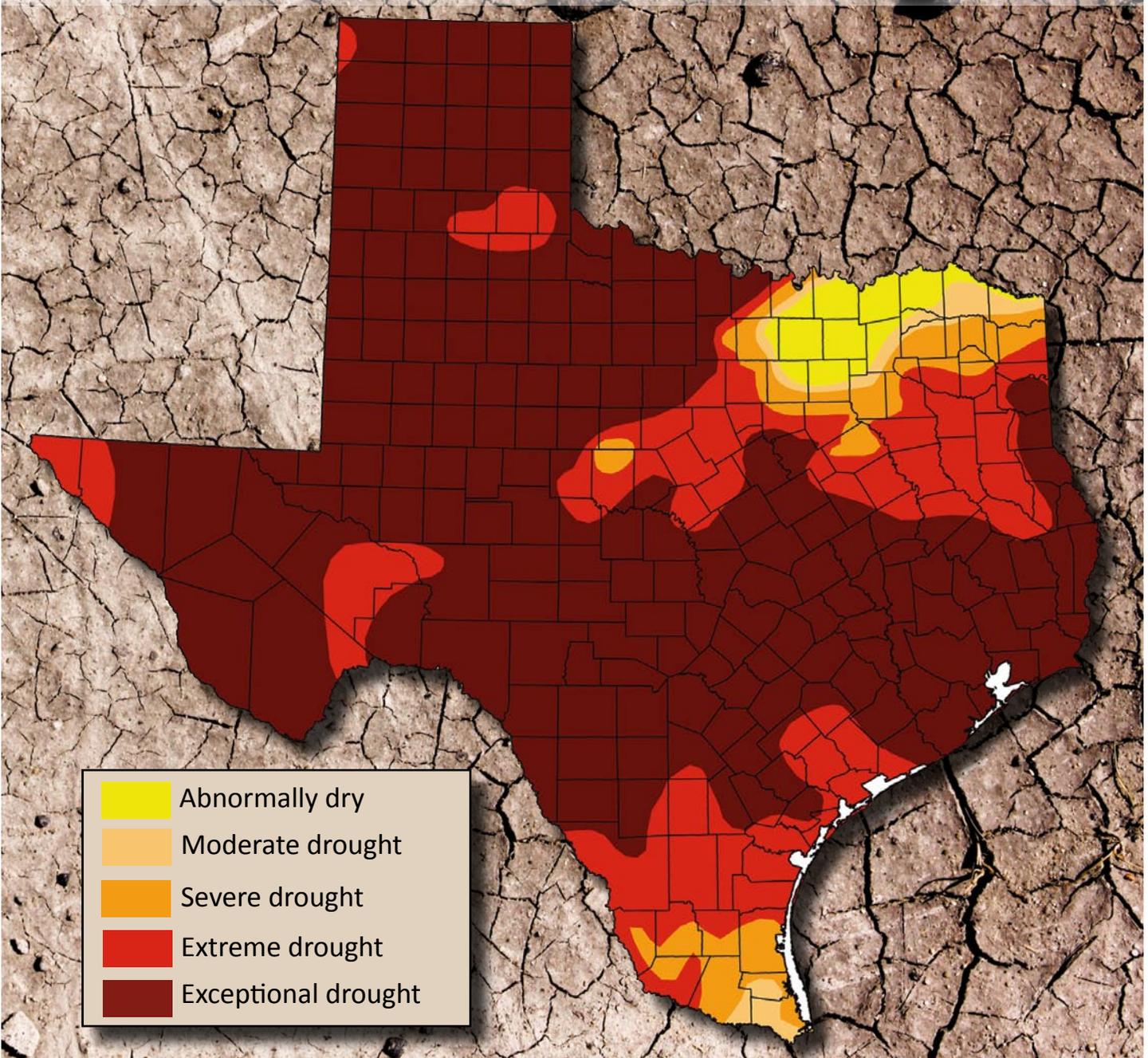


June/July 2011



Newsletter of the Trinity River Authority of Texas

A state of drought



-  Abnormally dry
-  Moderate drought
-  Severe drought
-  Extreme drought
-  Exceptional drought



New directors join TRA from Dallas, Trinity counties

Gov. Rick Perry recently appointed two new directors for the Trinity River Authority. TRA is honored to welcome Christina Melton Crain of Dallas and Dennis "Joe" McCleskey of Apple Springs.

Crain is an attorney and president of Christina Melton Crain, PC. She presently serves as the director of the State Bar of Texas, as trustee of the Dallas Bar Foundation, and as a member of the Texas Transportation Advisory Committee. Crain maintains close ties with her alma maters; she is the director of the Oklahoma City University School of Law Executive Board, and also serves on the University of Texas at Austin's Chancellor's Council and the College of Liberal Arts Advisory Council. She has a

passion for child welfare and co-founded Amachi Texas, a mentoring program for children of the incarcerated, she serves as a board member for Big Brothers Big Sisters Lone Star, and she is the director of the Texas Regional Advisory Board for the National Center for Missing and Exploited Children. Crain is active in her community and is a member of Altrusa International Inc. of downtown Dallas, an association that focuses on literacy, AIDS/HIV, community needs and the environment, and she is also the director of the Patriot PAWS Service Dogs organization. She is also the re-entry co-chair of the Dallas County Criminal Justice Advisory Board and the chair of the Dallas One-Stop Optimized Re-entry

System.

TRA board President Linda D. Timmerman, Ed.D. has appointed Crain to the board's legal committee and to Tarrant County Water Supply Project's right-of-way committee.

McCleskey is the owner of Angelina Excavating Inc., which specializes in underground utilities, road construction, demolition and excavation. He maintains an interest in the preservation of Texas wildlife, serving as secretary and treasurer of the Piney Woods Chapter of the National Wild Turkey Federation, a nonprofit organization dedicated to the preservation and conservation of wild turkeys and their natural habitats. He is also a member of the Texas Wildlife Association, which advocates wildlife conservation at

the local, state and national levels. McCleskey is also dedicated to his community; he is a member of the Lufkin Lions Club and has volunteered with the Angelina County Habitat for Humanity. He is a member of the Buyers Group Committee for the Angelina County Youth Fair, an agricultural and arts and crafts fair held annually in Lufkin. McCleskey has also served as a committee member of the Hudson ISD Community Involvement Advisory Board and as president of the Deep East Texas Association of Builders.

