CRWS Construction Advances as Board Approves Final Installment of Bond Sale
TRA’s Board Approves Third Installment of $300 Million in Revenue Bonds for CRWS Construction Projects

In December 2008, the Trinity River Authority’s Board of Directors approved a resolution authorizing the sale of $90 million in revenue bonds to fund the third installment of a $300 million series of construction projects to improve efficiency and rehabilitate aging components in TRA’s Central Regional Wastewater System (CRWS).

CRWS receives wastewater from 20 Dallas/Fort Worth metroplex cities and the Dallas-Fort Worth International Airport. According to the Texas Water Development Board, population in CRWS’ customer cities will increase by nearly a half million between the years 2000 and 2010. By the year 2030, TWDB projects an increase of 47% in the population served by the system.

CRWS has experienced steadily increasing flows since it was last up-rated to its current capacity of 162 MGD in 1993. The Texas Commission on Environmental Quality requires planning for wastewater plant expansion to begin once flows reach 75% of capacity. Construction to expand capacity must begin when flows reach 90% of permitted capacity for three consecutive months. The system’s annual average flows have increased to 86% of permitted capacity.

In addition to the need for increased capacity, construction was necessary to rehabilitate aging equipment and facilities. Many of the construction projects include updated technology to improve efficiency and effectiveness. Other projects address new regulatory requirements.

TRA received the first installment of $120 million in June 2007. The second installment was issued in February 2008 in the amount of $90 million. Proceeds from the first and second installments were used to fund projects ready for construction and to initiate engineering plans and designs for many other projects.

The final installment of $90 million will fund construction for remaining projects designed with funds from the first two installments.

TRA Funds Channel Marking Project

Project Sponsored by Lake Livingston Tourism Council, uses U.S. Coast Guard approved navigational markers.

The Trinity River Authority’s Livingston Recreational Facilities provided financial assistance to mark a clear boat lane on Kickapoo Creek, a waterway on Lake Livingston.

Kickapoo Creek is frequently navigated by boaters as they make their way to the open waters of Lake Livingston. The creek is replete with underwater hazards such as stumps and snags that can wreak havoc on boats.

The Lake Livingston Tourism Council served as the sponsor for the channel marking project. They applied for a permit to pursue the project, which was granted by the U.S. Army Corps of Engineer’s Nationwide Permit #1, which addresses aids to navigation on navigable waterways. The project was carried out with available funds provided by TRA’s Livingston Recreational Facilities project.

Richard Gerard, Area Administrator at TRA’s Lake Livingston Project, provided specifications for the channel-marking effort. TRA, on behalf of the Lake Livingston Tourism Council, obtained bids from three local contractors.

Members of the Tourism Council, with the use of GPS, marked all the piling locations. The contractor drove 24 pilings on location on either side of a two-mile section of Kickapoo Creek. Each piling is 35 feet long and is driven into the soil beneath the water, leaving the top of the piling at least seven feet out of the water for proper visibility. Coast Guard approved water navigation markers indicating safe passage to and from the lake were hung from the pilings.

Boaters returning from the lake keep red markers on the right and green markers on the left to navigate clear passage of Kickapoo Creek.

“With a boating channel in Kickapoo Creek properly marked, boaters that use the creek can enjoy safe passage to and from the lake,” said Gerard.

See page 4 for map of marked area and examples of markers. See Kickapoo Creek.
General Manager’s Message

Reservoir Development: A Possible 40-year Timeline

When someone is unfamiliar with the state-wide water resource planning process that has been underway in Texas since 1997, they are often struck by how far in advance the 16 Regional Water Planning Groups have begun to investigate new sources of surface water.

A realistic time line for bringing a new surface water source to fruition could easily consume 30 to 40 years. This is a reality of how complex, protracted and controversial this process has become.

One of the compelling issues confronting potential water resource developers is that at no point in this process, particularly early on, do you have assurance that you will be successful. For this reason, it is imperative that all options for developing future water supplies remain as strategies.

Shifting planning assumptions can make a difficult job that much harder. Modification to the proposed reservoir site is probably one of the most disruptive things that can happen. TRA saw this occur with Lake Joe Pool in southwest Dallas County when, during the early planning stages, it became necessary to move this federal water project further upstream on Mountain Creek to avoid conflict with the proposed location of Interstate 20.

This resulted in a revision of almost all the planning that had been completed by the Corps of Engineers up to that point in time. Lake Joe Pool was originally authorized by the U.S. Congress in 1965 but was not open to the public for recreation purposes until 1989.

