SARA'S VISION
Leaders in Watershed Solutions

SARA’S MISSION
Sustain and Enrich Life in the San Antonio River Watershed

TABLE OF CONTENTS
Employee Highlight ............... 3
Sustainability in the Community .4
Board Member Hector R. Morales

Mission San Juan Portal ............ 4
Improving Your Watershed ....... 5
Creating Opportunities .........  .6
Reducing Bacteria ............... 8
Board Member John J. Flieller

Water Treatment Plant Awarded .8
Branch River Park Improvements .9
Trail Safety Tips ............... 10
Managing Pipeline Crossings ....11
South Texas Native ............. 11
General Manager’s Message .... 12

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Cover Image:
Spring wild flowers at Jackson Nature Park.
Drummond’s Phlox (Phlox drummondii)
Texas Paintbrush (Castilleja indivisa)
Texas Prickly Pear, (Opuntia engelmannii)
It is with great pleasure that we introduce Joe Shannon, Network Administrator, within the San Antonio River Authority’s (SARA) Information Technologies (IT) Department. Joe began his career at SARA 23 years ago as a Technician in the Engineering Department. During this time, he also served as a construction inspector for various projects and was instrumental in the creation of the Flood of 1998 Study. Joe eventually transferred to the IT Department as Network Administrator; a position he has held for 14 years. Joe says “Now that might seem boring, but when I came to IT, SARA only had a total of 35 computers and three servers. I helped get SARA’s first email address and the naming of our domain (www.sara-tx.org). We have expanded our capacity so that we now have 85 servers and approximately 300 networked PC’s and nearly 800 networked devices.”

Joe was also part of the committee that selected the Environmental Center, located at 600 E. Euclid, as suitable for SARA’s expansion site. He then orchestrated the IT portion of SARA’s data center move to the new building. Joe now takes care of all data centers for SARA locations which include data storage, virtual hosting, all networking between data centers and all connectivity of our remote offices. He is charged with purchasing the hardware and software and keeps computer inventory. Joe also does the IT design work for our new facilities and also helps with security cameras, access controls and our phone system.

Joe was born in San Antonio, Texas but raised in Pleasanton. At the age of 8 his family moved to Sonora, Texas where he graduated high school and attended Angelo State University (ASU). Joe and his wife, Tammy, have been married for 26 years. Together they have 3 children, Ryan, Matthew and Kaycie. They enjoy spending time at their kids sporting events, traveling, fishing and spending time working and hunting on the family ranch. Thank you Joe, for keeping SARA “connected!”

By Kim Garcia
The San Antonio River Foundation is excited to bring another piece of world-class public art to the Mission Reach of the San Antonio River Walk. The Foundation has commissioned Belgian artist Arne Quinze to design the sculpture “WIND” for the Mission San Juan Portal.

Always seeking inspiration from the direct environment in which his work is placed, Quinze aims to redraw attention back to the unique flora that characterize the San Antonio region. His sculpture will have abstract hints to the mesquite, small oaks and pecan trees of the area. The color scheme of “WIND” is a blend of Quinze’s signature fluorescent red-orange and a beautiful mixture of blues and purples referencing local wildflowers, such as the bluebonnet.

Quinze has been creating large and small sculptures, drawings, paintings and large-scale installations worldwide for over two decades. Smaller works, sketches and drawings are the basis and research for his large installations. Recurring themes which Quinze focuses on include social interaction, communication and urbanism. What drives him is the belief in the possible realization of a society where all individuals communicate and interact, aiming to bring people together and push them into a vigorous dialogue. In his urban vision, communal activities flourish and social cohesion is the norm. His installations are built to provoke reaction and to intervene in the daily life of passersby confronted with his sculptures.

You can look for this wonderful new addition to the Mission Reach later this year when it is installed along the west bank of the River Walk just north of the Mission Road bridge, a short distance across the river from Mission San Juan.

For the 2015 UDC application process, the San Antonio River Authority (SARA) will be submitting amendments to codes that allow for the best use of natural and existing features on a site that incorporate Low Impact Development (LID). The main purpose of LID is to take advantage of natural landscape features in order to filter and treat polluted stormwater through natural percolation processes or engineered systems. The stormwater is then utilized as a water resource versus a waste product. SARA Board of Directors support sustainable development practices in commercial, residential and capital improvement projects that minimize increases in the volume of stormwater runoff, improve water quality and protect and improve the ecological functions of the watershed. The UDC amendments being put forth by SARA will aid the community in addressing stormwater quality and quantity issues thereby improving the health of the San Antonio River Watershed. Learn more about SARA’S UDC amendments on page 6.