McCleskey will serve on TRA's administration committee as well as the Livingston Regional Water Supply System right-of-way committee.

Master planning: the road map for meeting customer needs

The Trinity River Authority has embarked on master plans for three regional wastewater systems in the Northern Region of the Trinity River basin. Planning efforts for Ten Mile Creek Regional Wastewater System, Denton Creek Regional Wastewater System and Red Oak Creek Regional Wastewater System are under way.

"As a provider of services that are vital to the health and well-being of the communities we serve, we can't afford to be reactive when it comes to upgrading and expanding our facilities. We must be proactive," said Fiona Allen, Northern Region manager. "Master planning provides a road map that allows us to make informed decisions that meet the needs of our contracting parties."

The master planning process includes gathering data from numerous sources to prioritize and optimize the timing of facility upgrades and expansions.

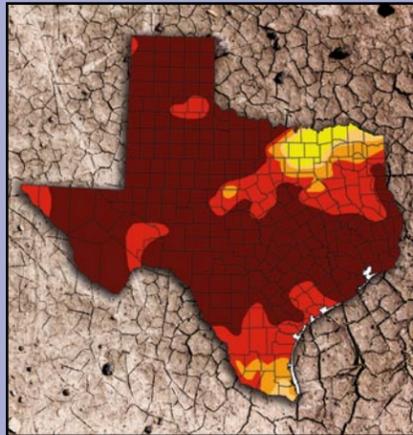
Engineers first study the history of wastewater flows in relation to permitted capacity. The Texas Commission on Environmental

Quality requires that wastewater facilities begin the planning process once flows have reached 75 percent of permitted capacity. Construction must begin by the time flows are at 90 percent.

Flows usually increase in response to population growth within a system's geographic reach. For this reason, monitoring population data is crucial to master planning. Engineers look to state and regional agencies that track and predict future population figures such as regional water planning groups and the North Central Texas Council of Governments to estimate growth within a system. Each customer entity verifies population estimates for its area.

Changing regulatory requirements also often drive system modifications. Increasingly stringent regulations govern several aspects of wastewater treatment including effluent quality and solids handling/disposal, as well as the reuse of treated water. For example, regulations now require

Continued on back page. See Planning.



On the cover: The U.S. drought monitor map in mid-July shows almost all of Texas in exceptional drought conditions. The U.S. Department of Agriculture recently declared all of Texas a natural disaster area to help the state recover from widespread crop loss and devastating wildfires. See how the Trinity River basin is faring in these dry times with stories on page 2.

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Water restrictions on the horizon for Tarrant County

Plagued with lack of rain, extreme heat and high winds, Texas is mired in its driest period on record. The 2011 drought heads the list of the top five Texas droughts followed by 1925, 1956, 1917 and 1971, with the October 2010-June 2011 period ranking as the driest ever. In late June, the U.S. Department of Agriculture declared all of Texas a natural disaster area to help the state recover from widespread crop loss and devastating wildfires.

Most municipalities and water supply systems across the state have implemented water restrictions that limit, and in extreme cases prohibit, outdoor water use.

Thus far, North Central Texas has been spared from the worst drought conditions. Water supply systems have not yet issued restrictions for the area's residents.

But that could soon change for 98 percent of Tarrant County residents.

According to the Tarrant Regional Water District, combined water levels at four of its reservoirs have fallen to 81 percent full. Without significant rainfall, the reservoirs will fall to 75 percent of capacity by late August or early September, triggering stage one water restrictions. Follow TRWD's reservoir levels at www.trwd.com/DailyReport.aspx.

The primary focus of the district's stage one water watch is reducing outdoor water use since 60

to 70 percent of residential water use in the summer is devoted to landscapes. Restrictions call for limiting landscape irrigation to two days per week with the goal of reducing overall water consumption by five percent.

Tarrant County residents can prevent restrictions by conserving water through the summer months. TRWD, along with other North Texas water agencies, has reached out to Tarrant County residents with a new Lawn Whisperer campaign using billboards, brochures, videos and social media. The Lawn Whisperer character shows residents how to have a beautiful, healthy lawn and still save water by paying attention to when a lawn needs water and when it doesn't. His videos are available on YouTube or residents can consult the Lawn Whisperer on Facebook by using the link at www.savenorthtexaswater.com.

The following tips can help save water this summer:

- ☑ Apply just an inch of water to your lawn once a week during the summer to encourage deeper root systems and establish healthier grass.
- ☑ Water during the cooler hours before 10 a.m. and after 6 p.m. to minimize water loss through evaporation. Most North Texas cities prohibit automatic and hose-end sprinkler use during the heat of the day.

THE Lawn Whisperer Says

"You're watering too much. How do I know? Your lawn told me."

Water Your Lawn Just Twice A Week Or Less.

LISTEN TO YOUR LAWN

To be honest, anyone can be a Lawn Whisperer when you keep your eyes out for a few signs. If you leave footprints in your Bermuda grass or the edges of your St. Augustine are rolled up, your lawn probably needs some water.

And when you're watering, watch for runoff. Our North Texas clay soil retains moisture, but is also susceptible to runoff. You may have to water some, let it soak in and then finish your watering.

TWICE A WEEK IS PLENTY

Most people water too much. Even in the summer, turf grass never needs more than two good soakings a week. Thorough, infrequent watering promotes healthy root growth and will make your grass stronger, greener and healthier. And if we've had some rain, you may not even need to water at all.

SaveNorthTexasWater.com

DON'T WATER BETWEEN 10AM & 6PM

In many cities it's against code to water between 10 and 6, but no matter where you live, it's just a good idea. In the heat of the day, much of the water you're trying to put on your grass winds up being lost to evaporation.