Other changes in planning assumptions that can complicate development of a new surface water source include changes in environmental laws and other regulations along with escalating costs of energy, technical support and materials.

Congressional authorization to develop the Wallisville project was secured in 1962. Congress appropriated funding for design and construction in 1965 and the Galveston District of the U.S. Army Corps of Engineers began construction in 1967. This aerial photo shows the rough outline of the locks in the center of the picture.

The U.S. District Court halted construction on the Wallisville Saltwater Barrier in 1973 when the project was 72 percent complete in response to a lawsuit filed in 1971 by environmental groups. A summary judgement issued by the court sited an inadequate Environmental Impact Statement, among other concerns, as the reason for halting construction.
generally be fairly straight forward, but unanticipated developments, such as the discovery of previously unknown cultural or archeological resources, can produce significant delays.

The actual filling of the lake with water can take a matter of weeks, as was the case for the initial filling of Lake Arlington, or never, as is the situation for the E.B. Spence Reservoir on the Colorado River. E.B. Spence was completed in the late 1960’s but has yet to fill.

The best example of how the development of a water resource project can take so long can be seen in the real-world Trinity River basin example, the Wallisville Saltwater Barrier. As background, this project is important because it prevents saltwater from intruding up the Trinity River during periods of low river flow. If saltwater migrates upstream in the lower watershed, the raw water intake structures of municipal, industrial and agricultural water systems will pump saltwater into their systems resulting in dire circumstances.

Congressional authorization to develop the Wallisville project was secured in 1962. Congress appropriated funding for design and construction in 1965 and construction began in 1967. The Wallisville project took almost four decades to complete despite the due diligence of the local sponsors, Trinity River Authority, city of Houston and Chambers-Liberty Counties Navigation District.

The project’s construction was delayed from 1973 to 1989 due to an environmental lawsuit, a federal injunction and a variety of permit challenges. The project was completed and dedicated in 1999-37 years after authorization.

Many factors involved in the lengthy reservoir construction process are impossible to control. If Texas is to have a water secure future, it is important to avoid any actions that would undermine the viability of needed reservoirs.

For example, the legislature established a Sunset date of September 1, 2015 to protect reservoir sites identified in the 2007 Texas Water Plan for implementation. If the proposed developer of a designated reservoir does not demonstrate a good-faith commitment toward developing the reservoir prior to the Sunset date, the project could be lost. Reservoir developers also have to be cognizant of policy changes, such as new eminent domain laws, that could make project development virtually impossible.

Much can be done in the way of preparing for future water demands to include aggressive water conservation and wastewater reuse programs. The population of Texas is expected to double in the next 50 years. There can be no substitute for the development of additional surface water supplies if the needs of this state’s population are to be satisfied.
Imagine receiving a call from XYZ Collection Agency, acting on behalf of ABC Credit Card Company, asking for $6,000 to repay charges you made at an appliance store in Columbus, Ohio. According to the lady on the phone, you purchased a full set of household appliances including refrigerator, oven, dishwasher and washer and dryer. Trouble is you have never been shopping in Columbus, Ohio. In fact, you have never been to the state of Ohio. The collection agency is not the least bit interested in your story. They want money and nothing you can say to them on the phone is going to change that.

What happened? What can you do to make things right?

What happened is clear. You have become one of 8.9 million American consumers who are victims of identity theft. Someone has used your personal information—your name, Social Security number, bank or credit account numbers or driver’s license number—for fraudulent use. They have used your good credit to enrich themselves. And now you are stuck with the bill.

What can you do to make things right?

The best plan is to prevent identity theft in the first place. The following steps will give you the best chance of protecting your personal information from falling into the wrong hands.

Social Security Number
• Above all, protect your Social Security number. Your social security number can be used to access all of your credit accounts. Many times, a social security number is all that is needed to open a new account.
• Give your Social Security number only when absolutely necessary and before providing, ask to use other types of identifiers.
• Remove your Social Security number from any identification you carry in your wallet.

Wallet
• Carry only one or two credit cards in your wallet.
• Carry only the identification information you’ll actually need.
• Do not carry your Social Security card in your wallet.
• Report a stolen wallet or purse to the police immediately.

Bank and Credit Card Statements
• Review your bank and credit card statements thoroughly for signs of suspicious activity.
• If your statement is late by more than a couple of days, call your credit card company or bank to confirm your billing address and account balances.

