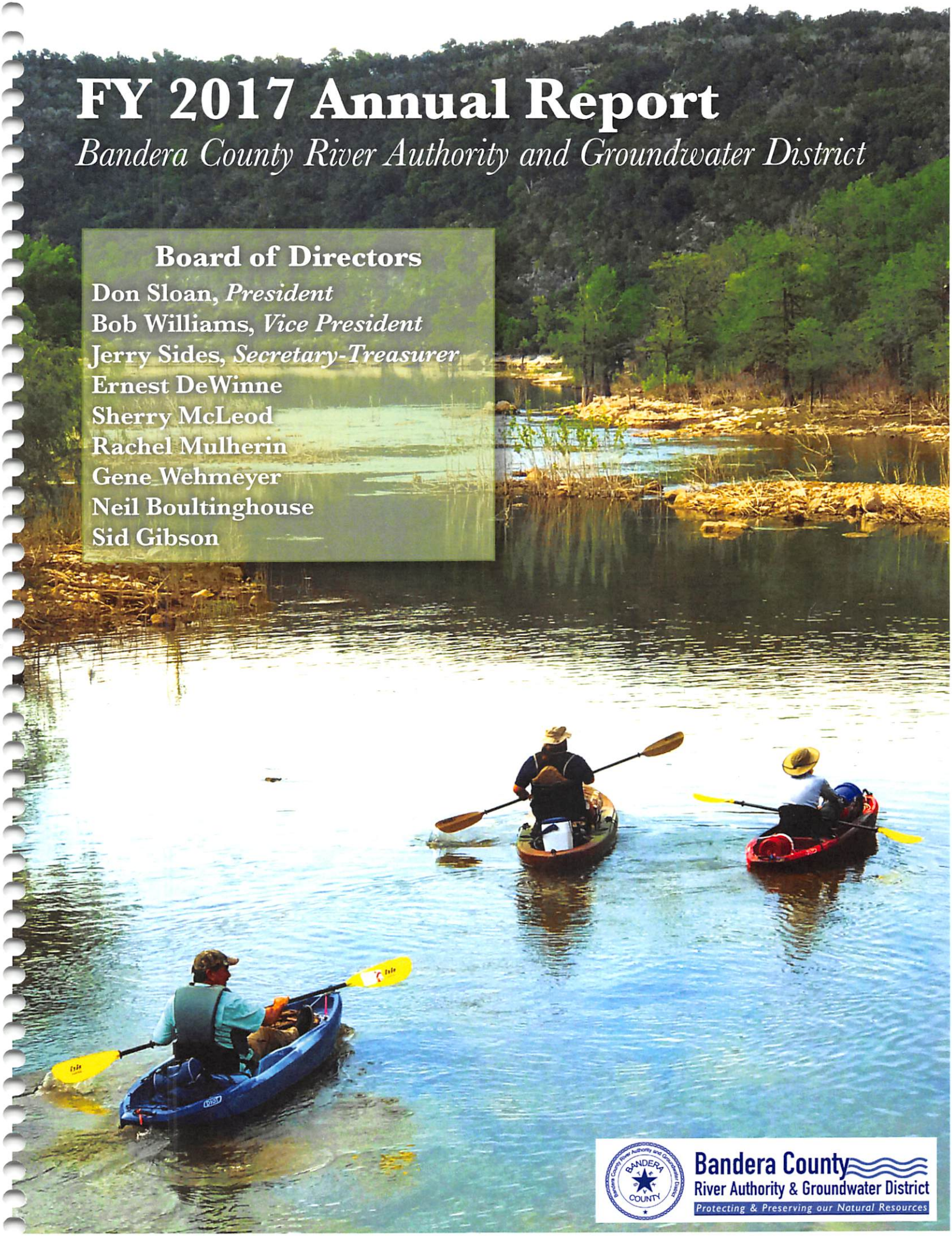
FY 2017 Annual Report

Bandera County River Authority and Groundwater District



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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Contact Information

Address: 440 FM 3240 | PO Box 177, Bandera, TX 78003-0177
Phone: (830) 796-7260
Fax: (830) 796-8262

Website: www.bcragd.org
Social Media:
www.facebook.com/bcragd/
http://twitter.com/BCRAGD_TX

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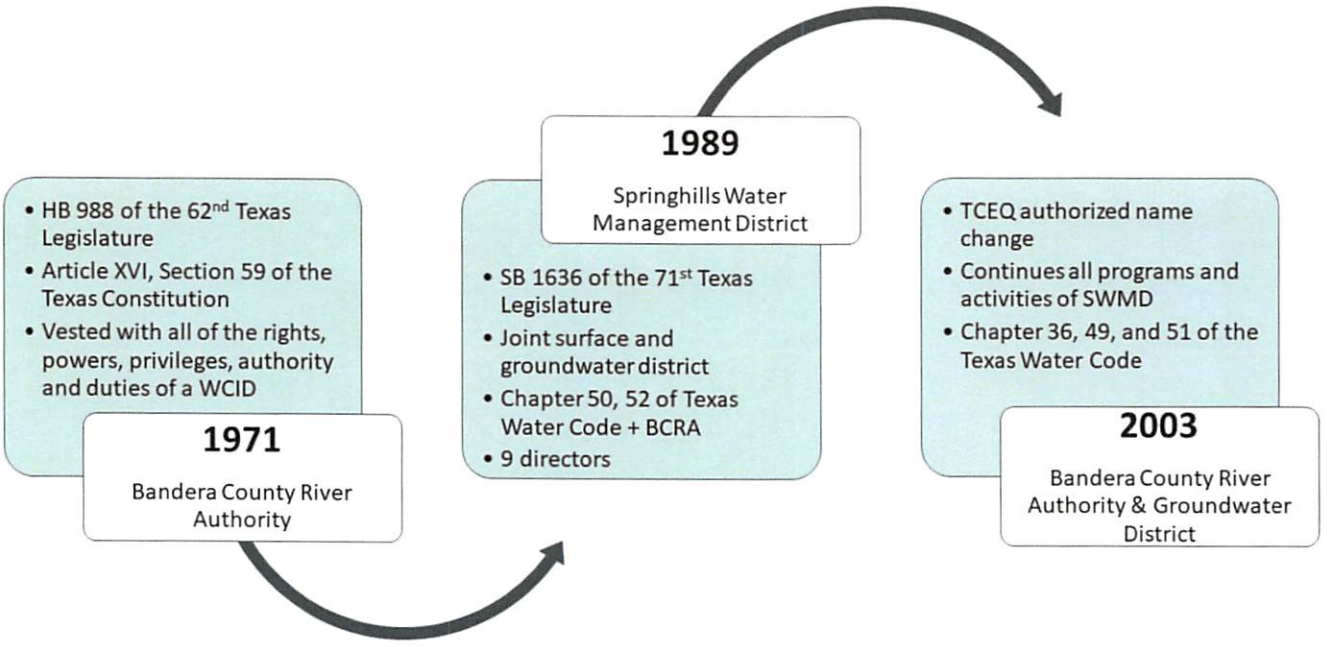
About the District



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

51.121. Purposes of a District (River Authority)

A water control and improvment 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 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.

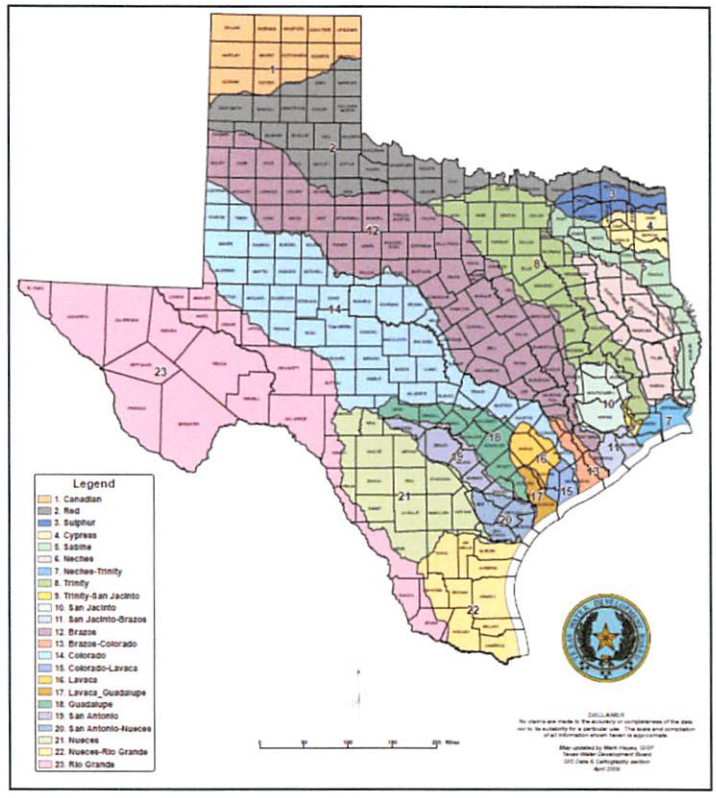
Location

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 768 square miles, or 491,520 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 Basins

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.

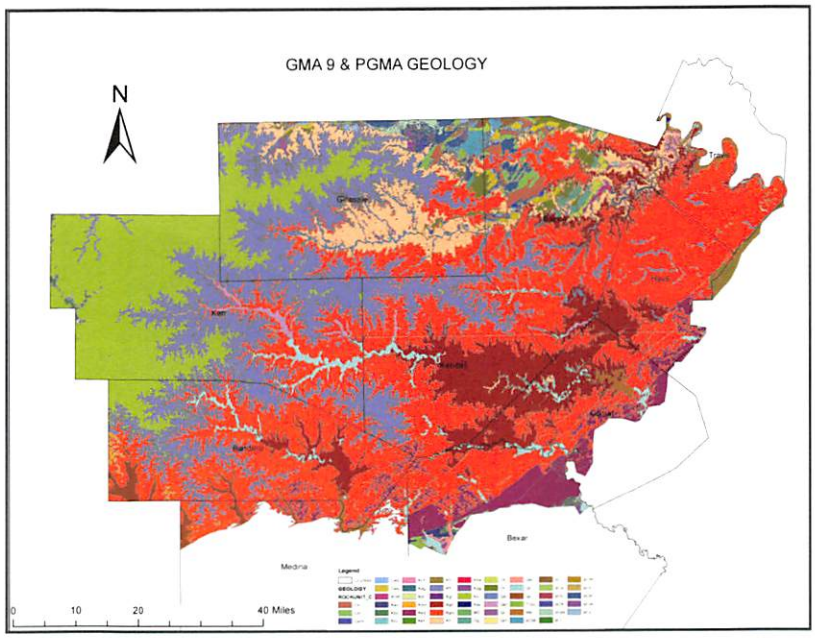


Major Aquifers

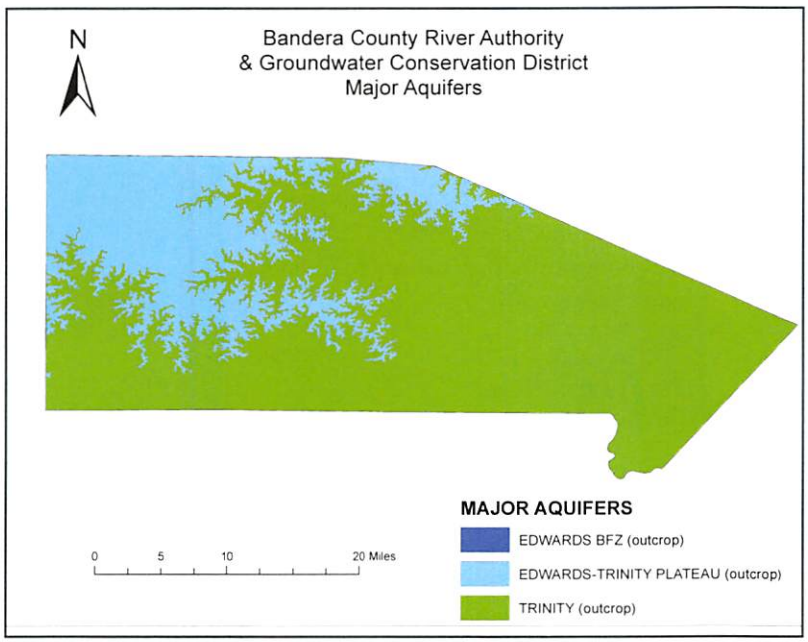
The Trinity Group aquifer underlies all of Bandera County, underlying the Edwards Plateau aquifer in the northwest portion of the County and extending south into Medina and Uvalde counties and east into Kendall and Bexar counties. The Trinity Group aquifer is the primary source of groundwater in Bandera 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 groundwa-

Major Aquifers

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



District Staff

Dave Mauk
General Manager

The General Manager is the Chief Executive Officer responsible for the planning, development and implementation of policies of the District for the protection, management and conservation of ground 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 fashion. The General Manager is responsible for hiring, discharging, and supervising District staff.

Kayla Shearhart
Assistant General Manager

The Assistant General Manager is primarily responsible for supporting the General Manager in implementing all District policies and programs; ensuring both field and office operations are conducted efficiently, properly, and in accordance with District, Federal, and State rules, policies, and regulations.

Michael Redman
Groundwater Resources Manager

Under the Direction of the General Manager and the Assistant General Manager , the Groundwater Resources Coordinator is responsible for maintaining and implementing the Groundwater Monitoring and Protection Programs. Some of the primary duties include implimenting the District's Well Permitting and Registration Programs, Monitor Well Program, Well Plugging Program, and serving as the District's Compliance and Enforcement Officer (Code Enforcement Officer).

Levi Sparks
Watershed Protection Coordinator

The Watershed Protection Coordinator is primarily responsible for supporting the General Manager with the implementation of the District's surface water quality, natural resources, and monitoring programs. The Watershed Protection Coordinator serves as the Supervisor for the River Authority field operations. The Watershed Protection Coordinator is also in charge of the District's laboratory operations.

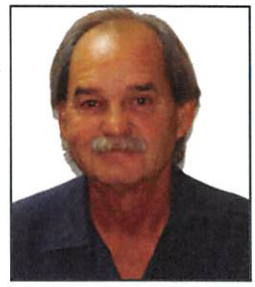
Larry Thomas
Natural Resource Specialist

The Natural Resource Specialist is primarily responsible for supporting the implementation of the District's surface water quality, natural resources, and monitoring programs.The Natural Resource Specialist works closely with the Watershed Protection Coordinator to assure that the District's goals and policies are met in a timely fashion.

Morgen Ayers
Education & Community Outreach Coordinator

The Education & Community Outreach Coordinator is primarily responsible for promoting science-based educational programs and best management practices that promote water conservation and water quality protection.

Jay McEwen
Field Technician - Well Inspector



The Field Technician-Well Inspector is primarily responsible for conducting site visits before and while registered and permitted wells are being drilled and after they have been completed to verify that they are in adherence to applicable rules and construction standards for all programs administered by the District.

Welcoming new staff in 2018!

Prari Blair

Office Manager (as of February 2018)

The Office Manager 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 both District, Federal, and State, rules, policies, and regulations.

Corrina Fox

Education & Outreach Coordinator (as of February 2018)

The Education & Community Outreach Coordinator is primarily responsible for promoting science-based educational programs and best management practices that promote water conservation and water quality protection.

District Teams

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

General Management

Administrative

Field Operations

Water Well Permitting and Registration

Aquifer Science and DFC Compliance

Medina Lake Management

Watershed Protection

Water Quality-Science/Research-Clean Rivers Program (CRP)

Water Conservation

Water Resource Management and Policy

Education and Community Outreach

Environmental Investigations/ Regulatory Compliance

Flood Awareness/Rainfall Monitoring

General Manager's Statement

Our region continues to fluctuate in and out of drought conditions. Last year we started to recover from the drought, only to have the area start to slip back into drought conditions. This region tends to experience either heavy rainfalls or periods of drought. Bandera County seems to bounce back and forth between feast or famine rain conditions. There is not a consistent average yearly rainfall.

However, those much needed rainfall events have reminded us of another grim reality; we live in flash flood alley. This region is one of the most flash flood prone areas in the world. Recently, several rain events in our area have threatened life and property. Seeing the public safety need, the District in 2016 applied for and received a Texas Water Development Board grant to for a USGS flood warning project.This state of the art project is currently being implemented, with two additional stream gages already installed.

The USGS has successfully deployed flash flood warning systems throughout the Midwest United States. This will be the first time a project like this has been actualized in Texas. We envision this cutting edge flood warning system will become a model for the rest of the state. The warning system utilizes river gages and basin modeling, which will give Emergency Managers in Bandera County a set of predictive tools that will allow them to understand what areas potentially will flood during an event.

The District continues to promote conservation, rainwater harvesting, and drought awareness. District personnel have assisted and counseled landowners on how to protect both their water quantity and quality. The District will continue to enforce rules and follow our management plan.

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 are constantly revisiting and improving operating procedures to better serve the citizens of Bandera County. 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 an active participant in the Regional Water Planning Groups, Groundwater Management Area-9, TCEQ's Clean Rivers Program, and Bay and Basin Stakeholder Committee. Our District has established lasting collaborations with other Districts and community organizations. The District will continue in the next year to improve its programs and processes to further the policies of the Board. This continued progress and regional engagement will help ensure that both the interests and water resources are protected not only for the people of Bandera County but the people of the entire basin.

Very Respectively,

Dave Mauk
General Manager

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

Invasive Species Management

Medina Lake Managment

Enforcement / Investigations

Enforcement of State and District Rules

Environmental Investigations
- Illegal Dumping Litter Abatement
- Public Safety / Pollution

Education & Community Outreach

USGS Early Flood Warning System - TWDB Flood Protection Grant

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

Collaboration Highlights

BCRAGD would like to highlight many of the local, regional, and state agencies and organizations that assist with programs and initiatives each year.

United States Geological Survey
BCRAGD has contracted USGS to expand the early flood warning system tool set for Bandera County 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 flood warning tool set.

Texas Commission on Environmental Quality
Environmental Investigations

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

Nueces River Authority
Clean Rivers Program partners; ISD education collaboration; Invasive plant collaboration - *Arundo donax*

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

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

Schreiner University
Expanding Your Horizons Program
Internship Program

Texas Water Development Board (TWDB)
Texas Commission on Environmental Quality (TCEQ)
Texas Department of Licensing and Regulation (TDLR)
Texas Parks 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
Texas A&M AgriLife Extension
United States Geological Survey
USDA-NRCS
San Antonio River Authority
Nueces River Authority
Edwards Aquifer Authority
Blanco Pedernales Groundwater District
Central Texas Groundwater Conservation District
Hill Country Groundwater Conservation District
Schreiner University
Bandera County Economic Development Corp.
Bandera City Economic Development Corp.
Bandera Electric CO-OP
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
Bandera Canyonlands Alliance

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 May 28th, 2013. BCRAGD will be required to revise and submit an updated management plan during FY 2018. During FY 2017, BCRAGD:

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

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.

In order to protect groundwater resources in FY 2017 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
- 96 Registrations issued for FY2017

Well Inspector, Jay McEwen, going through his post-drilling inspection of a registered well.

Permitted Well Program

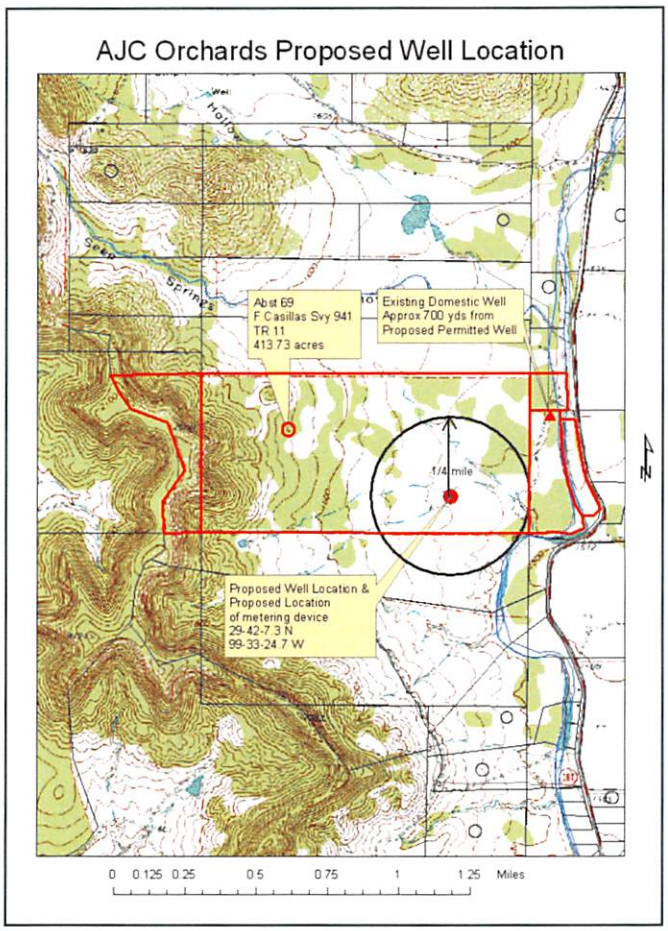
The District maintains a permitting program for non-exempt wells. Pumping reports are collected each January and the amount of water is tabulated. Newly permitted wells are inspected to ensure compliance with District and State rules and requirements. These pumping amounts will help the District to evaluate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

In order to protect groundwater resources in FY 2017 BCRAGD:

- Identified Wells that needed to be permitted
- Permitted existing wells which required permits
- Prepared permit applications for Board approval

Groundwater Programs

- 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
- 3 Permits issued for FY 2017



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

Monitor Well Program

Michael Redman taking a water sample from one of BCRAGD's monitor wells.

The District maintains and operates a monitor well program to track and assess aquifer conditions in Bandera County. This is done through periodic water level measurements and quarterly water quality sample collection from designated monitor wells. As a result of this program, during FY 2017 the District:

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

Groundwater Programs

Geophysical Logging Program

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

BCRAGD logging a well in the logging trailer shared by other districts in the region.

Well Camera Inspection

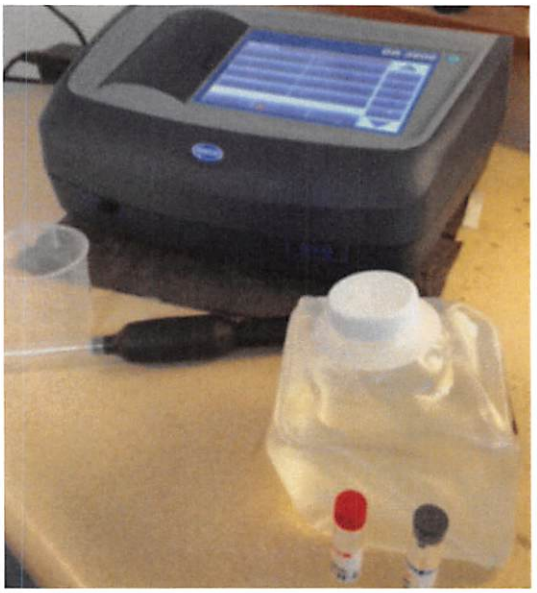
BCRAGD's WellVu Camera is a recorded media used to assess collapsed and/or damaged wells. It can also be used as a tool to investigate compliance with district well construction rules.

