GBRA River Run

A publication of the Guadalupe-Blanco River Authority *Summer 2013*

Planning Progresses for Environmental Learning Center

Gonzales Paddling Trails ◆ *SMWTP TOP Ops* ◆ *MWH Gets Desal Study*

From the GM

Visions of the Future

The state of Texas is facing some real challenges:

- A great portion of the state has experienced significant drought conditions for the past several years and is forecast to persist in the foreseeable future

- Drought conditions have stifled the reservoir storage throughout the state with Texas' monitored water storage reservoirs indicating just under 62 percent capacity in mid-August according to waterdatafortexas.org and many reservoirs less than half full
- Water conservation efforts have and will continue to be the most cost-effective way for citizens to extend existing water supplies, but as the state's population and economy grow, conservation alone will fall far short of meeting demands

The Office of the State Demographer can offer population projections 40 years beyond the most recent Census. Those projections are provided in three different scenarios with each projecting populations of 32.1 million, 55.2 million and 41.3 million by 2050 respectively (http://osd.state.tx.us/Publications/2013-01_ProjectionBrief.pdf). In June, the Bureau of Economic Analysis released data that show North Dakota led the nation in increased economic growth in 2012 at 13.4 percent, followed in second place by Texas at 4.8 percent. Not surprisingly, both economies were driven in large part by oil and gas production.

Given those facts, the question that arises for me is, "What can the Guadalupe-Blanco River Authority do to prepare its region for the future?"

GBRA already has several initiatives underway.

First, the GBRA's staff wants to continue with robust conservation efforts, teaching all constituents, as we say, "from K (kindergarten) to gray (hair)." A master plan has been developed for an environmental learning center (ELC) that would be located in the Upper Basin area of Comal County near Canyon Reservoir. The proposed ELC would go well beyond teaching about water conservation and water quality. Read more about the planned facility beginning on page 8.

Looking beyond conservation to new water supplies, GBRA staff issued a request for qualifications last September to conduct a feasibility assessment study for developing ocean water desalination as a regional water supply including the option of co-located power generation facilities. In July, GBRA and its partners, the General Land Office (GLO), and the University of Texas at San Antonio (UTSA) named a team led by MWH Global as the preferred finalist. Details of this exciting project that may help address the state's long-term water and power needs can be read on page 16.

And finally, a draft permit that would allow GBRA to develop a water project to meet the demands of the Guadalupe River Basin, including the fast-developing Central Texas region that includes Hays, Caldwell, Comal, Guadalupe and Gonzales counties has been prepared by the executive director of the Texas Commission on Environmental Quality (TCEQ). Notice of GBRA's application and the draft permit recently was published for public comment. More details about this project will be explained in an upcoming issue of the *River Run Magazine*.

W. E. "Bill" West, Jr.
General Manager

GBRA River Run
Summer 2013

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GBRA

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Back cover photo: by Janet Thome

Paddling Trails Open in Gonzales

After many years of planning, the Independence Paddling Trail and the Come and Take It Paddling Trail opened in July to celebration during a ceremony at the U.S. Highway 183 Bridge in Gonzales, Texas.

A result of work by Guadalupe-Blanco River Authority, the Texas Parks and Wildlife Department (TPWD) and the City of Gonzales, the paddling trails include informational kiosks and put-in and take-out points on the river for kayaks and canoes.

Other paddling trails can be taken along the Guadalupe and San Marcos rivers in Spring Branch, Seguin, Luling, Cuero and Victoria. For more information about paddling trails around the state, visit the TPWD website at: http://www.tpwd.state.tx.us/fishboat/boat/paddlingtrails/

Photos GBRA Archives

In Memoriam: Angel Castillo, Jr., 1963 - 2013

GBRA Operator Angel Castillo, Jr., 49, died on Saturday, June 8, 2013.

Castillo worked for the Lockhart water and wastewater treatment plants for 24 years, and Smitty's Market on weekends.

"Angel was a loyal and honorable friend and coworker, he was family and will be missed very much," said Edward Montana, GBRA operations manager. "I loved him like my brother."

Castillo is survived by his wife of 20 years, Teresa, daughter, Ashley Marie, and pet, Tinkerbell; parents, Angel D., Sr., and Mary Helen Castillo; sister, Valerie Gonzales and spouse, Fabian, and children: Tabitha, Samantha, Joshua, Paul and Clarissa; brother, Joe Castillo and nieces: Stephanie and Kelli Castillo; brother, Stephen Castillo and spouse, Kelly and nieces: Courtney, Amanda and Emily; sister, Lisa Montana and spouse, Edward, and nephews: Joseph and Justin; sister, JoAnne Leija and spouse, Johnny, and children: Brandi and John Anthony; brother, James Castillo and spouse, LeAnn and children: Allie, Hollie, Jamie and Lindsie.

Family and friends remembered Castillo during a memorial, June 12, at Eeds Funeral Home and a mass of celebration was held, June 13, at St. Mary's Catholic Church in Lockhart.

GBRA Showcases Pit Masters at Lineman's Rodeo

Photo by Susan Wilson

Photos by Marella Dalme

The Texas Lineman's Rodeo, held July 19-20, 2013, at GBRA's Nolte Island in Seguin, featured linemen literally at the top of their craft as well as a popular Barbeque Cook-off. Forty-one lineman teams, some from as far away as Kansas, participated with 65 apprentices and 26 barbeque teams (the most ever) participated.

Of the 26 participating BBQ teams, GBRA entered two.