“WIND” – Mission San Juan Portal

By Stuart Johnson, AIA, LEED AP • Project Manager, San Antonio River Foundation

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Well designed, implemented and enforced city codes help sustain growth in a community. As time progresses, past “best practices” become outdated, so it is important that the codes occasionally be taken back to the drawing board and improved. This year, the City of San Antonio will be accepting applications to amend ordinances in the current Unified Development Code (UDC). The UDC regulates the type and location of developments. These developments are vital to our daily life and consist of things such as parking requirements, street widths, building densities, a building’s landscape and more. Before your favorite grocery store or library broke ground, there were many versions of blueprints and mock-ups created, and the best design was implemented.

By Stuart Johnson, AIA, LEED AP • Project Manager, San Antonio River Foundation

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Throughout the history of civilization, communities have been drawn to settle where sources of water are plentiful. Rivers generally provide an abundance of nature’s most precious resource to communities within its watershed, supplying nourishment and vitality to those in close proximity. Water from rivers support economic growth through irrigation, farming, ranching and transport. Riparian habitats enhance natural food supply and ecosystems conducive with an enriched lifestyle.

Communities up and down the banks of the San Antonio River have consistently benefitted from the utility of its waters. But nature knows no boundaries, and non-point source pollution has drastic implications on water quality. The flow of the river at any given time is subject to the weather. South Texas faces drought and flooding on what seem to be a cyclical basis. Though we may not be able to make it rain, we can certainly improve the watershed’s sustainability throughout the unpredictable cycle.

The San Antonio River Authority (SARA) has taken steps to mitigate flooding hazards and sustain a healthy watershed through the development and implementation of holistic watershed master plans (HWMP). The purpose of the HWMPs is to provide communities within the watersheds of Bexar, Wilson, Karnes and Goliad counties with a plan to address flooding risks, stream conditions and water quality.

A HWMP is conducted in phases. SARA engineers begin with the planning phase, which includes identifying the particular watershed, determining which issues need further study and reaching out to stakeholders throughout the watershed. During the data collection phase, engineers gather information about the watershed and identify any additional studies or models that need to be completed. The next phase involves developing goals and strategies to achieve the desired results throughout the watershed. The goal is to implement the HWMP through policy and best management practices (BMPs).

The HWMP encourages the facilitation of land use practices to manage stormwater quality and quantity while preserving the natural watershed. Potential projects are scored and ranked according to criteria seeking flood damage reduction, crossing safety improvements, water quality benefits, recreational enhancements and stream function improvements. The HWMP process seeks to maximize the potential for multipurpose programs, processes and projects.

Ultimately, the HWMP is an advanced living document, which will be continually updated to guide future planning efforts by SARA and other entities within the Watershed. SARA has completed HWMPs for the Upper San Antonio River, Leon Creek and Salado Creek and is currently in the process of developing HWMPs for the Lower San Antonio River, Medina River and Cibolo Creek Watersheds.
Removing Barriers, Creating Opportunities

By Karen Bishop

It is done in many locations throughout the state, nation and world, but the question we kept hearing was, “Can it be done in San Antonio? Our climate and geology are unique.”

The “it” is Low Impact Development, or LID. Some communities call it Green Infrastructure, others Green Stormwater Infrastructure. Regardless of its name, this toolbox of engineered systems mimics and/or utilizes natural areas to manage stormwater runoff as close to its source as possible.

LID systems are designed to capture the first 1.5 to 1.8 inches of local rainfall depth. This “first flush” carries most of the greases, pesticides, bacteria and other pollutants that are washed off hard surfaces during rain events. Much of this pollution ends up on our streets, yet streets are part of our storm drain system, carrying runoff into storm drains and depositing it untreated into our creeks and rivers.

Recognizing that stormwater runoff poses the greatest threat to the health of our creeks and rivers, yet being responsive to concerns about LID application locally, the San Antonio River Authority (SARA) funded a study in 2012 to examine barriers to LID in San Antonio.

Among the barriers reported are current codes and ordinances, which require variances to the standard plan review process when LID design is incorporated into plans.