The District provides a camera well inspection service to identify problems and assess damaged wells to determine if the well needs rehabilitated or plugged.

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, pertinent mineral content, along with hardness, pH, TDS and EC of water samples. BCRAGD tests groundwater samples collected from newly inspected wells at no cost to the owner and offers groundwater testing services to the public for an at cost fee. Below is a breakdown of BCRAGD's efforts during FY 2017:

- 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 the public information 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



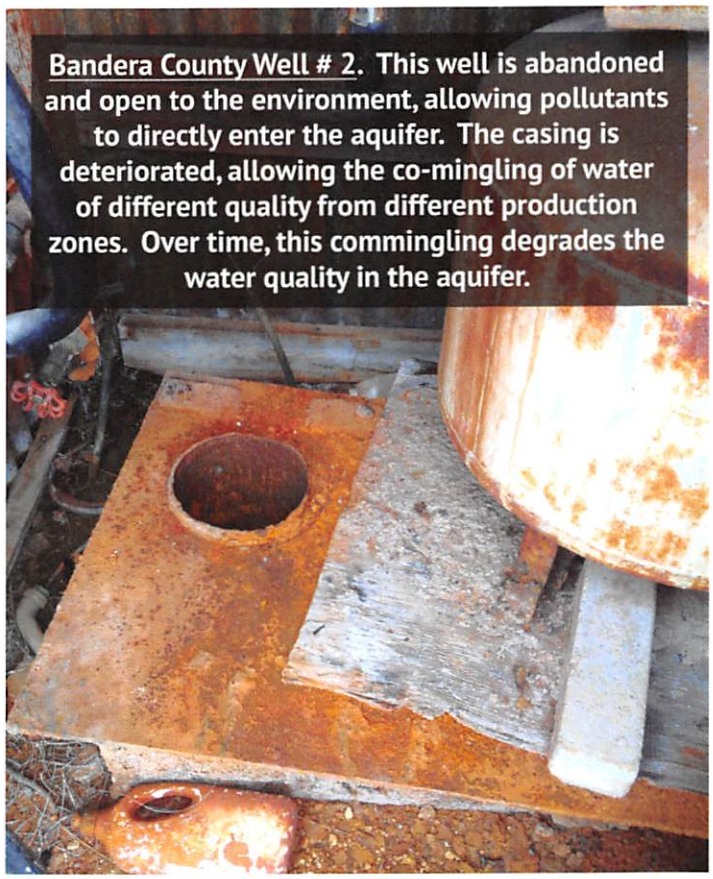
Groundwater Programs

Abandoned Well Plugging Program

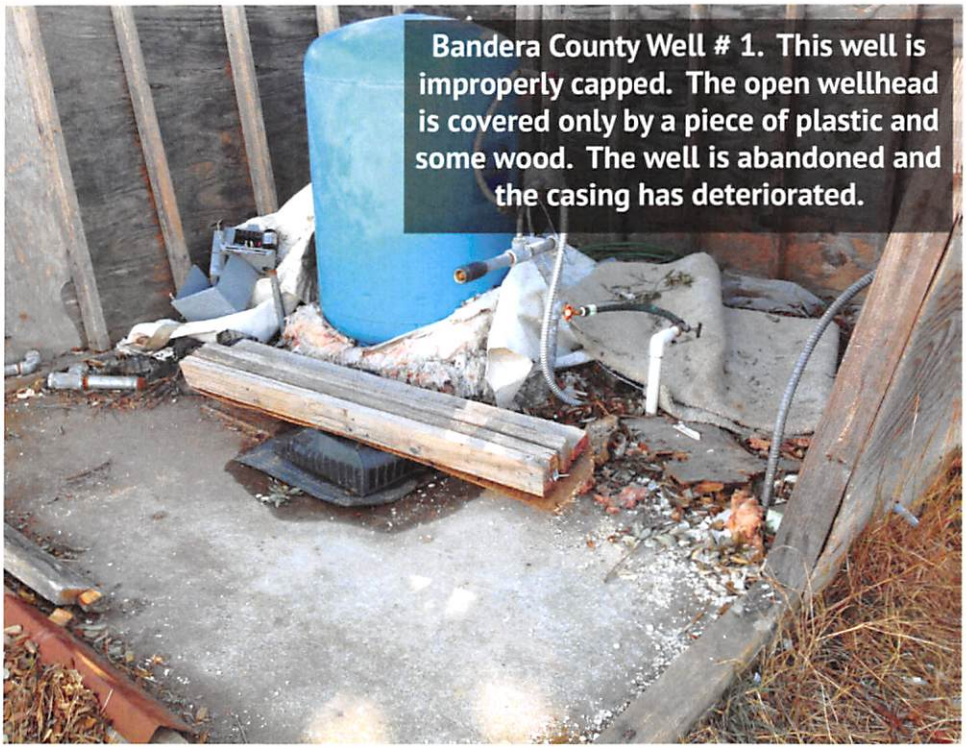
There is a high environmental risk associated with abandoned/deteriorated wells, as they are a direct conduit from the surface to our groundwater resources. In response to the existence and threat of abandoned wells to the health of Bandera County's groundwater, BCRAGD offers the public a well plugging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

- The District plugged 0 wells for the general public during the Fiscal Year 2017.
- 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

Please contact us at (830) 796-7260 with questions regarding any abandoned well in Bandera County.



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.



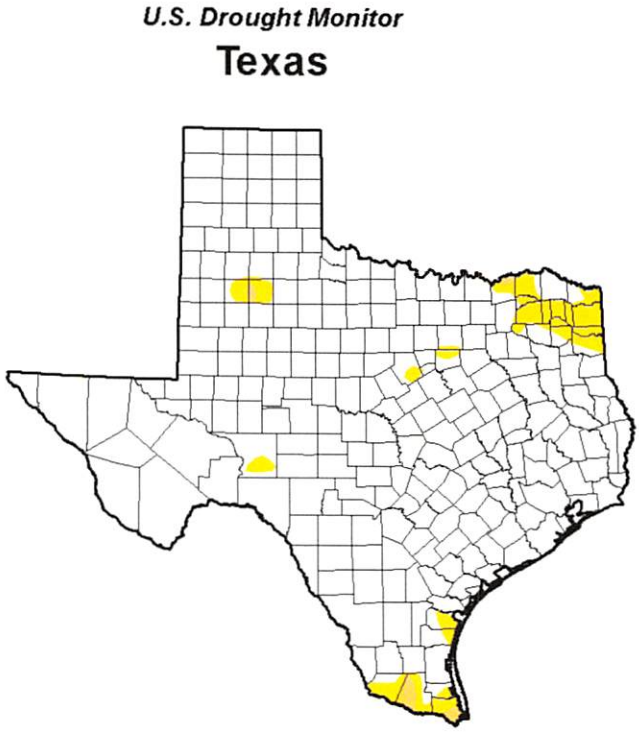
Bandera County Well # 1. This well is improperly capped. The open wellhead is covered only by a piece of plastic and some wood. The well is abandoned and the casing has deteriorated.

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

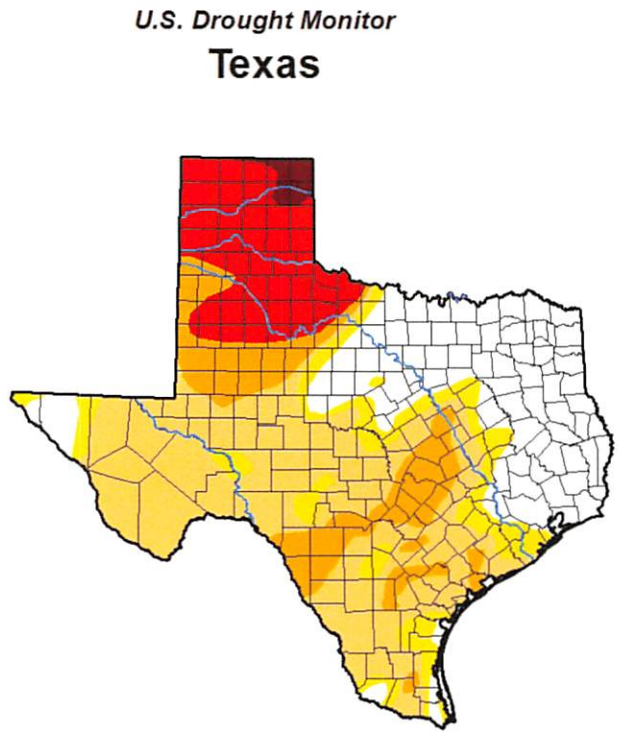
Drought Management Plan

During FY 2017, 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
- Posted drought conditions weekly at the District office and on the District's website
- Reviewed Drought Management Plan



September 27, 2016
(Released Thursday, Sep. 29, 2016)
Valid 8 a.m. EDT



March 27, 2018
(Released Thursday, Mar. 29, 2018)
Valid 8 a.m. EDT

Drought Classification

None | D0 (Abnormally Dry) | D1 (Moderate Drought) | D2 (Severe Drought) | D3 (Extreme Drought) | D4 (Exceptional Drought)

Groundwater Programs

Rainfall Monitoring Program

Gages and Weather Station:

BCRAGD is partnered with Bandera County and the Bandera Electric Coop in sponsorship of a USGS discharge and rain gage at Patterson Road in Medina. This gage displays all parameters real time via a telemetry unit, and is accessible to the public through the USGS website. The Flood Protection Grant will allow significant expansion in USGS gages along with a more comprehensive flood warning tool set for Bandera County.

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. BCRAGD records rainfall data, and contrasts rainfall data with monitor wells results. Results are available to USDA and the County Extension office.

Rain Spotters Program:

The District continues to support its all-volunteer Rain Spotters Program. Bandera County residents report monthly rainfall amounts from their District issued gages on a quarterly basis. During each BCRAGD Quarterly Board meeting, the data is presented in report form.

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

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 6 sites, which are in Bandera County and summarized to the right. FY 2017 CRP sample dates were October 19-20, 2016, January 17, 2017, February 7-8, 2017, April 11-12, 2017, and June 21-22, 2017. The District was audited by the SARA for the TCEQ Clean Rivers Program on June 21, 2017.

At the end of FY 2016, BCRAGD added five CRP sites on Medina Lake along with two CRP sites on Diversion Lake, partnering with SARA. The sample dates for Medina Lake were December 13-14, 2016, March 15-16, 2017, and July 19-20, 2017. The sample dates for Diversion Lake were November 17, 2016, May 23, 2017, and August 22, 2017.

BCRAGD partnered with Nueces River Authority (NRA) in 2016 to participate in the Clean Rivers Program in the Nueces River Basin. BCRAGD staff are responsible for 2 sites shown in the chart to the right. The FY 2017 sample dates for the Nueces River Basin was November 8, 2016, January 24, 2017, March 23, 2017, and August 15, 2017.

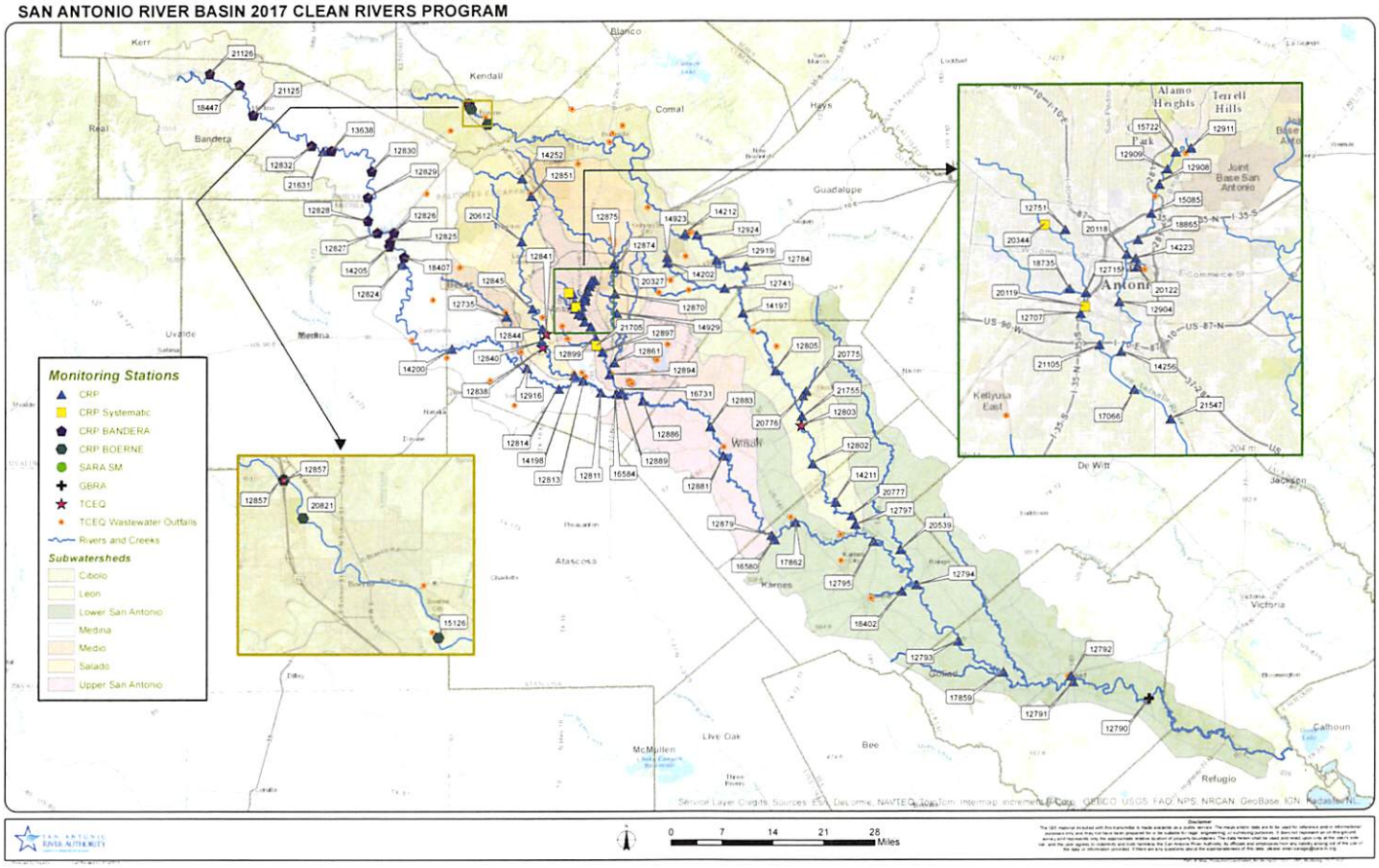
The table to the right lists all of the CRP sites that BCRAGD sampled each quarter. They are separated into sections as follows: Medina River sites, Medina Lake sites, Diversion Lake sites, and Sabinal Basin sites.

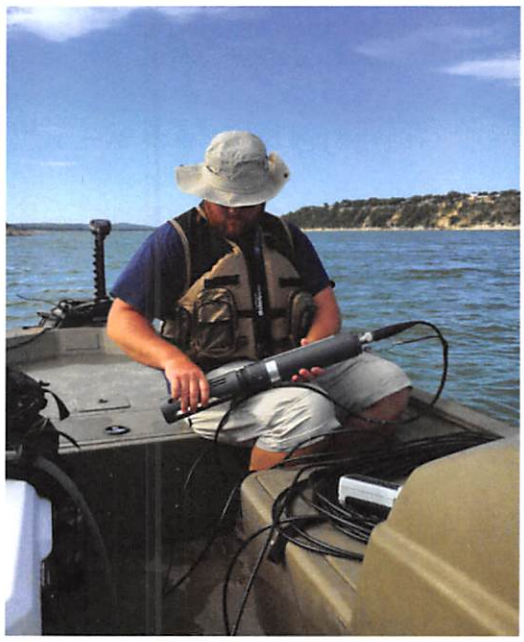
The maps shown in the next two pages show all of the CRP sites coverd by San Antonio River Authority and Nueces River Authority. The sites sampled by BCRAGD are included in both.

Station ID	Site Name
12830	Medina River @ 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
12829	Medina Lake Mid 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
14205	Medina R. Downstream Medina Reservoir in Mico, TX @ low water crossing
18407	Medina Diversion Lake near West Bank 40m Upstream of Dam and approx. 1mi Upstream of M. River crossing @ CR 2615
13017	Seco Creek @ RR 470
14939	Sabinal River @ FM 187

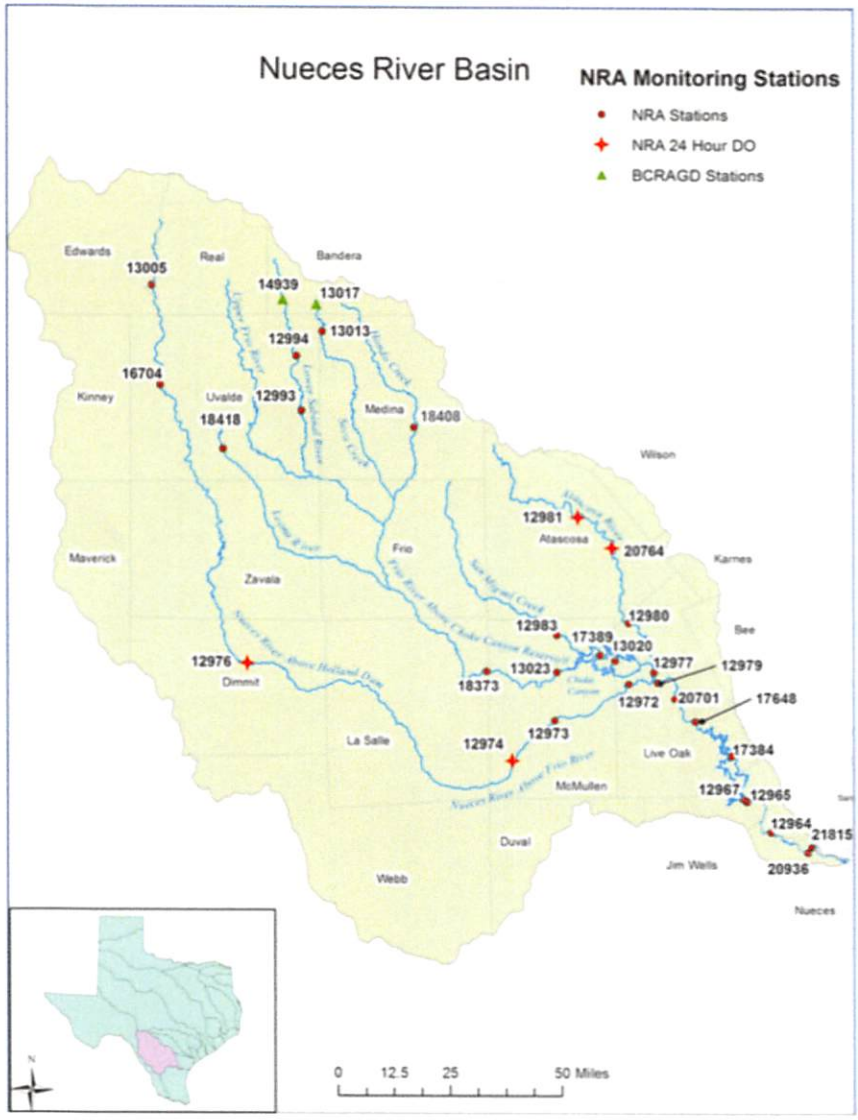
Surface Water Programs

SAN ANTONIO RIVER BASIN 2017 CLEAN RIVERS PROGRAM





The image to the left is of a CRP sampling on Medina Lake. The image to the right shows BCRAGD and SARA staff at an aquatic life monitoring event at the Mayan Dude Ranch.



The image above is from the Seco Creek CRP site, and the image below is from the Sabinal River CRP site south of Vanderpool.

Surface Water Programs

During FY 2017, BCRAGD District staff also:

- Assisted SARA with sediment sampling on the Medina River @ Mayan Ranch 10/25/16
- Attended SWQM (Surface Water Quality Monitoring) Training 11/01/16-11/03/16
- Created Medina Lake Habitat Improvement on 11/19/16
- Attended Ethics & Data Integrity Training by SARA on 11/29/16
- Attended a SCTWRIG Meeting 12/01/16
- Attended a webinar over subdivision design and flood hazard areas 12/02/16
- Attended HCA Rural Planning & Development Series 12/06/16
- Attended Texas Riparian Training (TWRI) on 12/07/16
- Attended Rainbow Trout Stocking by Parks and Wildlife 12/15/16
- Attended Wastewater School 01/17/17-01/20/17.
- Attended the Texas Chapter of the American Fisheries Society 01/19/17-01/21/17
- Attended Water for Texas 2017 01/23/17-01/25/17
- Attended an "Adopt a Highway" Clean up 01/31/17
- Attended River Cat Training with SARA on 02/01/17
- Attended Central Texas Water Conservation Symposium on 02/02/17
- Attended TFMA Meeting 02/22/17
- Attended MRPF Meeting 03/22/17
- Attended TWRI Stream & Riparian Ecosystems-Medina & Sabinal Rivers 04/18/17
- Attended SARA Coordinated CRP Meeting on 04/25/17
- Attended TFMA Spring Conference on 04/26/17-04/28/17
- Attended Texas State Fish Class 05/24/17-05/25/17
- Attended Texas Water Conservation Association Conference
- Attended TCEQ Meeting 06/23/17
- Attended SARA Risk Map Meeting 07/18/17
- Attended CRP Meeting with NRA & SARA- Lab Services on 08/03/17
- Attended 2017 TFMA Fall Conference on 08/29/17-09/01/17

The image above shows BCRAGD and SARA staff kayaking Diversion Lake for CRP sampling. To the right are images from an aquatic life monitoring event at the Mayan Dude Ranch.

Surface Water Programs

District In-House Sampling Programs

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

Surface Water Quality Monitoring

This 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 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 or Sabinal River and Medina Lake and follow up with an immediate investigation.

From October 2016 to September 2017 there were 7 instances with E. coli counts over the TCEQ standard of 399 cfu (colony forming units) 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 and further investigation if the count remains above the standard.

