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Newsletter of the Trinity River Authority of Texas

## Huntsville looks forward to updates as construction progresses



## Asset management drives action instead of reaction

TRA's Northern Region is taking a proactive stance on asset management, evaluating and cataloging equipment and infrastructure to get the most out of those items. The asset management program will improve reliability and service to customers, control costs and maximize the lifecycle of existing infrastructure.

Infrastructure improvement is a never-ending process, and much of TRA's current infrastructure was built in the '50s, '60s and '70s and is approaching the end of its life cycle. A standardized method of rating the condition of those assets makes maintenance and replacement easier to anticipate.

"TRA is trying to address this in a methodical fashion, where we are determining the proper assets for replacement," said Julie Hunt, Northern Region assistant manager/operations "In order to figure out what rises to the top of that list, you have to create some ranking criteria."

Some of those standards are straight-forward, like age and condition of the equipment. Others may be more complex, based on risk or usage. The end result is an overall

rating that will drive infrastructure replacement schedules.

Without a working catalog of equipment and replacement needs, an organization can be forced into a defensive position, reacting to failures as they occur. The asset management program allows TRA to anticipate and avoid those emergencies by identifying when assets are close to the end of their life and assessing the risk of failures.

Employees and TRA customers benefit from a reduction in unexpected emergency expenditures and a smarter, more efficient allocation of funds.

"You're always trying to balance replacement needs with the funds that you have," Hunt said. "In that balance, you're trying to determine the most critical assets that are closest to the end of their lives so that we can assign the funding in the right place."

Since the program will provide a better picture of upcoming infrastructure needs, it is anticipated that infrastructure funding needs and gaps can be defined.

"TRA has a capital improvement program, with a

five-year plan, and this information will feed in to that," Hunt continued.

Maximo, TRA's work order management system, is implemented in some form at all projects and offers a great deal of asset information. That data, supplemented with additional data that has not been collected previously, will form the basis for the asset ratings.

"We're also improving the geographic information system within the Central Regional Wastewater System and hope to be able to use that as a geographic and visual component for the work order management and asset management systems," Hunt said.

"What triggers this kind of program is the understanding that the needs are greater than the resources," she explained. "You're never going to be able to do everything on the to-do list, so you have to create standards that drive your decision-making process."

The asset management program promises to do just that, directing resources where they are needed most before problems occur.



**On the cover:** The construction of new deep-bed carbon filters is underway at Huntsville Regional Water Supply System. Full story page 2.

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## Lightning protection measures at Lake Livingston pass the ultimate test



Lightning from an early summer storm strikes the surface of Lake Livingston. LLP's main office building recently suffered two direct strikes.

The team at the Lake Livingston Project can tell you without hesitation that lightning does strike the same place twice. Last summer, the main office building received two destructive lightning strikes in less than two months.

In both cases, lightning struck an antennae and sensor tower on the west side of the building, damaging equipment and interrupting some of the site's operations for several weeks. After a nearby 190-foot radio tower was removed, LLP began experiencing some minor electrical issues.

"Sometimes the phones acted strangely or networking equipment needed to be rebooted," said Mark Waters, project manager for LLP. "We didn't realize what the problem really was until the actual strike."

The strike damaged computers and networking equipment, cameras and gate electronics, wind sensors and more. Estimated costs ran more than \$25,000. Wayne Chen, information technology supervisor, and Kenny Nguyen, information technology support specialist, rushed down from Arlington, working quickly to get essential networking components up and running and allowing LLP to bring some operations back online.

"Immediately after the incident, we didn't have any way to communicate," added Waters. "Computers, routers, phones and lab equipment were all offline for several days. We needed to get back online, but we also needed to figure out how to prevent it from happening again."

Nearby Kinder Morgan gas plant control buildings had experienced similar lightning damage in the past. Darrell Davis, maintenance supervisor

at LLP and Waters visited the site to review its lightning protection system and learned that in the two years since installation there had been no incidents of related damage. The team also consulted an electrical engineer and, with those recommendations, designed a similar system.

The cost of the new system was approximately \$2,000 for material and included lowering the lightning-prone equipment tower from 60 feet to 26 feet and placing grounding cable around the building and through the attic. The cable was connected to all electric equipment and panels, a weather radar pole and the lowered tower. All labor required to complete the system was provided by members of the LLP maintenance department.

The system proved its worth in June when LLP experienced more severe weather.

"That afternoon's heavy thunderstorm was as severe as any I have seen in 20 years," said Waters. "This time, we were thrilled to find that there was no electrical damage associated with the storm."

See more stories online in Current News.



## Gov. Perry appoints 11 directors to Trinity River Authority's board



Valerie Ertz



Dudley Skyrme



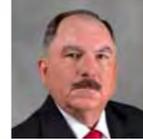
C. Dwayne Somerville



Henry Borbolla III



Amanda Davis



Tom Fordyce



Jess Laird



David Leonard



James Neal



Amir Rupani



Ana Laura Saucedo

Recently, Texas Gov. Rick Perry appointed 11 members to serve on Trinity River Authority's board of directors. The appointments include three new and eight reappointed directors.