For example, think of all the curbs bordering our roads and parking lots. Those curbs channel stormwater toward storm drains. A LID design could incorporate curb cuts to allow stormwater to flow into planted and/or natural areas. There, the stormwater would serve as a resource rather than as a waste product. Such a design would require a variance. These variances cost time and money for developers, and therefore, they deter the use of LID.

During 2015, the City of San Antonio is accepting applications to amend its Unified Development Code (UDC). SARA is funding a stakeholder input-driven project to develop a new, voluntary development option for the UDC with a goal to remove barriers and incentivize sustainable development practices including LID, natural channel design, as an option to concrete-lined stream channels, and conservation subdivision development, which retains and protects the unique natural characteristics of an undeveloped property site and utilizes them as an amenity after development.

SARA created two advisory groups to guide the new code content: an Agency Advisory Panel consisting of staff from the City of San Antonio, Bexar County, the San Antonio Water System (SAWS), CPS Energy, Edwards Aquifer Authority, Texas Department of Transportation and SARA; and a Development Community Stakeholder Committee consisting of development, design, construction and realty professionals serving the San Antonio area. Both groups met independently to brainstorm their needs and concerns, reviewed the draft document that resulted from their work and were given time to submit additional input. Then, the two groups met together to identify where there was consensus, where there was disagreement and where there were gaps that had not yet been addressed. Further draft work ensued.

During one of the Development Community Stakeholder meetings, a contractor and a landscape architect volunteered to compare the cost and function of a traditional San Antonio development to the cost and function of the same property taking a LID design.

In many cases, proper pre-planning not only may lead to these enhancements but actually may lower site development costs.
approach. A few weeks and much number-crunching later, the duo reported a 9.31% savings with their LID design—and that was utilizing the existing building, road and parking lot configuration. Had they begun planning the site with LID as a guiding principle, the team mused they would have saved even more. National case studies prove they are correct.

“One of the main goals of the consultant team has been to educate the development community about the opportunity to use natural site features and a variety of LID best management practices to replace typical drainage infrastructure and increase the quality of stormwater runoff leaving a project site,” stated Rob Leonhard, a local developer engineer and member of the project consultant team.

“In many cases, proper pre-planning not only may lead to these enhancements but actually may lower site development costs,” stated Leonhard. “With the addition to the UDC of the comprehensive detail collected through the stakeholder input process, we hope to stimulate the use of LID and natural channel design within the community in the near future.”

Through the drafting process, which began in September 2014, agency staff and development community representatives have completed a draft Low Impact Development/Natural Channel Design option and have made significant revisions to the existing Conservation Development Code language to incentivize its use. The draft documents are now in circulation for final edits before they are attached to formal application for amendment and submitted to the City of San Antonio by its May 1, 2015 deadline.

For more information, contact Karen Bishop at SARA at (210) 302-3642 or kbishop@sara-tx.org.
We are not strangers to bacteria. Our bodies contain close to 100 trillion bacteria cells. The bacteria cells, or microbiome, is our own personal ecosystem. With any ecosystem, there is a delicate balance that must be maintained in order to have optimal performance. The Texas Commission on Environmental Quality (TCEQ), much like our bodies, acts as a regulator. In this case, the TCEQ helps to regulate natural resources in order to ensure Texans have a high quality of life and lasting natural resources.

During a 2000 study, the TCEQ, along with the San Antonio River Authority (SARA), determined that segments of the Upper San Antonio River contained concentrations of bacteria that exceeded the contact recreation standard. The Upper San Antonio River flows through three counties; Bexar, Wilson and a portion of Karnes. As a result of this finding, the impaired segments of the Upper San Antonio River were placed on the Environmental Protection Agency’s (EPA) 303(d) List which identifies impaired waterways.

The TCEQ then initiated three total maximum daily load (TMDL) programs as a way of determining the maximum amount of bacteria that the River can support and be in compliance with surface water quality standards. As part of the TMDL process, stakeholders of the Upper San Antonio River came together to form a Coordination Committee which is responsible for creating an Implementation Plan (I-Plan).

SARA, as a member of the Coordinating Committee, assisted in the creation of the document which identifies steps to be taken in the next one to five years that will reduce bacteria levels, who will be in charge of those steps, when the steps will be implemented and how to gauge improvement. The Coordinating Committee approved the I-Plan for TCEQ review on January 15, 2015. SARA will post the I-Plan on its website once it is approved by the TCEQ. By working together, we can protect and improve water quality in the Upper San Antonio River.