Site #	Location	Site #	Location
MR-2.05	Medina R. Bandera City Park @ 1st St	MR-3.05	Medina R. @ Ranger Crossing HWY 16
MR-2.04	Medina R. Bandera City Park Midpoint	MR-3.01	Medina R. @ RR 377
MR-2.03	Medina R. Bandera City Park - Hwy 173	MR-2.02	Below Sewage Treatment Plant Effluent
MR-1.01	Medina R. @ English Crossing	MR-2.025	Above Sewage Treatment Plant Efluent
LM-4.01	Sabinal R. @ Lost Maples 1st Bridge	WVC-2.01	Hill Country State Natural Area @ FM 1077
MP-3.01	Medina R. @ Moffett Park	ML-1.04	Medina Lake @ County Park NE of ramp
MRN-3.01	North Prong - FM 2107 @ Rocky Creek	ML-1.05	Medina Lake @ County Park SE of ramp
MR-3.04	Medina R. @ Tarpley Crossing	CC-4.01	Sabinal R. @ Cornelius Crossing
WC-3.01	North Prong @ Wallace Creek	WC-4.01	Sabinal R @ Williams Creek Crossing
MRN-3.03	North Prong @ Brewington Crossing FM 2107	SC-4.01	Seco Creek @ RR 470 Crossing
MRW-3.01	W. Prong @ Coalkiln Rd RR 377	UTOP	Sabinal R @ Utopia

Surface Water Programs

Nonpoint Source Pollution (NPS) Initiative on Medina Lake

Medina Lake is utilized as a source of drinking water for San Antonio and riparian residents. In the last few years, there has been an increase in population in the surrounding areas, and water recreation has grown in popularity. In July of 2016 BCRAGD began the Nonpoint Source Initiative as a survey of Medina Lake's waters to identify any potential nonpoint source pollution, and/or potential health risks to the public.

Nine Medina Lake coves will be sampled for the presence of fecal coliforms and E. coli in conjunction with other water quality monitoring that is currently taking place on Medina Lake, including the In-House water quality study and the Clean Rivers Program. Results will be published in a report at the conclusion of the project.

Site #	Location	Site #	Location
ML-1.06	Medina Lake - Pop's Place	ML-2.04	Medina Lake - Hamilton Cove
ML-2.01	Medina Lake - River Mouth	ML-2.05	Medina Lake - Elm Cove
ML-2.02	Medina Lake - Cypress Cove	ML-2.06	Medina Lake - Haybes Cove
ML-2.03	Medina Lake- Church Cove	ML-2.07	Medina Lake - Red Cove
ML-1.04	Medina Lake @ Co. Park - NE of Ramp		

Below is a combined summary of our In-house sampling & NPS sampling events:

1st Quarter: Oct 2016-Dec 2016
Oct 6, 2016 (9 Medina Lake sites)
Oct 19-20, 2016-- (CRP; 6 Medina R. sites)
Oct 26-27, 2016-- (5 Sabinal R., 18 Medina R., 1 M. Lake)
Nov 8, 2016 (CRP; 2 Sabinal R. sites)
Nov 17, 2016 (CRP; 2 Diversion L. sites)
Dec 7, 2016 (9 Medina Lake sites)
Dec 13-14, 2016-- (CRP; 5 Medina Lake sites)

2nd Quarter: Jan 2017 to March 2017
January 17, 2017 (CRP; 1 Medina R. sites)
January 24, 2017 (CRP; 2 Sabinal R. sites)
Feb 7-8, 2017-- (CRP; 5 sites Medina R.)
Feb 22, 2017 (9 Medina Lake sites)
March 15-16, 2017-- (CRP; 5 Medina Lake sites)
March 23, 2017 (CRP; 2 Sabinal R. sites, 9 Medina Lake sites)
March 28-29, 2017-- (5 Sabinal R., 18 Medina R., 1 M. Lake)

3rd Quarter: April 2017 to June 2017
April 11-12, 2017-- (CRP; 6 Medina R. sites)
April 20, 2017 (9 Medina Lake sites)
May 23, 2017 (CRP; 2 Diversion L. sites)
May 30, 2017 (9 Medina Lake sites)
June 13, 2017 (9 Medina Lake sites)
June 15, 2017 (1 Medina L., 6 Medina R., 2 Sabinal R.)
June 21-22, 2017-- (CRP; 6 Medina R. sites)
June 29, 2017 (1 Medina L., 6 Medina R., 2 Sabinal R.)

4th Quarter: July 2017 to September 2017
July 12, 2017 (1 Medina L., 6 Medina R., 2 Sabinal R. sites)
July 17, 2017 (CRP; 1 Medina R. site)
July 19-20, 2017-- (CRP; 5 Medina Lake sites)
July 25, 2017 (1 Medina L., 6 Medina R., 2 Sabinal R. sites)
July 26, 2017-- (9 Medina Lake sites)
August 9, 2017 (1 Medina L., 6 Medina R., 2 Sabinal R.)
August 15, 2017 (CRP; 2 Sabinal River sites)
August 22, 2017 (CRP; 1 Diversion L. sites)
August 23, 2017 (1 Medina L., 6 Medina R., 2 Sabinal R.)
September 12, 2017 (5 Sabinal R., 18 Medina R., 1 M. Lake)

Surface Water Programs

Invasive Species Management

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

The Nueces River Authority has been actively and successfully managing *Arundo donax* along a portion of the Sabinal River in Bandera County for the last eight 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 Authotiy in the chemical treatment and physical removal of *Arundo*.

The District is currently in preliminary stages of beginning *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* beginning in Summer 2018, and ongoing monitoring and re-treatment as needed.

If you have *Arundo donax* on your property and want more information on its control, please call BCRAGD at (830) 796-7260. To learn more about the Healthy Creeks Initiative, visit the Texas Parks and Wildlife Department website: http://tpwd.texas.gov/healthy-creeks.

The image to the top left shows a patch of *Arundo* compared to a BCRAGD employee. The image on the bottom left and the image above show BCRAGD staff removing *Arundo* in the Sabinal River.

BCRAGD has also begun to monitor Zebra Mussels - small, freshwater mussels that spread 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.

BCRAGD staff had a meeting at the San Antonio River Authority office concerning regional Zebra Mussel management on 8/04/17. Levi Sparks, Larry Thomas, and Morgen Ayers conducted the first monitoring efforts on Medina Lake with Texas Parks and Wildlife and San Antonio River Authority staff on 11/13/17. Literature concerning *Arundo donax* and Zebra mussels is available at the BCRAGD office for pick-up.

The top image is a collaboration between Texas Parks and Wildlife and BCRAGD to keep the public aware of the zebra mussel threat. The two bottom images are from the zebra mussel monitoring event mentioned in the text.

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, a popular recreational site, but an important drinking water reservoir for the entire region. The waters in the lake are some of the most pristine in the country. It is imperative that the Lake be preserved and protected.

The top image shows Larry Thomas preparing a bouy to be put in the water to warn boaters of a hazard. The bottom image shows Levi Sparks with the San Antonio Quality Bass Club posing with their artificial fish habitats to be placed in Medina Lake. The image to the right shows BCRAGD staff removing a potential boating hazard from the water.

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 the recent years, the organization has created a zebra mussel monitoring program in partnership with TPWD and monitoring the quality of the water through the CRP program and a study in partnership with USGS.

However, the BCRAGD has an interest in the human health and safety associated with Medina Lake as well. Staff have acquired a Hazard buoy for immediate deployment in the lake to warn boaters of hazard. 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. Along with the above mentioned, BCRAGD has also participated in numerous Fish surveys and Fish stockings done by TPWD in the lake.

Enforcement / Investigations

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 2017 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 Required Administrative Requirements

During FY 2017, the District maintained and reviewed policies mandated by Chapter 36 of the Texas Water Code including the Public Funds Investment Policy, Ethics Policy, Financial Management Policy, and Travel Policy. Additionally, the District reviewed and adjusted rules and District activities.

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. BCRAGD's Groundwater Resource Coordinator attended an Illegal Dumping Meeting with SARA on 10/13/16-10/14/16.

The image to the left shows a picture from a nuisance complaint from 2014 regarding a leaking septic. The image above shows an on-going environmental investigation from 2014 regarding an illegal tire dump.

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.

Education & Outreach Programs

USGS Early Flood Warning System Underway

On August 25, 2016 The Texas Water Development Board awarded $265,150 in Flood Protection Grant funding to BCRAGD for Bandera County. Working with USGS, this project is currently underway and will protect the lives of our local residents and also the communities downstream through a flood warning tool set. Two additional stream gages are already installed upstream, which in turn will improve response strategies and planning through advanced modeling and mapping. Parts of the Midwest have successfully implemented this tool set, and Bandera County will be an example to the rest of Texas. We envision this project to be fully functional and online by August of 2019.

BCRAGD staff held and attended multiple meetings concerning flood awareness. See details below:

- 12/02/16- Webinar: Subdivision Design and Flood Hazard Areas
- 01/11/17- Flood Protection Grant Meeting with the City of Bandera
- 01/31/17- County Emergency Management Meeting
- 02/02/17- Flood Awareness Meeting
- 02/22/17- Texas Floodplain Management Association Outreach Meeting
- 03/01/17- Science in Action: Part III: Flood Awareness presentation at Bandera Middle School
- 03/18/17- Commanche Cliffs HOA Meeting- Flood Warning
- 03/30/17- BCRAGD Public Meeting for Early Flood Warning Project
- 04/20/17- Utopia Flood Warning Meeting
- 05/15/17- Disaster Mitigation Plan Meeting
- 06/03/17- TFMA Floodplain Management 101
- 07/06/17- NWS & USGS Meeting

One of the first stages in the project was to install new gages. Above is the newly installed gage on the North Prong Medina River at Brewington Creek.

The 2013 Light Detection and Ranging (LiDAR) data acquisition will enhance the modeling and mapping capabilities for this flood warning tool set. 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, flood risk and emergency planning, watershed protection, water resource and invasive species monitoring.

Education & Outreach Programs

Public Safety - Flood Preparation Programs

BCRAGD has many Certified Floodplain Managers in its employ and is an active member of the Texas Floodplain Management Association. The District has partnered with Bandera County Emergency Management and the National Weather Service to hold Flash Flood Education workshops and put out several flash flood awareness radio public services announcements during Texas Flood Awareness Week.

Educational Recognition for Flood Awareness

The District won the 2017 John Patton Community Service Award in April 2017 from the Texas Floodplain Management Association. This was awarded to BCRAGD for promotions and educational activities initiated in schools and in the community to promote awareness over flood hazards. The award was presented to the BCRAGD board on Thursday, July 13th at the BCRAGD Quarterly Meeting. BCRAGD Board President Don Sloan and Water Conservation and Community Outreach Coordinator Morgen Ayers accepted the award on behalf of BCRAGD.

The image above shows the award given to BCRAGD by the Texas Floodplain Management Association. The image to the left shows General Manager, Dave Mauk, accepting the award at a Texas Floodplain Management Association meeting in Richardson, Texas.

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.

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 middle school students. The program features a water use and conservation presentation, the demonstration of a surface water runoff model and an aquifer model, with an emphasis on non point source pollution. Riparian and flood awareness education were BCRAGD additions to the program in 2016.

The images to the left show the NRA Water Resource Education Programs at Bandera Middle School (top) and Utopia ISD (bottom). The image above is from a Science in Action presentation at BMS.

The District facilitated hands-on surface and groundwater educational programs. Beginning in 2015, BCRAGD and Bandera Middle School (BMS) initiated a series of Science in Action programs to educate students on aquifer science, conservation, riparian systems, and flood awareness. In 2016 BCRAGD facilitated an aquifer science build and has continued the rest of the series into FY 2017. A riparian picture categorizing activity was facilitated for BMS's Environmental Fields class at the beginning of FY 2016.

Education & Outreach Programs

Educational Programs in the ISDs

The local Soil and Water Conservation Board invites the District to participate in 6th grade Ag Day at Mansfield Park in Bandera. In recent years, BCRAGD has collaborated with Nueces River Authority at this event. For FY 2017, this event took place on 05/12/17.

The image above is from the 6th grade Ag Day. The image to the top right shows the BCRAGD Back to School Bash stand. The image to the bottom right shows another Science in Action activity at BMS.

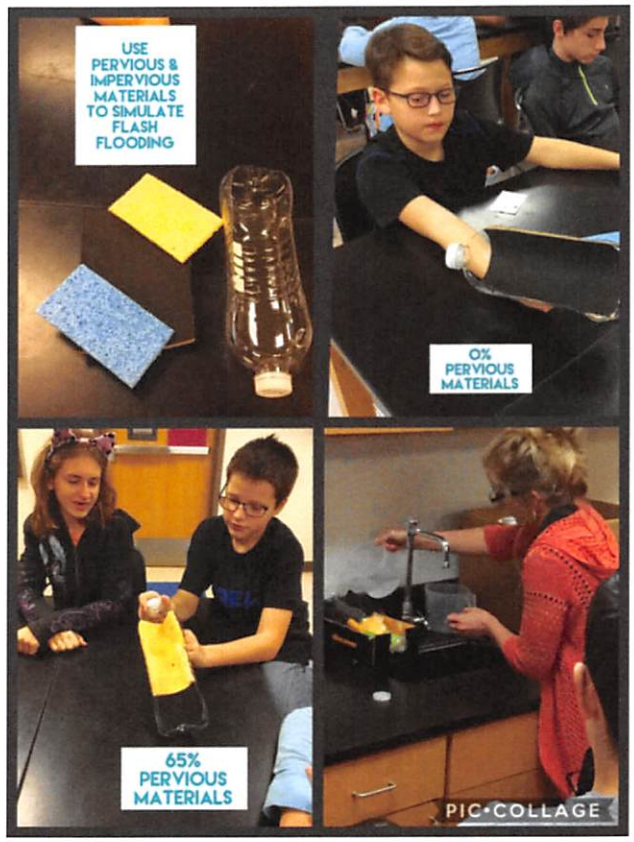
The District delivered Major Rivers educational work-books (an elementary water education curriculum) to schools in Bandera County and to Utopia ISD.

During 11/30/16-12/01/16, BCRAGD Community Outreach Coordinator held the Science in Action: Part II-Riparian Systems Event at Bandera Middle School. The Science in Action: Part III: Flood Awareness was held at Bandera Middle School on 03/01/17.

An Education and Community Outreach event was held at Alkek Elementary on 05/16/17 for Third Grade Earth Day as a presentation by BCRAGD's Community Outreach Coordinator.

On 08/10/17, BCRAGD's Community Outreach Coordinator held a Back to School Bash Water Conservation Presentation to Bandera Middle School.

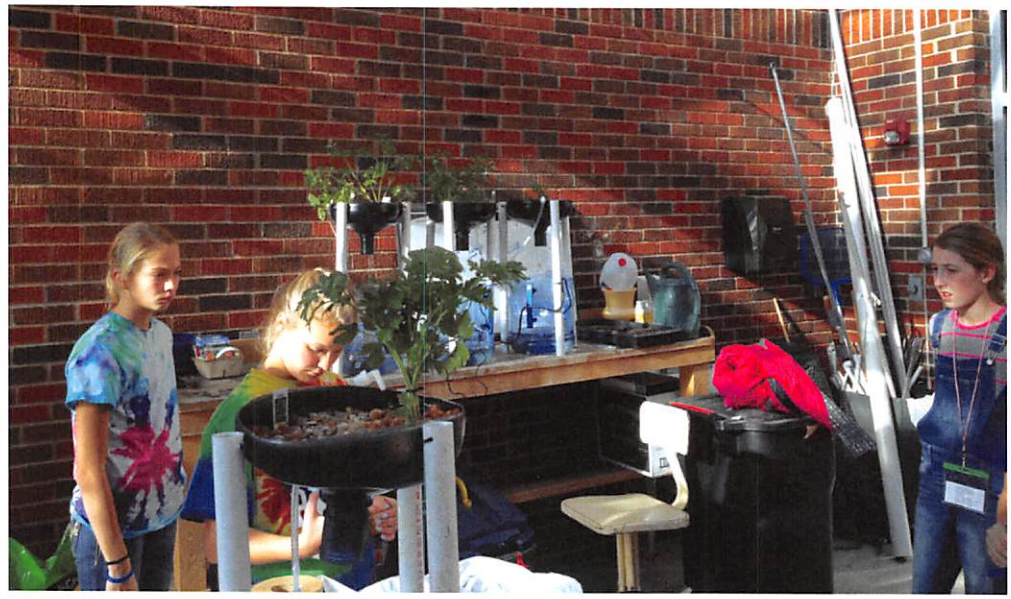
On 09/28/17-09/29/17, BCRAGD's Community Outreach Coordinator held the Science in Action Event for Bandera Middle School.



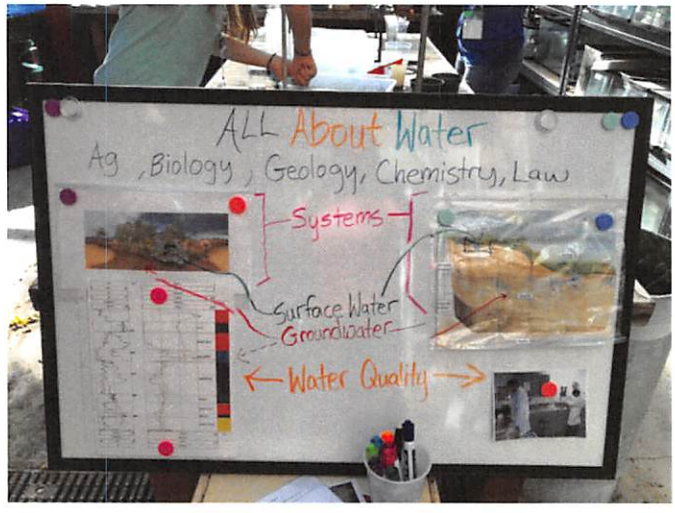
Education & Outreach Programs

Expanding Your Horizons (EYH)

The Expanding Your Horizons (EYH) Network is a global platform that seeks to increase female participation in the fields of math and science (as a part of the STEM effort) by facilitating local conferences that inspire middle school and high school aged girls in hands on workshops.



Schreiner University hosts EYH annually, and BCRAGD proudly sponsors and collaborates with its implementation. BCRAGD facilitated an aquifer science, water filter build, and small scale aquaponics system. The students were provided various natural and man-made materials from which to construct a model of an aquifer emphasizing its filtration function and components to build aquaponics system. On 10/28/16, BCRAGD Community Outreach Coordinator held a EYH demo meeting at Schreiner University. The actual EYH Event was held on 11/19/2016 at Schreiner University.



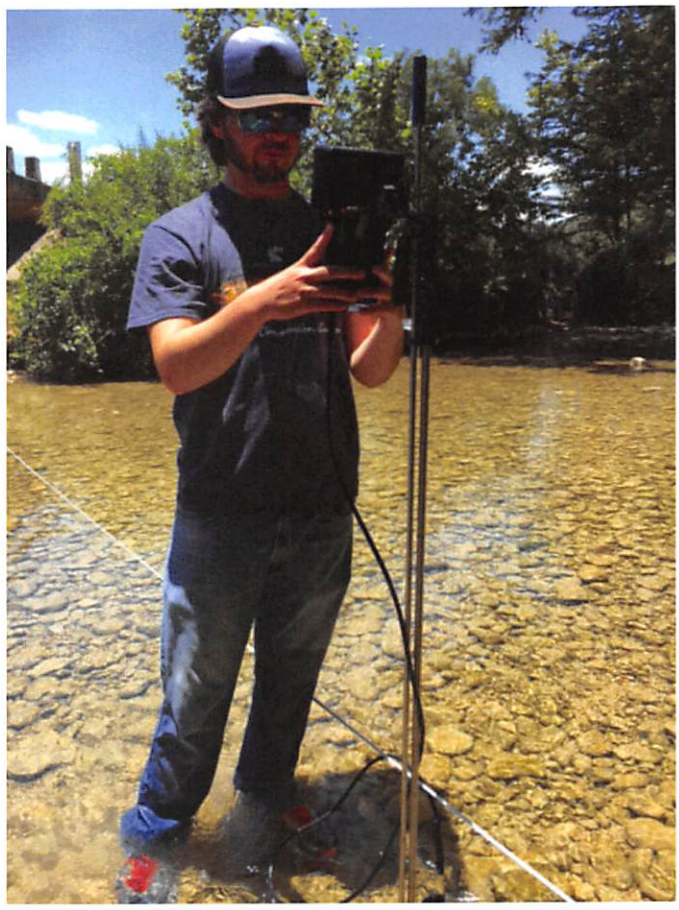
The image at the top right shows EYH participants learning about aquaponics. The image to the bottom left shows one of the completed natural water filter labs, and the image to the bottom right shows the lesson given before the labs started.

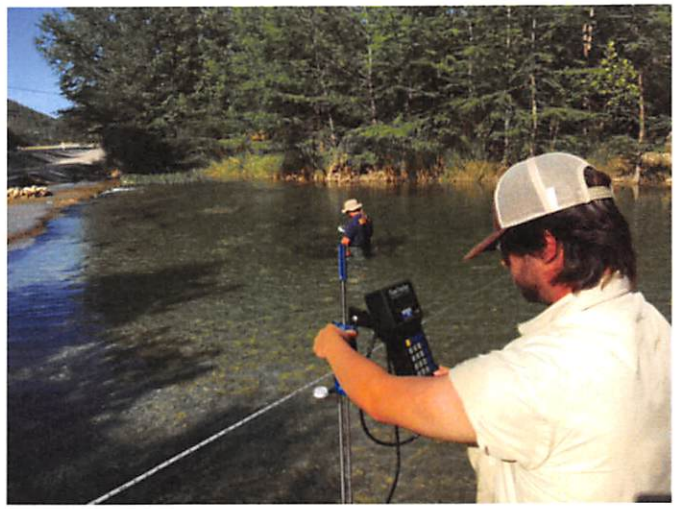
Education & Outreach Programs

University Internship Program

The District participates in the Schreiner University Community Internship Program (CIP). Each year a qualified student is given the opportunity to work and to learn at the District. The work includes both laboratory and field work.

Jaime Perez, a student at Schreiner University, interned with BCRAGD from May 2017 to July of 2017. He participated in the Medina River Clean Rivers Program, collected flow measurement data using the Flowtracker AVM (Acoustic Velocity Meter), BCRAGD's In-house Surface Water Quality Monitoring Study, and the Monitor Wells Program.





The images above show BCRAGD summer intern, Javier Perez, learning the various aspects of water management. The top right and bottom right pictures show him using the FlowTracker to calculate flow of a stream. The bottom left picture shows him learning how to take the static level measurement of a monitor well.

Education & Outreach Programs

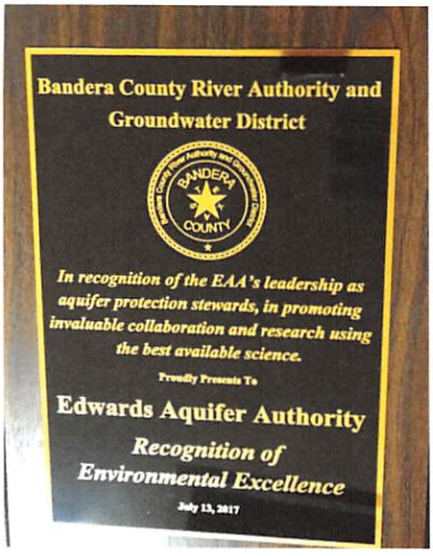
Water Conservation Programs & Natural Resource Stewardship

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. During FY 2017, this public event was on 12/15/16 and featured a watershed protection presentation by District Aquatic Biologist and District Water Conservation and Community Outreach Coordinator, along with water conservation and rainwater harvesting literature.

BCRAGD staff also attended Webinars over Small Drinking Water Systems and Drought and Your Water Well NGWA on 07/25/17.