Robby Scott, control room operator, led a team called the GBRA River Wranglers. Scott earned first place in ribs. David Garcia, maintenance technician, led a team from the lower basin called the Calhoun County Cookin' Crew. Joining Garcia were Curtis Gosnell, heavy equipment operator, and Ryan Boedecker, maintenance operator. They earned fifth place in chicken; tenth place in ribs; and seventh place in brisket.

About 1,000 people attended the event on Friday night and just as many people crowded the island throughout Saturday.

San Marcos WTP Earns 5th Consecutive TOP Ops Award

The Texas Commission on Environmental Quality (TCEQ) recognized the San Marcos Water Treatment Plant (SMWTP) for earning its fifth consecutive year of the state's Texas Optimization Program (TOP) awards for meeting rigorous criteria in surface water treatment.

The SMWTP, located at 91 Old Bastrop Highway in San Marcos, is owned by the City of San Marcos and operated by the GBRA.

The (TOP) Award, presented by the TCEQ technical review and oversight team, is a voluntary, non-regulatory program created to improve standards of existing surface water treatment plants without major capitol improvements. After a comprehensive performance evaluation and certain TOP optimization goals being met for a six-month period, the TCEQ presents the recognition to the TOP performing plants. Only a few treatment plants throughout the state have earned TOP Ops awards for five or more consecutive years.

The TCEQ's Mason Miller explained that the SMWTP ranks among the top 1 percent of water treatment plants in the state. It has earned the TOP Operations recognition from May 2007 through April 2013. There are only 10 Texas water treatment plants participating in this rigorous TCEQ program, although there are about 400 surface water treatment plants in the state.

"We are proud to earn this designation because it reflects the considerable investments that San Marcos citizens, our City Council and staff have made in this plant and the outstanding performance of the GBRA team that operates the plant," said Tom Taggart, director of Water and Wastewater Utilities for the City of San Marcos.

"From the first recognition earned in this program to the most recent, our operators realize the importance of optimization in water treatment, and are very proud to consistently maintain these high standards," said Jerry Sharp, GBRA's San Marcos Water Treatment Plant manager. "We will continue to operate under these very stringent guidelines to assure that the City of San Marcos and our other customers receive the highest quality water possible," Sharp added.

"The citizens of San Marcos and other constituents served by the San Marcos plant have some of the best water treatment operators in the state. Jerry and his team are second to none, as this recognition from TCEQ demonstrates," Bill West, Jr., GBRA general manager said.

GBRA is the contract operator for the City of San Marcos' water treatment plant that began operation in January 2000. This facility uses surface water from Canyon Reservoir to reduce the city's pumping from the Edwards Aquifer by an average of 75 percent and existing city wells are used to supplement peak demand periods.

Raw water from Canyon Reservoir is pumped from Lake Dunlap through a 21-mile pipeline, treated to meet state and federal drinking water standards, and delivered to the cities of San Marcos and Kyle for distribution.

Photo by Don Anders

GBRA Assists Port Lavaca with "Welcome" Sign

GBRA officials recently assisted Port Lavaca city officials with the purchase of a "Welcome to Port Lavaca" sign.

Placed at the intersection of highways 35 and 87 in Port Lavaca, the sign not only greets visitors upon entering the city, it touts Port Lavaca's motto: "Paradise on the Bay."

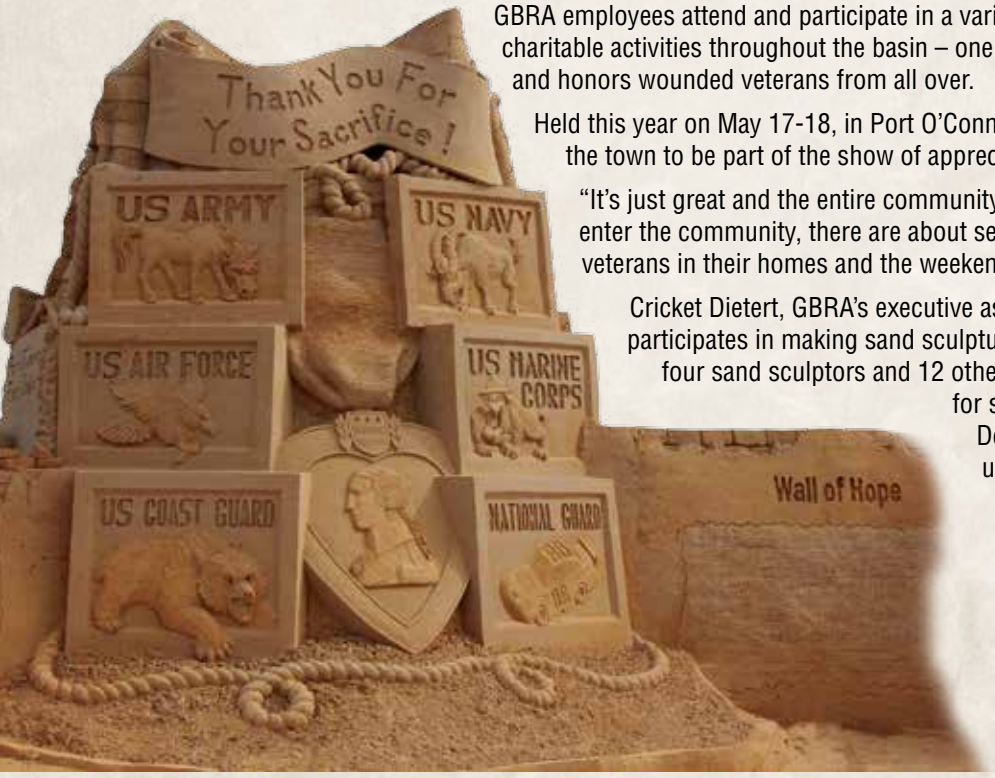
Not long after the purchase of the sign, Port Lavaca Councilman Jim Ward and City Manager Bob Turner, GBRA's Tommy Schulte, Bryan Serold, and Herb Wittliff, and GBRA Board Member Kenneth Motl, DVM, participated in a sign installation.