Valerie Ertz, new appointee and owner and president of VEE Services, is a member of the State Commission on Judicial Conduct, the Society of St. Vincent DePaul, Military Order of St. John's, Texas Women's Initiative and the Southern Methodist University Alumni Association. Ertz received a bachelor's degree from Southern Methodist University and a master's degree in management from Troy State University. She is serving out the remainder of former director Harold Jenkins' term for Dallas County, expiring March 15, 2015.

Newly appointed Dudley Skyrme is a retired sales and construction manager for United Bilt Homes LLC and volunteers at the Palestine Community Food Pantry. Skyrme served in the U.S. Navy and received his bachelor's degree from the University of Central Arkansas. He is appointed to serve for Anderson County until March 15, 2019.

New appointee C. Dwayne Somerville is president and owner of Natural Alternatives Inc., Henderson RV Sales, Palestine RV Center, Eagle Ford RV Park, South Texas Family Housing and Wash Mart Laundry. He is a youth group leader at First Baptist Church of Mexia, assistant scoutmaster for the Mexia Boy Scouts of America and a member of the Coin Laundry Association. Somerville attended Kilgore College. He is appointed to serve for Freestone County until March 15, 2019.

Gov. Perry also reappointed eight members to new terms: Henry Borbolla III, Amanda Davis, Tom Fordyce, Jess Laird, David Leonard, James Neale, Amir Rupani and Ana Laura Saucedo.

Henry Borbolla III of Fort Worth is vice president of BB&T and board member of the Fort Worth Convention and Visitors Bureau, Community Hospice of Texas, Downtown Fort Worth Design Review Board, University of North Texas Health Science Center Foundation, Tarrant County Housing Partnership Inc., Bobby Bragan Youth Foundation and Fort Worth Casa Mañana Theatre. He is also a member of the Fort Worth Rotary Club and a committee member of Catholic Charities Fort Worth. Borbolla received a bachelor's degree from

Texas Christian University. He is reappointed to serve as one of three directors for Tarrant County until March 15, 2019.

Amanda Davis of Buffalo is a retired school administrator in the Buffalo Independent School District and member of the Texas Association of School Administrators, Texas Association of Secondary School Principals, Texas Elementary Principals and Supervisors Association, and Texas Association of Mediators. She is also a member of the State Bar of Texas Alternative Dispute Resolution Section, Texas Mediation Trainers Roundtable and Texas Farm Bureau. Davis received a bachelor's degree from Sam Houston State University, a master's degree in educational leadership and conflict resolution from Abilene Christian University and completed her superintendent certification from the University of Texas at Tyler. She is reappointed to serve for Leon County until March 15, 2017.

Tom Fordyce of Huntsville is a retired director of the Texas Criminal Justice Agribusiness Department. He serves as vice president of the Lone Survivor Foundation and is a board member of the Huntsville Chamber of Commerce. He is also a member of the Texas Assistive and Rehabilitative Services Council, Kick Start for Kids and Huntsville Veterans' Affairs Advisory Board. He served in the U.S. Marine Corps and is a Vietnam War veteran. Fordyce received a bachelor's degree from Sam Houston State University. He is reappointed to serve for Walker County until March 15, 2019.

Jess Laird of Athens is president and CEO of First State Bank in Athens. He is a member of the Independent Bankers Association of Texas and Texas Bankers Association, and a board member of the Athens Economic Development Corporation and Trinity Valley Community College Foundation Board. He is also a member and past president of the Athens Rotary Club, a past member of the Region VII Education Service Center, Athens Chamber of Commerce and East Texas Medical Center Board of Managers, and past chairman and board member of the Cain Center. Laird received a bachelor's degree from Texas A&M University, a Master of Business Administration from the University of Texas at Tyler and is a graduate of the Southern Methodist University Graduate School of Banking. He serves as Chair of the Administration Committee and is reappointed to

represent Henderson County until March 15, 2019.

David Leonard of Liberty is co-owner of Liberty Dayton Chrysler. He is a member of the Liberty-Dayton Chamber of Commerce, a director of the Liberty Knights of Columbus, and a director and past president of the Liberty Lions Club. He is also president of the Immaculate Conception Catholic Church Parish Council and treasurer of the Magnolia Ridge Country Club. Leonard attended Lee College. He is reappointed to serve for Liberty County until March 15, 2019.

Jim Neale of Dallas is president of Quorum Energy Co. He is a member of the North Texas Commercial Real Estate Association, a board member of the Dallas Police Athletic League, and a past member of the Dallas Blue Foundation Executive Committee. Neale received a bachelor's degree from the University of Texas at Austin. He is reappointed to serve as one of four directors for Dallas County until March 15, 2019.

Amir Rupani of Dallas is president and CEO of Texas Prince Properties Inc., and serves as a board member of the World Affairs Council of Dallas/Fort Worth and the Dallas Foundation, as an executive committee member of the Pakistan Society of North Texas, and as past chairman and current executive committee member of the Greater Dallas Asian American Chamber of Commerce. Rupani attended City College of Karachi in Karachi, Pakistan. He is reappointed to serve as director-at-large until March 15, 2019.