Reducing Bacteria, A Group Effort

By John J. Flieller, SARA Board Member, Wilson County

Water Treatment Plant Receives Award

By Yliana Flores

The City of Goliad’s Wastewater Treatment Plant (WWTP) was recently selected as this year’s Water Environment Association of Texas (WEAT) Municipal Wastewater Treatment Plant of the Year award recipient. In November 2012, the City of Goliad enlisted the help of the San Antonio River Authority (SARA) to assist with operations and maintenance of Goliad’s WWTP. After several months of assistance, Goliad entered into a contract agreement allowing SARA to continue assisting with day-to-day operations at the plant.

Goliad’s WWTP, built in 1930, has 950 connections with approximately 22.5 miles of collection system lines and operates on an extended aeration process. The plant processes sludge using drying beds and sludge dewatering boxes. Once the process is completed, the sludge is transported to a landfill or composting site. Goliad’s WWTP is operated by one full-time SARA Class C Wastewater Operator and one City of Goliad Wastewater Operator. Help with plant maintenance and collections system assistance comes from additional SARA operators. All operators are on call 24 hours a day and make weekend checks on a rotating basis.

With technical and electrical assistance from SARA’s Utilities Maintenance Department, the City of Goliad purchased two new return sludge pumps. The new pumps, installed by SARA, helped the plant run more efficiently and increased the waste activated sludge pumping capacity. Goliad also received assistance from SARA’s Utilities Collections Department by cleaning offsite city operated lift stations with the use of vacuum trucks.

Since 2012, Goliad’s WWTP has had no compliance violations and passed TCEQ inspection last year. City employees have been provided hands-on training in wastewater and water system operation resulting in zero lost time accidents. The partnership between SARA and the City of Goliad has led to an improved facility and assisted the community in developing new strategies to support growth and sustainability.

Congratulations to the City of Goliad for attaining this WEAT award, and special thanks to the staff from the City of Goliad and SARA’s Utilities Department for your dedication and service to ensuring high quality wastewater treatment. To learn more about SARA’s Utilities Department, please visit the Utilities section of the Public Services page at www.sara-tx.org.
The San Antonio River Authority (SARA) recently announced improvements to the Branch River Park located on East Fannin St. in the City of Goliad. The improvements include permanent restroom facilities, a playground and an amphitheater for public use. Construction began in October 2014 and improvements were finalized in February 2015.

Branch River Park is a 4.2 acre park that links Goliad’s historic courthouse square to the San Antonio River as well as the Angel of Goliad Hike & Bike Trail and the Ferry Street river access site. The 4.2 acre property was donated to SARA in November 2009 by Mrs. Elizabeth Branch in honor of the David W. Branch family. Construction of the park began in early 2011 and the park was opened to the public in summer 2011.

“The proximity of Branch River Park to the city’s courthouse square makes this the ideal location for the community to gather and enjoy the outdoors,” said SARA General Manager Suzanne Scott. “We hope the entire community enjoys these park improvements that help enhance nature-based recreation in Goliad County.”

The property features a carriage house that was built in the 19th century, a small pecan orchard and other native trees and shrubs. Additional park amenities include a walking trail, benches, picnic tables, drinking fountain, 9-hole disc golf course and a pavilion that can be reserved at no charge to the public. Pavilion reservations can be made over the phone by contacting Stella Luna toll free at (866) 345-7272 or via email at sluna@sara-tx.org.

SARA works with community organizations to host events at the park, such as the annual Missions Tour de Goliad post-event celebration, and is also in charge of creating park programming that includes educational and recreational events that are family-friendly and free to the public. Future SARA events include the Quilt Art Bazaar as part of SARA’s Art in the Park series on Saturday, May 16. For more information on Branch River Park, please visit www.sara-tx.org.
With springtime upon us, now is the perfect time to take advantage of warmer temperatures and enjoy the outdoors along the San Antonio River. The San Antonio River Authority (SARA) owns and operates several nature parks throughout the San Antonio River Watershed and also maintains the Museum Reach and Mission Reach segments of the San Antonio River Walk. These parks and trails not only provide a great opportunity for entertainment, they also encourage exercise and wellness.