Hydroelectric Crews Make Repairs to Dam

Photo by Mike Schultze

GBRA hydroelectric crews made repairs to Lake Dunlap Dam in May. Repairs included adding new long flash boards across the top, which are shown in the photo.

Warrior's Weekend Memorial in Sand



GBRA employees attend and participate in a variety of charitable activities throughout the basin – one such event is Warrior's Weekend, which benefits and honors wounded veterans from all over.

Held this year on May 17-18, in Port O'Connor, Texas, more than 600 veterans descended on the town to be part of the show of appreciation, said resident Biddy Helmann.

"It's just great and the entire community participates," Helmann explained. When people enter the community, there are about seven miles of flags. Some residents host the veterans in their homes and the weekend is dedicated to them.

Cricket Dietert, GBRA's executive assistant to the general manager, said a team participates in making sand sculptures. The team consisted of four master sculptors, four sand sculptors and 12 other workers. About 200 tons of sand was hauled in for sculpting and they worked 18 days on the project. Depending on weather conditions, the sculptures usually remain until around the fourth of July.

Photos by Cricket Dietert

Trust Taps Crosby as Executive Director

by Abigail Nebb and Travis Tindell

SEGUIN, TX — The Guadalupe-Blanco River Trust (GBR Trust) Board of Trustees hired Jeff Crosby as the new executive director for the organization. As a graduate of the University of Oklahoma with a bachelor's degree in environmental design, Jeff brings over a decade of experience in land conservation to the Guadalupe-Blanco River Trust.

Jeff has spent the last nine years at Oklahoma's only state wide land trust, and most recently filled the position for the Director of Conservation for Land Legacy. He has conducted several studies on land conservation and has been involved in projects ranging from land use planning, farmland preservation, and to water quality protection. He is currently the program director for Eucha-Spavinaw Watershed Protection Initiative; whose goal is to protect the drinking water source for a quarter of the population of Oklahoma.

"I am honored to have been selected as the next executive director of the Guadalupe-Blanco River Trust and I am looking forward to the opportunities and challenges of working to protect such diverse and unique landscapes in Texas. The organization has done tremendous work over the years and I am eager to contribute to this growing success and to the advancement of conservation in the region," Mr. Crosby said.

Members of the GBR Trust and the San Antonio Bay Foundation will be exploring opportunities to collaborate on projects throughout the region. "Jeff brings a wealth of knowledge and skill in land conservation and water quality preservation." said Todd Votteler, Ph.D.

The GBR Trust is a charitable, non-profit 501(c)3 organization that was developed to conserve the land and water of the Guadalupe River watershed for its natural, recreational, scenic, historic and productive value. Its mission is to promote and encourage the conservation, stewardship and enjoyment of the land and water resources of the Guadalupe River watershed, while maintaining its unique and irreplaceable natural heritage. Additional information about the Trust is available at www.gbrtrust.org.

New Interns Contribute to the GBR Trust

by Abigail Nebb and Travis Tindell

A partnership between Sewanee: the University of the South and the Episcopal Diocese of West Texas created an internship program to provide unique opportunities for six Sewanee students who have interests in environmental studies to study and work in Texas. The Guadalupe-Blanco River Trust and Guadalupe-Blanco River Authority (GBRA) were able to connect with that partnership to land two of those interns for environmental-related work at the organizations.

Abigail Nebb and Travis Tindell Photo by Bill Evans

Under the mentorship of Todd Votteler, Ph.D., GBRA's executive manager of science, intergovernmental relations and policy, Travis Tindell and Abigail Nebb have been exploring the diverse subject of water resources and policies through field work and meetings that involve both water policy and land management.

A native of Lubbock, Nebb is a rising senior at Sewanee who will graduate in May 2014 with a bachelor's degree in natural resources and a watershed sciences certificate. Her primary scholastic interests lie in environmental policy, with studies in both forestry and geology. She hopes to attend law school after graduation to further her interests in natural resource management.

Tindell will graduate in December with a bachelor's degree in natural resources. His focuses are on the science of forestry, geology, and hydrology, and has interests in management, policy, and local agriculture. Tindell is from Saint Cloud, Fla., and lives in Sewanee, Tenn.

This type of internship program offers the opportunity to gain experience and discern specific interests within the vast fields of surface and ground water management. Nebb and Tindell have attended several meetings involving the Edwards Aquifer, feral hog population control, and the operations of the GBRA. Their field work has included exploring the region through the installation of a storm water sampler, bio assessments of several streams (Nebb held her first fish!), and a tour of San Antonio Bay along the Texas coast.

"A summer internship can play an essential role in a student's career. We hope the experience these students get through their work with GBRA and the Trust is quite unique," Votteler explained.

The internship program, now in its fifth year, has been sponsored by donations from the Diocese of West Texas and Sewanee alumnus Gregg Robertson.

Planning Progresses for Environmental Learning Center

by Barbara Elmore

A little more than 10 years after a devastating flood carved a deep hole into the limestone near Canyon Lake, a longtime vision is taking shape for an educational complex at the ravine's edge. Planners at GBRA believe the land the agency bought above the Comal County gorge is the ideal place for people to learn about natural resources, particularly water.

No ground will be broken for the learning center until the newly formed nonprofit Guadalupe River Foundation has banked enough money to pay for it. But thanks to several important events, the center is closer to reality.