CHECK THOSE TIMERS

Automatic sprinklers are great when they're set correctly. Take the time to reset your sprinkler system to give a thorough watering once or twice a week and avoid watering between 10 and 6. You'll be doing your lawn a favor and saving water in the process.

Want to fine-tune your Lawn Whisperer talents? Visit our website to find The Lawn Whisperer and learn how to have a great lawn and save water at the same time.

Save Water. Nothing Can Replace It.

Listen to the Lawn Whisperer on YouTube or follow him on Facebook by using the link at www.savenorthtexaswater.com.

- ☑ Avoid cutting grass too short. Taller grass holds moisture better and slows down evaporation. Leaving lawn clippings on your lawn does the same and also returns valuable nutrients to the soil.

The TRWD provides raw water to Fort Worth, Arlington and other municipalities, as well as TRA's Tarrant County Water Supply Project. TCWSP treats potable water for five cities: Bedford, Colleyville, Euless, Grapevine and North Richland Hills.

HRWSS operating at peak capacity as drought deepens

In response to high water demand fueled by extended drought in the Southern Region of the Trinity River basin, Huntsville Regional Water Supply System is treating and pumping an average of nearly eight million gallons per day, the system's maximum capacity.

HRWSS treats and delivers potable water to Huntsville and two Texas Department of Criminal Justice prison units in northern Walker County. The system also pumps an additional six MGD of partially treated water to Tenaska's electric power-generating plant in Grimes County.

HRWSS is designed to produce a firm capacity of six MGD with a maximum capacity of eight MGD. Firm capacity refers to the volume of water the plant is able to treat and deliver with one component out of service. For example, the plant has four filters capable of processing two MGD each. If one filter is taken out of service for maintenance, the plant can still treat six MGD.

"We started pumping the maximum capacity of eight MGD in June of this year," said Southern Region Assistant Manager Robert Stevens. "In 2010, water demand didn't reach eight MGD until August."

Drought has plagued the Southern Region of the Trinity River

basin since last fall. According to the U.S. drought monitor, the area began to experience abnormally dry conditions in September 2010, graduating to severe and extreme drought conditions by December. Exceptional drought conditions, the harshest level of drought, have afflicted the region since early April. Learn more about drought in Texas and across the United States at www.drought.unl.edu/dm/monitor.html.

Ongoing drought conditions have led to a minor water shortage in Huntsville. In mid-June, continuous high water demand triggered stage one water shortage conditions outlined in Huntsville's Water Conservation and Drought Contingency Plan. Stage one water restrictions call for voluntary conservation efforts to limit non-essential water use such as outdoor irrigation and washing vehicles, sidewalks or buildings. Residents are also asked to repair water leaks as soon as possible.

While HRWSS has been reliably producing eight MGD for several weeks, water supply could be limited if one of the system's major components fails.

"New raw water pumps and clarifiers were added to the system in 1999 to provide water to Tenaska, but most of the remaining

equipment and piping is 30 years old," said Stevens. "Equipment failure is definitely possible and parts can be difficult to find."

HRWSS maintenance and operations staff monitor the plant and distribution system continuously to detect potential problems at the earliest possible moment.

"We strive for the shortest possible down time for repairs and maintenance," said Chief Operator David Odom.

A stage two moderate water shortage can be triggered by further increases in water demand, continuing drought conditions or failure of water supply components. Stage two water restrictions include mandatory limitations of non-

essential water use.

Find links to Huntsville's Water Conservation and Drought Contingency Plan at www.huntsvilletx.gov.

"Conservation will help in the short term," said Stevens. "The long-term solution is to add to the system's capacity."

In 2008, Huntsville funded engineering services to design process and treated water pumping improvements to bring firm capacity to 12 MGD. Recently, the city funded additional engineering services to bring raw water pumping and piping improvements to 12 MGD firm capacity.

Funds to construct the expansion are still pending.



An aerial view of the Huntsville Regional Water Supply System treatment plant.

CRWS staff battle massive slug of solids, extreme heat as interceptor pipeline begins service

On the morning of June 14, construction crews opened MC 5 and 6, a new seven-mile section of the Mountain Creek interceptor, allowing nearly 100 cubic yards of grease, grit and rags to surge toward Central Regional Wastewater System’s treatment plant.

By 11 a.m. rags and grit were clogging the barscreens at the plant and falling in mounds around the equipment. The grease followed at 2 p.m. Staff worked quickly to shovel the wet, malodorous materials into dumpsters. In the Texas summer heat, everyone working downed gallons of cold water and took frequent breaks to avoid heat exhaustion.

“Even though it was 100 degrees with no shade, everyone worked hard and I didn’t hear a single complaint,” said CRWS Project Manager Bill Tatum. “We filled three 30-cubic-yard dumpsters before it slacked off around 8 p.m.”

CRWS management and staff had anticipated the arrival of the accumulated debris at the treatment plant and had prepared as best they could for the onslaught. Bringing large wastewater system components online rarely happens without hiccups, but this section of the Mountain Creek interceptor proved especially challenging.

In the days before the pipe was connected, the collection system repair crew suctioned grease from manholes along the interceptor.

“Some of the five-foot-diameter manholes were completely plugged with a six- to seven-foot layer of grease,” said Technical Services Manager Bill Cyrus.

At the plant, Operations Manager Mike Young redirected the incoming flow to a set of barscreens better equipped to handle a large amount of debris.

“These barscreens can process a large volume as well as large chunks of debris without overwhelming the cleaning system,” said Young.

Vacuum trucks and dumpsters stood ready near the barscreens.

Tatum directed all available operations and maintenance staff to help with the effort.