Credit Report
• Check your credit reports from the three major credit bureaus: Equifax, Experian and TransUnion. Check all three reports annually. The credit bureaus will provide one report each year free of charge. Go to annualcreditreport.com for your free copy.

Credit Cards
• Take caution when handing over your ATM/debit cards or credit cards to anyone including a server in a restaurant. Your card, including the security code on the back, can be copied in seconds when it is out of your sight.
• Cancel all unused credit card accounts.
• Make photocopies of all your credit cards and leave these copies at home in a secure file. Include customer service phone numbers and any other relevant information regarding your credit cards in this file. If these cards were stolen, you will have access to all the information in order to cancel the cards.

Mail
• Deposit your outgoing mail in post office collection boxes or at your local post office, rather than in an unsecured mailbox.
• Promptly remove mail from your mailbox.

Trash
• Tear or shred your charge receipts, copies of credit applications, insurance forms, physician statements, checks and bank statements, expired charge cards that you’re discarding and credit offers you get in the mail.

Workplace
• Secure personal information in your workplace.
• Keep your purse or wallet in a safe place at work; do the same with sensitive personal information such as your paycheck.

Home
• Secure personal information in your home, especially if you have roommates, employ outside help, or are having work done.

Computer
• Do not keep computers online when not in use. Either shut them off or physically disconnect them from internet connection.
• Use anti-virus software and a firewall.
• Be cautious about opening any attachment or downloading any files from emails you receive.

In spite of your best efforts, identity theft can happen to you. Thieves have become clever in obtaining personal information to use in fraudulent schemes and they don’t care who they victimize. Identity thieves have stolen personal information from infants, children, elderly people and even deceased individuals.

Most ID theft involves cash and credit but medical ID theft is on the rise. Victims of medical ID theft can find their medical benefits depleted and medical bills run up by a stranger.

Identity theft is a serious crime that happens silently while you go about your life’s business. You may not even be aware of the crime for years. Many victims do not learn they have been victimized until they need their good credit to finance an automobile or a home.

Stopping the fraudulent activity and restoring your credit records can take years. On average, victims of identity theft spend 175 hours researching and tracking the crime and 23 months correcting credit reports.

You don’t have to face the nightmare alone. The Trinity River Authority offers employees an Identity Theft Program. The program is offered, free of charge, through CIGNA life insurance which covers all full-time TRA employees starting the first of the month following 45 days of employment.

TRA employees under identity theft attack can call the CIGNA Identity Theft Program toll-free number, 1-888-226-4567. Upon calling and activating CIGNA’s ID Theft Program, employees will be assigned a personal case manager that will guide and assist the employee through the complicated and time-consuming process of restoring credit and stopping further fraudulent activity. CIGNA’s Identity Theft Program is available to TRA employees 24 hours a day, 365 days a year, in every country in the world.

Kickapoo Creek. Continued from page 1.
Promotions

- David Luther was promoted to Senior Operator at ROCRWS.
- Terry Burks was promoted to Senior Maintenance Mechanic at TMCRWS.
- Steven Guerin was promoted to Senior Operator at DCRWS.
- Ricky Basham was promoted to Senior Maintenance Mechanic at CRWS.
- Wendy Derdeyn was promoted to Senior Secretary at ROCRWS.
- Elias Ruiz, II was promoted to Maintenance Mechanic II at TMCRWS.
- Jose Avila was promoted to Biologist at CRWS.

New Hires

- Phuoc-Loc Nguyen joined TCWSP as Clerk/Messenger.
- Charles Rankin as Operator I.
- Anson Suarez joined CRWS as Operator I.
- Hector Garcia as Maintenance Mechanic II.
- Danny Smith joined MCRWS as Operator I.
- Shao-Wen Liu as Information Systems Analyst.
- Matthew Aimes joined CRWS as Operator I.

Employee Milestones

- Steve Lee, Senior Operator at ROCRWS, was promoted to U.S. Army Private Senior Operator TCRWSS, was promoted to Engineer's license on December TMCRWS.
- Wendy Derdeyn was promoted to Maintenance Mechanic II at CRWS.
- Jimmy Chapman was promoted to Senior Maintenance Mechanic at TMCRWS.
- Anson Suarez was promoted to Senior Maintenance Mechanic at CRWS.
- Elias Ruiz, II was promoted to Senior Maintenance Mechanic II at TMCRWS.
- Jose Avila was promoted to Biologist at CRWS.

Current Events

- Karen Stafford-Brown received her Texas Professional Biologist at CRWS.