GBRA's 10-county district stretches from Kendall County in Central Texas to Refugio and Calhoun counties on the Gulf Coast. The location for the learning center in the upper part of the basin fell into place when the land above the gorge became available, said LaMarriol Smith, GBRA public affairs officer. "The beauty of that site is its location -- adjacent to both the gorge and our primary water supply at Canyon Reservoir," Smith said. "It's a location that made sense."

When the story about the gorge, a new natural wonder in Central Texas, began to circulate, people worldwide wanted to see it. GBRA and the Army Corps of Engineers, already jointly managing Canyon Reservoir, extended their partnership to the gorge. GBRA assumed a 25-year lease as manager.

Cinde Thomas-Jimenez, GBRA's environmental education administrator, was the first person to train guides and lead tours into the gorge, which started in 2007. She also helped establish the nonprofit Gorge Preservation Society (GPS). Although chaotic at first, today's smoother operations include a GBRA staff person dedicated to gorge management and between 50 and 60 volunteers who maintain the site and guide tours.

After GBRA bought the 21 acres above the gorge, workers razed a farmhouse to prepare for development, but left standing a garage which the GPS uses as a staging center for tours, a souvenir shop, and storage of supplies. Eventually volunteers will have space in the learning center.

GBRA's vision

Water is only one subject that people would study at the proposed learning center, but it plays the biggest part in this story. That's because of GBRA's role as a manager of water resources in its basin, and also because water created the gorge, scooping out

giant boulders and dirt to unearth ancient artifacts. The modern-day excavation formed by the flooding Guadalupe River in 2002 reaches 50 feet in places and extends for about a mile. Once people walked into its depths, they found dinosaur tracks from more than 100 million years ago.

The proposed site for the learning center features a hill that offers great views and a nearby dam, said Thomas-Jimenez. “With Canyon as our major reservoir, we can pull in a lot of concepts that we want people to be familiar with, such as why we built the dam, the Trinity and Edwards aquifers that feed into the river system, and Comal Springs in New Braunfels. Comal County is very water-rich, so this spot is ideal.”

She sees the gorge as an outdoor laboratory for people to view the aquifer system, which includes natural falls and areas in which ponds form, disappear, the reappear. “It is interesting to see the emergence of water. Then it disappears and comes out again.” Much of the water trickles from the lake, but it also comes from natural seeps that are part of the groundwater system, she said.

GBRA also tells this story with a middle-school curriculum called Waters to the Sea: Guadalupe River. The curriculum is part of an interactive, multimedia series about waterways developed by Hamline University’s Center for Global Environmental Education. Through historical characters, students learn about the history of the area and about Texas as a whole. The curriculum emphasizes importance of conservation and water purity.

The Internet-based curriculum helps keep GBRA up-to-date with educational trends, said Smith, as do its watershed kiosks in public areas that anyone can use -- such as those in the Boerne library and other areas of the basin. “These allow people to learn about the watershed in their area and things they can do to help keep the water healthy.”

Educational centers would be an extension of those educational efforts. Thomas-Jimenez and Smith spent about six months investigating similar centers and made a wish list for the GBRA complex. Architectural drawings show the area off the South Access Road near Hidden Valley Sports Park. Three buildings are surrounded by native gardens, oak trees, a courtyard basin, rainwater cisterns and nature trails. One building would house offices, another classrooms, and a third, exhibits.

The educational staff considered state-mandated education requirements that teachers must meet and looked at big-picture

concepts. “We visited quite a few centers in Central Texas,” said Thomas-Jimenez. “We wanted people to walk away with an understanding of the river system and the interconnectedness between ground and surface water.”

Other pieces of that puzzle include the different types of land through which water travels, she said. Giving people a more complete water picture illustrates Texas’ future challenges in terms of water quality and water quantity. She hopes the knowledge will lead to people using water wisely on an everyday basis.

Voices of the community

As a companion to the wish list, GBRA wanted to include community ideas and needs, Smith said.

GBRA board member Rusty Brockman of Comal County is one of the fans of the proposed learning complex. As director of economic development for the New Braunfels Chamber of Commerce and a retired educator, Brockman has a stage from which to tout the proposed learning center. “The ELC would be easy to get to and benefit both teachers and administrators,” he said. “These are folks I know already, so gathering their support, no matter what kind of support, is important.”

Brockman likes the idea of sharing both ancient history and today’s lake with visitors worldwide. “The gorge and the history are part of the reason we have been able to garner so much attention. It’s nice to have that. And when people come and want to take the tour, they want to see a world-class educational facility as well.”

Susan Bogle, a volunteer gorge guide and a board member for the nearby Tye Preston Memorial Library, supported efforts to build the learning center by participating in early community discussions. The 12-year resident of the area also helped choose Jackson McElhaney Architects.

Bogle was important in pulling together the future learning center's neighbors -- the library, the Gorge Preservation Society and a nearby recreation center, said Thomas-Jimenez. A community meeting attracted many people who contributed ideas. GBRA already had done a lot of research, Bogle said. "From that perspective I saw how committed GBRA is to this endeavor."

When it came to choosing an architect, the community wanted a firm that would respect the environment. "There is unique topography on the property. We wanted to work with that, not recreate it," Bogle said. "Also, the access to it is important. The access has to consider cars and school buses and has to minimize the impact on the property. We don't want to do an excavation. We want to take advantage of the views so that people can enjoy the environment."

Even though the gorge is known worldwide, said Bogle, some local residents still have not gone to see it. "It's not on their radar yet. Once the learning center goes in, it will be a wonderful piece of the puzzle to tell people more about the Canyon Lake area -- the heritage, history, geology and paleontology."