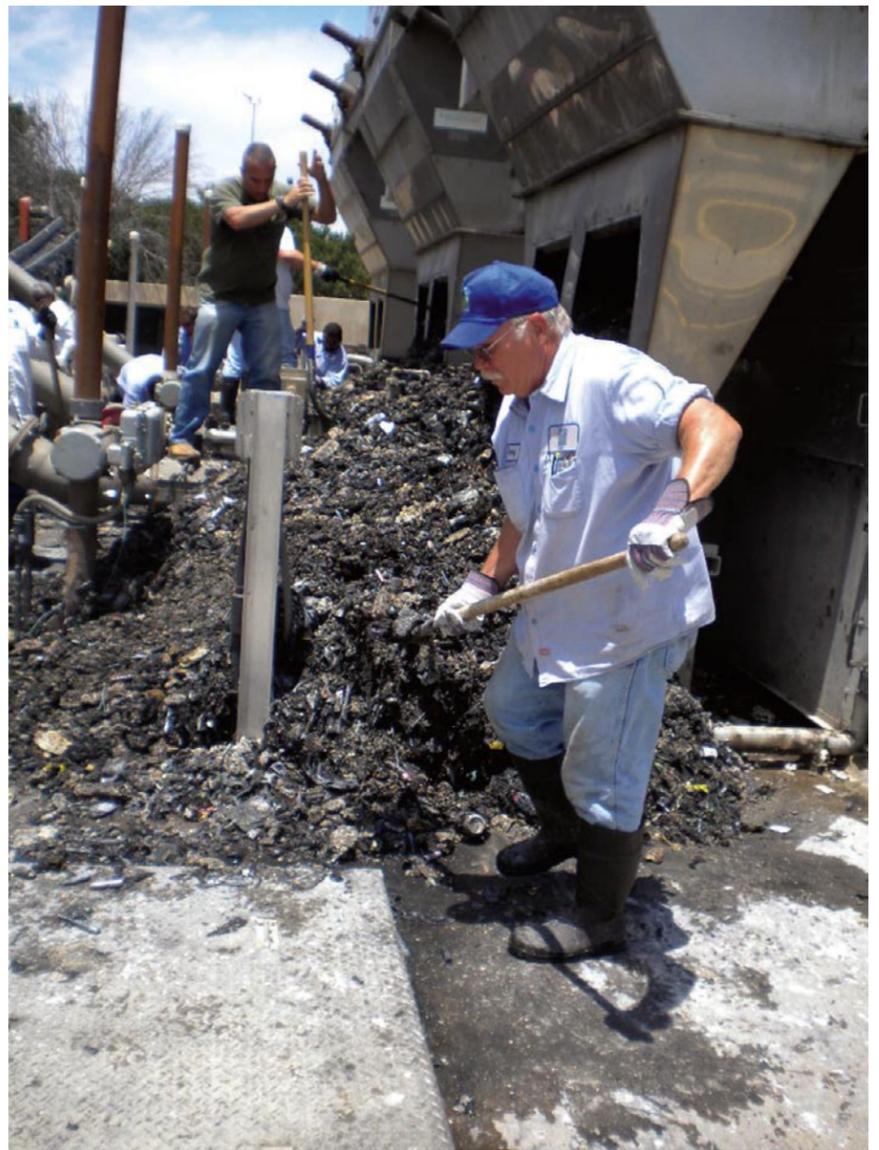
“After ten years of planning and four years of construction, it’s good to have MC 5 and 6 complete,” said Tatum. “But scheduling disruptions in various phases of the project, plus the change in grade between the old and new pipes, ultimately made for a big challenge at the plant.”

The new section is part of an interceptor system that transports wastewater from cities in south Dallas and Tarrant counties. Measuring 96 inches in diameter and stretching for more than seven miles, approximately 4,000 feet of the pipe was installed by tunneling through the hilly terrain that characterizes the area. It replaces a 72-inch pipe originally constructed in 1974, with the new line running roughly parallel to the old pipe but buried six feet deeper.

Due to the length and complexity of the MC 5 and 6 project, engineers scheduled construction in three phases. TRA originally planned to install all three phases of the interceptor and then redirect the flow from the 72-inch line into the new line.

However, schedules were disrupted when the Texas Department of Transportation and Dallas County began making improvements to Mountain Creek Parkway. Part of the original 72-inch pipeline ran beneath the road and would need to be replaced sooner than originally planned to accommodate construction.

Phase 1A, which called for replacing and relocating a portion of the pipeline away from Mountain Creek Parkway, was expedited and put online ahead of the other two phases. In 2009, Phase 1A began transporting flows from one section of the 72-inch pipe to another. The new pipe was connected at 90-degree angles and was located six feet deeper than the existing line. See the diagram below for clarification.



With temperatures soaring to 100 degrees, CRWS operations and maintenance staff shovel grease, grit and rags away from barscreens. Approximately 100 cubic yards of solids inundated the plant after new interceptors were brought online.