- Jon Lee, son of Steve Lee, Senior Operator TCRWSS, was promoted to U.S. Army Private First Class on February 1, 2008. Jon is stationed at Fort Knox, Kentucky.

- Austin Brewer, grandson of Warren Brewer, Northern Region Manager, plays football for the Sulphur Springs Wildcats Football team. The Wildcats won the Class 4A, Division 2 State Championship when they beat Dayton 69-49 on December 20 in the Alamodome. Austin is the specialist placekicker for the Wildcats. Throughout the season, Austin kicked extra points, field goals and sideline kicks. Austin’s proud parents are Brian and Jeannie Brewer.

- Colton Brewer, grandson of Warren Brewer, Northern Region Manager, was a Running Back, Wide Receiver and Defensive Back for the Eastland Mavericks Football team where he gained over 1800 yards in receiving, kick returns and rushing, and scored 12 touchdowns in the 2008-2009 season. Colton was voted to First Team Academic All State, named District 6-2A Utility Player of the year and selected as Honorable Mention All Big Country Utility Player by the Abilene Reporter News. Colton will play as a representative of Eastland High School in the Meryl Greathouse FCA All Star Football game in June. Colton’s proud parents are Dr. Shawn and Mrs. Laurie Brewer.

Fats, Oils and Grease: A Sticky Problem for the Wastewater System at Your Home and Beyond

The Trinity River Authority participates in the North Texas Grease Abatement Council (NTGAC), an educational partnership between municipalities and water utilities in North Texas anchored by the North Central Texas Council of Governments. NTGAC educates residents about the effects of pouring fats, oil and grease down the drain. Recently, NTGAC filmed a public service announcement at TRA’s Central Regional Wastewater System to illuminate the impact grease has on the wastewater treatment process.

Fats, Oils, and Greases aren’t just bad for your arteries and your waistline; they’re bad for sewers, too. Fats and oils poured down the drain, separate from water, solidify and cling to pipe walls. Fats and oils tend to be sticky and particles of food and other waste will stick to the fats. Soon, chunks of fat, oil and grease and anything sticking to it can completely block the pipe. On average, about two thirds of blocked pipes in the home are caused by fat.

Grease has solidified and completely blocked this pipe.

When a pipe becomes blocked in your home, wastewater cannot drain down your kitchen sink. At the very least, you will not be able to use your kitchen sink until a plumber has been called to unplug the drain. This alone will result in inconvenience and an unplanned expense. But it may be worse than that. Depending on where the clog lays, all sink, shower, tub and toilet drains can be blocked and you may not be able to use any plumbing in your house at all until a plumber has cleaned the drains. Even worse, the dirty water may back up and overflow into your home leaving you with an unpleasant, unsanitary mess to clean and possible damage to floors, walls and furnishings.

Once it leaves your home’s plumbing, grease often blocks pipes in the wastewater collection system. It can wreak havoc on pumps and other equipment in the collection system through the kitchen sink.

Putting fats or any other food down the drain will result in a greasy buildup in your home’s plumbing and the city’s wastewater collection and treatment system.

Emergency repairs are expensive and eventually will increase the cost of wastewater treatment. Those costs must be passed along to homes and businesses.

You’ve Fried the Turkey—Now What Do You Do with the Oil?

The use of turkey fryers grows in popularity every year. The average turkey fryer uses five gallons of oil. What can you do with a large quantity of used cooking oil?

Above all, do not dispose of the oil down your drain. Equally as important, do not pour the grease down a storm drain or on the ground. The storm drain leads directly to your local creek or river.

Recycle/Reuse: To reuse the oil, let it cool completely and strain it to remove particles. Using a funnel, pour the oil back into the original container. Store in the freezer and use within six months.

Disposal: If you are not planning to reuse the cooking oil, return it to the original container once it has cooled. Seal tightly and place it in the trash. In addition, many cities accept used cooking oil, and other types of fats and oils, at drop-off locations. Call your city’s trash disposal number or visit their website for instructions.

At the wastewater treatment plant, grease can cause problems for nearly every step of the wastewater treatment process. Each year, wastewater treatment plants spend millions of dollars separating and disposing of grease. Even so, grease manages to clog filters and backing down equipment throughout the plant.

Emergency repairs are expensive and eventually will increase the cost of wastewater treatment. Those costs must be passed along to homes and businesses.

Most of us know grease as the byproduct of cooking. Most of us use fats and oils for cooking. But many foods we eat contain fats such as dairy products, baked goods, sauces and gravies. Fats and oils are usually washed into the plumbing system through the kitchen sink.