She noted that one of the slogans of the library is "Where books are only the beginning." That means the library is more than just books. "The library has a high awareness of the qualities in the area and stresses living in and with your environment. Landscaping is all drought-resistant native. We have a nature trail, and we are trying to restore the trees."

In the same way, she said, the learning center will be about more than water. "The idea of this learning facility in our area is more than what we could have hoped for. GBRA has chosen a wonderful location on the South Access Road. There is a community feeling along that road. It presents a tremendous opportunity for tourists and locals alike."

Aerial view: Scope of Project

Next steps

The learning center will require financial support, both for the building of it and for ongoing operation. Estimated cost of the building is between $5.5 million and $6.5 million, Smith said. In 2012, GBRA established a nonprofit Guadalupe River Foundation to support all of its educational efforts, and hired a grant writer.

Those are the first steps toward raising the funds that must be in place before building begins. Fund-raising could take four to five years and the total amount will determine what level of LEED certification -- Leadership in Energy and Environmental Design -- the construction attains. The LEED program provides third-party verification of green buildings, and there are different levels of certification.. “The greener your building, the more self-sustaining it is,” said Thomas-Jimenez.

Exhibit Hall

Top:
View From Front

Bottom:
View From Above

"We put in water conservation features in restrooms and a green roof on one of the buildings. One building is oriented to use natural lighting when it can, to cut down on electricity costs."

Brockman, an economic development veteran, said the grant writer provides GBRA with one avenue to finding money. Getting people interested in seeing the benefits of the learning center will be easier with that established. Next steps will involve asking people who have a history of giving to environmental projects to take a look. Plentiful examples of GBRA's efforts to provide water will help, he said.

"It's never just a walk in the park," Brockman said. "But we will have plenty of good resource material to show, and we are reaching into the next century. The groundwork we lay today will be important for a long, long time. If we tie it to the big picture -- how it affects us currently and for many years out in the education process, it will make our job much easier.

"We are on our way to hitting a home run for the state of Texas," he added. "The gorge provides us with a great focal point for making our case."

Top:
Courtyard Walkway

Bottom:
Learning Center Courtyard

FROM OCEAN

GBRA examines pos

by Barbara Elmore

In about two years, Texas could have a firm plan for transforming salty ocean water into tap water that provides hundreds of thousands of homes and businesses across Texas. Whether that transformation reaches fruition depends on the outcome of a feasibility study that will be undertaken over the next two years.

From the point of view of GBRA officials spearheading a project that could integrate the processes of desalinating seawater and power production, such an undertaking could not come too soon. "Since any water supply takes years to develop, the sooner you start it, the sooner you get there," said W.E. "Bill" West, general manager of GBRA. "We have been working 15 to 20 years on conventional projects, and all current water supplies are allocated."

The use of the ocean as a potable water source will occur before the year 2060 -- a timeline mentioned in the State Water Plan -- if Texas is to meet the demands of a growing population and minimize the effects of repetitive cycles of drought.

The process of desalinating seawater, or removing salt and other minerals so that it is safe enough to drink, is moving closer to reality with the GBRA's selection of MWH Global, a consulting, technical engineering and construction services firm, to conduct a 20-month study into how such a plant could work in Texas.

As the feasibility study gets under way, GBRA and its partners will seek funding from the state, potential partners and other sources to help pay its $2 million estimated cost.

Other agencies that have an interest in water might find benefit in what the study reveals. Although GBRA is interested in developing additional water supplies to serve its 10-county district, the issues that MWH Global will study have statewide bearing. "This is important for Texas as a whole because it will demonstrate what is possible for Texas," said Project Manager Bill Swanson of MWH Global. "We are looking at seawater desalination for South Central Texas, but there is no reason why this study could not be applicable to other parts of the Texas coast."

Why desalination now?

Projects that remove the salt from ocean water for drinking and other purposes are not new. A large plant in Israel uses the Mediterranean Sea and was projected to pipe water to users at an estimated rate of 7 million gallons per hour. More than 40 projects exist in Texas that purify brackish water.

While strategies in the State Water Plan put seawater desalination efforts in the distant future, GBRA is trying to accelerate those efforts because of the booming population in Central Texas -- the heart of GBRA's district -- has put pressure on water supplies. Record-setting drought across the state also has shrunk water supplies to dangerous levels, forcing strict conservation measures. Seawater desalination offers the opportunity of a constant supply that is not subject to shortages during droughts and some of the other limitations of existing water supplies.

This scenario means development of new water sources is necessary now. "The low-hanging fruit of all available water projects has been developed," West said. As people go to court to fight over who should have first chance at the existing water supplies, the reasons for moving desalination up sooner than the year 2060 make even more sense. "When you go to the Gulf, you are not dealing with competition for surface water rights, or ground water rights. You avoid all those factors."

Dr. Les Shephard, director of the Texas Sustainable Energy Research Institute, said he looks at the desalination project as one more point on the continuum of building a diversified water portfolio for Texas. With all the water supply at Canyon Reservoir allocated, GBRA's planners must look for new water sources, and that's where desalination fits on the continuum. The oceanographer has consulted with GBRA for two years on the desalination plant, and has found people across the state have a good understanding of water and energy -- two components of a desalination plant.

"That understanding is a good thing," he said. "Effective implementation of water conservation is very important, and we have done that in a reasonable manner. The drought helps accelerate understanding of the problem by raising water awareness," he added, listing education and awareness, conservation and efficiency as important pieces of the water picture.

