,212.47	-	2,212.47	-	2,212.47
Prepayments	7,632.05	-	7,632.05	-	7,632.05
Capital assets (net of accumulated depreciation)					
Land	-	-	-	150,000.00	150,000.00
Building	-	-	-	120,458.23	120,458.23
Monitoring wells & equipment	-	-	-	13,566.17	13,566.17
Vehicles	-	-	-	21,250.26	21,250.26
Total assets	<u>\$ 295,602.11</u>	<u>\$ 24.98</u>	<u>\$ 295,627.09</u>	<u>305,274.66</u>	<u>600,901.75</u>
LIABILITIES					
Accounts payable	\$ 23,478.98	\$ 24.99	\$ 23,503.97	-	23,503.97
Payroll liabilities	5,210.08	-	5,210.08	-	5,210.08
Total liabilities	<u>28,689.06</u>	<u>24.99</u>	<u>28,714.05</u>	<u>-</u>	<u>28,714.05</u>
DEFERRED INFLOW OF RESOURCES					
Unavailable Revenue- Property Taxes	66,077.73	-	66,077.73	(66,077.73)	-
Total Deferred Inflows of Resources	<u>66,077.73</u>	<u>-</u>	<u>66,077.73</u>	<u>(66,077.73)</u>	<u>-</u>
FUND BALANCES/NET POSITION					
Fund balances:					
Committed	71,282.00	-	71,282.00	(71,282.00)	-
Unassigned	129,553.32	(0.01)	129,553.31	(129,553.31)	-
Total Fund Balance	<u>200,835.32</u>	<u>(0.01)</u>	<u>200,835.31</u>	<u>(200,835.31)</u>	<u>-</u>
Total liabilities deferred inflows and fund balances	<u>\$ 295,602.11</u>	<u>\$ 24.98</u>	<u>\$ 295,627.09</u>		
Net Position:					
Invested in capital assets, net of related debt				305,274.66	305,274.66
Unrestricted				266,913.04	266,913.04
Total net position				<u>\$ 572,187.70</u>	<u>\$ 572,187.70</u>

The accompanying notes are an integral part of this statement.

**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, 2021

	General Fund	Special Revenue Fund	Total Governmental Funds	Adjustments	Statement of Activities
Revenues:					
Property taxes	\$ 1,048,062.49	\$ -	\$ 1,048,062.49	\$ 300.80	\$ 1,048,363.29
Property taxes penalty & interest	16,438.76	-	16,438.76	-	16,438.76
Interest income	528.35	-	528.35	-	528.35
Permits and deposits	53,660.00	-	53,660.00	-	53,660.00
USGS Flood Project Funding	-	62,321.42	62,321.42	-	62,321.42
USGS Gauge Station	6,800.00	-	6,800.00	-	6,800.00
Miscellaneous	20,544.53	-	20,544.53	-	20,544.53
Non Compliance Penalty	-	-	-	-	-
Water analysis	4,400.00	-	4,400.00	-	4,400.00
Total revenues	<u>1,150,434.13</u>	<u>62,321.42</u>	<u>1,212,755.55</u>	<u>300.80</u>	<u>1,213,056.35</u>
Expenditures/expenses:					
Service operations:					
Appraisal District	30,662.91	-	30,662.91	-	30,662.91
Bonds & Insurance	16,019.13	-	16,019.13	-	16,019.13
Building Maintenance	31,566.62	-	31,566.62	-	31,566.62
Dues & Subscriptions	3,917.90	-	3,917.90	-	3,917.90
Office Security	7,740.00	-	7,740.00	-	7,740.00
Education	10,810.65	-	10,810.65	-	10,810.65
Computer Software and Support	11,303.98	-	11,303.98	-	11,303.98
Small Equipment & Supplies	10,205.67	-	10,205.67	-	10,205.67
Health Insurance	88,397.16	-	88,397.16	-	88,397.16
Retirement	15,350.32	-	15,350.32	-	15,350.32
Monitoring Units	59.91	-	59.91	-	59.91
Office Supplies	5,882.02	-	5,882.02	-	5,882.02
Office Rent	9,000.00	-	9,000.00	-	9,000.00
Payroll Tax	44,759.56	-	44,759.56	-	44,759.56
Postage	752.23	-	752.23	-	752.23
Professional Services	67,404.06	-	67,404.06	-	67,404.06
Salaries	544,509.91	-	544,509.91	(637.73)	543,872.18