BCRAGD gave Edwards Aquifer Authority an award for Environmental Excellence and an award to Field Operations Supervisor Marcus Gary for Environmental Stewardship displayed at BCRAGD's Quarterly Meeting July 13th, 2017. The aquifer authority was honored for the strong, science-based partnership it has developed with BCRAGD, while Gary was recognized for his leadership in moving projects forward that strengthen both agencies.



Award given to EAA by BCRAGD.

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.

District staff serve on various local groups focused on water conservation and watershed protection:

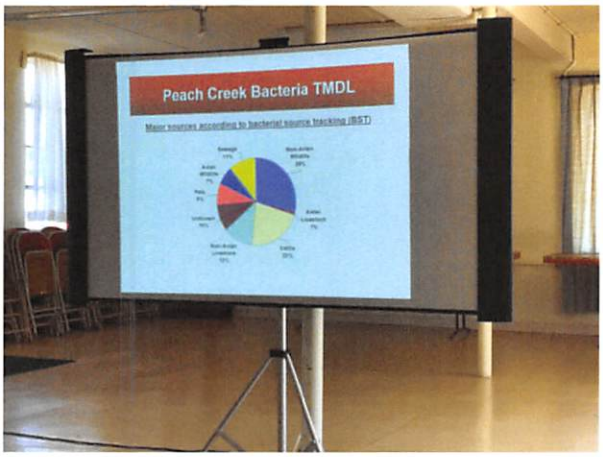
- Attended and presented with Nueces River Authority Water Resource Stewardship 02/08/17, 02/15/17, 03/02/17 as part of Education and Community Outreach at Bandera and Medina ISD.
- BCRAGD Education and Outreach Coordinator serves on the local Ag and Natural Resource Committee and attended the Ag & Natural Resources Committee Meetings on 02/28/17, 04/25/17, and 07/11/17
- Multiple staff serve on the Medina River Protection Fund Board (MRPF), which meets numerous times at the District office during the Spring to organize the annual Medina River Clean up which was held on May 6th, 2017. The District contributes toward the clean up each year. Staff also attended the MRPF meeting on 03/22/17.
- Two BCRAGD staff are members of Lake Medina Conservation Society (LAMCOS) and several staff members attended the LAMCOS meeting on 11/17/16
- Our District's Water Conservation and Community Outreach Coordinator serves as the Madrona Garden Club's Secretary attending meetings on 10/20/16, 11/17/16, 01/19/17, 02/16/17, and 04/19/17. The District was invited to give a pre-

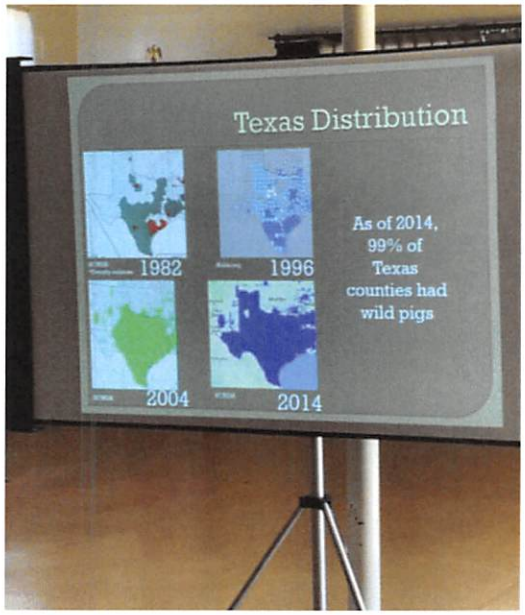
Education & Outreach Programs

Water Conservation Programs & Natural Resource Stewardship

sentation overviewing watershed protection, along with water conservation best management practices for homeowners, highlighting garden-specific techniques based on best available science.

- On 04/18/17, BCRAGD staff attended TWRI Stream and Riparian Ecosystems- Medina and Sabinal Rivers at Mansfield Park and Mayan Ranch.
- On 09/07/17, BCRAGD's Community Outreach Coordinator gave a Lone Star Healthy Streams Presentation in Medina, Texas.





Both images to the left show portions of presentations given at the Lonestar Healthy Streams workshop in Medina, TX. The image above is from the TWRI Stream and Riparian Ecosystems workshop.

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 Ranchers and Landowners Association of Texas (RLAT) have been essential partners in various community outreach efforts. BCRAGD staff attended an AgriLife Workshop on Top 10 Natural Resource questions in Bandera County on 03/03/17 and spoke at an AgriLife Workshop on 07/28/17. Staff also attended the ANR Committee Meeting held on 09/19/17.

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:

- Arundo Workshop Preparation Meeting with the City on 08/04/17
- HCA Arundo Workshop on 08/07/17
- Commissioner's Court- NRA Arundo Prevention Presentation on 08/10/17
- Presentation at TxDOT Safety Meeting over NRA Arundo Prevention on 08/17/17
- Arundo Project Cost Share Conference Call with TPWD on 08/17/17
- Performed Arundo Treatment with the NRA on 09/05/17-09/06/17
- Arundo site visits with the City Administrator on 09/28/17

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.

The image on the top shows the classroom portion of the Arundo Workshop held with BCRAGD, Hill Country Alliance, Nueces River Authority, and the Texas Parks and Wildlife Department. The picture below shows the field portion.

Education & Outreach Programs

Annual Medina River Cleanup

The Medina River Cleanup is an annual event that 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, the District's website, the District's office, and email chain.

The image above shows the participants in the 2017 Medina River Cleanup. The image to the bottom left shows the scrap metal that was collected being loaded up into dumpsters.

For the 2017 river clean up District staff volunteered along with BCRAGD Director Don Sloan. There were about 200 participants from 21 cities and towns in Texas that attended, and two large dumpsters were filled with debris removed from the river, one of which was full of metal that was recycled.

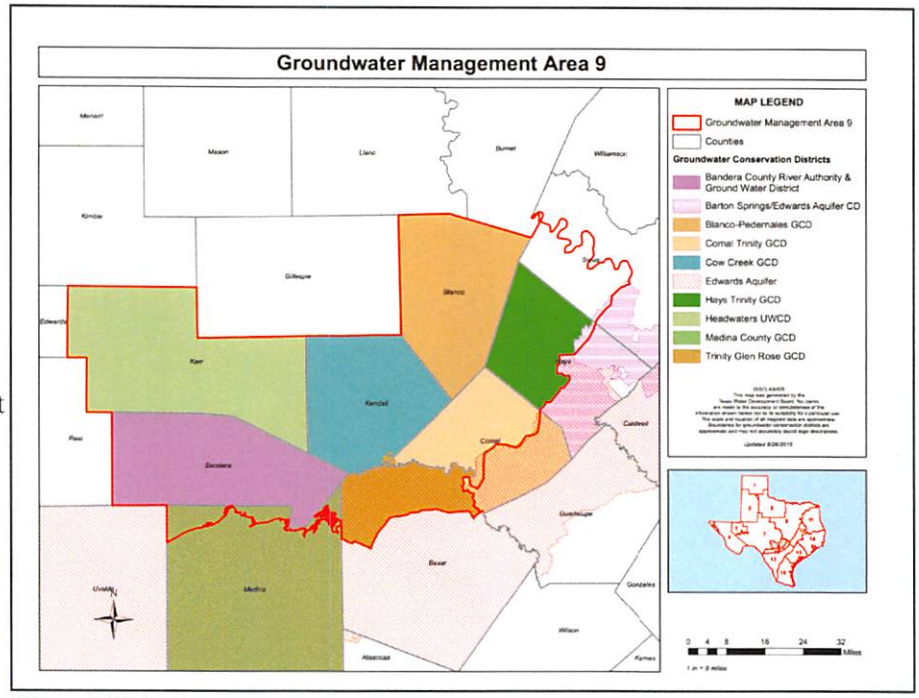
Kerrville Recycling measured 4,080 lbs. of scrap metal retrieved from the river on cleanup day, 680 lbs. more than last year's cleanup. A second dumpster was filled with trash that could not be recycled, reported BCRAGD Education and Outreach Coordinator, who oversaw sorting out the trash on cleanup day.

The recycling effort produced dividends for the Medina River Protection Fund, which hosts the clean-up each year. Kerrville Recycling loaned the dumpster, contributed the $204 collected from recycling the metal and another $1,714 to pay for the t-shirts that went to all participants. The effort was mostly aimed at removing debris from the flooding which occurred on June 3, after last year's cleanup. This was the seventeenth year of the annual cleanup, which is always held on the first Saturday in May.

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) Added by Acts 1995, 74th Leg., ch. 933, §2, eff. Sept. 1, 1995.



Map of GMA-9

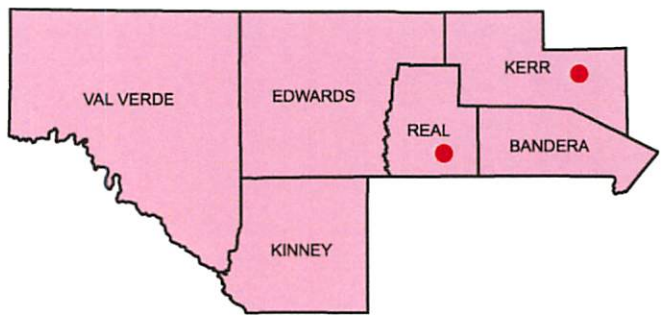
BCRAGD has been a member of GMA-9, a regional water management group since 2005. More information on the group, including data and reports can be found at http://www.twdb.texas.gov/groundwater/management_areas/gma9.asp

Our District's involvement is summarized below:

- Attended and represented the District at the GMA 9 public meetings on 10/17/16, 02/06/17, and 03/27/17, and a GMA-9 Manager's Meeting on 07/24/17
- Supplied groundwater data to TWDB for determination of aquifer conditions
- Maintained program to require measurement of permitted well usage as required by the state to determine water usage for the county
- Attended adjacent GMA meetings for DFC's compliant strategies
- GMA-9 re-adopted the DFC on April 18th, 2016.

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 10/19/16 and 07/27/17.



Map of Region J - Plateau Regional Water Planning Group

Resource Planning & Collaboration

Texas Alliance of Groundwater Districts Member

Founded in 1988, the Texas Alliance of Groundwater Districts (TAGD) "works to promote and support 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, http://www.texasgroundwater.org/). During FY 2017, BCRAGD remained an active member:

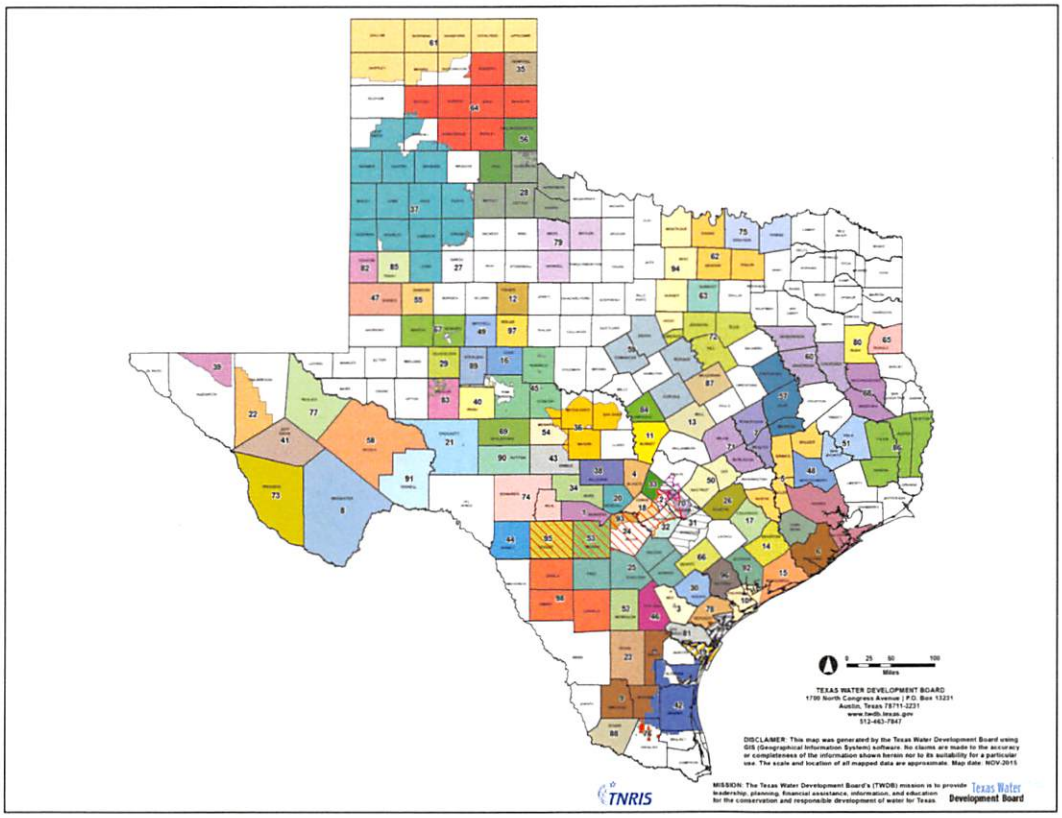
- BCRAGD General Manager served as a representative on the Legislative Committee
- The District's General Manager was invited to speak during a Texas Alliance of Groundwater District meeting on August 30, 2017 over Groundwater Conservation District adopting similar rules.

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_technical-resources/eflows/guadalupe-sanantonio-bbsc

District General Manager, Dave Mauk, serves as a BBASC Member, representing the Regional Water Planning Groups Interest Group. BCRAGD staff attended meetings for GSA BBASC on 04/05/17 and 09/15/17.



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

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Articles, Publications, and Press Releases

Articles / Publications / Press Releases

	Article Title	Date	Newspaper Published
1.	Notice of General Election Bandera Cty 11/08/16	10/05/2016	Bandera Bulletin
2.	Notice of General Election Bandera Cty 11/08/16	10/13/2016	Bandera County Courier
3.	BMA	10/13/2016	Bandera County Courier
4.	Commissioners' Court	10/20/2016	Bandera County Courier
5.	BCRAGD Board Meets for Quarterly Session	10/27/2016	Bandera County Courier
6.	Bacteria Count in Bandera's Surface Water	11/10/2016	Bandera County Courier
7.	DeWinne Claims River Authority Seat	11/23/2016	Bandera Bulletin
8.	Public Notice of Intent to Introduce a Bill	01/19/2017	Bandera County Courier
9.	Officials to Address Republican Women	03/01/2017	Bandera Bulletin
10.	Public Notice of Tax Foreclosure Sale	03/22/2017	Bandera Bulletin
11.	Notice to Public-BCRAGD 1st Public Meeting For The Early Flood Warning System Project 3/30	3/23/2017	Bandera County Courier
12.	River Authority to Examine Key Points	03/29/2017	Bandera Bulletin
13.	Bacteria Counts in Bandera's Surface Water	04/13/2017	Bandera County Courier
14.	Annual River CleanUp This Saturday	05/04/2017	Bandera County Courier
15.	2017 6th Grade Conservation Workshop	05/18/2017	Bandera County Courier
16.	Workshop Teaches Ecological Lessons	05/24/2017	Bandera Bulletin
17.	River Authority Tightens Drought Rules	05/24/2017	Bandera Bulletin
18.	BCRAGD Offers Info on Protective Riparian System	05/25/2017	Bandera County Courier
19.	Notice-Abnormal Drought Restrictions in Effect	05/25/2017	Bandera County Courier
20.	BCRAGD Puzzels Over Property Values	06/01/2017	Bandera County Courier
21.	Riparian Systems Offer Big Benefits	06/07/2017	Bandera Bulletin
22.	River Cleanup Outdoes 2016 Scrap Totals	06/07/2017	Bandera Bulletin
23.	Alert Issued on Mussels Infestation	06/28/2017	Bandera Bulletin
24.	Dear Editor: Puzzles Over Property Values True	06/29/2017	Bandera County Courier
25.	Flying L Water Rights Agreement Proposed	07/05/2017	Bandera Bulletin
26.	Water Contamination Readings Acceptable	07/19/2017	Bandera Bulletin
27.	BCRAGD Receives Community Service Award	07/19/2017	Bandera Bulletin
28.	Bonds Between Water Districts Honored	07/19/2017	Bandera Bulletin
29.	Awards Presented at BCRAGD Meeting	07/20/2017	Bandera County Courier
30.	BCRAGD Public Service Announcement	07/20/2017	Bandera County Courier

Articles / Publications / Press Releases

	Article Title	Date	Newspaper Published
31.	Arundo Donax: A Workshop on Controlling Invasive River Cane Along the Medina River 8/7/17	07/27/2017	Bandera County Courier
32.	BCRAGD Public Service Announcement	08/03/2017	Bandera County Courier
33.	Arundo Donax Workshop 8/7/17	08/03/2017	Bandera County Courier
34.	Non-Native Reed Controls Outlined	08/08/2017	Bandera Bulletin
35.	Bacterial Tests Raise No Alarms	08/08/2017	Bandera Bulletin
36.	BCRAGD & WPOA on BMA's Agenda	08/10/2017	Bandera County Courier
37.	E. coli numbers spike after rains	08/17/2017	Bandera County Courier
38.	Water District Notice of Public Hearing on Tax Rate 9/1	08/23/2017	Bandera Bulletin
39.	Bacterial Concentration in River Fall	08/23/2017	Bandera Bulletin
40.	Budget, Tax Increase Anticipated at BCRAGD	08/23/2017	Bandera Bulletin
41.	Water District Notice of Public Hearing on Tax Rate 9/1	08/24/2017	Bandera County Courier
42.	BCRAGD Public Service Announcement	08/31/2017	Bandera County Courier
43.	BCRAGD Approves Budget, Tax Hike	09/06/2017	Bandera Bulletin
44.	Water Quality Measures Not Hazardous	09/13/2017	Bandera Bulletin
45.	High E. coli Count Found on Sabinal	09/20/2017	Bandera Bulletin
46.	Promoting Sustainability Through Rainwater Harv.	09/21/2017	Bandera County Courier
47.	BCRAGD Surface Water Conditions	09/21/2017	Bandera County Courier
48.	Rainwater Catchment Boosts Water Conservation	09/27/2017	Bandera Bulletin

Featured Newspaper Articles

October 1, 2016 - September 30, 2017

2017-05-04- Bandera County Courier

Annual River Cleanup This Saturday

By Bob Brischetto Special to the Courier

More than two hundred people are expected to gather at the Bandera city park near the dam on Saturday for the Medina River Cleanup. For the most part, they will be removing debris from flooding on June 3 of last year. Since 1983–when the US Geological Survey began measuring–the river has exceeded its flood stage sixteen times.

The Medina River Cleanup was initiated as an annual event by the Lake Medina Conservation Society in 2001 to bring together the various communities in the county to keep the river clean. In 2005 the Medina River Protection Fund was established as a 501(c)(3) public charity to raise funds to protect the river and ensure that each year there would be a cleanup effort.

Paddlers from throughout the state join with local and nearby residents. Last year 212 persons came from 32 towns in Texas to help with the cleanup. The Medina River begins in the springs of northwestern Bandera County and crosses the county diagonally until it reaches Medina Lake, continues past the Medina Dam southeastward until it joins the San Antonio River near the town of Von Ormy.

The cleanup effort covers the estimated 50 miles of river within Bandera County. Cleanup organizers have divided the cleanup area into twelve sections. Section heads have been identified to protect the safety of paddlers and coordinate the shuttle in each section. They are posted along with maps of the river and information on the cleanup at www.MedinaRiver.net.

A liability release form must be signed by all participants and a parent or guardian for each person under 18 years. These are available on the web site and at registration. Maps of the river and more detailed information about the cleanup may also be found on the web site.

The cleanup begins with registration at 9 am Saturday at the Bandera city park near the dam. Participants can get a breakfast taco at registration and hot dogs for lunch. A three-meat barbecue for all participants will follow at 5 pm with entertainment by Rodney Joe Smith.

2017-05-18- Bandera County Courier

2017 6th Grade Conservation Workshop

The Bay Wing Hawk (also known as Harris Hawk) flies over the students.

For the 35th year, the Sixth Grade Conservation Workshop has been sponsored by the Bandera Soil and Water Conservation District. The goal of this program is to expose students of the county to the needs and practices found in the farming and ranching industry. Some of the subjects covered in the event include Soils, Rangeland Management and Health, Rainfall and its effects, Wells and Groundwater, Watersheds, Water Safety and Bats.

Presenters represent several agencies and include Soil & Water Conservation Districts, Natural Resources Conservation Service, Texas Parks and Wildlife and the Bandera County River Authority and Groundwater District. The Key Club from Bandera High School also provided assistance for preparation of the meal and serving.

The Hondo National Bank has for several years, provided funds to allow Last Chance Forever, a bird of prey and conservancy group, to give a program about raptors and their importance in nature. This presentation by John Karger and his staff is always a highlight for the students to see several species of these important birds up close and actually watch them fly.

This year, a long time District Director, Paul L. Garrison Jr., received a plaque of appreciation from the Bandera SWCD for 18 years of dedicated service. The Bandera SWCD looks forward to having another Conservation Workshop for students next year.

Workshop Teaches Ecological Lessons

For the Bulletin May 24, 2017

A conservation workshop was held for the 35th year this year by the Bandera Soil and Water Conservation District to show sixth grade students in the county more about the farming and ranching industries and about the region's ecology.

Among the subjects covered in the May 12 event were soil types, rangeland health and management issues, rainfall factors, groundwater and watershed issues and water safety.

Hondo National Bank again provided the financial support to bring representatives from the birds of prey rehabilitation and conservancy group Last Chance Forever to the event to talk about raptors and their importance to nature.

John Karger and his staff at Last Chance Forever demonstrated the skills of some of the raptors to the sixth graders.

Also making presentations at the event were officials with the event were officials with the conservation district, the U.S. Natural Resources Conservation Service, the Texas Parks and Wildlife Department and the Bandera County River Authority and Groundwater District. The Bandera County Key Club helped with the preparation and serving of the meal for students.

In addition, the event featured the presentation of a plaque of appreciation from the conservation district to district Director Paul L. Garrison Jr. for his 18 years of service to the water conservation district.

Officials with the district said they look forward to holding another conservation workshop for students in 2018.

River Authority Tightens Drought Rules

For the Bulletin May 24, 2017

The Bandera County River Authority and Groundwater District has moved Bandera County to abnormally dry drought restrictions, based on current groundwater levels and rainfall deficits, district officials have reported.

Those restrictions require that all holders, public water suppliers, any district permit holder in the county and anyone who uses water from a public supply system shall limit irrigation of landscaped areas and turf, to the hours after 6 p.m. and before 8 a.m. to reduce water losses due to evaporation.

In addition, the following uses of water are considered non-essential and shall be prohibited:

- Washing down any sidewalks, walkways, driveways, parking lots, tennis courts or other hard-surfaced areas.
- Washing down buildings or structures for purposes other than immediate fire protection.
- Failure to repair a controllable leak within a reasonable period after having been given notice directing the repair of such leak.

A map of the drought conditions facing the nation, as determined by the U.S. Department of Agriculture and three other agencies, can be found at http://droughtmonitor.unl.edu/.