With recreation opportunities such as hiking, biking and nature-watching, there are plenty of opportunities for individuals and families to have a fun and safe outing experience along the banks of the San Antonio River. All hike and bike trail users should be prepared, safe and courteous and observe posted hours for trail use. Proper hike and bike trail etiquette will help ensure that everyone safely enjoys the hike and bike trails. Here are some simple tips to follow:

**Pedestrians:**
- Stay to your right on the trail leaving room for others to pass you on your left
- Be aware of your surroundings and keep the volume of your music low enough to hear external voices and sounds
- Make sure that children in your group stay by your side and safe from other traffic on the trail
- Keep your pets on short leashes and please pick up after your pets
- Come prepared to enjoy the trail by wearing proper shoes and by bringing water and sunscreen

**Cyclists:**
- Always wear a helmet
- Let all others on the trail know you are approaching by calling out “rider(s) up on your left” and thank them after passing
- Be aware of your surroundings
- Ride at a casual speed and slow down when approaching pedestrians
- Make sure your equipment is in proper working order and bring water, sunscreen and an extra tube with tools.

Pedestrians and cyclists should always avoid blocking the entire trail space when traveling in a group by traveling in a single file. Call 911 for emergencies. Also, please dispose of trash properly, and last but not least, please do not feed the wildlife. For more information on trail etiquette and river recreation along the San Antonio River, please visit [www.sara-tx.org](http://www.sara-tx.org).
American Sycamores are tall ghostlike trees with white-grey speckled bark and spreading branches, found scattered along the San Antonio River. The largest deciduous tree in North America and one of the oldest tree species on earth, sycamores can exceed 100 feet in height and live about 250 years!

When you chance upon a sycamore in winter, you get the feeling of being transported into another world. If only trees could talk, they would tell stories of our ancestors.

Unlike most trees, sycamores are highly resistant to pollution and salty soils, growing in full sun to shade conditions, preferring clay and sandy loam areas. They thrive in spaces where they regularly receive moisture.

They play a key role in Texas riparian habitats by improving air and water quality. Deep root systems prevent soil erosion. They reduce the surface temperatures in our community, especially in parking lots. Many neo-tropical migratory birds use sycamores in riparian corridors as a stopover during migration or as a breeding habitat. This fast-growing native is a lofty home, providing nesting sites for cavity-dwellers like owls, woodpeckers, swifts and raccoons, and hunting sites for other wildlife. Sycamore seeds are fed upon by goldfinches, chickadees, mallards and squirrels while insects feed on the wood. No wonder that a pair of beautiful, predatory red-shouldered hawks have made a sycamore tree along the river in San Antonio their permanent abode!

If you are curious to sight what the Native Americans called “Ghosts of the Forest”, visit the San Antonio River near Roosevelt Park. When you come upon these handsome trees, sit in their cool shade and listen to a Louis Armstrong jazz tune wafting with the breeze, “Birds singing in the sycamore trees, dream a little dream of me.” Do sing along...

For more information about this and other native species of flora and fauna, please visit the San Antonio River Authority website at www.sara-tx.org.
By Suzanne Scott, General Manager

As a public, taxing authority, the San Antonio River Authority (SARA) recognizes the importance of accountability and transparency in the conduct of our business. With the internet, it has become much easier to provide public access to documents and materials. For years, SARA has posted our board agendas, minutes, annual budgets, tax rate information and comprehensive annual financial audit reports on our website. In 2012, we expanded accessibility to historical information and documents by joining with the University of Texas at San Antonio Libraries Special Collection to establish an on-line archive dating back to 1920 with documents regularly added to the collection which can be found by clicking the History & Archives tab at www.sara-tx.org.

Most recently, we have extended the accessibility to our information even further with the creation of SARA’s Open Government / Financial Transparency webpage, which is easily accessible from SARA’s homepage. We are proud that the site was recently recognized by the State Comptroller’s Leadership Circle with the Platinum Award. Platinum is the highest recognition a political subdivision may receive from the Comptroller’s office and represents “entities that go above and beyond providing financial transparency.”

I invite you to visit the website and review the information provided. In addition to annual budgets, audits and expense information, we have graphs highlighting property valuations, the trend of our property tax rate over the past decade and average wastewater bills for service areas. Additionally, there are links to directly contact your representative on our Board of Directors or submit a request for information.

Each day SARA strives to demonstrate our core values of excellence, integrity and stewardship. Providing easy access to important information is one way we put those values into practice and promote good fiscal stewardship and public accountability. ★