Putting fats or any other food down the drain will result in a greasy buildup in your home’s plumbing and the city’s wastewater collection and treatment system.

Some people believe that olive oil, canola oil and other oils that are

Continued on page 6. See Fats, Oils and Grease.
Wolf Creek Park Adjust Fees for 2009 Season

The Trinity River Authority’s Wolf Creek Park on Lake Livingston will open on March 1 for the 2009 season with a new fee schedule.

TRA management compared Wolf Creek Park fees to fees charged by similar facilities on Lake Livingston. It was determined that Wolf Creek Park fees, on average, were less than others by as much as 25%. As a result, camping fees at Wolf Creek Park were raised to be comparable to fees charged by similar facilities. In most cases, however, it still costs less to visit Wolf Creek Park than other facilities in the area.

In a move that simplifies the Wolf Creek Park fee structure, TRA eliminated the vehicle charge for the first two vehicles as well as the surcharge for RVs occupying a tent camp site.

Day-use fees were increased to reflect the cost incurred by the Park to accommodate day use. Heavy day-use visitation requires the highest level of maintenance and increased security by the Park staff.

The fee for reserving the group shelter, primarily used by day-use guests, was increased nominally. Non-profit and large groups including Boy Scouts, Girl Scouts, schools and church groups, can enjoy Wolf Creek Park at a 50 percent discount. Senior citizens, 65 years or older, are also entitled to a 50 percent discount on the per person entry fee.

Wolf Creek Park is a full-service camping facility encompassing 110 acres on the western shore of Lake Livingston. The park has 39 campsites for RVs requiring full hookups and 64 sites with water and electricity. Park amenities include a boat ramp and fishing pier, three rest room/shower facilities, a group shelter, playground equipment and a marina store.

Fees at Wolf Creek Park have not increased since 2002. Since the last increase, budget requirements have increased by 21 percent due to a corresponding increase in the Park’s popularity and the age of its facilities. Recent improvements include upgrading 38 tent sites with electrical connections and RV pads including nine with full hookups. The group shelter has been replaced and a rubberized playground surface was installed.

The new fee schedule will allow Wolf Creek Park to continue the high level of service provided to Park guests and support further enhancements of the Park’s facilities.

Campsites at Wolf Creek Park can be reserved in advance by calling 936-653-4312 or visiting TRA’s website at http://www.trinityra.org/Recreation/Reservations.htm. The website has detailed information concerning deposits and fees as well as additional information about the Park.

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Premium waterfront RV sites with full hookups provide shade and views of Lake Livingston. With the new fee structure, there will no longer be a vehicle charge for the first two vehicles. Senior citizens over the age of 65 years and large groups enjoy discounted fees.

Fats, Oils and Grease. Continued from page 5.

Commercial additives, including detergents that claim to dissolve grease may pass grease down the line and cause problems in other areas.

Finally, some dispose of used cooking oil by pouring it on the ground, usually in some unseen area of the yard. This is bad for the environment for a number of reasons. Immediately, the oil will smother beneficial insects, block air from entering the soil and kill any vegetation at the site. Later, when the oil comes in contact with water from rain or irrigation, it will rise and run off into the storm water system which drains directly into the nearest creek, river or lake. The best way to deal with fats and oils in your plumbing system is to keep them out. Put all used oil in a container, seal it and put it in the trash. Scrape food scraps, oil and grease from kitchen utensils and equipment before washing. Use a paper towel to wipe small amounts of cooking oil, such as meat drippings. Throw the paper towel in the trash.

Liquid at room temperature will not clog drains. Not true. All forms of oil and fat separate from water, rise to the top and stick to the walls of pipe.

Others believe it is ok to pour grease down the drain as long as if they use the garbage disposal. Home garbage disposals do not keep grease out of the plumbing system. These units only shred solid material into smaller pieces and do not prevent grease from going down the drain.

What if you chase the oil down the drain with a dose of dish soap? It is true that soap breaks up grease. You see it happen every time you wash your dishes. What you don’t see is what happens in your sewer pipes. Eventually, soap loses its effectiveness and grease solidifies and congeals on pipe walls.

Neither will running hot water with grease as it goes down the drain prevent problems. The hot water quickly cools and the grease solidifies sticking to pipes.

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Infiltration and Inflow to be Studied in CRWS Collection System

$951,000 Study to Assess Wet Weather and Groundwater Impact on System Flows

At the December meeting, the Trinity River Authority’s Board of Directors approved an engineering services contract in the amount of $951,000 to study infiltration and inflow (I/I) to the Authority’s Central Regional Wastewater System.