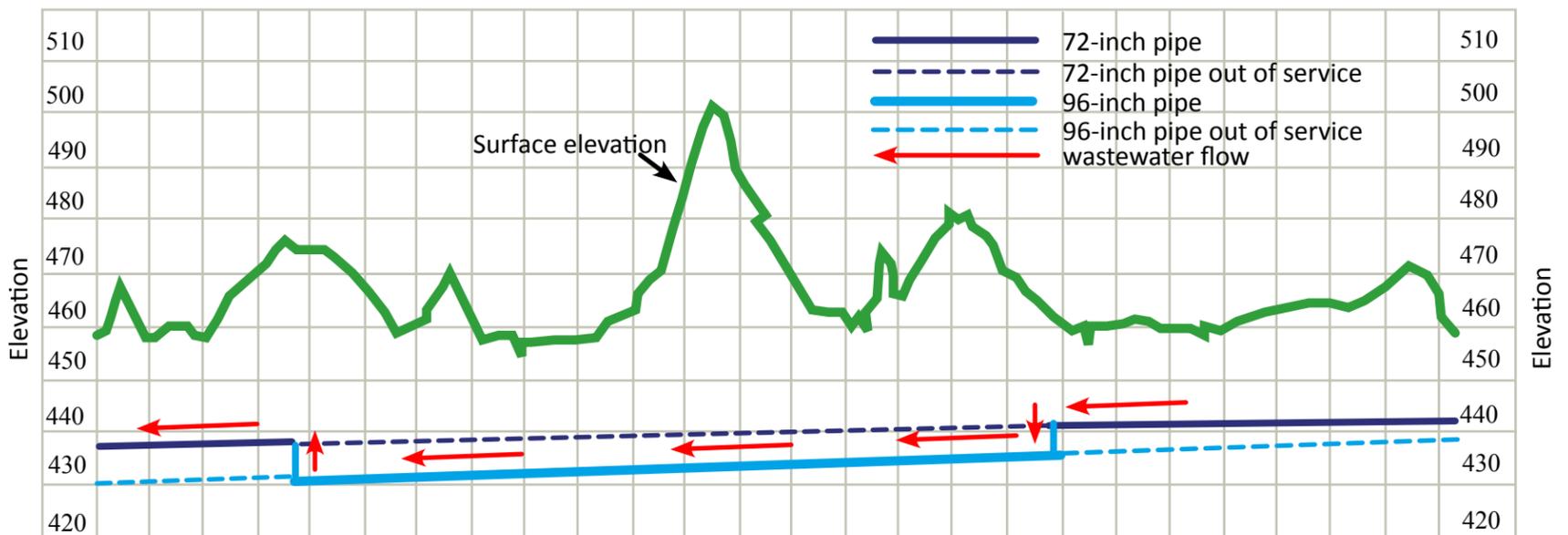
“The steep change in grade, coupled with the sharp angles, affected the pipeline hydraulics and reduced the scour velocities of the pipeline. That gave us an accumulation of rags and grit, which are heavier than water, in the bottom of the 96-inch pipe,” said TRA Assistant Manager of Development Bart Hines. “Grease, which is lighter than water, coagulated in manholes above the pipe.”

When engineers pulled the bulkhead to open the new line, the first flush of wastewater pushed most of the accumulated debris toward the plant. Engineers suspect that more could break loose during

the next major wet weather event when stormwater runoff brings high flows to CRWS.

“We’ll watch the weather and be prepared for more,” said Tatum.

CRWS cleans wastewater for 20 DFW Metroplex cities, along with the Dallas/Fort Worth International Airport. The system includes a 162-million-gallon-per-day treatment plant as well as 200 miles of interceptor pipelines. The CRWS plant is currently undergoing construction to improve processes and expand treatment capacity to 189 MGD.



A profile view of Phase 1A of the MC 5 and 6 pipeline shows the flow of wastewater descending six feet at a 90-degree angle into the new 96-inch pipe. Because of the sharp angles and change in grade, solids accumulated in the bottom of the 96-inch pipe. When the remaining 96-inch line was opened, the rags, grit and grease surged toward the CRWS treatment plant.

General Manager's Message

Proposition 2 water funding amendment heads to voters



General Manager J. Kevin Ward

While the headlines may have kept Texas citizens discussing the use of the filibuster and the future of school finance during this year's legislative session, a key item affecting TRA and its customers made its way through both the House and the Senate – a proposed constitutional amendment authorizing the Texas Water Development Board to issue additional general obligation bonds for water-related projects.

Penned by Sen. Juan Hinojosa (D-McAllen), Sen. Troy Fraser (R-Horseshoe Bay), Sen. Glenn Hegar (R-Katy) and Sen. Eddie Lucio Jr., and sponsored by Rep. Allan Ritter (R-Nederland), Senate Joint Resolution 4 passed in early May and gives voters the opportunity to approve up to \$6 billion in evergreen bonding authority to support water projects and infrastructure needs across the state. The TWDB would then use bond proceeds to make loans to political subdivisions in Texas for a variety of water, wastewater and flood-control projects. The constitutional amendment is scheduled for the Nov. 8 ballot and will appear as Proposition 2.

Most of us in the water and wastewater industry are well-versed in the reality that as our population continues to grow, so does its need for cost-effective water and wastewater infrastructure. And that infrastructure typically comes at a tremendous price – in fact, the capital costs of infrastructure outlined in the 2011 regional water plans pinpointed the need for \$27 billion in state financial assistance to meet water supply needs over the next fifty years.

Through its funding programs, the TWDB has provided financial assistance to communities for water and wastewater infrastructure projects since its inception in 1957. Also since that time, the Legislature and Texas voters have approved constitutional amendments authorizing the TWDB to issue up to \$4.23 billion in bonds for financing water-related projects, of which \$3.29 billion has been issued. Of that amount, over \$1 billion has been issued in just the last three years.

The simple fact is that without additional bonding authority the TWDB will not be able to continue providing adequate financing to

meet the water and wastewater infrastructure needs of Texas. Estimates indicate that TWDB's existing bond authority will be exhausted by August 2013. This proposition will provide the necessary constitutional authority to meet future water and wastewater infrastructure demands.

TWDB's loans primarily go to political subdivisions, such as cities, counties, districts and river authorities, plus to nonprofit water-supply corporations. Because of the state's strong credit rating, the TWDB can often issue debt at more cost-effective rates and then lend to community borrowers who benefit from the lower interest rates available on the state's bonds.

TRA has benefitted in the past from such loans, including those for recent projects at Central, Denton Creek, Red Oak Creek and Ten Mile Creek regional wastewater systems. The lower interest rates we enjoy are then a cost savings we are able to pass along to our customer cities.

Of course, one of the first questions that comes to mind when discussing increases in financing is where the additional monies will need to come from. In this case, the additional bond authority is

designed to be self-supporting – the bonds issued are repaid by the debt service of the borrowers. For end users, this means overall reduced costs to support the infrastructure needs of their particular provider systems. TRA and other water and wastewater treatment providers across the state will benefit, and ultimately so will our customers.

The financing will typically be used for pipelines; water towers; groundwater wells and well field sites; wastewater collection, treatment and disposal; nonpoint-source pollution control; and any number of other water, wastewater and flood-control projects. In other words, it will help TRA, its customers and its partners continue to provide essential services that maintain public health and well-being.

TRA will continue to discuss the potential of this constitutional amendment as the upcoming election grows closer – please watch the TRA website and future issues of *inTRA* for further developments.