Ana Laura Saucedo of Dallas is a retired real estate investor, past president of the Pike Park Preservation League and a past member of the Dallas Mexican American Historical League and Socorro Independent School District Board of Trustees. Saucedo attended Eastfield Community College. She is reappointed to serve as one of four directors for Dallas County until March 15, 2019.

Members of TRA's Board of Directors are appointed by the governor, with the advice and consent of the Texas Senate, to serve for six years. In accordance with TRA's enabling legislation, three directors are appointed from Tarrant County, four from Dallas County, one from each of the remaining 15 counties within its geographical jurisdiction and three serve at-large.

## Huntsville looks forward to updates as construction progresses

Construction at the Huntsville Regional Water Supply System is progressing as planned, with more than half of the project completed since the September start date. The expansion will double the system's capacity and update several system components.

"Currently, we're pumping 6 MGD, with two pumps running constantly," said Keith Bass, operation and maintenance chief for Southern Region Support Services. "These improvements will take us up to 12 MGD firm capacity, and I expect that we'll run between 8 and 10 million MGD as soon as the new construction is completed."

Increased demand in the Huntsville area drove TRA to plan for the expansion and recent technology changes have prompted other updates.

"We'll be one of the first in Texas to use deep-bed carbon filtering to remove nitrates to meet state standards," Bass said. "The technology has been proven in other areas, but is relatively new for drinking water."

The application is new enough that the Texas Commission on Environmental Quality has asked TRA to perform a pilot test beginning in February to prove that this type of usage won't increase turbidity. The new filters have the added benefit of costing much less than other available technologies.

A 1.4 million-gallon clearwell is also nearing completion and will be the future site of a new pumping station. The update will replace all of the system's high-service pumps and all of the site's electrical systems. In order to support the new capacity, a section of the raw water pipeline is being upsized from 30-inch diameter to 36-inch diameter pipes.

In addition to the increase in capacity, the update provides operators with more tools, including the new denitrification process, to treat water. The entire project is slated for completion in August 2014, but Bass expects to be operational before then.

"We should be operating with the filters and increased capacity by the beginning of next summer," Bass said.

## Diving into the Planning and Environmental Management Division



Kelly McKnight, PEMD environmental scientist, prepares to collect channel bathymetry from Denton Creek with an acoustic Doppler profiler.

Most TRA employees work with water as it comes in or out of pipes, but the Planning and Environmental Management Division's focus is further downstream. The division operates in-house behind the scenes and out in the field, performing a number of functions for the organization and the river system as a whole.

In the field, the division is charged with monitoring the quality and quantity of water in the Trinity River basin.

"What TRA is producing at the treatment plants becomes the actual river," said Glenn Clingenpeel, senior manager, PEMD. "It's what the fish live in and what the wildlife along the basin depend on. It flows to Lake Livingston and becomes drinking water, so it's important that we understand it."

Clingenpeel's statement is not just philosophical. In low flow conditions, most of the water in the system comes from treatment plants, and the entire basin needs to be monitored and studied. The division has been performing extensive river studies over the last five years covering the entire basin—something that hasn't been done by any entity in over a century.

"Our team spends significant

time in and on the river getting an empirical understanding of the system," explained Webster Mangham, manager of special studies and assessments. "Modeling, though it serves an important function, is very different from being out in the river, seeing it, touching it, and going to parts that haven't been surveyed in a very long time. The data that PEMD field staff collects is being incorporated by PEMD modeling staff as well as other state agencies and consulting firms to create models that better represent the Trinity River system."

"Even though populations have grown and more wastewater is entering the systems, the river is healthier and larger than it has been in 150 years," Clingenpeel said. "The quality of the river is so good that both Fort Worth and Dallas have ambitious programs to develop recreation along the banks of the Trinity."

PEMD employees spend only part of their time outside. Inside, the division uses sophisticated modeling to watch for water rights requests and applications that might impact water supply along the basin and advises partners and regulatory agencies on those impacts.

The division also monitors

current and proposed regulations, working closely with the Texas Commission on Environmental Quality to make sure that the appropriate standards are put in place to achieve the desired ecological benefit.

On July 1, TRA's Geographic Information System department joined PEMD. GIS provides data and precise visual representations of infrastructure, city layers, river layers and more. The system will also play a role in asset management, capturing detailed information about infrastructure.

"We're really excited about having GIS," said Clingenpeel. "This gives us an opportunity to integrate our environmental data with TRA's operational data, giving the organization a clear picture of infrastructure and impact. We're also looking forward to building a robust system that provides analytics and GIS services that the projects need."

GIS is a natural fit for the department, offering even more tools to examine and understand the basin and TRA's role within it.



Webster Mangham, PEMD manager of special studies and assessments, marks erosion pins installed on the main stem Trinity River with survey grade GPS.