Desalination fits on the continuum only after officials have explored less-expensive sources of water, he said. "We are fortunate to have the Edwards Aquifer in central Texas. It is very economical -- very little treatment of the water is required, so you have a readily available supply." Less water treatment means lower water costs, he noted, and moving from water sources that require limited treatment to sources that require significant treatment will increase the cost to consumers. A desalination plant will be expensive, he cautioned. Water from the ocean requires "lots of treatment and lots of energy and the cost has to go up."

Shephard was on GBRA's team that selected seven finalists among the 64 that applied to conduct the feasibility study. In addition to Shephard's team and GBRA officials, representatives participated from the General Land Office and the Texas Water Development Board.

"They had a comprehensive plan and made impressive presentations," West said. "MWH Global had a broader scheme that was more diverse and in particular, a project manager with experience and outstanding project management skills."

If the MWH feasibility study shows what West and others believe it will, planners said they anticipate the first phase of the plant could be operational about five years after the feasibility study

TO FAUCET:
sibility of desalinated seawater

is finished. “We would not build the ultimate project on Day 1,” West said. “Once the participants are identified, the management structure is identified, and financial arrangements are in place, we could have Phase 1 in place in five years.”

Part of the feasibility study is to help planners better understand when a facility could be ready for operation, Shephard added. “Across the country, you see that at least in existing ocean desalination plants in the United States, delays contribute to the cost. The study will allow us to understand key elements that drive the schedule and affect costs. The strategy for today is one that says, ‘Let’s look to the future and phase in water and energy parts in a way that makes sense from an energy perspective and a cost perspective.’”

A new plant could start with 20 percent of its rated capacity of an eventual 3,000 megawatts of power and 250 million gallons of treated water per day, said Shephard, who will help steer the project. “But you need to be measured and careful in your approach.” A range of sizes for water and power plants, however, as well as the respective phasing of them, would be considered in the feasibility study.

Swanson of MWH said that building the desalination and associated power plant in phases is typical, with builders adding units as needed. “The underlying infrastructure needs to be there. Initially, it needs to be big enough to accommodate future expansion,” he said. But adding water treatment and power generation components as necessary is a common practice his company has followed in other areas.

Issues to resolve

Although West said the plant as it is conceptualized today would be the largest in the Western Hemisphere, the land required to host it would not be huge. To refine seawater, the location would have

FROM OCEAN TO FAUCET, CONTINUED

to be near the coastline, and planners are looking at sites between Freeport and Corpus Christi.

Location is only one issue the study must consider. Other issues include the technology such a plant would use to desalinate the water, energy required to power it, and how to dispose of salt byproducts (also called brine).

Planners will study using traditional reverse osmosis as well as emerging technologies. Permits govern part of the process, because desalination uses membrane technology to trap salt and other unwanted substances. Planners also say that intake structures for desalination plants should be designed to minimize impacts on marine life.

Desalinating seawater with membranes results in roughly half potable water and half brine, Swanson said. That affects the size of the intake. "One of our biggest concerns is designing an intake in a way that does not cause harm to marine life," he said. "It comes down to the permitting requirements of several regulatory agencies."

"The real challenges we face will be social, political, and regulatory, You must site your facilities to minimize detrimental impacts."

The process is energy-intensive. In fact, energy is the largest operating cost of desalination technology, Swanson said. But the study will also examine new technologies that use less energy, and determine when they might be commercially available. "Many technologies that can reduce energy needs are under research right now. We are on the cutting edge of that."

At the other end of the process is the question of where to discharge the brine byproduct. The concentration of salt in the brine is roughly twice that of ocean water, Swanson said. The discharge has to disperse the brine to background conditions in a relatively short distance to avoid impacts to marine life.

This issue is among the concerns of environmentalists, said Shephard. "The real challenges we face will be social, political, and regulatory," he said. "You must site your facilities to minimize detrimental impacts." The feasibility study helps planners understand what the detrimental impacts are, and try to overcome them.

Desalination requires power not only to treat the water, but to convey it through pipes to users. Part of the power produced would be used to run the plant itself, and part would be sold, if there were surpluses. "We will also be looking at other ways of meeting energy requirements," added Swanson, whose company has worked on plants in both Australia and Trinidad and Tobago. "It could be wind and solar or it could rely on the market price of power at the time the project is built. Those are the big technical challenges."

Shephard said one way of helping meet the project's challenges is to make sure the academic community participates. "We want to make sure the academic community has a good voice in this project and is actively involved, not only for the feasibility study, but if we decide the concept should go forward, how do we mobilize as an academic community in research and development?"

Who pays?

"We must involve our communities and other stakeholders to be informed about the desalination project feasibility process to gain a good understanding of its impact," West said. "The more informed, the better the outcome."

Ratepayers who have enjoyed inexpensive water most of their lives will notice costs increasing. One of the challenges of the study will take on is how to build broad-based interest in the project and create partnerships with water and power users.

"Governmental entities like GBRA are tied to the cost of service," said West. "That means we have to put a commodity charge in our water development." As one step toward helping develop new water sources, he is hoping that voters will say yes in November to an amendment that would allow the state to take $2 billion from the state's saved Rainy-Day Fund to support new projects. The bipartisan proposal has the support of Gov. Rick Perry and other state leaders. The existing price of water is about $150 an acre foot, while new project costs generally are coming in around $1,000 an acre foot, said West.

Meanwhile, the desalination project under investigation is expected to be a bit more expensive than traditional water treatment projects. That's because of the large amounts of power desalination requires. "In the last two years," West said, "that cost has been coming down because of strides made in membrane technology."

An integrated water and power project would be a large facility, and financing is one more issue the study will grapple with. "Financing will require innovation, whether bond financing with ratepayer reimbursement, partnerships, investors -- there are lots of options to be considered," Swanson said.