Tax Collection Exp.	21,290.74	-	21,290.74	-	21,290.74
GMA Expense	1,163.85	-	1,163.85	-	1,163.85
Travel & Conferences	1,542.38	-	1,542.38	-	1,542.38
Employee Training	6,359.40	-	6,359.40	-	6,359.40
Utilities	14,832.60	-	14,832.60	-	14,832.60
USGS - Gauges	46,680.00	-	46,680.00	-	46,680.00
USGS - Flood Control Project	2,799.99	62,321.43	65,121.42	-	65,121.42
Vehicle Operations	47,724.76	-	47,724.76	(25,924.25)	21,800.51
Water Quality Project	1,263.79	-	1,263.79	-	1,263.79
Water Samples Exp.	4,999.45	-	4,999.45	-	4,999.45
Well Plugging & Logging	6,773.65	-	6,773.65	-	6,773.65
Clean Rivers Program	1,967.17	-	1,967.17	-	1,967.17
Illegal Dumping -Litter Abatement	-	-	-	-	-
Invasives - Zebra Mussels	109.98	-	-	-	-
Riparian Project	-	-	-	-	-
Brush Control	3,500.00	-	3,500.00	-	3,500.00
Depreciation	-	-	-	15,503.95	15,503.95
Total expenditures/expenses	<u>1,059,349.79</u>	<u>62,321.43</u>	<u>1,121,561.24</u>	<u>(11,058.03)</u>	<u>1,110,503.21</u>
Excess (deficiency) of revenues over expenditures	<u>91,084.34</u>	<u>(0.01)</u>	<u>91,084.33</u>	<u>11,358.83</u>	<u>102,443.16</u>
Other financing sources (uses)					
Transfers in	-	-	-	-	-
Transfers out	-	-	-	-	-
Total other financing sources (uses)	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Change in fund balance/net position	91,084.34	(0.01)	91,084.33	11,358.83	102,443.16
Fund balance/net position:					
Beginning of the year	109,750.98	-	109,750.98	359,993.56	469,744.54
End of the year	<u>\$ 200,835.32</u>	<u>\$ (0.01)</u>	<u>\$ 200,835.31</u>	<u>\$ 371,352.39</u>	<u>\$ 572,187.70</u>

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, 2021**

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

**Bandera County River Authority and
Ground Water District
Notes to the Financial Statements
For the Year Ended September 30, 2021**

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 be 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:

<u>Assets</u>	<u>Years</u>
Buildings	40
Monitoring Wells	20
Vehicles and Road Equipment	7
Office Equipment	7
Computer Equipment	7

**Bandera County River Authority and
Ground Water District
Notes to the Financial Statements
For the Year Ended September 30, 2021**

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, 2021**

J. Reconciliation of Government-wide and General Fund Financial Statements

**Reconciliation of General Fund Balance to
Net Position of Governmental Activities
September 30, 2021**

Total General Fund Balance	\$ 200,835.31
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 funds.	320,778.61
Accumulated depreciation has not been included in the general fund financial statements.	(15,503.95)
Revenue reported as deferred revenue in the general fund was recorded as revenue in the government-wide financial statements.	<u>66,077.73</u>
Net Position of Governmental Activities	\$ <u>572,187.70</u>

**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	\$ 91,084.33
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	300.80
Governmental funds report capital outlays as expenditures. However, they are reported as increases in capital assets in the government-wide financial statements.	26,561.98 -
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.	<u>(15,503.95)</u>
Change in Net Position of Governmental Activities	\$ <u>102,443.16</u>

Bandera County River Authority and Ground Water District

Notes to the Financial Statements For the Year Ended September 30, 2021

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 policies 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.