## A pat on the back for: Robert Ray



Robert Ray, chief maintenance mechanic at Denton Creek Regional Wastewater System, celebrates his five-year TRA anniversary this September. When asked what his most memorable experiences with TRA have been, he cited three:

"Being hired at TRA, being promoted to Chief Maintenance Mechanic and learning the wastewater treatment process," Ray stated.

A typical day for Ray includes meeting with staff to discuss the day's objectives, touring the plant to ensure all equipment is performing properly and catching potential problems. He also corresponds with vendors for parts, supplies and support maintenance, and can often be found repairing equipment and assisting staff with repairs.

Ray says that TRA has helped him meet his professional goals by providing training in computer software and in wastewater process and control. His favorite aspect of the job is serving TRA's customer cities by discharging the cleanest water possible to benefit the environment.

Ray likes being outdoors and enjoys fishing, repairing outboard motors and yard work. "The Shawshank Redemption" is his favorite movie and his favorite book is "Where the Red Fern Grows."

Ray has two sons, Robert, 20 and Cody, 13, and recently became engaged to his girlfriend who has known him for 30 years.

## Trinity River Authority receives award from the National Hydrologic Warning Council

The National Hydrologic Warning Council has presented their 2013 Operational Excellence Award to the Trinity River Authority for the application of real-time weather monitoring for uninterrupted construction in floodplains. TRA was recognized for using this approach during the Central Regional Wastewater System's CAC-11 rehabilitation of a section of 96-inch pipe, part of the Elm Fork interceptor. This ensured the contractor and the project could be protected from flash flooding and plan for bad weather by receiving a one-week advanced outlook. General Manager Kevin Ward and Northern Region Manager Fiona Allen accepted the award on behalf of the Authority at the Texas Water Conservation Association meeting in Galveston. RPS Espey and Vieux & Associates were the consultants on this successful project.



Kevin Ward, General Manager (center), and Fiona Allen, Northern Region Manager (right), accept the 2013 Operational Excellence Award from Jean Vieux of Vieux, Inc. (left).

# GENERAL MANAGER'S MESSAGE

## Board of Directors receives strategic planning update



General Manager J. Kevin Ward

At the June 26 meeting, TRA's Board of Directors received an update on the organization's strategic planning process. This comprehensive planning effort has included the creation of key components that define the organization in the present and set a foundation and direction for shaping it in the future.

Based on feedback and insight developed through multiple management and supervisory interviews, employee focus groups and advisory committee input, the executive management team clarified the mission statement and created organizational vision and value statements. The results are concise and directional, laying out who we are as an organization, what we value and where we're going.

The team also performed an in-depth analysis of the organization's strengths, weaknesses, opportunities and threats (SWOT), prioritizing the findings for both customers and internal staff. Some of these SWOT findings have already triggered new projects and changes in reporting structure.

With these findings and the new statements in hand, the executive management team developed seven strategic goals for the organization. These goals flow directly from the mission statement and define what the organization seeks to accomplish over the long term. The proposed vision and mission statements, core values and strategic goals were presented and reviewed with TRA's executive and administrative committee members at a joint meeting in February, and a SWOT analysis was conducted. With minor revisions, the overall superstructure of TRA's first strategic plan moved forward into meetings with mid-management to look at proposed objectives and to develop strategies to meet those objectives, leading up to the June unveiling to the full Board of Directors.

All of these components are simple by design, but their importance cannot be overstated. These high-level statements will inform every part of the planning process as we move forward and will drive everything from our legislative agenda to budgeting and staffing considerations for the organization.

The Board received this update with praise for the progress to date and excitement about what's to come. With this feedback, TRA is ready to move on to the next planning phase.

Objectives with specific, measurable outcomes have been developed for each of these strategic goals. These objectives will be updated over time to better support the goals, and each will require strategies to achieve the desired outcomes.

The strategies are where ideas meet implementation and will serve as

### STRATEGIC PLANNING

#### VISION STATEMENT

The Trinity River Authority of Texas is an innovative, adaptive leader, enriching the Trinity basin as a resource for Texans.

#### MISSION STATEMENT

The Trinity River Authority's mission is to promote conservation, reclamation, protection and development of the natural resources of the river basin for the benefit of the public.

the measureable proof of the plan. To develop appropriate strategies, we have been and will continue to seek input from employees in all roles and at all locations. That input will be essential in determining what gets measured and how that is accomplished.

Once the management team reviews the goals, objectives and strategies, we will present the completed strategic plan to the Board of Directors for final approval. While it may seem as if that's the end, it's actually just the first step. It's a big step that will take time, but it will set the framework for aligning all of our operations with the strategic goals of the organization.

Employees can expect to hear more about the plan soon from supervisors and managers, and will continue to receive updates in future *inTRA* issues.

## Customers receive updates, offer feedback at advisory meetings

Advisory meetings were held in July for each of the Northern Region projects and their customer cities. At least three times per year, TRA management meets with customer entities to offer updates on current business and solicit feedback.

"We want to make sure that our customers are well informed and that they know what's going on in the systems, because they're the ones paying for it," said Northern Region Manager Fiona Allen. "We work to be as transparent as possible."