CRWS receives wastewater from 20 Dallas/Fort Worth metroplex cities and the Dallas Fort Worth International Airport through more than 200 miles of pipelines buried below ground.

Infiltration occurs when groundwater enters the wastewater collection system through openings such as cracks in pipe, deteriorating pipe joints, and decaying manhole structures below the manhole cone. Groundwater may be present year round over pipes depending on the depth of the pipe. The rate of infiltration depends on the depth of groundwater, the size of the openings in the collections system, and the percentage of the wastewater collection system submerged. Groundwater levels vary with the seasons and rainfall. Infiltration is therefore indirectly related to weather. There may be infiltration in the absence of rain but there will be more infiltration during rain storms.

Inflow is rainfall-related water which enters the wastewater collection system from sources such as private sewer pipelines, downspouts, foundation drains, yard and area drains, stormwater sump pumps, manholes, defective piping, and cross-connections from storm drains. Inflow is directly influenced by the intensity and duration of a storm event.

I/I is problematic from many standpoints. Wastewater is metered and each of CRWS’ customers is charged for the amount of wastewater received by the CRWS collection system. It is not unusual for the volume of wastewater flows to increase by 200-400% during wet weather. If a city’s wastewater flows are engorged with rainwater, it will increase the cost of wastewater treatment for the municipality.

In addition, pipes must be of sufficient size to accommodate increased flows during rain storms and that adds to the cost of the wastewater treatment as well. The increased flow also causes wear and tear on pipes and speeds up the aging process. On a related note, wet-weather flows result in a similar situation at the CRWS treatment plant. CRWS receives an average of 144 million gallons per day but that amount can spike to more than 400 MGD during a heavy rain storm. The plant must be of sufficient capacity and design to handle the increased flow.

Finally, I/I can have a negative impact on the environment. Pipes that are overwhelmed by stormwater can back up and spill wastewater into the environment, although the impact of this type of spill is greatly reduced due to heavy dilution by rain.

In a proactive effort to reduce I/I, TRA schedules regular I/I studies in the CRWS collection system. Since 1992, the Authority has completed four phases of system-wide I/I assessments. These assessment reports have quantified the amount of I/I in the CRWS interceptor system, identified how much of the I/I was generated within each of the customer city’s collection systems, and identified and prioritized pipeline replacement and rehabilitation to reduce I/I within the CRWS collection system.

Population growth and other significant changes within the CRWS service area since the last I/I assessment in 2004 require an updated I/I assessment to be completed in the near future. This update will provide key information necessary to assist in prioritizing future pipeline replacement, rehabilitation and increases in capacity. In addition, I/I assessment studies assist TRA in complying with regulatory issues concerning collections system outflows including the Environmental Protection Agency’s Sanitary Sewer Overflow (SSO) initiative and the related Texas Commission on Environmental Quality’s SSO Outreach Initiative. These regulatory programs seek to eliminate wastewater outflows to the environment by proactively reducing collection system I/I and increasing pipeline capacity where necessary.

This map shows the five major interceptor pipelines that transport wastewater from CRWS’ 20 customer cities and the D/FW Airport. The I/I study will monitor flows in all 200 miles of CRWS collection system pipelines.

A manhole overflows after a night of heavy rain. Stormwater can enter underground pipes through manholes. Inflows of stormwater, combined with wastewater flows can exceed pipe capacity resulting in an outflow of the diluted wastewater like the one seen here.
Anniversaries

30 Years
Bill Cyrus, Manager, Technical Services, CRWS

20 Years
Mark Kidwell, Senior Electronics Technician, TCWSP

15 Years
Spencer Karr, Land/Emergency Management Coordinator, LLP
Richard Gerard, Area Administrator, LLP

10 Years
Fritz Schwalm, Laboratory Supervisor, CRWS
Thresa Aguayo, Senior Biologist, LLP
Debbie Bronson, Public Information Assistant, GO
Lee Shaffer, Office Coordinator, CRWS

5 Years
Marion Sheets, Field Inspector, LLP
Billy Lewis, Operator II, LRWSS

3 Years
Ricki Morales, Operator II, CRWS
Raudel Juarez, Senior Operator, CRWS
Arthur Brownlow, Information Systems Technician, CRWS
Paul Hopkins Operator II, CRWS
James Pointer, Operator II, TCWSP
Jeremy Patterson, Inspector II, CSS
Vincent Lim, Manager, Information Technology Support Services, GO