For more information about the drought, visit the district's website at www.bcragd.org.

BCRAGD offers info on protective riparian system

BCRAGD offers info on protective riparian system

The Bandera County River Authority and Groundwater District has been working in collaboration with the Nueces River Authority on a Riparian System article series as a public service to the community. The following is the first of a series, which they plan to present quarterly, featuring a specific plant.

Know before you mow

Shrubs and grasses may seem to be blocking your view of the river, but there's something you should know before you mow or clear those areas. That vegetation is part of a riparian system that rewards and protects the land and the public in more ways than one. A riparian system is characterized by a diverse plant community alongside a stream, river, (or other surface water body), which works to sustainably interact with soil, water, and the ecosystem. These unique plants range from grasses and forbs to shrubs and trees, and each plant species should be treated differently. One of their major collective functions is to act as a buffer to slow the speed of rainfall runoff, which allows more water to soak into the ground, and the remainder of the water as runoff is filtered before it reaches the stream. Some of the rainfall that soaks into the ground moves laterally to slowly feed the stream or river when it needs it (such as during drought), and some of it infiltrates to become groundwater. This depends on the topography as well as the subsurface conditions. Another major function of riparian plants is sediment trapping, which adds to overall bank stability while enhancing water storage.

When we receive a *flood event*, (as we periodically do in the Texas Hill country), stable riparian systems are crucial to reducing floodwater speed and volume into our streams and rivers, which helps protect communities downstream. This stabilization, largely due to deep plant root systems and trapped sediments can additionally prevent a complete bank washout, which could wreak havoc on downstream communities, the water quality, and wildlife habitat.

The photo on the left reflects an unhealthy riparian area, while the photo on the right reflects a healthy riparian area, (where vegetation has been allowed to grow). Photos courtesy of Nueces River Authority and Steve Nelle.

There are various reasons to have mowed or cleared access to specific portions of our streams and rivers. If we use the knowledge of these riparian system functions to make the best management decisions for our land, the benefits are far reaching. Humans, wildlife, and the environment reap the benefits of water quality improvement, increased water storage, and mitigation of floodwaters. To learn more about these systems and their special plants, visit: http://remarkableriparian.org/ and http://texasriparian.org/ Additional questions may be directed to the contacts at the following local entities:

Sky Lewey
Resource Protection and Education Director
(830) 278-6810
slewey@nueces-ra.org

Morgen Ayers
Water Conservation & Outreach Coordinator
(830) 796-7260
mayers@bcragd.org

Nueces River Authority

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

Flying L water rights agreement proposed

Bandera Bulletin Wednesday July 5, 2017

by Bill Pack
bill@banderabulletin.com

Bandera County River Authority & Groundwater District directors have agreed to resolve their water rights dispute with the Flying L Hill Country Resort by endorsing higher water allocations than directors had wanted but modifying a judge's recommendations governing how those water rights are released.

The board of directors on Thursday, June 29, unanimously adopted a proposal that generally endorses an administrative law judge's recommendation to give the Flying L the authority to pump 735 acre-feet of water per year from its seven wells; but instead of authorizing all the production at one time as the judge proposed, the proposal would delay the release of 408 acre-feet of those rights until new resort projects that need that water are ready to be built.

The board had sought to limit the Flying L's pumping rights initially to 240 acre-feet a year but indicated at a September hearing that it would be willing to accept an increase to 301 acre-feet of groundwater.

So while voting for the proposed settlement, several directors were not happy that state Administrative Law Judge Casey A. Bell had recommended a 735 acre-foot total allocation for the resort. "The administrative law judge gave the citizens of Bandera a bad deal, but it appears we are bound by this proposal," said Director Gene Wehmeyer. While the administrative's judge's proposal is not final, it does carry a fair amount of weight if it is challenged in court, the district's attorney, Richard C. Mosty said. Wehmeyer and other directors worried that wells of property owners surrounding the Flying L could dry up if the resort pumps the 735-acre-foot limit each year. "Somebody will be sued. Hopefully, not us," said Director Sid Gibson. Still, the board's decision does not resolve the pumping rights question, which arose in 2014 when the Flying L challenged the proposed production limits that the river authority had established for its wells.

The Flying L has to decide whether it accepts the board's settlement decision. If it doesn't, it can appeal the matter to state District Court, which would start the clock on another round of deliberations. Jody Jenkins, who co-owns the resort, and the Flying L's attorney Rene Ruiz attended last week's board meeting but declined to comment on the settlement proposed by the board at the end of the session. Ruiz assured the board that the Flying L would be good stewards of the water rights they ultimately receive. The resort initially had hoped to attain a 2,100 acre-foot-per-year pumping limit but acknowledged at the September hearing that a 1,400-acre-foot limit could be justified under the groundwater district's rules.

Ruiz disputed claims at last year's hearing that the higher pumping limits proposed by the Flying L would have a catastrophic impact on the aquifer that the resort counts on for water.

The law judge's proposed decision, a 46-page document that was issued in January, said the 735 acre-feet limit it recommended "strikes an appropriate balance between the protection of the Flying L's property rights in the groundwater below the surface of its land and the conservation, protection, preservation, recharging and prevention of waste of groundwater in the district."

Bell, in his decision, also said that the Flying L's historic use of groundwater and its need for additional groundwater production are factors that should be considered in establishing groundwater limits.

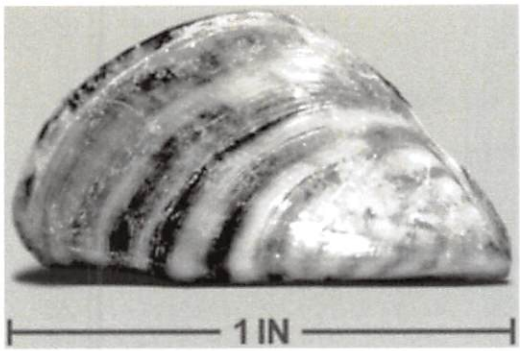
The resort showed over the course of the administrative review that it had a need for 735 acre-feet of groundwater to cover its current operations and planned expansions in its golf course's irrigation system, which would need an estimated 134 acre-feet of additional water, in its water park,

which would require a 90-acre-foot addition annually, and in its subdivision acreage, which would need 184 acre-feet of new groundwater, the judge said. As a result, Bell recommended that the water district amends the Flying L's groundwater permits to allow the withdrawal of 735 acre-feet of water a year for commercial, irrigation and recreational purposes.

The modification approved by the board would issue the resort authorization to pump 327 acre-feet of groundwater immediately and would allow it to obtain variances producing more water for the golf course irrigation system, the two, new water parks and the proposed 190-lot expansion of the subdivision once construction starts on those expansions.
Those projects have not been fleshed out enough to warrant a commitment of water now, the board decided. How acceptable that condition is to the Flying L is likely to be a key factor in the resort's decision making concerning an appeal. Bell's opinion quoted Jenkins as saying he could not obtain financing for the water park and subdivision expansions without a showing of a commitment that the expansions would have the water needed for them to move forward.

Alert issued on mussels infestation

Bandera Bulletin Wednesday July 7, 2017



Invasive and destructive zebra mussels have been found in Canyon Lake- only 60 miles from Medina Lake – and local water quality officials are calling on boaters to help keep the mussels from spreading.

Texas Parks and Wildlife Department experts confirmed the presence of the mussels at Canyon Lake on June 8, calling it the first positive documentation of zebra mussels in that lake and in the Guadalupe River Basin.

Employees at a marina noticed zebra mussels while working on a boat and called parks and wildlife to report the finding. It is the farthest south that zebra mussels have been verified in Texas, officials said.

Plankton samples collected from Canyon Lake found zebra mussel larvae at multiple sites, meaning the lake has a fully established infestation, state officials said.

The rapidly reproducing zebra mussels, originally from Eurasia, can cover shoreline rocks and litter beaches with treacherously sharp shells, can clog public water intakes and damage boats and motors that are left in infested waters, officials said.

In addition, they could jeopardize three, state-listed threatened freshwater mussels that are found in the Guadalupe River basin – the Texas Pimpleback, the Golden Orb and the Texas Fatmucket.

Brian Van Zee, the parks department's regional director for inland fisheries, said evidence has shown that the zebra mussels colonize the shells of native mussels, eventually reaching a density that suffocates the native mussels.

Van Zee has called the Canyon Lake finding "a textbook scenario of zebra mussel infestation that is a result of a contaminated boat being launched on the lake." He hopes boaters will do their part to limit the infestation by following the "Clean, Drain, and Dry" initiative.

As explained online in the link http://www.texasinvasives.org/zebramussels, the initiative calls on boaters to clean their boats, trailers and gear of all plants and foreign objects, to drain all the water out of the boat, including the bilge and live wells, before leaving a lake and to dry the boat and trailer for a week or more before entering another body of water.

Zebra mussel larvae are microscopic, and both adults and larvae can survive for days in or on boats transported from a lake, officials said.

In Texas, it is unlawful to possess or transport zebra mussels, dead or alive. Boaters are required to drain all water from their boat and onboard receptacles before leaving or approaching a body of fresh water in order to prevent the transfer of zebra mussels that might be inside.

Officials with the Bandera County River Authority and Groundwater District issued a report about the infestation hazard and are asking residents of Bandera and Medina Counties to take the steps needed to keep the mussel infestation from getting to Medina Lake.

They said area residents can call the river authority at 830-796- 7260 for more information.

Since zebra mussels were first found in Texas in 2009, 10 lakes in four river basins are now classified as infested, meaning they have an established, reproducing population, parks department officials said. Those lakes are Belton, Bridgeport, Dean Gilbert, Eagle Mountain, Lewisville, Randell, Ray Roberts, Stillhouse Hollow, Texoma and now Canyon.

Arundo Donax
Contributed

Arundo Donax: A Workshop on Controlling Invasive River Cane along the Medina River

August 7th from 10:30 am—2:00 pm

Hosted at the Bandera County River Authority & Groundwater District Office

Join us on Monday, August 7th, to learn about *Arundo donax*. This non-native, invasive plant—also referred to as river cane or giant reed—has taken over river banks across the Hill Country, including stretches of the Medina River. Classroom presentations and a site visit will highlight the harmful impacts of this plant and what we can do as a community to control it and restore our river banks.

To RSVP, email Morgen Ayers at mayers@bcragd.org or call 830-796-7260*

Who: this free workshop is geared towards landowners, community members, and agency personnel that own or manage river or creek-side habitat in Bandera County

What: classroom presentations, free lunch provided by BCRAGD, then a site visit to learn about *Arundo donax*

Where: meet at the Bandera County River Authority & Groundwater District Office (440 FM 3240 Bandera, TX 78003). After lunch, we'll head down to the city park along the Medina River

When: on Monday, August 7th, we will meet at 10:30 am and wrap-up at 2:00 pm

Why: to learn about an emerging threat to our local waterways and what we can do to restore and protect the health of our creeks and rivers

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

TEXAS PARKS & WILDLIFE

BANDERA, TEXAS COWBOY CAPITAL OF THE WORLD

Nueces River Authority

hill country alliance

2017-08-17 Bandera County Courier

E. coli numbers spike after rains

BCRAGD

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 Wednesday, Aug. 9. The significant spike in colony forming units of E. coli is directly attributed to the heavy rains of Monday, Aug. 7.

According to BCRAGD's aquatic ecologist Levi Sparks the spike in colony forming units (cfu) is more a result of run off during rains than churning up of the water in the river itself.

"The run off carries manure into the river, which is what normally causes the numbers to spike," Sparks said. "The city park is more often than not higher than other areas in the county because of the amount of human activity and landscaping. It normally takes a week, sometimes two week for the numbers to get back to a more normal level." 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 colony forming units (cfu) per 100 mL of water.

There is always a possibility of infection from E. coli or other waterborne illness. Never drink or ingest river water without proper disinfection. BCRAGD surface water staff test samples every Wednesday during the summer months and post the results on Thursday at the BCRAGD website at www.bcragd.org and the BCRAGD Facebook page. Results listed below were analyzed at the BCRAGD lab and are for informational purposes only.

Results are also posted on Medina Lake, park at
PR 37 less than 10 cfu
English Crossing 240 cfu
Bandera River Ranch Park 190 cfu
Bandera City Park at SH173 860 cfu
Bandera City Park at 1st Street 670 cfu
Ranger Crossing 70 cfu
Moffett Park in Medina 40 cfu
Sabinal River at Lost Maples 50 cfu
Sabinal River at Utopia less than 10 cfu

High E. coli Count Found on Sabinal

By Bill Pack Bandera Bulletin September 20, 2017

E. coli bacterial concentrations at one site on the Sabinal River spiked beyond the acceptable level during one test last week, but in a retest two days later fell well below the level considered safe for normal recreational activities, Bandera County River Authority and Groundwater District data shows.

The problem site was at the Sabinal River and Cornelius Road, which produced an E. coli count of 550 colony forming units per 100 milliliters of water, or cfu, when it was tested on Sept. 12, groundwater district testing showed.

That count was well over the 399 cfu level that has been established by the Texas Commission on Environmental Quality as the concentration above which no primary recreational contract should be allowed. That means no one should be allowed to engage in activities that result in the total submersion of the head below water at that level.

However, when the same site was tested two days later, an E. coli count of 180 cfu was recorded, the groundwater district said.

Levi Sparks, BCRAGD's aquatic ecologist, could not be certain why the earlier reading was so high, saying human error could have been a factor or an undetected element in the sample could have caused it to be contaminated.

But with the safeguards taken on the second test, he felt confident it was the more accurate test. Twenty-four sites on Medina Lake, the Medina River, the Sabinal River and their tributaries were examined for E. coli on Sept. 12, 13 and 14, and the Cornelius Road sample was the only one that exceeded the hazard level.

The second-highest reading was at the Medina River crossing at Highway 173 in Bandera City Park, which had a reading of 210 cfu, and a second site on the Medina River in Bandera, which had a reading of 190 cfu.

English Crossing produced a count of 140 cfu, the Medina River at 1st in Bandera City Park had a reading of 110 cfu, and Bandera Creek at Highway 16 South had a reading of 100 cfu.

Otherwise, none of the readings exceed 50 cfu, which was found at Ranger Crossing. Nine of the sites produced readings that fell under 10 cfu, and one reading at Bandera River Ranch Park could not be taken because the waterway was dry.

E. coli is tested for because the bacteria, which is found in the gut of warm-blooded mammals, can cause illnesses in humans if the water it is found in is ingested.

The river authority in its report said the possibility of infection from E. coli or some other waterborne illness is always possible when people engage in water-related activities. It said people should never drink river water without disinfecting it first and should recognize that when they are swimming, they are taking a risk.

2017-09-21- Bandera County Courier

Promoting sustainability through rainwater harvesting

Contributed by BCRAGD

Water resource management has been making the headlines for decades. If we begin counting the ways in which we depend on water, we might quickly lose that count—between growing and harvesting food and livestock, manufacturing parts to build our homes, hospitals, schools, businesses, vehicles, devices, along with the municipal and industrial demands to support community needs. The Texas population is growing at a booming rate. Conventional ways of using water must be a thing of the past, and more efficient water conservation practices the way of the present.

Each homeowner can consider the opportunity to depend less on groundwater and surface water supplies. Tapping into rainwater as a source is one wonderful way to supplement your household water needs, and for certain drought prone climates, the only reliable water supply. A multitude of resources are available to help assist with starting the catchment process, making the option adaptable to your needs and affordability. Storage tank/cistern sizes range from hundreds to thousands of gallons of storage, available in a variety of materials. Proper construction of tank/cistern pads promote a sturdy foundation, which helps to prevent tank cracking and associated pipe cracks. Gutter types and sizes also vary greatly to fit your roof type and needs. Rainwater catchment can provide for landscaping, garden, pets, vehicle wash, and miscellaneous outdoor use. Consult a licensed water treatment specialist and local laws before attempting indoor use. Homeowners also have a say in their local and regional management surrounding alternate water sources such as rainwater harvesting. There are options to serve on homeowner associations, school boards, and economic development boards to encourage efficient water use and alternative water sources for your community. Contact Bandera County River Authority and Groundwater District at 830-796-7260 for more information and water conservation resources.

Results are also posted on the BCRAGD website at www.bcragd.org and the BCRAGD Facebook page.

Medina Lake, park at PR 37 - fewer than 10 cfu
English Crossing - 140 cfu
Brudlegate Park - fewer than 10 cfu
Bandera River Ranch Park - DRY
Bandera Creek at SH 16 S - 100 cfu
Lower Mason Creek - fewer than 10 cfu
Upstream of Wastewater Treatment Plant in Bandera - 190 cfu
Bandera City Park at SH 173 - 210 cfu
Bandera City Park at 1st Street - 110 cfu
Tarpley Crossing - 40 cfu
Ranger Crossing - 50 cfu
Moffett Park in Medina - 30 cfu
1st Crossing at RR 337 - fewer than 10 cfu
N Prong, Brewington - fewer than 10 cfu
North Prong, Rocky Creek - fewer than 10 cfu
North Prong, Wallace Creek - fewer than 10 cfu
West Prong at Coalkiln Road - 10 cfu
West Prong at Carpenter Creek - fewer than 10 cfu
Williams Creek in Tarpley - 10 cfu
Seco Creek at Ranch Road 470 - 20 cfu
Sabinal River at Cornelius Road - 550 cfu (180 cfu)
Sabinal River at State Highway 187, Vanderpool - 20 cfu
Sabinal River at Lost Maples - 40 cfu
West Verde Creek at FM 1077 - fewer than 10 cfu

Rainwater Catchment Boosts Water Conservation

For the Bulletin- September 27, 2017

Water resource management has been making the headlines for decades. Officials with the Bandera County River Authority and Groundwater District said communities depend on water for a variety of critical needs - including what's required to grow and harvest food and livestock, to manufacture parts for homes, hospitals, businesses and a variety of goods and to meet the municipal and industrial demands of the area.

With the Texas population growing at a booming rate, conventional ways of using water must be a thing of the past and more efficient water conservation practices the way of the present. BCRAGD said in a release.

Each homeowner can consider the opportunity to depend less on groundwater and surface water supplies. Tapping into rainwater as a source is one useful way to supplement your household water needs, and for certain drought-prone climates, can become the only reliable water supply.

A multitude of resources are available to help assist with starting the rainwater catchment process, and different catchment options can be adapted to an individual's needs and what he or she can afford.

Storage tank cistern sizes range from hundreds to thousands of gallons of storage, and the tanks are available in a variety of materials. Proper construction of tank/cistern pads promotes a sturdy foundation, which helps prevent tank cracking and associate pipe cracks. Gutter types and sizes also vary greatly to fit individual roof types and needs.

Rainwater catchment can provide for a home's landscaping, garden, pets, vehicle cleaning needs, and several other outdoor uses. Consult a licensed water treatment specialist and local laws before attempting indoor use, the river authority advises.

Homeowners also have a say in their local and regional management surrounding alternate water sources, including rainwater harvesting. They have the opportunity to serve on homeowner associations, school boards and economic development boards to encourage efficient water use and alternative water sources for communities.

Contact the BCRAGD at 830-796-7260 for more information and for water conservation resources.

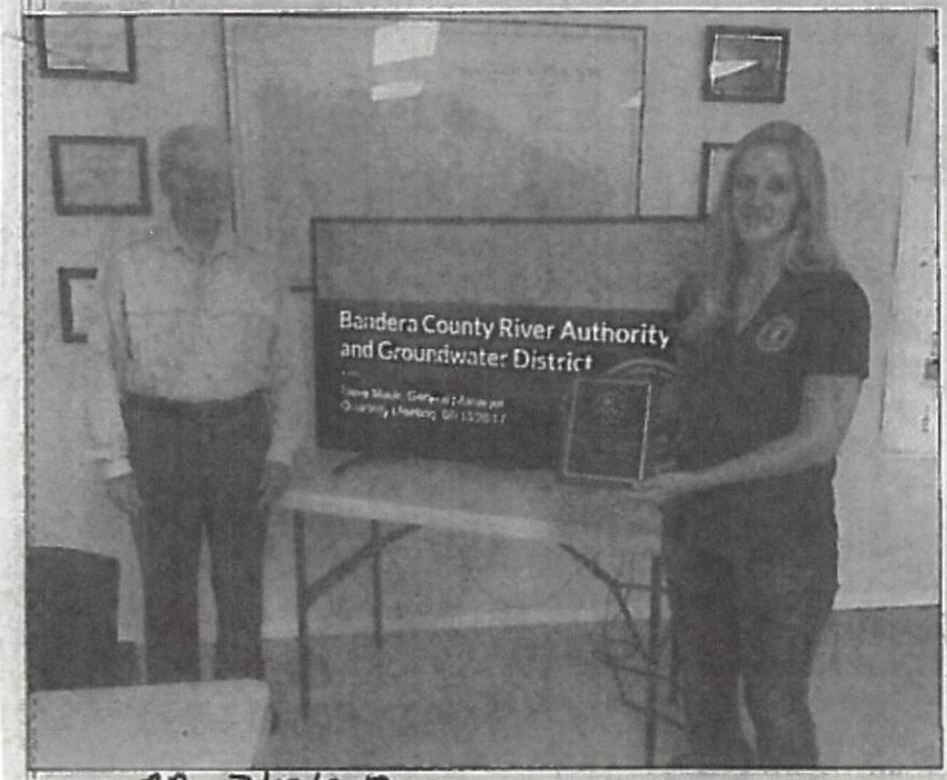
BB 8/8/2017

NON-NATIVE REED CONTROLS OUTLINED

BULLETIN PHOTO/Bill Peck

Sky Lewey, front, at center, the resource protection and education director for the Nueces River Authority, describes the control options available for a rapidly expanding, non-native reed called Arundo donax to those who took part in a workshop on Monday, Aug. 7 that ended with a field trip to see the reed on the Medina River in Bandera City Park. The river authority, the Bandera County River Authority & Groundwater District and other organizations sponsored the workshop to inform people about the problems caused by the giant reed, the tall plant at left.