At the last round of meetings, customers received updates on operations, the status of the current budget, regulatory issues and current planning and capital improvement projects. The proposed 2014 budget and rate projections were also discussed.

Debt service was of particular interest to the customers.

"Debt service is such a large portion of our costs," Allen said. "There was a lot of anticipated growth for DFW in the last 10 years, so we've implemented several expansions and improvements and we're watching debt service closely."

Permit changes that may require process or equipment upgrades were also a topic. Questions and concerns were presented to TRA for discussion and will be addressed at follow-up meetings scheduled for August.

## EMPLOYEE MILESTONES



Abby Miksch, daughter of Gary Miksch, field inspector, LLP, and Andrew Lantrip, son of Lisa Lantrip, permit administrator/receptionist, LLP, both graduated from Livingston High School in June. Abby will attend Sam Houston State University and Andrew will attend the University of Houston.



Ashlyn O'Banion, daughter of Julie Wilson, senior secretary, DCRWS, graduated from Mansfield High School this June.

### New Hires

CRWS welcomes **Dominique Rather** as biologist, **Carlos Torres** as maintenance mechanic II, **Emman Lewis** and **Brett Cast** as operators I and **Trey Benton** as storekeeper II.

CSS is pleased to have **Ben-Dahvid Ramirez** as part-time support technician. **William Bond**, **William Maxey**, and **Alyssa Riley** join the team at LLP as part-time maintenance helpers. LLP is also happy to have **Sheryl Hanks** as biologist. GO welcomes **James Jackson** as part-time support technician and **Katelyn Sprinkle** as business analyst intern.

### Promotions

**Tim Morgan** was promoted to technical services division chief at CRWS. **Bonnie Crawford** was promoted to senior secretary at TCWSP. **Julia Hunt** was promoted to Northern Region assistant manager.



Jacob Hollis, son of Jona Hollis, senior accounting clerk, GO, graduated U.S. Army Advanced Individual Training in June, earning his Infantry Blue Cord. Hollis joined the Army in January and will be attending Airborne School for paratrooper training.



Brooke Munoz, seven-year-old daughter of Kristie Munoz, office coordinator, LLP, is competing in a summer track league for the City of Conroe. In her first meet, she placed first in 200 meter dash, second in 100 meter dash and third in 50 meter dash and recently qualified for the Texas Amateur Athletic Federation state meet in Corpus Christi.



Josie (right) and Lillie Fink (left), twin granddaughters of Ernie Fink, inspector II, CSS, were born July 1 to son Nathan and daughter-in-law Tauna Fink.



Reid Garner Tatum, grandson of Bill Tatum, project manager, CRWS, was born on May 30 to Tatum's son Shane and daughter-in-law Christin Tatum.



## Summer Campers Celebrate the 4th of July at Wolf Creek Park

- We had a wonderful time at the park! It is so clean and well kept. The facilities are wonderful and the views are beautiful. Thanks for letting us share it.
- The best, clean, well-kept place to bring family and friends.
- I was there this weekend and it was beautiful. The weather was great.
- We just left yesterday, had a great weekend! We will definitely be back!
- Nice, it's beautiful and the white bass are biting.

Wolf Creek Park occupies 110 acres on the western shore of Lake Livingston. For more information or to post your pictures or comments, visit [www.facebook.com/TRAWolfCreekPark](http://www.facebook.com/TRAWolfCreekPark).

TRA's Wolf Creek Park recreation facility's campsites were hopping for the July 4th weekend, with all 57 sites and all 46 RV hookups booked. Visitors enjoyed the great weather, great fishing and even better company. Summer campers were enthusiastic about their visits to WCP and posted glowing reviews on Facebook:

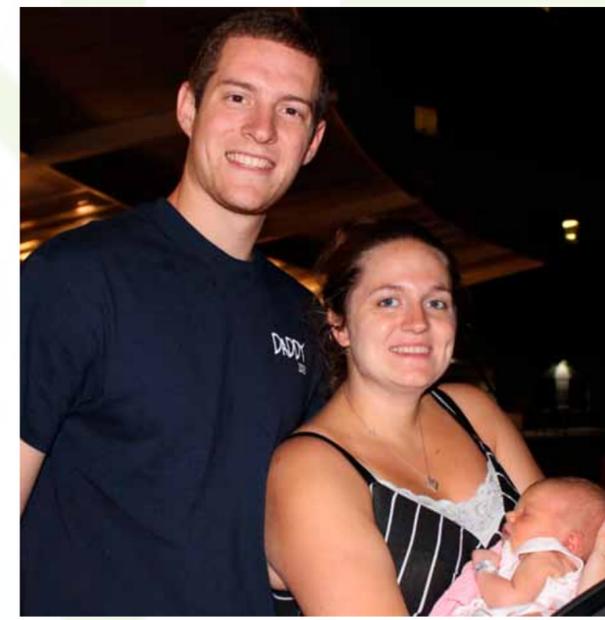


Howard Slobodin, general counsel, GO, and his wife Nikki Slobodin, celebrated the birth of their first child, Natalya Rose Slobodin on May 30.