TRA continues leadership role with Upper Trinity Basin Compact

At its June meeting, the Trinity River Authority board of directors authorized a contract to continue participating in and administering the Upper Trinity Basin Water Quality Compact.

The Compact is an agreement between the four major providers of wastewater treatment services in the Northern Region of the Trinity River basin: TRA, the North Texas Municipal Water District and the cities of Dallas and Fort Worth.

The Compact was organized to improve water quality in the upper Trinity River and to negotiate and obtain reasonable discharge permits for wastewater treatment facilities. The members of the Compact began working together in the late 1960s to establish water quality standards in the upper Trinity River before

formally entering into a contractual agreement in 1975.

One of the early successes of the Compact was to establish achievable standards in the upper Trinity River basin based on an accurate description of existing conditions.

“Without achievable water quality standards supported by a data-driven characterization of the river, it would have been impossible to obtain permits to discharge effluent,” said Glenn Clingenpeel, senior manager of TRA's planning and environmental division. The four members of the Compact agreed to adhere to equal wastewater discharge permit limitations, a step that improves water quality across a widespread area of the basin and facilitates the

permit process.

The state's regulatory agency, the Texas Commission on Environmental Quality, appreciates the cooperation between the Compact's members.

“The TCEQ prefers to work with a unified group rather than four separate entities, each vying for the same effluent allocation in the Trinity River basin,” said Clingenpeel.

Building on its early success, the Compact established a long track record of conducting coordinated studies and negotiating discharge permit limits with the TCEQ. Of particular value is an automated monitoring contract with the United States Geological Survey that measures the flow in the river

as well as four key water quality parameters at several sites on the West Fork and Main Stem of the Trinity River.

“These annually renewed contracts with the USGS have provided 30 years of reliable data at crucial sites on the river,” said Clingenpeel.

In anticipation of changing water quality regulations, the Compact continues to track and study river conditions with the goal of negotiating permit limitations that will meet current and future stream standards.

TRA serves as the administrator of the Compact, collecting funds from members and distributing payments to consultants engaged to conduct studies and other technical work.

2011 Trinity River survey in progress

This summer, TRA's Clean Rivers Program staff, working with crews from the Texas Water Development Board and the Texas Parks and Wildlife Department, have embarked on a 350-mile survey of the Trinity River. Traveling by day and camping at night for several weeks, the crews are making their way downriver aboard small boats, stopping frequently to measure flow characteristics, bank angles and channel widths. They will also take soil samples and photos and make general observations.

“Much of the Trinity River is only accessible by boat,” said Webster Mangham, planning and environmental management assistant and survey team leader. “We will observe and record the relative abundance of various habitats over the entire river. Building on our observations, we can select representative habitat sites for future, detailed biological sampling.”

Last year, CRP staff carried out preliminary surveys of two portions of the main stem of the Trinity River below U.S. Highway 287. From their initial studies, they identified areas in need of further study as well as the need for more detailed observations.

“This important project will help us determine how hydrology relates to ecology,” said Glenn Clingenpeel, senior manager of TRA's planning and environmental management division. “This information will enable us to make science-based decisions when balancing the needs of ecology with those of society.”

See future issues of *inTRA* and the TRA website at www.trinityra.org/basin-planning.htm for more survey information and photos.

Employee Milestones

New Hires

CSS welcomes Patti Adams as maintenance helper.

CRWS is excited to have Joseph Gedville as maintenance mechanic I; Steven Powell and Bruce Austin as maintenance mechanics II; Mary Gaither as lab supervisor; Samuel Knight as maintenance helper; and Sean Galbraith, Mario Martinez and Mac Paige all as operators I.

LLP welcomes Bradley Heath as maintenance helper.

DCRWS is glad to have Andrew Whitford as maintenance mechanic II.

GO welcomes Brenna Witt as senior secretary.

Promotions

Michael Easley was promoted to senior operator at TMCRRWS.

Silvia Zavala was promoted to environmental inspector and Russell Gurs was promoted to operations division chief at CRWS.

Current Events

Congratulations to Internal Auditor Ann Carver for earning her CPA certification.



Congratulations to John Bennett, DCRWS project manager, as he receives his 25-year anniversary certificate from Patty Cleveland, Northern Region assistant manager.



CRWS Solids Operation Division Chief Wayne O'Rear recently retired after 34 years of service.

Throughout his extensive career at TRA, O'Rear was known as an expert in filter press dewatering operations.

"His understanding of sludge chemical conditioning requirements led to the success of the CRWS dewatering process," said Project Manager Bill Tatum. "Wayne truly is gifted, and he is respected by all of us who know him. He'll be missed."



Will Holder, son of LLP Project Manager Bill Holder, recently graduated magna cum laude from Texas State University in San Marcos with a bachelor's degree in digital photographic imaging. Will is currently employed by Photo Texas Photography in Austin.



Tanner Burks, son of Terry and Sherri Burks of Livingston, graduated from Livingston High School. Tanner plans to attend Angelina College and then move to John Brown University to study worship ministry and become a youth pastor.



Paige Hooks, daughter of Johnny Hooks, LLP maintenance mechanic II, helped the East Texas Mojo softball team win the state championship tournament in the Amateur Softball Association of America 10 and under B class.



Amzee Gerard, granddaughter of Richard Gerard, LLP area administrator, helped the East Texas Mojo softball team win the state championship tournament in the Amateur Softball Association of America 10 and under B class.



Stefanie Thomas graduated from Mansfield High School and plans to study business at Tarrant County College this fall. Stefanie's parents are Pam Thomas, land rights senior secretary, and her husband Rusty.



Jamie Clark, son of Public Information Officer Michelle Clark and her husband Robert, recently graduated from pre-kindergarten. This fall he will attend kindergarten in the Arlington Independent School District.

GRADUATION

As our final year comes to an end, we pause to reflect upon the memories which brought us together. As classmates and friends, we learned, grew, shared, laughed and cried. And even though time and space may separate us, wherever our pathways take us we'll always be the Richard Milburn Academy 'Class of 2011'!