BCRAGD RECEIVES COMMUNITY SERVICE AWARD



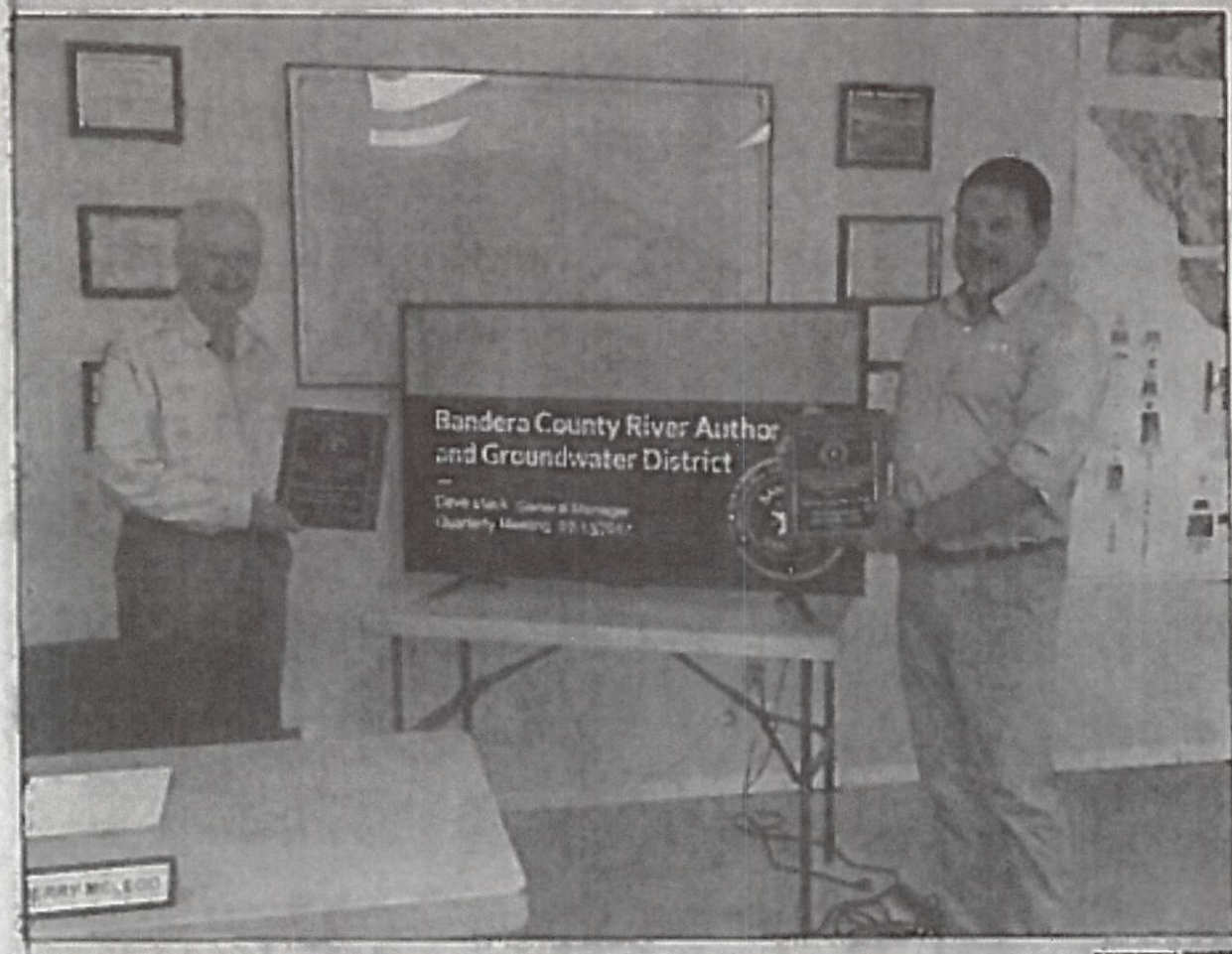
BB 7/19/2017

COURTESY PHOTO

Morgen Ayers, water conservation and community outreach coordinator for the Bandera County River Authority and Groundwater District, right, holds the 2017 John Patton Community Service Award that the groundwater district won in April from the Texas Floodplain Management Association. It was given to the district for its promotions and the educational activities it initiated in schools to make students and the community more aware of flood hazards, officials said. The award was presented to the BCRAGD board on Thursday, July 13. At left is the board's President Don Sloan.

BB 7/19/2017

BONDS BETWEEN WATER DISTRICTS HONORED



COURTESY PHOTO

A plaque the Bandera County River Authority and Groundwater District gave to the Edwards Aquifer Authority for Environmental Excellence and a second one it gave to the aquifer authority's Field Operations Supervisor Marcus Gary, right, for Environmental Stewardship are displayed at the groundwater district's board meeting on Thursday, July 13. The aquifer authority was honored for the strong, science-based partnership it has developed with the BCRAGD, while Gary was recognized for his leadership in moving projects forward that strengthen both agencies. BCRAGD's board President Don Sloan is holding the aquifer authority's plaque.

Appendix A

Fiscal Year 2017 Performance and 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 2017.**

b. Collect water level data from a minimum of 10 wells on a semi-annual basis.
- See USB labeled "FY 2017 ANNUAL REPORT PERFORMANCE STANDARDS 1.1.2B AND 13.1.2"

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.

➢ **3 Permits Issued**

➢ **96 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.

➢ **Total # of Handouts (electronic or hard copy) given out on water saving for FY 2017**

- **Conserving Water Indoors-158 hard copies; 17 electronic copies on USB,82 emailed website link**
- **The Texas Manual on Rainwater Harvesting- 17 electronic copies on USB, 87 emailed website link**
- **Water Conserving Tips- 24 hard copies; 17 electronic copies on USB, 82 emailed website link**
- **Conserving Water Outdoors-24 hard copies; 23 electronic copies on USB, 82 emailed website link**
- **Water Conserving for Businesses- 24 hard copies; 17 electronic copies on USB, 82 emailed website link**
- **TAMU Agrilife Extension Well Owner's Guide to Water Supply-17 electronic copies on USB**
- **TAMU Agrilife Extension Plugging Abandoned Water Wells- 58 hard copies; 17 electronic copies on USB**
- **BCRAGD engraved Reusable Bags- 46**
- **Agriculture Producer drought- 17 electronic copies on USB**

➢ **Literature is provided with well permits and registrations to educate the public about conservation. 3 permits were issued and 96 Wells were registered.**

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. (12 meetings): 10/13/2016, 11/28/2016, 12/1/2016, 12/15/2016 (2), 1/12/17, 3/30/17, 4/13/2017, 5/25/17, 6/29/2017, 7/13/2017, 8/9/2017, 9/1/17, 9/21/2017.**

➢ **On October 20, 2016 M. Ayers presented over Water Conservation to the Madrona Garden Club in Bandera.**

- On November 17, 2016 M. Ayers presented over Water Conservation to the Madrona Garden Club in Bandera.

- On November 16, 2016 BCRAGD staff attended the Lake Medina Conservation Society Meeting in Lakehills where D. Mauk gave a presentation.

- On November 19, 2016 L. Sparks facilitated a Habitat improvement with the Quality Bass and Youth Bass Clubs at Medina Lake.

- On November 19, 2016 M. Ayers presented and facilitated a lab-- building aquaponic systems to promote water conservation--at Schreiner University's annual Expanding Your Horizons event. Water conservation literature was given to each student.

- On November 29 -30, 2016 M. Ayers presented Part II of Riparian Systems for Science in Action program at Bandera Middle School.

- On December 15, 2016 the District hosted a *BCRAGD Celebrates 45 years of public service* at which a District overview and Outreach presentation was given and water conservation and rainwater harvesting literature were provided.

- On January 19, 2017 M. Ayers presented over Water Conservation to the Madrona Garden Club in Bandera.

- On February 8, 2017 M. Ayers co-presented over water conservation and watershed protection with Nueces River Authority staff as part of the *Water Resource Stewardship Program* 5th and 7th grader at Utopia ISD.

- On February 15, 2017 M. Ayers co-presented over water conservation and watershed protection with Nueces River Authority staff as part of the *Water Resource Stewardship Program* for 5th and 7th graders at Medina ISD.

- On February 16, 2017 M. Ayers presented over water conservation to the Madrona Garden Club in Bandera.

- On March 2, 2017 M. Ayers co-presented over water conservation and watershed protection with Nueces River Authority staff as part of the *Water Resource Stewardship Program* for 7th graders at Bandera Middle School. She also presented as Part III: Flood Awareness for Science in Action.

- On March 2, 2017 D. Mauk presented over water resources and policy at the Republican Women's meeting in Bandera.

- On March 3, 2017 M. Ayers co-facilitated a Natural Resource workshop with Agrilife group in Utopia.

- On March 16, 2017 D. Mauk was there to give information on watershed protection at the Bandera City Council.

- On March 18, 2017 D. Mauk gave a presentation at Commanche Cliffs HOA meeting over flood warnings, watershed protection, and rainfall monitoring.

- On March 21, 2017 BCRAGD hosted a Board of Realtors Meeting at the BCRAGD Office, where water conservation literature and rainwater harvesting information was provided.

- On April 5, 2017 D. Mauk gave testimony to House Natural Resources on HB 3025.

- On April 7, 2017 D.Mauk presented water policy and water conservation to residents of Utopia, Western Bandera County and Uvalde in Utopia.

- On April 10, 2017 D. Mauk presented on Water Conservation and Natural Resource management of the proposed Kronkosky state park in Bandera.

- On April 18, 2017 L. Sparks presented on invasive species at TWRI Stream and Riparian Ecosystems-Medina and Sabinal River event at Mansfield Park in Bandera.

- On April 19, 2017 M. Ayers presented over Water Conservation to the Madrona Garden Club in Bandera.

- On April 20, 2017 D.Mauk and L.Thomas presented over Flood Warning, Flood Protection, and Water Conservation to citizens of Utopia and Bandera County in Utopia.

- On May 12, 2017 M.Ayers presented on Water Conservation at the 6th grade Ag/Conservation Day in Bandera at Mansfield Park.

- On May 16, 2017 M. Ayers presented on Water Conservation to 3rd graders at Alkek Elementary in Bandera.

- On June 7, 2017 D. Mauk presented on Water Conservation at the Kronosky Nature Center.

- On July 28, 2017 D.Mauk and M. Ayers presented on Water Conservation, Surface and Groundwater Quality at AgriLife Workshop in Bandera.

- On August 4, 2017 M. Ayers presented on Arundo Donax to the City of Bandera.

- ➢ **On August 7, 2017 M.Ayers and L. Sparks co-presented with City of Bandera on Arundo Donax at a HCA Arundo Workshop at BCRAGD facility.**

- ➢ **On August 10, 2017 D. Mauk, K. Shearhart, and M. Ayers presented on Arundo Donax Prevention to the Bandera Commissioner's Court.**

- ➢ **On August 10, 2017 M. Ayers presented on Water Conservation at the Back to School Bash for Bandera Middle School.**

- ➢ **On August 17, 2017 M.Ayers presented on Arundo Donax prevention at TxDot Safety Meeting in Bandera.**

- ➢ **On August 29-31, 2017 D. Mauk presented at the 2017 TAGD Groundwater Summit over adopting similar rules, water resource management, and aquifer science.**

- ➢ **On September 7, 2017 M. Ayers presented on Watershed Protection and Water Conservation at The Lone Star Healthy Streams Presentation in Medina.**

- ➢ **On September 28, 2017 Arundo Donax site visits with City of Bandera Administrator; Education on Watershed Protection and Water Conservation.**

- ➢ **On September 28-29, 2017 BCRAGD facilitated a lesson on Flood Awareness for the Science in Action program at Bandera Middle School.**

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- 10/13/2016, 01/12/2017, 04/13/2017, 07/13/2017.)**

- **For quarterly reports, see USB labeled ""FY 2017 ANNUAL REPORT PERFORMANCE STANDARDS 1.1.2B AND 13.1.2"**

Annual Evaluation of the Surface Water Quality in Bandera County FY 2017

- **Summary of our In-house sampling & NPS sampling events: From October 2016 to September 2017 there were 7 instances with E. coli counts over the TCEQ standard of 399 cfu (colony forming units) 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 and further investigation if the count remains above the standard (see also 12.2.2).**

- **CRP water quality data can be viewed at:** http://www80.tceq.texas.gov/SwqmisWeb/public/crpmap.html

Medina Lake Evaluation:

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

FY 2017 Quarter	Date	Capacity (% full)
1st	October 1, 2016 December 31, 2016	96.6 % 92.3%
2nd	January 1, 2017 March 31, 2017	92.3% 92.6%
3rd	April 1, 2017 June 30, 2017	92.5% 86.1%
4th	July 1, 2017 September 30, 2017	86.0% 74.6%

Clean Rivers Program:

BCRAGD partnered with SARA to participate in the Clean Rivers Program in the San Antonio River Basin in 2012. BCRAGD staff are responsible for sampling 6 sites, which are in Bandera County and summarized to the right. FY 2017 CRP sample dates were October 19-20, 2016, January 17, 2017, February 7-8, 2017, April 11-12, 2017, and June 21-22, 2017.

At the end of FY 2016, BCRAGD added five CRP sites on Medina Lake along with two CRP sites on Diversion Lake, partnering with SARA. The sample dates for Medina Lake were December 13-14, 2016, March 15-16, 2017, and July 19-20, 2017. The sample dates for Diversion Lake were November 17, 2016, May 23, 2017, and August 22, 2017.

BCRAGD partnered with Nueces River Authority (NRA) in 2016 to participate in the Clean Rivers Program in the Nueces River Basin. BCRAGD staff are responsible for 2 sites shown in the chart to the right. The FY 2017 sample dates for the Nueces River Basin was November 8, 2016, January 24, 2017, March 23, 2017, and August 15, 2017.

Station 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
12829	Medina Lake Mid 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
14205	Medina R. Downstream Medina Reservoir in Mico, TX @ low water crossing
18407	Medina Diversion Lake near West Bank 40m Upstream of Dam and approx. 1 mi Upstream of M. River crossing @ CR 2615
13017	Seco Creek @ RR 470
14939	Sabinal River @ FM 187

In-house sampling: This 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 to the citizens of Bandera County for safety.

MR-2.05	Medina R. Bandera City Park @1st St.	MR-3.05	Medina R. @ Ranger Crossing HWY 16
MR-2.04	Medina R Bandera City Park Midpoint	MR-3.01	Medina R. @ RR 377
MR-2.03	Medina R City Park—Hwy 173	MR-2.02	Below Sewage Treatment Plant Effluent
MR-1.01	Medina R. @ English Crossing	MR-2.025	Above Sewage Treatment Plant Effluent
LM-4.01	Sabinal R. @ Lost Maples 1st Bridge	WVC-2.01	Hill Country State Natural Area @ FM 1077
MP-3.01	Medina R. @ Moffett Park	ML-1.04	Medina Lake @ County Park NE of ramp
MRN- 3.01	Medina R.-FM 2107 @ Rocky	ML-1.05	Medina Lake @ County Park SE of ramp
MR-3.04	Medina R. @ Tarpley Crossing	CC- 4.01	Sabinal R @ Cornelius Crossing
WC-3.01	North Prong. @ Wallace Creek	WC-4.01	Sabinal R @ Williams Creek Crossing
MRN-3.03	Medina R @ Brewington Crossing FM 2107	SC-4.01	Seco Creek @ RR 470 Crossing
MRW-3/01	W. Prong Medina R @ Coal kiln Rd FM 337	UTOP	Sabinal R @ Utopia

Nonpoint Source Pollution (NPS) Initiative on Medina Lake

Medina Lake is utilized as a source of drinking water for San Antonio and riparian residents. In the last few years, there has been an increase in population in the surrounding areas, and water recreation has grown in popularity. In July of 2016, BCRAGD began the Nonpoint Source Initiative as a survey of Medina Lake's waters to identify any potential nonpoint source pollution, and/or potential health risks to the public.

Nine Medina Lake coves will be sampled for the presence of fecal coliforms and *E. coli* in conjunction with other water quality monitoring that is currently taking place on Medina Lake, including the In-House water quality study and the Clean Rivers Program. Results will be published in a report at the conclusion of the project.

ML-1.06	Medina Lake-Pop's Place	ML-2.04	Medina Lake- Hamilton Cove
ML-2.01	Medina Lake- River Mouth	ML-2.05	Medina Lake- Elm Cove
ML-2.02	Medina Lake- Cypress Cove	ML-2.06	Medina Lake-Haybes Cove
ML-2.03	Medina Lake- Church Cove	ML-2.07	Medina Lake- Red Cove
ML-1.04	Medina Lake @ Co. Park- NE of ramp		

Annual Evaluation of the Groundwater Resources in Bandera County 2017

EVALUATION OF GROUND WATER LEVELS FOR 2017

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. A maximum of 30 ft. of drawdown after 50 years 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 generally used in Bandera County.

2017 EVALUATION

For this evaluation, water level changes in each the Middle and Lower Aquifers were averaged separately and combined for the total Trinity Aquifer average change. A total of 36 December water levels from monitoring wells were used in the evaluation. The December 2017 water levels were compared to the 2008 water levels to determine a loss or gain in the water level. Water levels from wells added to the monitoring system after 2008 were calculated from the initial or first winter water level obtained.

The TWDB groundwater grid was used to obtain a better average County wide. A large number of the monitoring well data is located in the eastern part of the County. To improve the evaluation Countywide, water levels in each grid was averaged and the total grids were averaged for the Trinity Aquifer total.

Water level data was obtained from Headwaters GWCD in Kerr County for the grids that are shared with Bandera County. Two of the wells used were completed in the Middle Trinity Aquifer and two wells were completed in the Lower Trinity Aquifer.

RESULTS OF THE EVALUATION

The average loss or gain for each grid with multiple wells and grids with only one well is indicated in Table 1. County maps with the grid averages are found in Figures 1 and 2 for each the middle and Lower Aquifers. The Middle Aquifer had a gain of +17.25 ft. and the Lower Aquifer had a loss of -2.22 ft. for the end of 2017. The Trinity Aquifer had a gain of +7.52 ft. in 2017 for the compliance to the DFC.

Prepared by: David Jeffery PG # 134

- **For complete report of groundwater resource evaluation see section 13.1.2 and/or USB LABELED "FY 2017 ANNUAL REPORT PERFORMANCE STANDARDS 1.1.2B AND 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.

➢ **On October 19, 2016 D. Jeffery and M. Redman attended a Region J Meeting in Leakey, TX.**

➢ **On February 23, 2017 D. Jeffery and M. Redman attended the Region J Meeting in Leakey, Texas.**

➢ **On July 27, 2017 D. Mauk, M. Redman, and K. Shearhart attended the Region J Meeting held at BCRAGD's office.**

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: 7 total**
➢ **Notice of Violations: 8 total**
➢ **Illegal Dumping Mitigation Cases Resolved: 2 total**
➢ **Total Surface Water Test samples taken (including CRP): 250; see 4.1.2B**
➢ **Total number of Groundwater Tests: 343**

- **Both (Bacteria & Mineral)-154**
- **Bacteria Only-161**
- **Mineral Only-28**

Management Goal 6

6.0.0 Address drought conditions.

6.1.1 Management Objective

Record the Drought Severity Index once at the first of each month and when drought conditions exist, implement the Drought Management Plan.

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 announce and record the Drought index at the first of each month and implement the appropriate stage of the Drought Management Plan when necessary.

- **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 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 at least 6 monitor wells with continuous recorders within Bandera County.

6.2.2 Performance Standard

Record number of wells recording daily water levels and number of wells analyzed each year in the annual report to the Board of Directors.

- **14 electronically monitored wells with daily water levels recorded**
- **27 non-electronically monitored wells measured without daily water levels recorded**

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 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.

- **On October 20, 2016 M. Ayers presented over Water Conservation to the Madrona Garden Club in Bandera.**

- **On November 17, 2016 M. Ayers presented over Water Conservation to the Madrona Garden Club in Bandera.**

- **On November 19, 2016 L. Sparks facilitated a Habitat improvement with the Quality Bass and Youth Bass Clubs at Medina Lake.**

- **On November 19, 2016 M. Ayers presented and facilitated a lab-- building aquaponic systems to promote water conservation--at Schreiner University's annual Expanding Your Horizons event. Water conservation literature was given to each student.**

- **On November 29 -30, 2016 M. Ayers presented Part II of Riparian Systems for Science in Action program at Bandera Middle School.**

- **On December 15, 2016 the District hosted a *BCRAGD Celebrates 45 years of public service* at which a District overview and Outreach presentation was given and water conservation and rainwater harvesting literature were provided.**

- **On January 19, 2017 M. Ayers presented over Water Conservation to the Madrona Garden Club in Bandera.**

- **On February 8, 2017 M. Ayers co-presented over water conservation and watershed protection with Nueces River Authority staff as part of the *Water Resource Stewardship Program* 5th and 7th grader at Utopia ISD.**

- **On February 15, 2017 M. Ayers co-presented over water conservation and watershed protection with Nueces River Authority staff as part of the *Water Resource Stewardship Program* for 5th and 7th graders at Medina ISD.**

- **On March 2, 2017 M. Ayers co-presented over water conservation and watershed protection with Nueces River Authority staff as part of the *Water Resource Stewardship Program* for 7th graders at Bandera Middle School.**

- **On March 2, 2017 D. Mauk presented over water resources at the Republican Women's meeting in Bandera.**

- **On March 3, 2017 M. Ayers co-facilitated a Natural Resource workshop with Agrilife group in Utopia.**

- On April 7, 2017 D.Mauk presented water policy and water conservation to residents of Utopia, Western Bandera County and Uvalde in Utopia.

- On April 10, 2017 D. Mauk presented on Water Conservation and Natural Resource management of the proposed Kronkosky state park in Bandera.

- On April 18, 2017 L. Sparks presented on invasive species at TWRI Stream and Riparian Ecosystems-Medina and Sabinal River event at Mansfield Park in Bandera.

- On April 19, 2017 M. Ayers presented over Water Conservation to the Madrona Garden Club in Bandera.

- On April 20, 2017 D.Mauk and L.Thomas presented over Flood Warning, Flood Protection, and Water Conservation to citizens of Utopia and Bandera County in Utopia.

- On May 12, 2017 M.Ayers presented on Water Conservation at the 6th grade Ag/Conservation Day in Bandera at Mansfield Park.

- On May 16, 2017 M. Ayers presented on Water Conservation to 3rd graders at Alkek Elementary in Bandera.

- On June 7, 2017 D. Mauk presented on Water Conservation at the Kronosky Nature Center.

- On July 28, 2017 D.Mauk and M. Ayers presented on Water Conservation, Surface and Groundwater Quality at AgriLife Workshop in Bandera.

- On August 4, 2017 M. Ayers presented on Arundo Donax to the City of Bandera.

- On August 7, 2017 M.Ayers and L. Sparks co-presented with City of Bandera on Arundo Donax at a HCA Arundo Workshop at BCRAGD facility.

- On August 10, 2017 D. Mauk, K. Shearhart, and M. Ayers presented on Arundo Donax Prevention to the Bandera Commissioner's Court.

- On August 10, 2017 M. Ayers presented on Water Conservation at the Back to School Bash for Bandera Middle School.

- On August 17, 2017 M.Ayers presented on Arundo Donax prevention at TxDot Safety Meeting in Bandera.

- **On September 7, 2017 M. Ayers presented on Watershed Protection and Water Conservation at The Lone Star Healthy Streams Presentation in Medina.**

- **On September 28, 2017 Arundo Donax site visits with City of Bandera Administrator; Education on Watershed Protection and Water Conservation.**

- **On September 28-29, 2017 BCRAGD facilitated a lesson on Flood Awareness for the Science in Action program at Bandera Middle School.**

-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.