**Bandera County River Authority and
Ground Water District
Notes to the Financial Statements
For the Year Ended September 30, 2021**

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, 2021, 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.

NOTE 6 – CAPITAL ASSET ACTIVITY

Capital asset activity for the twelve months ended September 30, 2021, was as follows:

	Beginning Balances	Increases	Decreases	Ending Balances
<u>Governmental activities:</u>				
<i>Capital assets not being depreciated:</i>				
Land	150,000	-	-	150,000
Total capital assets not being depreciated	150,000	-	-	150,000
<i>Capital assets being depreciated:</i>				
Buildings and Improvements	172,083	-	-	172,083
Vehicles	114,301	25,924	(22,436)	162,661
Monitoring Wells & Equipment	154,602	-	-	154,602
Total capital assets being depreciated	440,986	25,924	(22,436)	489,346
Less accumulated depreciation for:				
Buildings and Improvements	47,323	4,302	-	51,625
Vehicles	110,073	2,300	(22,436)	134,809
Monitoring Wells & Equipment	138,735	8,902	-	147,637
Total accumulated depreciation	296,131	15,504	(22,436)	334,071
Total capital assets being depreciated, net	144,854	10,420	0	155,274
Governmental activities capital assets, net	\$ 294,854	\$ 10,420	\$ 0	\$ 305,274

**Bandera County River Authority and
Ground Water District
Notes to the Financial Statements
For the Year Ended September 30, 2021**

NOTE 7 - 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 8 - 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, 2021**

	Actual	Original Budget	Final Amended Budget	Variance Positive (Negative)
Revenues:				
Property taxes	\$ 1,048,062.49	\$ 1,039,000.00	\$ 1,039,000.00	\$ 9,062.49
Property taxes penalty & interest	16,438.76	-	-	16,438.76
Interest income	528.35	520.00	520.00	8.35
Permits and deposits	53,660.00	20,000.00	20,000.00	33,660.00
USGS Gauge Station	6,800.00	6,800.00	6,800.00	-
Miscellaneous	20,544.53	42,500.00	42,500.00	(21,955.47)
Water analysis	4,400.00	6,000.00	6,000.00	(1,600.00)
Total revenues	<u>1,150,434.13</u>	<u>1,114,820.00</u>	<u>1,114,820.00</u>	<u>35,614.13</u>
Expenditures:				
Service operations:				
Appraisal District	30,662.91	27,000.00	27,000.00	(3,662.91)
Bonds & Insurance	16,019.13	11,000.00	11,000.00	(5,019.13)
Building Maintenance	31,566.62	20,000.00	32,000.00	433.38
Dues & Subscriptions	3,917.90	3,000.00	3,000.00	(917.90)
Office Security	7,740.00	8,000.00	8,000.00	260.00
Education	10,810.65	22,500.00	22,500.00	11,689.35
Computer Software and Support	11,303.98	13,000.00	16,200.00	4,896.02
Small Equipment & Supplies	10,205.67	18,500.00	18,500.00	8,294.33
Health Insurance	88,397.16	92,000.00	97,000.00	8,602.84
Retirement	15,350.32	16,500.00	16,500.00	1,149.68
Monitoring Units	59.91	1,500.00	1,500.00	1,440.09
Office Supplies	5,882.02	7,000.00	7,000.00	1,117.98
Office Rent	9,000.00	3,600.00	6,600.00	(2,400.00)
Payroll Tax	44,759.56	35,000.00	45,000.00	240.44
Postage	752.23	850.00	850.00	97.77
Professional Services	67,404.06	122,500.00	126,100.00	58,695.94
Salaries	544,509.91	513,350.00	539,500.00	(5,009.91)
Tax Collection Exp.	21,290.74	-	-	(21,290.74)
GMA Expense	1,163.85	3,500.00	3,500.00	2,336.15
Travel & Conferences	1,542.38	15,000.00	15,000.00	13,457.62
Employee Training	6,359.40	8,000.00	8,000.00	1,640.60
Utilities	14,832.60	18,000.00	18,000.00	3,167.40
USGS - Gauges	46,680.00	36,980.00	36,980.00	(9,700.00)
Election	-	-	-	-