Shephard noted that Texas' natural gas fields in the Eagle Ford Shale are important to the economy as a whole, and could be vital to planning the new plant.

Fuel for a natural gas powered plant is at historically low cost and this low cost could help reduce the cost of energy to desalinate and convey water.

If the results of the feasibility study determine seawater desalination to be a viable option for Texas, the agency would next seek legislative support to build it. West believes many public and private organizations that are currently on the sidelines would then join the initiative. "People are interested but want to see what will happen," he said.

employee anniversaries @ gbra

GBRA recognizes the following employees for the dedication of service. (These employees started with GBRA between the months of June and October.)

June

6/25/2013	David Welsch	Water Resources	40
6/27/2013	Jeffrey McKee	Hydro	36
6/1/2013	Carl Korth	Coleto Reservoir	30
6/10/2013	Sammy Salas	Luling WTP	27
6/7/2013	Tamra Beutnagel	General	14
6/1/2013	Todd Votteler	General	13
6/21/2013	Janet Thome	General	12
6/23/2013	Teresa Van Booven	Water Resources	10
6/30/2013	Daphne Harder	General	9
6/15/2013	Allen Lawson	Western Canyon	4
6/6/2013	Christopher Harder	Western Canyon	2

July

7/6/2013	Debbie Magin	Water Resources	37
7/10/2013	Joel Heideke	RUD	35
7/2/2013	David Kenda	Hydro	31
7/2/2013	Allen Ognoskie	Hydro	29
7/28/2013	Lee Gudgell	Water Resources	10
7/19/2013	Mellinda Brzozowski	Lab	3
7/15/2013	Mark Wagner	San Marcos WTP	New Hire

August

8/25/2013	Christy Dietert	General	38
8/18/2013	**Richard Maxwell**	**Hydro**	**38**
8/7/2013	Scott Kolbe	Canyon Hydro	24
8/5/2013	John Urban	Coleto Reservoir	22
8/29/2013	Felix Cortinas	Luling WTP	19
8/11/2013	Billy Imhoff	General	18
8/5/2013	Josephine Longoria	Lab	11
8/18/2013	Jeffery Hebert	Western Canyon	5
8/24/2013	James Irby	Coleto Reservoir	4
8/1/2013	Thomas Schulte	Water Resources	2
8/13/2013	Kimberly Helmke	Lab	1

September

9/1/2013	Eduardo Montana	Lockhart WWTP	25
9/1/2013	Stephanie Shelly	Port Lavaca WTP	22
9/15/2013	Ronnie Parenica	Port Lavaca WTP	21
9/2/2013	Jason Eeds	Lockhart WWTP	21
9/14/2013	Susan Cochran	Water Resources	15
9/10/2013	Ryan Boedeker	Calhoun Canal	14
9/1/2013	Brian Lyssy	RUD	13
9/28/2013	Gerardo Rodriguez	Water Resources	12
9/16/2013	Kylie Gudgell	Lab	5
9/24/2013	Jennifer Sanchez	Lab	1
9/10/2013	Joe Simmons	Western Canyon	1

October

10/22/2013	Herbert Wittliff	Calhoun Canal	34
10/11/2013	Elizabeth Sedlacek	Water Resources	23
10/10/2013	Dennis Walker	Buda WWTP	15
10/15/2013	Marella Dalme	General	12
10/1/2013	Barbara Gunn	General	12
10/20/2013	Jose Leal	Lockhart WTP	10
10/25/2013	Annlee Drazkowski	General	6
10/22/2013	Tommy Walenta	San Marcos WTP	2
10/17/2013	Elizabeth Aguilar	General	1
10/29/2013	Tirso Hinojosa	Coleto Recreation	1

The information for the employee anniversary list was compiled by Daphne Harder, Human Resources Department of the Office of Finance and Administration.

Richard Maxwell Photo by Connie Rothe

Photo GBRA archives

WHERE ARE THEY NOW?

Lee Jahns

by Tammy Beutnagel

Photo by Tammy Beutnagel

If while driving on Interstate Highway 10 near Seguin, Texas, you happen to see a two-story log cabin and an exotic breed of cattle resembling Texas Longhorns, you probably just passed the Jahns Ranch.

GBRA retiree Lee Jahns and his wife Beth built the Cypress log cabin in 1983, and today still live in their dream home, along with their two dogs, four llamas, and African Ankole-Watusi cattle.

"The llamas are great at 'warding off' coyotes, Jahns said. "I used to raise Beefmaster and I've been around cattle all my life. I just like them."

But before retirement and raising cattle, Jahns worked at the GBRA headquarters in Seguin as an administrative clerk. It was 1963 and a monumental year to start his career. Canyon Dam construction was underway, creating a joint partnership between the river authority and the U.S. Army Corps of Engineers, GBRA also had acquired the Calhoun Canal System as well as six hydroelectric dams along the Guadalupe River.

Jahns' job responsibilities included processing payroll on a machine called a "peg board," equipment inventory, filing insurance claims, mail distribution and archiving. One of the few ways to archive at the start of the computer age involved removing a magnetic reel tape the size of a hubcap, from the 7-foot tall computer to an off-site location. Jahns would deliver this tape to city hall every Friday.

After 30 years of experience under his belt, Jahns put away his pencils, unplugged his adding machine and turned off his computer for the last time. He was ready to retire.

In October of 1998 and then later in 2002, Jahns received calls from GBRA requesting his help immediately following devastating floods along the Guadalupe River that inundated homes and property and damaged the hydroelectric dams. GBRA needed qualified individuals to inspect the necessary lake clean-ups and Jahns was up for the task. "I was glad I did it," Jahns said, and he had fond recollections of the many people affected by the flooding.