- **On November 19, 2016 L. Sparks facilitated a Habitat improvement with the Quality Bass and Youth Bass Clubs at Medina Lake.**

- **On November 19, 2016 M. Ayers presented and facilitated a lab-- building aquaponic systems to promote water conservation--at Schreiner University's annual Expanding Your Horizons event. Water conservation literature was given to each student.**

- **On November 29 -30, 2016 M. Ayers presented Part II of Riparian Systems for Science in Action program at Bandera Middle School.**

- **On February 8, 2017 M. Ayers co-presented over water conservation and watershed protection with Nueces River Authority staff as part of the *Water Resource Stewardship Program* 5th and 7th grader at Utopia ISD.**

- **On February 15, 2017 M. Ayers co-presented over water conservation and watershed protection with Nueces River Authority staff as part of the *Water Resource Stewardship Program* for 5th and 7th graders at Medina ISD.**

- ➢ **On March 2, 2017 M. Ayers co-presented over water conservation and watershed protection with Nueces River Authority staff as part of the *Water Resource Stewardship Program* for 7th graders at Bandera Middle School.**

- ➢ **On May 12, 2017 M.Ayers presented on Water Conservation at the 6th grade Ag/Conservation Day in Bandera at Mansfield Park.**

- ➢ **On May 16, 2017 M. Ayers presented on Water Conservation to 3rd graders at Alkek Elementary in Bandera.**

- ➢ **On August 10, 2017 M. Ayers presented on Water Conservation at the Back to School Bash for Bandera Middle School.**

- ➢ **On September 28-29, 2017 BCRAGD facilitated a lesson on Flood Awareness for the Science in Action program at Bandera Middle School.**

- ➢ **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

Provide literature on designing and operating a rainwater harvesting system to the public.

8.1.2 Performance Standard

Provide Rainwater Harvesting material to the public in handouts. Publish a minimum of one newspaper article annually on the benefits of Rainwater Harvesting. Report annually to the Board of Directors the number of publications provided and other educational talks by the District.

- ➢ **Total # of Rainwater Harvesting Literature handed out FY 2017:**

    - o **The Texas Manual on Rainwater Harvesting- 17 electronic copies on USB, 87 emailed website link**
    - o **Water Conserving Tips- 24 hard copies; 17 electronic copies on USB, 82 emailed website link**
    - o **Conserving Water Outdoors-24 hard copies; 23 electronic copies on USB, 82 emailed website link**
    - o **Conserving Water Indoors-158 hard copies; 17 electronic copies on USB,82 emailed website link**

- ➢ **Water conservation literature is provided at all District public meetings. (12 meetings): 10/13/2016, 11/28/2016, 12/1/2016, 12/15/2016 (2), 1/12/17, 3/30/17, 4/13/2017, 5/25/17, 6/29/2017, 7/13/2017, 8/9/2017, 9/1/17, 9/21/2017.**

- **On September 27, 2017, The Bandera Bulletin ran an article titled, "Rainwater Catchment Boosts Water Conservation," written by D. Mauk and M. Ayers.**

- **On December 15, 2016 the District hosted a *BCRAGD Celebrates 45 years of public service* at which a District overview and Outreach presentation was given and water conservation and rainwater harvesting literature were provided.**

- **On March 21, 2017 BCRAGD hosted a Board of Realtors Meeting at the BCRAGD Office, where water conservation literature and rainwater harvesting information was provided.**

- **On July 28, 2017 D. Mauk and M. Ayers presented on Water Conservation, Surface and Groundwater Quality at AgriLife Workshop in Bandera at which rainwater harvesting information was provided.**

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 Edward Aquifer Authority and operates from Pleasanton, Texas; therefore, this goal is not applicable to the District at this time.

Management Goal 11

11.0.0 Address brush control.

11.1.1 Management Objective

Provide to the public available information or published reports on the benefits of brush control to 100 percent of written public requests.

11.1.2 Performance Standard

Report the number of requests received for brush control information, and the number of times brush control information was provided, in an annual report to the Board of Directors.

- **Brush control information is available at the office for the public. There were no written requests for brush control information from the public for fiscal year 2017**

- **On May 04, 2017, M. Ayers attended a Brush Control Webinar**

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 10 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: 40 total**
- **Water Analysis Performed on New Wells: 78 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 partnership with SARA to participate in the Clean Rivers Program in the Bandera County portion of San Antonio River Basin. BCRAGD is responsible for sampling 6 sites along the Medina River, 5 sites on Medina Lake, and 2 sites on Diversion Lake. BCRAGD continues its partnership with Nueces River Authority to participate in the CRP in the Nueces River Basin; BCRAGD is responsible for 3 sites along the Sabinal River in Bandera County. 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. 251 total samples were taken between these two programs during FY 2017 and are summarized below:

1st Quarter: Oct 2016-Dec 2016
Oct 6, 2016 (9 Medina Lake sites)
Oct 19-20, 2016-- (CRP; 6 Medina R. sites)
Oct 26-27, 2016-- (5 Sabinal R., 18 Medina R., 1 M. Lake)
Nov 8, 2016 (CRP; 2 Sabinal R. sites)
Nov 17, 2016 (CRP; 2 Diversion L. sites)
Dec 7, 2016 (9 Medina Lake sites)
Dec 13-14, 2016-- (CRP; 5 Medina Lake sites)

2nd Quarter: Jan 2017 to March 2017
January 17, 2017 (CRP; 1 Medina R. sites)
January 24, 2017 (CRP; 2 Sabinal R. sites)
Feb 7-8, 2017-- (CRP; 5 sites Medina R.)
Feb 22, 2017 (9 Medina Lake sites)
March 15-16, 2017-- (CRP; 5 Medina Lake sites)
March 23, 2017 (CRP; 2 Sabinal R. sites, 9 Medina Lake sites)
March 28-29, 2017-- (5 Sabinal R., 18 Medina R., 1 M. Lake)

3rd Quarter: April 2017 to June 2017
April 11-12, 2017-- (CRP; 6 Medina R. sites)
April 20, 2017 (9 Medina Lake sites)
May 23, 2017 (CRP; 2 Diversion L. sites)
May 30, 2017 (9 Medina Lake sites)
June 13, 2017 (9 Medina Lake sites)
June 15, 2017 (1 Medina L., 6 Medina R., 2 Sabinal R.)
June 21-22, 2017-- (CRP; 6 Medina R. sites)
June 29, 2017 (1 Medina L., 6 Medina R., 2 Sabinal R.)

4th Quarter: July 2017 to September 2017
July 12, 2017 (1 Medina L., 6 Medina R., 2 Sabinal R. sites)
July 17, 2017 (CRP; 1 Medina R. site)
July 19-20, 2017-- (CRP; 5 Medina Lake sites)
July 25, 2017 (1 Medina L., 6 Medina R., 2 Sabinal R. sites)
July 26, 2017-- (9 Medina Lake sites)
August 9, 2017 (1 Medina L., 6 Medina R., 2 Sabinal R.)
August 15, 2017 (CRP; 2 Sabinal River sites)
August 22, 2017 (CRP; 1 Diversion L. sites)
August 23, 2017 (1 Medina L., 6 Medina R., 2 Sabinal R.)
September 12, 2017 (5 Sabinal R., 18 Medina R., 1 M. Lake)

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 GAM Task 10-005 Scenario 6 for Bandera County. The General Manager will report annually to the District Board of Directors and GMA 9 committee 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.

-For complete report of groundwater resource evaluation and DFC, see Management Goal 4 and see USB labeled "FY 2017 ANNUAL REPORT PERFORMANCE STANDARDS 1.1.2B AND 13.1.2". Highlights of the report are on the following page.

EVALUATION OF GROUND WATER LEVELS FOR 2017

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. A maximum of 30 ft. of drawdown after 50 years 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 generally used in Bandera County.

2017 EVALUATION

For this evaluation, water level changes in each the Middle and Lower Aquifers were averaged separately and combined for the total Trinity Aquifer average change. A total of 36 December water levels from monitoring wells were used in the evaluation. The December 2017 water levels were compared to the 2008 water levels to determine a loss or gain in the water level. Water levels from wells added to the monitoring system after 2008 were calculated from the initial or first winter water level obtained.

The TWDB groundwater grid was used to obtain a better average County wide. A large number of the monitoring well data is located in the eastern part of the County. To improve the evaluation Countywide, water levels in each grid was averaged and the total grids were averaged for the Trinity Aquifer total.

Water level data was obtained from Headwaters GWCD in Kerr County for the grids that are shared with Bandera County. Two of the wells used were completed in the Middle Trinity Aquifer and two wells were completed in the Lower Trinity Aquifer.

RESULTS OF THE EVALUATION

The average loss or gain for each grid with multiple wells and grids with only one well is indicated in Table 1. County maps with the grid averages are found in Figures 1 and 2 for each the middle and Lower Aquifers. The Middle Aquifer had a gain of +17.25 ft. and the Lower Aquifer had a loss of -2.22 ft. for the end of 2017. The Trinity Aquifer had a gain of +7.52 ft. in 2017 for the compliance to the DFC.

Prepared by: David Jeffery PG # 134

TABLE 1

CALCULATION OF CHANGES IN WATER LEVELS

MIDDLE TRINITY GROUNDWATER CHANGES IN WATER LEVELS

Grid # 69-12 = -46.4'

Grid # 69-14 (-3.1', +2.9', -22.9', 0, -5.78') = average of -5.78'

Grid # 69-16 (-9.3', -6.7') = average of -8.0'

Grid # 68-9 = +8' Grid # 69-20 = +131.75' Grid # 69-21 = +32.1'

Grid # 69-22 = -4.9' Grid # 69-05 = -1.0'

Grid # 69-24 (+42.1', +88.7', -21.6', +11.8', +15.4', +1.6') = average of +23.0'

Grid # 68-17 (-19.3', +47.2', -37.7', -1.0', -31.8') = average of -8.52'

Grid # 68-25 (+56.2', +2.8', +191', +28.1') = average of +69.53'

The Middle Trinity average change in water levels by grid in Bandera Co. for 2017 is **+17.25'.**

LOWER TRINITY GROUNDWATER CHANGES IN WATER LEVELS

Grid # 69-06 = +2' Grid # 69-07 = +17' Grid # 69-16 = -15.7'

Grid # 69-24 (-6', +8.1', +1.5') = average of +1.2'

Grid # 68-17 (-32.9', +1.8') = average of -15.6'

The Lower Trinity average change in water levels by grid in Bandera Co. for 2017 is **-2.22'.**

The average change in water levels in the Trinity Aquifer in 2017 is **+7.52'** as determined from 2008 water levels to December 2017. Some monitor wells added after 2008 are used to measure the water level change from the first water level measured.

The Edwards Aquifer change in the water level is **+6.4'** from 2011 to 2017.

<u>Groundwater Maps for DFC</u>

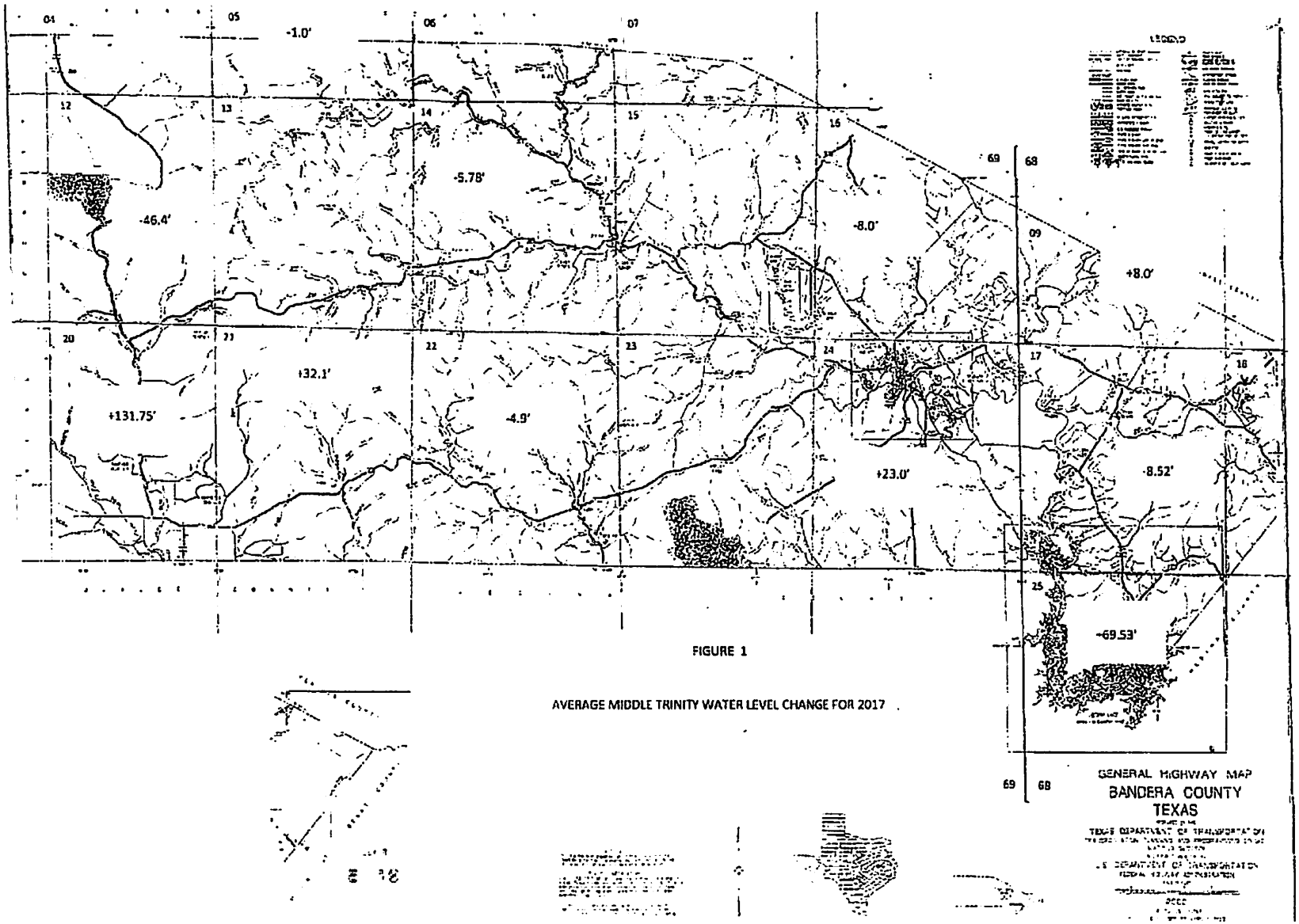


FIGURE 1

AVERAGE MIDDLE TRINITY WATER LEVEL CHANGE FOR 2017

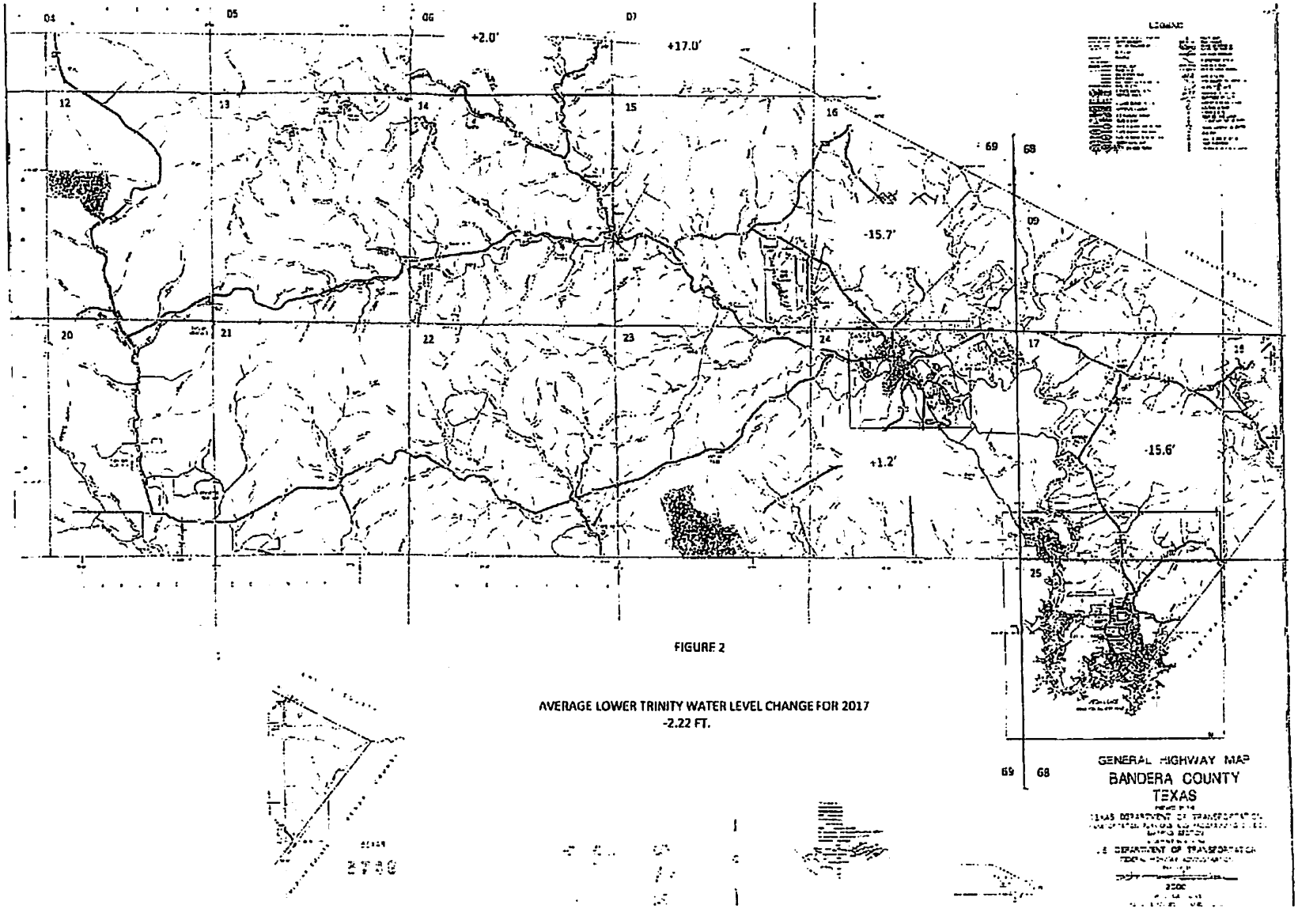


FIGURE 2

AVERAGE LOWER TRINITY WATER LEVEL CHANGE FOR 2017
-2.22 FT.

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, 2017

Ede & Company, LLC
Certified Public Accountants

BANDERA COUNTY RIVER AUTHORITY AND GROUND WATER DISTRICT

Annual Financial Report

For the Year Ended September 30, 2017

BANDERA COUNTY RIVER AUTHORITY AND GROUND WATER DISTRICT

Annual Financial Report

For the Year Ended September 30, 2017

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 11th day of January, 2018, its annual audit report for the year ended September 30, 2017 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 2/1/2018 ,2018

By: Don Sloan
(Signature of District Representative)

PRESIDENT
(Type Name & Title of above District Representative)

Sworn to and Subscribed to before me this 1 day of February, 2018

MORGEN R. AYERS
Notary Public
State of Texas
Comm. Exp. 10-02-2018

Morgen Ayers
(Signature of Notary)

Commission Expires on 10-02-2018

Morgen Ayers
(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, 2017 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, 2017, 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 analysis of taxes receivable is the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. This schedule is the responsibility of management and was derived from and relate directly to the underlying accounting and other records used to prepare 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

Ede & Company, LLC
Certified Public Accountants
Knippa, Texas

January 10, 2018

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, 2017. 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 $673,034.62 at September 30, 2017.
- During the year, the District's expenses were $64,210.34 less than the $941,046.96 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 $111,082.99

- The District's net position increased $64,210.34 which represents a 10.58 percent increase from 2016

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 $673.0 thousand at September 30, 2017. (See Table A-1).

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

	Governmental Activities		Total Percentage Change
	2017	2016	2017 - 2016
Current assets:			
Cash and cash equivalents	$ 156.5	$ 177.5	-11.83%
Accounts receivable	77.6	$ -	100.00%
Property taxes receivable	50.5	43.7	15.56%
Due from other governments	1.6	3.3	-51.52%
Prepayments	5.2	4.3	20.93%
Total current assets	291.4	228.8	27.36%
Noncurrent assets:			
Capital Assets	741.0	591.0	25.38%
Less accumulated depreciation	(229.5)	(200.8)	14.29%
Total noncurrent assets	511.5	390.2	31.09%
Total Assets	802.9	619.0	29.71%
Current liabilities:			
Accounts payable and accrued liabilites	129.9	3.0	4230.00%
Legal trust fee	-	7.4	100.00%
Total Liabilities	129.9	10.4	1149.04%
Net Position:			
Invested in capital assets	511.5	390.2	31.09%
Unrestricted	161.5	218.4	-26.05%
Total Net Position	$ 673.0	$ 608.6	10.58%

Changes in net position. The District's total revenues were $941.1 thousand. A significant portion, 82 percent, of the District's revenue comes from property taxes. (See Figure A-3.) and 2% from permits on new wells.

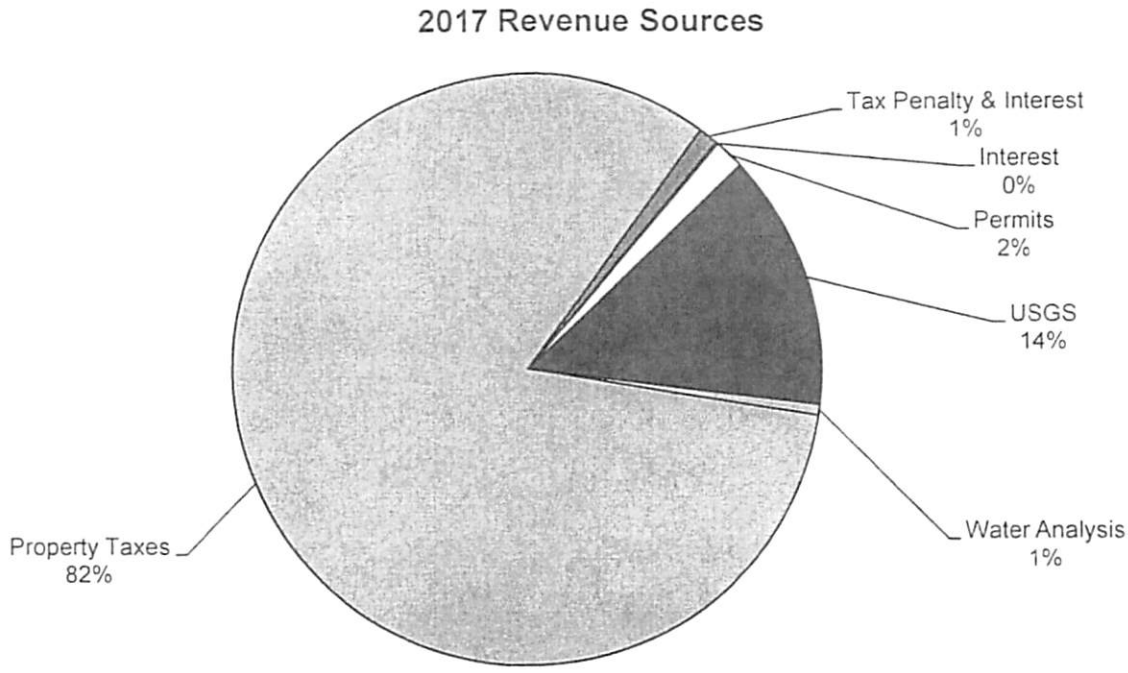
The total cost of all programs and services was $876.8 thousand; 100 percent of these costs are for General Government.