Audrey has graduated!

Commencement Exercises
Friday June 9th at 5:00 o'clock pm
The Riley Center at
Southwestern Baptist Theological Seminary
1700 West Fuller Ave. Fort Worth, Texas 76113

CLASS OF 2011

AUDREY KRISTENA BRIEANN DOSSEY

Audrey Kristena Briann Dossey recently graduated from Richard Milburn Academy. Ray Davidson, senior maintenance mechanic at CRWS, is Audrey's grandfather.



Anthony Chavarria, CRWS maintenance mechanic II, hooked this eight-pound bass from the shore of Lake Fork using a small minnow for bait.

Public awareness campaign educates boaters on dangers of zebra mussels

The Trinity River Authority recently joined a statewide agency campaign to encourage Texas boaters to prevent the spread of invasive zebra mussels by cleaning their watercraft after every use. Ten coalition partners, headed by the Texas Parks and Wildlife Department, contributed funds to develop multimedia educational materials for boaters across the state.

The coalition partners, led by TPWD Regional Fisheries Director Brian Van Zee, designed postcards, billboards, social media outreach, posters, radio news segments and other campaign awareness components to help boaters identify the invasive aquatic species and keep it from spreading throughout Texas lakes.

“Our message is simple,” said Van Zee. “If you keep or use a boat or personal watercraft, clean, dry and drain your vessel when you take it out of any body of water.”

TPWD recommends this simple, three-step procedure for cleaning watercraft after use:

- ☑ Clean all vegetation, mud, algae and other debris from the boat and trailer before leaving the water body.
- ☑ Drain all water from the motor as well as the live-well, bilge, bait buckets and any other compartments or systems that hold water.
- ☑ Dry the vessel and associated equipment for a minimum of seven to 10 days May through October or for 15 to 20 days from November through April before entering another body of water.

Zebra mussels are a non-native, invasive species that pose a threat to the state’s aquatic ecosystems, private property and water-related

Zebra mussel campaign coalition partners

- Texas Parks and Wildlife Department
- North Texas Municipal Water District
- Tarrant Regional Water District
- Trinity River Authority
- City of Dallas Water Utilities Department
- Sabine River Authority
- Canadian River Municipal Water Authority
- San Jacinto River Authority
- Lady Bird Johnson Wildflower Center
- Angelina and Neches River Authority

infrastructure such as water supply systems.

The mussels will attach to almost any hard surface, either natural or manmade. They colonize on water intake pipes, causing damage and severely restricting flow. The cost of removing or controlling zebra mussels can be substantial.

On boats, the mussels may affix to the hull, motor or any item immersed in the water. Both large and small boats can be severely affected by the increased drag thousands of mussels can cause. Also, zebra mussels may enter engine cooling systems, causing overheating and other damage.

“In their larval form, zebra mussels are impossible to see with the naked eye,” said Van Zee. “This is why it’s particularly important to clean, drain and dry boats, even when they appear to be clean.”

In addition, zebra mussels pose a threat to navigational buoys, piers, docks and other structures in the



Zebra mussels kill fishing, clog pipes that supply drinking water, and have sharp edges that make water recreation hazardous. They cling to boat hulls, piers and docks, and you can spread them when you enter other lakes.

SO CLEAN YOUR BOAT, TRAILER AND GEAR!



www.texasinvasives.org

water. Navigational buoys have sunk under the weight of large colonies of mussels while wood, steel and concrete are damaged by prolonged attachment of the mussels.

Native to the former Soviet Union, zebra mussels found their way to the United States via the exchange of ballast water from oceangoing vessels passing through the St. Lawrence Seaway to ports on the Great Lakes. Since then, the rapidly propagating bivalves have spread south and east and are currently found in 29 states.

The mussels were first documented in Lake Texoma in 2009 and have since been found

in Sister Grove Creek, a 30-mile waterway that carries water from Lake Texoma to Lake Lavon.

“If we don’t stop them before they get to Lake Lavon, the whole Trinity River basin is at risk,” said Van Zee.

Additional resources, including guides to spotting zebra mussels, how to report zebra mussels if you find them, and step-by-step instructions for effectively cleaning boats and aquatic equipment, can be found at the following sites:

- www.texasinvasives.org
- www.arlingtontx.gov/lakearlington
- www.100thmeridian.org
- www.protectyourwaters.net

Fourth of July at Wolf Creek Park

In spite of a burn ban prohibiting fireworks, more than 700 people had a great time at Wolf Creek Park over the Fourth of July weekend. Folks danced to live music at the group pavilion while a hang glider with a colorful craft festooned the sky. A parade of boats also lit up the lake to the tune of patriotic music. And later in the month, visitors enjoyed watching these armadillo pups with their mother as they made their way through the park - an unexpected daytime sighting.



Local teachers immersed in Trinity River watershed education experience

Twenty-five teachers canoed the river, explored wetlands and gathered aquatic insects during the inaugural Trinity River Institute held in early June at the Trinity River Audubon Center.

The Center for Global Environmental Education invited elementary, middle- and high-school teachers to attend the three-day, watershed-focused institute.

“Our watershed is the ideal tool for teaching natural sciences,” said Tracy Hollis, Grand Prairie Independent School District science team leader.

Participants partook in science-, math- and literacy-building activities using the river as a context for learning. They interacted directly with professionals working on the river to investigate how concepts taught in the field can be directly transferred to classroom practice.

“Local water experts joined in the activities to share their real-world experiences with the teachers,” said Brinkley Prescott, CGEE program administrator.

John DeFilipo from the John Bunker Sands Wetland Center facilitated an activity demonstrating how plants filter and clean water, while Charles Allen of Trinity River Expeditions led the group in a day-long canoe trip on the Trinity River. Teachers also made observations and collected macro invertebrates in two different ecosystems, guided by Stephanie Timko and Zeshon Segal from the Trinity River Audubon Center. Tracy Hollis from the Grand Prairie Independent School District and Jenna Hanson, formerly a TRAC instructor, helped the group investigate water quality

parameters, and Chris Culak, TRAC director, guided the group on a tour that illustrated the story of how the Center was transformed from a wasteland to a wetland. Several other water experts contributed as well.