Lisa Lantrip, permit administrator/receptionist, LLP, and husband Robert Lantrip celebrated their 25th wedding anniversary on May 6.



Jesse Dean Mikus, son of Greg Mikus, chief maintenance mechanic, CRWS, graduated from Pre-K in May. Jesse loves adding numbers and was awarded the Mathematics Award.



Emma Grace Davis, the first grandchild for Susan Davis, senior secretary, GO, was born on July 1 to her son Brian and daughter-in-law Jessica Davis. Emma was 20 inches and weighed 7 pounds, 3 ounces.



Elizabeth (Ellie) Mae Sanders, grandbaby of Thomas Sanders, manager, CSS, was born on Thursday, July 25 to Sander's son Adam and daughter-in-law Laura Sanders.



This Manchester, England wastewater treatment facility uses thermal hydrolysis for solids processing. The process has been in use in Europe for decades. CRWS will be among the first U.S. facilities to implement a thermal hydrolysis treatment system.

## Thermal hydrolysis offers the right solution at the right time

According to TRA's solids master plan, the Central Regional Wastewater System will be upgrading sludge treatment processes in 2017 or 2018. With the solids facility running near capacity already, this project is on a tight timeline.

### The Need

The plant is scheduled to replace the existing lime-alkaline system with a thermal hydrolysis process in five years. Thermal hydrolysis has seen extensive use in Europe, but the TRA site is expected to be the second facility of its type in the United States.

The state of the current solids treatment system, which is operating near maximum capacity, has management reviewing options for earlier completion and funding of the project in an effort to expedite the upgrade.

"We're no longer deciding what we're going to do, we're looking at how we're going to do it," said Sherri van der Wege, Northern Region manager of engineering services. "If we proceeded with the normal process, it would be five years before thermal hydrolysis is operational. We're looking at ways to make it happen sooner."

In biosolids treatment, solids must be thickened, de-watered and disposed. Thermal hydrolysis improves on all three processes. The technology will replace CRWS' existing lime-based sludge treatment, offering multiple benefits and cost-saving opportunities.

### The Technology

In the beginning of the thermal hydrolysis process, solids are continuously fed to a pulper tank where it is mixed with recycled steam, heating the biomass in preparation for the next step. The pre-heated solids are then fed in to one of four reactors. A reactor processes material through four cycles, with each reactor operating sequentially in a different cycle, much like pistons in an engine.

The first cycle fills an empty reactor using a mechanical pump. In the second cycle, the reactor is heated to 330 degrees F and pressurized to 150 psi through direct steam injection.

In the third cycle, the reactor is monitored for temperature, holding the solids at the required time and temperature requirements for Class A pathogen destruction and improved digestibility.

During the final reactor cycle, the differential pressure is used to

transfer the biomass to a large flash tank. The sudden change in pressure triggers the steam to expand rapidly, further rupturing cell structure, increasing surface area and decreasing viscosity of the hydrolyzed material. As a result, digesters are fed 10-14 percent dry solids as compared to 5-6 percent in conventional systems.

Steam from the flash tank is sent back to the pulper tank for reuse and anaerobic digesters receive a continuous feed of hydrolyzed biomass. The anaerobic digestion provides an increased breakdown of the biomass, reducing solids further.

"It's a lot like removing the wrapper from a piece of candy," said Bill Tatum, project manager at CRWS. "It's a lot easier to eat that way. Thermal hydrolysis breaks down much of the biomass structure, making digestion that much easier and giving us a much drier final product."

### The End Result

Once implemented, the thermal hydrolysis system is expected to yield savings on cost and time, higher solids system treatment capacity and a better final product. The process yields a reduction in volume of up to 50 percent, translating to reduced storage needs and transportation costs.

"That's a significant reduction. We're running 36 truckloads on average per day," said Tatum. "The thermal hydrolysis process could cut that in half."

The process also kills all pathogens, creating Class A approved biosolids. The resulting product is also reported to be odorless, which benefits the land application process.

Anaerobic digestion creates increased amounts of methane which may be used on-site for electricity or heat. By replacing the existing lime-alkaline treatment system, the new process will also reduce chemical costs, offering even greater savings. All told, cost estimates show the upgrade paying for itself within nine years of operation.

"We're excited that TRA is among the first in the nation to pursue thermal hydrolysis," said van der Wege. "We face some scheduling and funding challenges, but the new system will be cost-effective, environmentally friendly and will address our capacity upgrade needs."