Table A-2

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

(In thousands dollars)

	Governmental Activities		Total Percentage Change
	2017	2016	2017-2016
General Revenue			
Property Taxes	777.1	696.6	11.56%
Penalty & Interest	10.1	10.2	-0.98%
USGS	131.8	6.8	1838.24%
New Well Applications & Permits	15.4	14.0	10.00%
Other	6.6	7.8	-15.38%
Total Revenue	941.0	735.4	27.96%
Program Expenses			
General Government	876.8	767.9	14.18%
Total Expense	876.8	767.9	14.18%
Increase (Decrease) in Net Position	$ 64.2	$ (32.5)	-297.54%



2017 Expenses

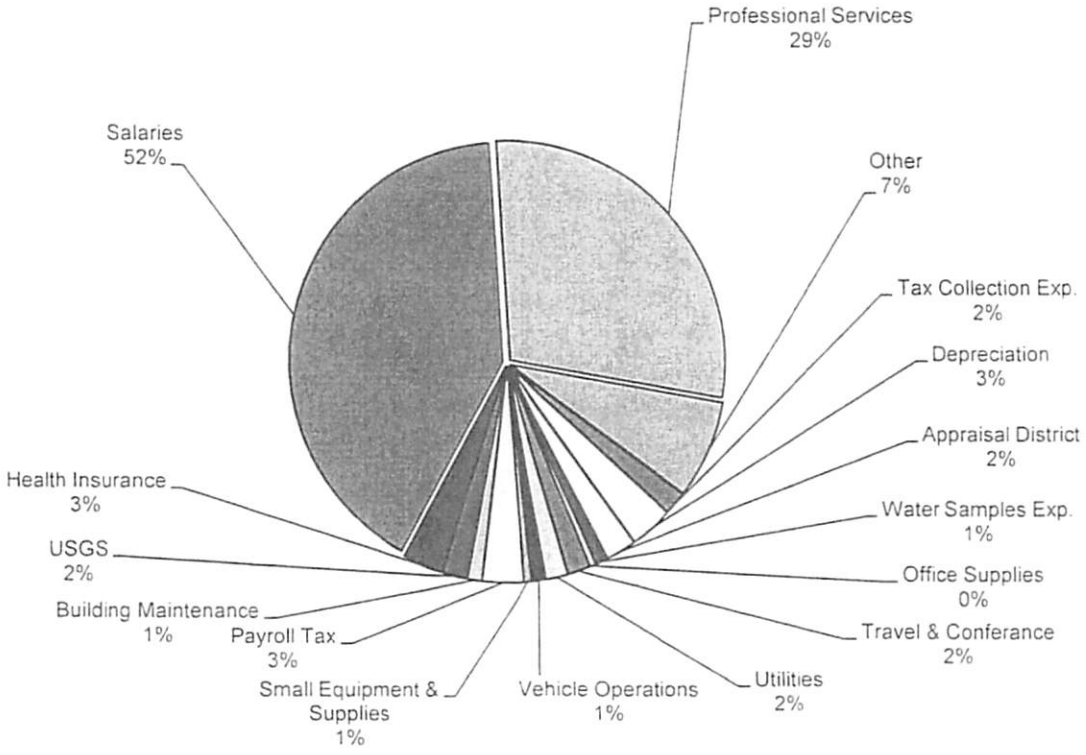


Table A-3 presents the cost of each of the District's largest functions as well as the major administrative categories.

- The cost of all *governmental* activities this year was 876.8 thousand.

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

	Total Costs of Services		
	2017	2016	Percent Change
Salaries	360.5	329.4	9.44%
Professional Services	251.8	172.0	46.40%
Health Insurance	26.8	21.9	22.37%
Small Equipment & Supplies	5.3	11.3	-53.10%
Vehicle Operations	8.9	19.2	-53.65%
Utilities	14.3	13.3	7.52%
Travel & Conferance	14.8	14.1	4.96%
Office Supplies	3.9	5.8	-32.76%
Water Samples Exp.	8.2	6.2	32.26%
Appraisal District	19.8	16.5	20.00%
Depreciation	28.7	28.7	0.00%
Tax Collection Exp.	14.2	14.2	0.00%

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, 2017

	General Fund	Special Revenue Fund	Total Governmental Funds	Adjustments	Statement of Net Position
ASSETS					
Cash and investments	$ 156,548.25	$ -	$ 156,548.25	$ -	$ 156,548.25
Accounts receivable	80.00	77,500.01	77,580.01	-	77,580.01
Taxes receivable	50,464.92	-	50,464.92	-	50,464.92
Due from other funds	-	22,500.00	22,500.00	(22,500.00)	-
Due from other governments	1,633.51	-	1,633.51	-	1,633.51
Prepayments	5,172.11	-	5,172.11	-	5,172.11
Capital assets (net of accumulated depreciation)					
Land	-	-	-	150,000.00	150,000.00
Building	-	-	-	137,666.55	137,666.55
Monitoring wells & equipment	-	-	-	47,593.79	47,593.79
Vehicles	-	-	-	26,232.37	26,232.37
Construction in process	-	-	-	150,000.00	150,000.00
Total assets	$ 213,898.79	$ 100,000.01	$ 313,898.80	488,992.71	802,891.51
LIABILITIES					
Accounts payable	$ 29,850.88	$ 100,000.01	$ 129,850.89	-	129,850.89
Due to other fund	22,500.00	-	22,500.00	(22,500.00)	-
Total liabilities	52,350.88	100,000.01	152,350.89	(22,500.00)	129,850.89
DEFERRED INFLOW OF RESOURCES					
Unavailable Revenue- Property Taxes	50,464.92	-	50,464.92	(50,464.92)	-
Total Deferred Inflows of Resources	50,464.92	-	50,464.92	(50,464.92)	-
FUND BALANCES/NET POSITION					
Fund balances:					
Committed	45,700.99	-	45,700.99	(45,700.99)	-
Unassigned	65,382.00	-	65,382.00	(65,382.00)	-
Total Fund Balance	111,082.99		111,082.99	(111,082.99)	-
Total liabilities deferred inflows and fund balances	$ 213,898.79	$ 100,000.01	$ 313,898.80		
Net Position:					
Invested in capital assets, net of related debt				511,492.71	511,492.71
Unrestricted				161,547.91	161,547.91
Total net position				$ 673,040.62	$ 673,040.62

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, 2017

	General Fund	Special Revenue Fund	Total Governmental Funds	Adjustments	Statement of Activities
Revenues:					
Property taxes	$ 770,478.62	$ -	$ 770,478.62	$ 6,633.19	$ 777,111.81
Property taxes penalty & interest	10,063.46	-	10,063.46	-	10,063.46
Interest income	1,080.68	-	1,080.68	-	1,080.68
Permits and deposits	15,438.65	-	15,438.65	-	15,438.65
USGS Flood Project Funding	-	125,000.00	125,000.00	-	125,000.00
USGS Gauge Station	6,800.00	-	6,800.00	-	6,800.00
Water analysis	5,552.36	-	5,552.36	-	5,552.36
Total revenues	809,413.77	125,000.00	934,413.77	6,633.19	941,046.96
Expenditures/expenses:					
Service operations:					
Appraisal District	19,834.97	-	19,834.97	-	19,834.97
Bonds & Insurance	5,580.42	-	5,580.42	-	5,580.42
Building Maintenance	9,045.94	-	9,045.94	-	9,045.94
Dues & Subscriptions	3,857.82	-	3,857.82	-	3,857.82
Education	4,126.92	-	4,126.92	-	4,126.92
Computer Software and Support	4,499.01	-	4,499.01	-	4,499.01
Small Equipment & Supplies	5,318.59	-	5,318.59	-	5,318.59
Elections	5,395.29	-	5,395.29	-	5,395.29
Public Relations	10,735.33	-	10,735.33	-	10,735.33
Health Insurance	26,841.60	-	26,841.60	-	26,841.60
Website	5,324.82	-	5,324.82	-	5,324.82
Monitoring Units	-	-	-	-	-
Office Supplies	3,913.17	-	3,913.17	-	3,913.17
Office Rent	3,600.00	-	3,600.00	-	3,600.00
Payroll Tax	27,770.16	-	27,770.16	-	27,770.16
Postage	409.83	-	409.83	-	409.83
Professional Services	251,764.87	-	251,764.87	-	251,764.87
Salaries	360,464.83	-	360,464.83	-	360,464.83

Tax Collection Exp.	15,280.20	-	15,280.20	-	15,280.20
GMA Expense	-	-	-	-	-
Travel & Conferences	14,807.78	-	14,807.78	-	14,807.78
Employee Training	5,666.15	-	5,666.15	-	5,666.15
Utilities	14,258.19	-	14,258.19	-	14,258.19
USGS - Gauges	16,580.00	-	16,580.00	-	16,580.00
USGS - Flood Control Project	-	150,000.00	150,000.00	(150,000.00)	-
Vehicle Operations	8,924.99	-	8,924.99	-	8,924.99
Water Quality Project	11,588.12	-	11,588.12	-	11,588.12
Water Samples Exp.	8,197.45	-	8,197.45	-	8,197.45
Well Plugging	116.48	-	116.48	-	116.48
Illegal Dumping Litter Abatement	-	-	-	-	-
Medina River Cleanup	708.00	-	708.00	-	708.00
Brush Control	3,500.00	-	3,500.00	-	3,500.00
Miscellaneous	-	-	-	-	-
Depreciation	-	-	-	28,725.69	28,725.69
Total expenditures/expenses	848,110.93	150,000.00	998,110.93	(121,274.31)	876,836.62
Excess (deficiency) of revenues over expenditures	(38,697.16)	(25,000.00)	(63,697.16)	127,907.50	64,210.34
Other financing sources (uses)					
Transfers in	-	25,000.00	25,000.00	-	25,000.00
Transfers out	(25,000.00)	-	(25,000.00)	-	(25,000.00)
Total other financing sources (uses)	(25,000.00)	25,000.00	-	-	-
Change in fund balance/net position	(63,697.16)	-	(63,697.16)	127,907.50	64,210.34
Fund balance/net position:					
Beginning of the year	174,780.15	-	174,780.15	434,050.13	608,830.28
End of the year	$ 111,082.99	$ -	$ 111,082.99	$ 561,957.63	$ 673,040.62

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, 2017

NOTE 1 – SUMMARY OF SIGNIFICANT ACCOUNTING 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 District is not included in any other governmental "reporting entity" as defined in Section 2100, Codification of Governmental Accounting and Financial reporting Standards.

The District receives no funding from local, state, or federal sources.

B. Government –wide and Fund Financial Statements

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

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

The statement of activities demonstrates what the District did with the revenue it raised.. The government-wide financial statements (i.e., the statement of net position and the statement of changes in net position) report information on all of the nonfiduciary activities of the primary government.

C. Measurement Focus, Basis of Accounting, and Financial Statement Presentation

The government-wide financial statements are reported using the economic resources measurement focus and the accrual basis of accounting. Revenues are recorded when earned, and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows. Property taxes are recognized as revenues in the year for which they are levied.

The total governmental fund column of the government-wide financial statements is reported using the current financial resources measurement focus and the modified accrual basis of accounting. Revenues are recognized as soon as they are both measurable and available. Revenues are considered to be available when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, the government considers revenues to be available if they are collected within thirty-one days of the end of the current fiscal period. Expenditures generally are recorded when a liability is incurred, as under accrual accounting.

No accrual for property taxes collected within sixty days of year end has been made as such amounts are deemed immaterial; delinquent property taxes at year end are reported as deferred inflows of resources.

Fund Accounting

The District uses funds to maintain its financial records during the year. A fund is defined as a fiscal and accounting entity with a self-balancing set of accounts. The District only uses governmental funds.

Governmental Funds

Governmental funds are those through which most governmental functions typically are financed. Governmental funds reporting focuses on the sources, uses and balances of current financial resources.

Expendable assets are assigned to the various governmental funds according to the purpose for which they will be paid. The difference between governmental fund assets and liabilities is reported as fund balance.

The District reports the following major governmental funds:

General Fund – The General Fund is used to account for all financial resources of the District except those required to the accounted for in another fund.

Special Revenue Fund – The Special Revenue Fund is used to account for grant funds.

D. 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.

E. 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, 2017

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

Reconciliation of General Fund Balance to Net Position of Governmental Activities September 30, 2017

Total General Fund Balance	$	111,082.99
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.		540,218.40
Accumulated depreciation has not been included in the general fund financial statements.		(28,725.69)
Revenue reported as deferred revenue in the general fund was recorded as revenue in the government-wide financial statements.		50,464.92
Net Position of Governmental Activities	$	673,040.62

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	$	(63,697.16)
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		6,633.19
Governmental funds report capital outlays as expenditures. However, they are reported as increases in capital assets in the government-wide financial statements.		150,000.00
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.		(28,725.69)
Change in Net Position of Governmental Activities	$	64,210.34

NOTE 2 – DEPOSITS, SECURITIES AND INVESTMENTS

District Policies and Legal and Contractual Provisions Governing Deposits

Custodial Credit Risk for Deposits State law requires governmental entities to contract with financial institutions in which funds will be deposited to secure those deposits with insurance or pledged securities with a fair value equaling or exceeding the amount on deposit at the end of each business day. The pledged securities must be in the name of the governmental entity and held by the entity or its agent. Since the District complies with this law, it has no custodial credit risk for deposits.

Foreign Currency Risk The District limits the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit by not participating in foreign currency transactions.

District Policies and Legal and Contractual Provisions Governing Investments

Compliance with the Public Funds Investment Act

The **Public Funds Investment Act** (Government Code Chapter 2256) contains specific provisions in the areas of investment practices, management reports, and establishment of appropriate policies. Among other things, it requires a governmental entity to adopt, implement, and publicize an investment policy. That policy must address the following areas: (1) safety of principal and liquidity, (2) portfolio diversification, (3) allowable investments, (4) acceptable risk levels, (5) expected rates of return, (6) maximum allowable stated maturity of portfolio investments. (7) maximum average dollar-weighted maturity allowed based on the stated maturity date for the portfolio. (8) investment staff quality and capabilities. (9) and bid solicitation preferences for certificates of deposit.

Statutes authorize the entity to invest in (1) obligations of U.S. Treasury, certain U.S. agencies, and the State of Texas. (2) certificates of deposit, (3) certain municipal securities. (4) money market savings accounts, (5) repurchase agreements, (6) bankers acceptances. (7) mutual funds, (8) investment pools, (9) guaranteed investment contracts, (10) and common trust funds. The Act also requires the entity to have independent auditors perform test procedures related to investment practices as provided by the Act. The District is in substantial compliance with the requirements of the Act and with local policies.

Additional polices and contractual provisions governing deposits and investments are specified below:

Credit Risk To limit the risk that an issuer or other counterparty to an investment will not fulfill its obligations the District limits investments to depository bank certificates of deposits and state sponsored investment pools.

Custodial Credit Risk for Investments To limit the risk that, in the event of the failure of the counterparty to a transaction, a government will not be able to recover the value of investment or collateral securities that are in possession of an outside party the District requires counterparties to register the securities in the name of the District and hand them over to the District or its designated agent. All of the securities are in the District's name and held by the District or its agent.

Concentration of Credit Risk To limit the risk of loss attributed to the magnitude of a government's investment in a single issuer, the District investments in both depository bank certificates of deposits and state sponsored investment pools.

Interest Rate Risk To limit the risk that changes in interest rates will adversely affect the fair value of investments, the District requires the investment portfolio to have maturities of less than one year on a weighted average maturity basis.

Foreign Currency Risk for investments The District limits the risk that changes in exchange rates will adversely affect the fair value of an investment by not investing in foreign currencies.

NOTE 3 – DUE FROM OTHER GOVERNMENTS

This balance represents taxes and penalty and interest that were collected by the Tax Assessor-Collector, before September 30, 2017, but not remitted to the District.

NOTE 4 – PENSION PLAN OBLIGATIONS

The District's employees do not participate in a public retirement system, but are covered by Social Security.

NOTE 5 – CAPITAL ASSET ACTIVITY

Capital asset activity for the twelve months ended September 30, 2017, was as follows:

Capital assets not being depreciated:				
Land	$ 150,000	$ -	$ -	$ 150,000
Construction in Process	-	150,000	-	150,000
Total capital assets not being depreciated	150,000	150,000	-	300,000
Capital assets being depreciated:				
Buildings and Improvements	172,083	-	-	172,083
Vehicles	114,301	-	-	114,301
Monitoring Wells & Equipment	154,602	-	-	154,602
Total capital assets being depreciated	440,986	-	-	440,986
Less accumulated depreciation for:				
Buildings and Improvements	30,115	4,302	-	34,417
Vehicles	79,665	8,403	-	88,068
Monitoring Wells & Equipment	90,988	16,020	-	107,008
Total accumulated depreciation	200,767	28,726	-	229,493
Total capital assets being depreciated, net	240,218	(28,726)	-	211,493
Governmental activities capital assets, net	$ 390,218	$ 121,274	$ -	$ 511,493

Required Supplementary Information

BANDERA COUNTY RIVER AUTHORITY AND GROUND WATER DISTRICT
Budgetary Comparison Statement - General Fund
For Year Ended September 30, 2017

	Actual	Original Budget	Final Amended Budget	Variance Positive (Negative)
Revenues:				
Property taxes	$ 770,478.62	$ 779,700.00	$ 779,700.00	$ (9,221.38)
Property taxes penalty & interest	10,063.46	-	-	10,063.46
Interest income	1,080.68	450.00	450.00	630.68
Permits and deposits	15,438.65	10,000.00	10,000.00	5,438.65
USGS Gauge Station	6,800.00	6,800.00	6,800.00	-
Water analysis	5,552.36	4,050.00	4,050.00	1,502.36
Misc	-	4,000.00	4,000.00	(4,000.00)
Total revenues	809,413.77	805,000.00	805,000.00	4,413.77
Expenditures:				
Service operations:				
Appraisal District	19,834.97	19,500.00	20,700.00	865.03
Bonds & Insurance	5,580.42	6,860.00	6,860.00	1,279.58
Building Maintenance	9,045.94	15,000.00	15,000.00	5,954.06
Dues & Subscriptions	3,857.82	4,000.00	4,000.00	142.18
Education	4,126.92	5,500.00	4,250.00	123.08
Computer Software and Support	4,499.01	5,500.00	5,870.00	1,370.99
Small Equipment & Supplies	5,318.59	17,400.00	8,400.00	3,081.41
Elections	5,395.29	3,000.00	5,500.00	104.71
Public Relations	10,735.33	9,500.00	11,500.00	764.67
Health Insurance	26,841.60	25,000.00	27,500.00	658.40
Website	5,324.82	5,500.00	5,500.00	175.18
Monitoring Units	-	1,000.00	1,000.00	1,000.00
Office Supplies	3,913.17	5,500.00	5,500.00	1,586.83
Office Rent	3,600.00	3,600.00	3,600.00	-
Payroll Tax	27,770.16	32,000.00	29,000.00	1,229.84
Postage	409.83	750.00	750.00	340.17
Professional Services	251,764.87	136,800.00	250,567.00	(1,197.87)
Salaries	360,464.83	388,000.00	361,000.00	535.17
Tax Collection Exp.	15,280.20		-	(15,280.20)
GMA Expense	-	5,000.00	1,000.00	1,000.00
Travel & Conferences	14,807.78	17,000.00	17,000.00	2,192.22
Employee Training	5,666.15	8,000.00	7,630.00	1,963.85
Utilities	14,258.19	14,500.00	14,500.00	241.81
USGS - Gauges	16,580.00	16,580.00	16,580.00	-

BANDERA COUNTY RIVER AUTHORITY AND GROUND WATER DISTRICT
Budgetary Comparison Statement - General Fund
For Year Ended September 30, 2017

	Actual	Original Budget	Final Amended Budget	Variance Positive (Negative)
Expenditures: (Continued)				
Vehicle Operations	8,924.99	14,500.00	11,500.00	2,575.01
Water Quality Project	11,588.12	15,000.00	12,000.00	411.88
Water Samples Exp.	8,197.45	7,500.00	8,500.00	302.55
Well Plugging	116.48	2,500.00	2,500.00	2,383.52
Illegal Dumping Litter Abatement	-	7,500.00	-	-
Medina River Cleanup	708.00	1,000.00	1,000.00	292.00
Brush Control	3,500.00	3,500.00	3,500.00	-
Well Logging Equip	-	1,250.00	1,250.00	1,250.00
ASR & Water Catchment Projects	-	1,250.00	-	-
Flood Awareness - Rainfall Project	-	4,510.00	15,344.00	15,344.00
Contingencies	-	1,000.00	-	-
	848,110.93	805,000.00	878,801.00	30,690.07
Excess (deficiency) of revenues over expenditures	(38,697.16)	-	(73,801.00)	35,103.84
Other financing sources (uses)				
Transfers out	(25,000.00)	-	-	(25,000.00)
Total other financing sources (uses)	(25,000.00)	-	-	(25,000.00)
Change in fund balance/net position	(63,697.16)	-	(73,801.00)	10,103.84
Fund balance:				
Beginning of the year	174,780.15	174,780.15	174,780.15	-
End of the year	$ 111,082.99	$ 174,780.15	$ 100,979.15	$ 10,103.84

BANDERA COUNTY RIVER AUTHORITY AND GROUND WATER DISTRICT

Schedule of Delinquent Taxes Receivable

For the Year Ended September 30, 2017

LAST TEN YEARS ENDED SEPTEMBER 30,	TAX RATE	ASSESSED VALUE FOR TAX PURPOSES (in thousands)	BEGINNING BALANCE 10/1/16	CURRENT YEAR TOTAL LEVY	ENTIRE YEAR'S ADJUSTMENTS	TOTAL COLLECTIONS	BALANCE 9/30/17
2007 & Prior	Var	Var	$ 6,786.22		$ (23.95)	$ 164.59	$ 6,597.68
2008	.029	1,369,933	1,177.90		(5.89)	104.82	1,067.19
2009	.026849	1,544,243	1,511.79		(4.03)	117.91	1,389.85
2010	.024000	1,683,008	1,604.01		(0.76)	165.32	1,437.93
2011	.023414	1,796,477	2,103.92		(0.79)	287.61	1,815.52
2012	.024474	1,842,781	2,697.80		78.34	560.70	2,215.44
2013	.026001	1,878,945	4,343.66		113.43	1,379.00	3,078.09
2014	.028058	1,903,192	7,633.05		67.71	3,507.76	4,193.00
2015	.034739	2,015,732	15,729.19		20.13	7,323.52	8,425.80
Current	.037300	2,088,705		779,086.84	(1,975.03)	756,867.39	20,244.42
			$ 43,587.54	$ 779,086.84	$ (1,730.84)	$ 770,478.62	$ 50,464.92