The institute also introduced teachers to the newly developed hands-on curriculum *Waters to the Sea: Trinity River*, for which TRA serves as a sponsor. The interactive learning program, geared toward grades 4-8, highlights relationships between human activities and water resources within the Trinity watershed. The curriculum covers essential water concepts such as the water cycle, water quality, reuse and resource planning. Extensive video, animated visuals and fun interactive elements inspire students while they learn important scientific and environmental principles.

Science teacher Aletha Fields plans to recreate the river institute activities for her seventh-grade students at Handley Middle School.

“We will cover the water cycle the first week of school,” said Fields. “With that as our foundation, we can explore the river and wetlands and look at water quality.”

Fields plans to incorporate *Waters to the Sea: Trinity River* into her classroom teaching.

“We went through every module of the program step-by-step,” said Fields. “It will be a great tool for introducing and expanding on water-based science concepts.”

Fields said the day-long canoe trip was her favorite part of the river institute.

The 2011 Trinity River Institute was free for participating



Local science teachers embark on a day-long canoe trip during the three-day Trinity River Institute.



Twenty-five teachers spent time on the river, exploring wetlands and gathering aquatic insects, during the Trinity River Institute. They were inspired to use their watershed as a tool for teaching natural science.

teachers. Costs were covered by CGEE’s Texas partner agencies and organizations.

CGEE hopes to offer the institute again in 2012. For information about future river

institutes or a copy of *Waters to the Sea: Trinity River*, visit www.hamline.edu/education/cgee/trinity or contact Brinkley Prescott at bprescott01@hamline.edu or 651-523-2591.

Lake Livingston reports successful treatment of giant salvinia

Lake Livingston Project personnel have discovered the invasive aquatic plant giant salvinia in two areas of the lake.

Native to Brazil, giant salvinia has proven to be a menace to East Texas lakes. The plant reproduces quickly, forming colonies of plants that float on the surface of the water – obstructing sunlight, displacing native vegetation and driving out fish. The dense mats also block access to boat ramps, shorelines and docks.

Giant salvinia is usually spread unknowingly by people moving their boats from lake to lake. The plant attaches to boats, motors and trailers and is now found in 17 Texas lakes, including some of the state’s most popular recreational water bodies: Toledo Bend, Sam Rayburn, Caddo Lake, Sheldon Lake, Lake Texana and Lake Conroe.

Jeff Blankenship, LLP maintenance mechanic II and invasive species technician, first spotted giant salvinia in two small areas on Lake Livingston.

“The two areas together amount to about a third of an

acre,” said Blankenship. “Once we had a positive identification, we immediately started treating with a species-specific herbicide.”

Giant salvinia leaves are covered with tiny hairs that make the plant resistant to conventional herbicides. Surfactants are added to burn the hairs and allow the herbicide to come in contact with the leaves.

“Both areas turned brown and appear to be neutralized,” said Blankenship. “We’ll monitor those areas as well as the rest of the lake for future growth.”

While herbicides can address a small infestation, public awareness and public participation are vital to prevent the plant from spreading. Anglers and recreational boaters are urged to clean boats and trailers when exiting any body of water.

Learn more about giant salvinia and other invasive species at www.texasinvasives.org.

Lake users are also encouraged to report any plants they suspect might be invasive species to the staff at Lake Livingston at 936-365-2292.

Giant salvinia is currently one of the most dangerous invasive aquatic plants in Texas. Left unchecked, giant salvinia can form mats up to three feet thick that prevent light from entering the water, stopping the growth of tiny organisms that form the base of the food chain. It damages aquatic ecosystems by outgrowing and replacing native plants that provide food and habitat for native animals and waterfowl. Additionally, it can form dense mats over the water that block out sunlight and reduce oxygen concentrations, degrading water quality for fish and other aquatic animals. The dense mats also make fishing, boating, swimming and other water recreation nearly impossible.



Giant salvinia is just one of hundreds of invasive species changing the very landscape of Texas. To learn more, visit www.texasinvasives.org

“There is not enough money to fix the problem. The only way we can lick this is if every individual takes responsibility every time he or she puts a boat into the water.”

TPWD Aquatic Biologist Howard Elder

To prevent the spread of giant salvinia, clean your boat, trailer and gear!

If you find new locations of giant salvinia, please notify TPWD at giantosalvinia@tpwd.state.tx.us. If possible, take a picture of the plant and record its GPS location.



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Anniversaries

35 Years

James Chadwick, maint. operations chief,
CRWS

25 Years

John Bennett, manager, DCRWS

20 Years

Gerald Gebhardt, operator II, CRWS

10 Years

Maryann Gutierrez, office coordinator, CRWS

5 Years

John Stephens, operator II, TCRWSS

Bernd Linn, lab tech. II, CRWS

James Dias, maint. mechanic chief, CRWS

3 Years

Gerald Smith, electronic tech. I, ROCRWS

Kevin Condra, maint. mechanic I, TCWSP

Luis Blanco, operator II, LLP

Stephen Honza, maint. mechanic I, TMCRWS

Eric Palmer, biologist, CRWS

Planning. *continued from page 1.*

wastewater treatment systems to include provisions that ensure energy reliability. As a result, dual power sources and quick connection to temporary power sources will be included in the planning process.

A thorough assessment of wastewater collection and treatment facilities also is a critical element of the planning process. Equipment is examined for damage due to age or exposure to corrosive gases. Rehabilitation needs can then be identified and prioritized in the final master plan.

Master plans are developed every five to 10 years to identify long-term needs for expansions, rehabilitation and improvements within treatment and collection systems. They give rise to more detailed five-year capital improvement plans that call for component designs and compare pricing as well as funding options. Engineers expect to produce draft plans for DCRWS, TMCRWS and ROCRWS in approximately nine months with final master plans completed in a year. Implementation of the plans' components depends on funding but typically begins after the five-year capital improvement plans are in place.