## Anniversaries

### 30 Years

Scott Hampton, chief electrician, CRWS

### 20 Years

Shane Lawson, senior maintenance mechanic, TCWSP  
Carl Huckleberry, maintenance mechanic chief, CRWS

### 15 Years

Jake Burwell, inspector II, CSS

### 10 Years

David Scott, operator II, MCRWS  
Wendy Derdeyn, senior secretary, ROCRWS

### 5 Years

Eric Palmer, senior biologist, CRWS  
Ron Tamada, engineering services manager, GO  
Stephen Honza, maintenance mechanic II, TMCRWS  
Luis Blanco, operator II, LLP  
Jerry Smith, operator II, ROCRWS  
Kevin Condra, maintenance mechanic II, TCWSP

### 3 Years

Lupe Moreno, maintenance mechanic II, TCWSP  
Silvia Zavala, environmental inspector, CRWS  
Jason Coles, operator II, TCRWS  
Brandon Smiddy, operator I, CRWS  
Marco Acosta, operator I, TCWSP



The drinking water supplied by TCWSP was ranked first for taste in North Central Texas by the Texas Water Utility Association in May. TCWSP provides drinking water to the cities of Bedford, Colleyville, Euless and portions of Grapevine and North Richland Hills.

## A matter of taste: TCWSP reclaims title

The Texas Water Utilities Association's Best Tasting Water Contest pits Texas districts against one another in a trial of taste. The North Central Texas regional competition was held May 14 at the University of Texas at Arlington, with TRA's Tarrant County Water Supply Project taking the top prize for the surface water category.

The contest recognizes the best tasting water from utilities and water supply companies that chemically treat water to be served to the public. Entrant samples must meet stringent criteria, including collection time, sample container guidelines, handling procedures and chain-of-custody documentation.

Judges also go through a rigorous approval process. Potential judges must be able to discern between subtle versions

of salty, sweet and blank samples.

"It's a lot like wine tasting," said Gary Smith, lab analyst at TCWSP. "The salty and sweet samples are very low intensity, so a judge has to be pretty sensitive to the differences."

In the actual competition, three, five or seven judges are given randomized samples that include entries as well as control samples. Judges rank the samples in order of taste preference, noting whether the sample is salty, sweet, sour, bitter or any of a number of other flavor profile factors. Sample scores are totaled across all judges to establish overall rankings.

TCWSP repeated their 2011 victory this year and will move on to the statewide contest in March. Teague placed second. He is a senior at Arlington High School.

## 2012 Safety committee and award winners

Active employee safety committees are in place at each operating project, giving employees the opportunity to provide input towards the adoption, revision and implementation of safety procedures and programs. Committee members, appointed by project managers, meet monthly to review accident investigations and discuss problems and recommendations.

TRA's Safety Awards Program recognizes employees who exhibit outstanding characteristics in attitude, hazard recognition, outstanding safety ideas, hazard

detection and suggestions, safety banners and heroism. There were 5 winners for the 2012-2013 period. Additionally, the National Safety Council recognized 11 TRA projects with Occupational Excellence Achievement Awards for having no fatalities and less than 50% of the industry category's injuries and illnesses away from work reports in a calendar year.

Congratulations to the 2012 employee safety committee appointees and recent award winners!



Firefighters from the Grand Prairie Fire Department provide a demonstration of the Jaws of Life to CRWS employees on a donated vehicle.

### CONSTRUCTION SERVICES

Scott Hill – Chairperson  
Kelly Logsdon – Chairperson  
Mike Query – Chairperson  
Skip Bacon  
Todd Bacon  
Robert Britton  
Jake Burwell  
Jeremy Patterson  
Jesse Reed  
Steven Renfro  
Jeffery Saunier  
Troy Shelton  
J.R. Silvernell  
Rusty Thompson  
David Tomlinson

### AWARDS

NSC Occupational Excellence Achievement Award

### CENTRAL REGIONAL WASTEWATER SYSTEM

Jennifer Whitaker – Secretary  
Jimmy Chadwick – Advisor  
Scott Alvey  
Belvin Blaylark  
Jim Dias  
Lynn-Hall Alley  
Paul Hopkins  
Eric Jones  
Marc Kilgore  
Elaine Sambel  
Charles Scott  
Mary Thomas  
Scott Wliks

### AWARDS

Scott Alvey – Safety Idea  
Chris Gonzales – Heroism  
Jeffrey Ramsey – Heroism

### DENTON CREEK REGIONAL WASTEWATER SYSTEM

Eric Blackmon – Chairperson  
Andrew Esquibel  
Steven Guerin  
David Hill  
Steven Hodges  
James Mallory  
Andrew Moore  
John O'Bryant  
Tracy Paul  
Bobby Ray  
Michael Roser  
Rosario Saldivar  
Patrick Wagon  
Andrew Whitford  
Julie Wilson  
Clifford Woods

### AWARDS

NSC Occupational Excellence Achievement Award

### DENTON CREEK REGIONAL WASTEWATER SYSTEM

Eric Blackmon – Chairperson  
Andrew Esquibel  
Steven Guerin  
David Hill  
Steven Hodges  
James Mallory  
Andrew Moore  
John O'Bryant  
Tracy Paul  
Bobby Ray  
Michael Roser  
Rosario Saldivar  
Patrick Wagon  
Andrew Whitford  
Julie Wilson  
Clifford Woods