A few years later, Jahns accepted what would be his last "retirement job" with GBRA wherein he served as a pipeline inspector.

During that job, Jahns sustained a severe injury. After months of therapy, he learned to walk again. "I was very appreciative that they asked me to do the job," Jahns said, but after what he called "a near-death experience," he decided it was time to retire for good.

These days, Jahns and his wife devote much of their time to their thriving fruit and vegetable garden, attend Emanuel's Lutheran Church in Seguin, and spend time with their four children and 12 grandchildren.

Lee Jahns

Started at GBRA—1963
Retired at GBRA—1993

Phone—(830) 379-5291

GBRA *Training & Licenses*

Michael Tompkins of Calhoun Canal Division attended the GCTWUA - Water Chemicals/ Safety Training.

Herbert Wittliff of Calhoun Canal Division attended the GCTWUA - Water Chemicals/ Safety Training, Legislative Updates, and TXWARN Training.

Kyle Caraway of Calhoun County RWSS attended the TWUA - Water Distribution and the TWUA Wastewater Treatment trainings, and received his "D" Wastewater Treatment Operator license.

Sheryll Kisiah of Calhoun County RWSS attended the Legislative Updates and TXWARN Training.

Don Koble of Calhoun County RWSS attended the Legislative Updates and TXWARN Training.

Daniel Beckendorf of the Coleto Recreation Division attended the TPWD Techniques of Fly Fishing.

Wilfred Korth, Jr. of the Coleto Recreation Division attended the TPWD Workshop on Managing for Quail.

Jason Lewis of the Coleto Recreation Division attended the Pesticide Applicator Continuing Education Training.

Jason Irby of the Coleto Reservoir Division attended the Pesticide Applicator Continuing Education Training.

Alan Schneider of the Coleto Reservoir Division attended the Pesticide Applicator Continuing Education Training.

John Urban of the Coleto Reservoir Division attended the Pesticide Applicator Continuing Education Training.

Daphne Harder of the General Division attended the New Form, New Challenges: Employers' Guide to the 1-9 and M-274 and Managing Employees during Time of Crisis Trainings.

Susan Hubbard of the General Division attended the TEXPO 2013.

Sandra Terry of the General Division attended the TEXPO 2013 and Texas Public Funds Investment Act Training.

Jeff McKee of the Hydro Division received his "C" Wastewater Treatment Operator license.

Brent Howard of Port Lavaca WTP attended Legislative Updates.

Joey Kisiah of Port Lavaca WTP received TXWARN Training.

Ronnie Parenica of the Port Lavaca WTP attended the GCTWUA - Water Chemicals/ Safety Training.

Stephanie Shelly of the Port Lavaca WTP attended the Legislative Updates and TXWARN Training.

Joseph Tschatschula of the Port Lavaca WTP attended the TRWA - Technology Based Training: Pump and Motor Maintenance Training.

Michael Gerdes of RUD attended TDEM Hazardous Materials Refresher Training.

Richard Matheaus of RUD attended TDEM Hazardous Materials Refresher Training, and Wastewater Laboratory Training.

Fred Hernandez of the Shadow Creek Division attended the TRWA - Technology Based Training: Basic Water Works Operation and the TDEM Hazardous Materials Refresher Training.

Darel Ball of the Water Supply Division attended the Texas Water 2013, the TDEM Hazardous Materials Refresher Training, and the AWWA Annual Conference.

Michael Urrutia of the Water Supply Division attended the TDEM Hazardous Materials Refresher Training.

Toby Dennis of Western Canyon Division attended the TDEM Hazardous Materials Refresher Training.

Hunter Duncan of Western Canyon Division attended the TDEM Hazardous Materials Refresher Training.

Christopher Harder of the Western Canyon Division attended the TDEM Hazardous Materials Refresher Training.

Jeffery Hebert of the Western Canyon Division attended the OVIVO Membrane Filtration Systems Training and the TDEM Hazardous Materials Refresher Training.

Jorge Rojas of the Western Canyon Division attended the OVIVO Membrane Filtration Systems Training.

Derek Schedlbauer of the Western Canyon Division attended the TDEM Hazardous Materials Refresher Training.

Joe Simmons of the Western Canyon Division received his "C" Surface Water Treatment Operator license.

Guadalupe-Blanco River Authority
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Aug. 21, 2013
GBRA Board Meeting
River Annex Bldg., Seguin, TX
http://www.gbra.org/board/meetings.aspx

Aug. 27-29, 2013
TAGD Texas Groundwater Summit
Embassy Suites, San Marcos, TX
http://www.regonline.com/builder/site/Default.aspx?EventID=1201482

Sept. 2, 2013
Labor Day Observed
GBRA Offices Closed

Sept. 12-13, 3013
Texas Desalination Association – Texas Desal 2013
Austin Marriott South, Austin, TX
http://www.texasdesal.com/

Sept. 18, 2013
GBRA Board Meeting
River Annex Bldg., Seguin, TX
http://www.gbra.org/board/meetings.aspx

Oct. 3-4, 2013
TCEQ Water Quality / Stormwater Seminar
DoubleTree Hotel, 6505 IH 35 N. Austin
http://www.tceq.texas.gov/p2/events/stormwater.html

Oct. 16, 2013
GBRA Board Meeting
River Annex Bldg., Seguin, TX
http://www.gbra.org/board/meetings.aspx

Oct. 23-25, 2013
TWCA 2013 Fall Conference
Crowne Plaza Riverwalk, San Antonio, TX
http://www.twca.org/meetings/fall/2013/index.html

Texas Coast at Matagorda

Photo by Janet Thorne