**BANDERA COUNTY RIVER AUTHORITY
AND GROUND WATER DISTRICT
Budgetary Comparison Statement - General Fund
For Year Ended September 30, 2021**

	<u>Actual</u>	<u>Original Budget</u>	<u>Final Amended Budget</u>	<u>Variance Positive (Negative)</u>
Expenditures: (Continued)				
USGS - Flood Control Project	2,799.99	40,000.00	40,000.00	37,200.01
Medina Lake Water Quality USGS	-	16,650.00	16,650.00	16,650.00
Vehicle Operations	47,724.76	21,390.00	49,390.00	1,665.24
Water Quality Project	1,263.79	8,000.00	8,000.00	6,736.21
Water Samples Exp.	4,999.45	9,000.00	9,000.00	4,000.55
Well Plugging & Logging	6,773.65	6,000.00	6,800.00	26.35
Clean Rivers Program	1,967.17	8,000.00	8,000.00	6,032.83
Riparian Project	-	1,000.00	1,000.00	1,000.00
Brush Control	3,500.00	5,000.00	5,000.00	1,500.00
Illegal Dumping -Litter Abatement	-	1,000.00	1,000.00	1,000.00
Invasive - Zebra Mussels	109.98	1,000.00	1,000.00	890.02
Contingences	-	1,000.00	1,000.00	1,000.00
	<u>1,059,349.79</u>	<u>1,114,820.00</u>	<u>1,206,570.00</u>	<u>147,220.21</u>
Excess (deficiency) of revenues over expenditures	<u>91,084.34</u>	<u>-</u>	<u>(91,750.00)</u>	<u>182,834.34</u>
Other financing sources (uses)				
Transfers out	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Total other financing sources (uses)	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Change in fund balance/net position	91,084.34	-	(91,750.00)	182,834.34
Fund balance:				
Beginning of the year	109,750.98	109,750.98	109,750.98	-
End of the year	<u>\$ 200,835.32</u>	<u>\$ 109,750.98</u>	<u>\$ 18,000.98</u>	<u>\$ 182,834.34</u>

**BANDERA COUNTY RIVER AUTHORITY
AND GROUND WATER DISTRICT
Schedule of Delinquent Taxes Receivable
For the Year Ended September 30, 2021**

LAST TEN YEARS ENDED SEPTEMBER 30,	TAX RATE	ASSESSED VALUE FOR TAX PURPOSES (in thousands)	BEGINNING BALANCE 10/1/20	CURRENT YEAR TOTAL LEVY	ENTIRE YEAR'S ADJUSTMENTS	TOTAL COLLECTIONS	BALANCE 9/30/21
2011 & Prior	Var	Var	\$ 7,441.34		\$ (390.97)	\$ 1,659.24	\$ 5,391.13
2012	.024474	1,842,781	1,716.99		(48.71)	268.05	1,400.23
2013	.026001	1,878,945	2,192.57		(46.14)	280.90	1,865.53
2014	.028058	1,903,192	2,473.84		(49.85)	361.04	2,062.95
2015	.034739	2,015,732	3,702.20		(53.23)	547.06	3,101.91
2016	.037300	2,088,705	5,251.62		(59.99)	1,000.99	4,190.64
2017	.039280	2,151,203	7,299.15		(73.06)	1,785.40	5,440.69
2018	.040339	2,245,731	11,340.74		(86.92)	3,511.83	7,741.99
2019	.042165	2,245,731	23,631.76		(110.84)	11,418.82	12,102.10
Current	.044890	2,335,405		1,048,363.29	1,646.43	1,027,229.16	22,780.56
			<u>\$ 65,050.21</u>	<u>\$ 1,048,363.29</u>	<u>\$ 726.72</u>	<u>\$ 1,048,062.49</u>	<u>\$ 66,077.73</u>