### AWARDS

NSC Occupational Excellence Achievement Award

### MOUNTAIN CREEK REGIONAL WASTEWATER SYSTEM

Mark Hrabal – Chairperson  
Avalardo De los Santos  
Bruce George  
David Scott  
Danny Smith

### AWARDS

NSC Occupational Excellence Achievement Award

### RED OAK CREEK REGIONAL WASTEWATER SYSTEM

Richard Dennie – Chairperson  
Barry Beeson  
Claud Lesly  
David Luther  
John Wardell  
James Watson  
Gerald Smith

### AWARDS

NSC Occupational Excellence Achievement Award

### SOUTHERN REGION

\*Note: Southern Region Committee is comprised of employees from each Southern Region project

Theresa Aguayo – Chairperson  
Johnny Hooks  
Aaron Johnson  
Eddie Knight  
Steve Lee  
Kristie Munoz  
Jason Smith

### AWARDS

NSC Occupational Excellence Achievement Award

### HUNTSVILLE REGIONAL WATER SUPPLY SYSTEM AWARDS

NSC Occupational Excellence Achievement Award

### LAKE LIVINGSTON PROJECT

### AWARDS

Cora Burns – Banner  
NSC Occupational Excellence Achievement Award

### LIVINGSTON RECREATION FACILITIES

### AWARDS

Charlie White – Attitude  
NSC Occupational Excellence Achievement Award



Vendors visit with employees and offer information on safe driving in the Administration Building at CRWS.



Members of CRWS 2012 Safety Committee. Pictured from left to right: Lynn Hall-Alley, senior secretary; Jim Dias, senior maintenance mechanic; Melvin Blaylark, field technician II; Peggy English, senior secretary; Jennifer Whitaker, lab supervisor; Marci Kilgore, buyer; Elaine Sambel, senior secretary; Scott Wliks, maintenance mechanic II.



Members of the TCWSP safety committee pictured with Julie Hunt, Northern Region assistant manager/operations (far left) and Don Tucker, General Services manager (far right). From left to right: Lupe Moreno, maintenance mechanic II, Bonnie Crawford, accounting clerk, and James Pointer, operator II.



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## Pilot program lays groundwork for improvement

Jay Shannon, maintenance engineer at TRA's Central Regional Wastewater System facility, was searching for operational benchmarking information when he came across the Water Research Foundation's Effective Utility Management Primer. The document, produced by the EPA and six national water and wastewater associations, is intended to help utility managers identify and address their most common needs in a customized, incremental approach.

Shannon reached out to the foundation and shortly after, TRA was invited to join the foundation's pilot program.

The manual describes 10 attributes of effectively managed water sector utilities, with desired outcomes and a framework for goal-setting and improvement. For the pilot, TRA focused on three attributes: operational resiliency, infrastructure stability and employee and leadership development.

Operational resiliency involves identifying and quantifying business risks, including legal, financial, safety and other risks. It also includes the ability of staff to work together to anticipate and avoid problems.

The infrastructure stability attribute is an evaluation of the condition and costs associated with critical infrastructure assets, with measures for maintenance, repair and replacement efforts.

Employee and leadership development evaluates institutional knowledge and emphasizes opportunities

for development at all levels and a collaborative organization that is dedicated to continual learning and improvement.

The first step in any improvement plan is assessing current conditions. Julie Hunt, Northern Region assistant manager/operations, worked with Shannon, John Bennett, project manager at Denton Creek Regional Wastewater System, Ed Mach, project manager at Ten Mile Creek Regional Wastewater System and Valery Jean-Bart, maintenance engineer at Central Regional Wastewater System to determine what TRA was currently measuring and what numbers it would need to begin tracking.

The baseline information painted an interesting picture.

"In many cases, we were already thinking along these lines," said Hunt. "Some of the data we needed was being tracked, but there were other factors that we intuitively knew about but hadn't monitored."

One such factor was institutional knowledge and the effect that voluntary turnover, such as retirement, has on the organization.

TRA employees are often long-term, building up a deep working knowledge and organizational understanding over time. TRA loses a significant resource when those employees leave, but that loss had not been quantified before.

Using tools outlined in the primer, the team plotted TRA's current measurements

for all three attributes and determined what areas needed focus and what the goals for those areas should be. This completed TRA's pilot program participation, but more work was ahead.

"We took it to the next step," Hunt said. "We wanted to improve in these attribute areas, and the program offered the tools to do that."

In the case of institutional knowledge, it was apparent that TRA needed ways to build more depth through training.

"We are at risk to see an exodus of knowledge due to the potential of upcoming retirements," Hunt continued. "We need to capture that long-term knowledge in a way that's easy to access so we can continue to run an efficient operation as long-term employees retire."

To address this particular need, TRA is planning to track training hours and certifications achieved and is looking for more in-house training and certification opportunities. Hunt proposes to target five key positions each year and develop long-term succession plans for these positions.

Similar goals are planned for the other attributes beginning with the 2014 fiscal year.

"Overall, it brought about an awareness of things that we intuitively knew," Hunt said. "But looking at the matrix and saying we're here and need to get there – how do we do that? This is a great first effort."