upstream downstream
WINTER 2006
A QUARTERLY PUBLICATION OF THE TARRANT REGIONAL WATER DISTRICT

DROUGHT CONDITIONS INCREASE DEMANDS ON TRWD WATER SUPPLY

Lack of rainfall and record demands prompt voluntary conservation measures

With annual rainfall totals over 15 inches below normal and no expected relief in sight, TRWD is urging Tarrant County residents and businesses to be more efficient with their water use as the North Central Texas area weathers a record setting drought.

"The drought we are in right now is extremely serious," said David Marshall, TRWD's director of engineering services. "It is one that we may see once every 50 to 100 years." In fact, Marshall says the National Weather Service recently labeled the 10-month period from February through November as the driest stretch ever recorded in the D/FW area.

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Low rainfall totals and increased demand have severely impacted area lake levels over the last several months.

BOARD PRESIDENT GEORGE SHANNON PASSES AWAY AFTER SHORT ILLNESS

George Shannon, TRWD's longtime president of the board of directors, passed away on November 10 after a short illness. He was 68.

Mr. Shannon, a Fort Worth native who was active in the funeral service field for more than 40 years, had served on the TRWD board since 1984.

During his years of public service, Shannon oversaw the completion of several high profile TRWD projects, including the construction of Richland-Chambers Reservoir, the Benbrook Pipeline Connection and the Richland-Chambers Water Reuse Project. He also guided the development of the Trinity River Vision Master Plan and served on the board of the Region C Water Planning Group, where he was instrumental in planning for a 60-year future water supply for the D/FW Metroplex.

Mr. Shannon is survived by his wife, Mary, two sons, Greg and Curt, and a daughter, Marian. Other survivors include a brother, Jack, and seven grandchildren.

WHAT'S INSIDE...

TRINITY UPTOWN PLAN WINS INTERNATIONAL AWARD

The Trinity River Vision Uptown Plan recently won the prestigious "Excellence on the Waterfront Award" during the Waterfront Center's annual awards program in Savannah, Georgia. The multi-agency project was honored for its outstanding planning efforts.

The awards program is a juried competition that recognizes top-quality urban waterfront projects and comprehensive waterfront plans from around the world. In addition to honoring the Trinity Uptown Plan during this year's awards ceremony, the committee also recognized the Wuxi Li Lakefront project that was recently completed in Jiangsu Province, China.

"We're incredibly honored with this award," said Vic Henderson, board president of TRWD, the lead sponsor of the project. "We salute our design firms of Bing Thom in Vancouver and GideonToal in Fort Worth for their excellent work on this dynamic project."

In selecting the Fort Worth project as recipient of the award, the jury commented: "This plan, at once wide-ranging, comprehensive in scope and finely detailed, is an exemplary piece of design emphasizing several elements of urban redevelopment – environmental restoration, transportation planning, parks and school facilities – that reflect both the complexity of and responsiveness to urban waterfront opportunities." The jury also praised the plan's water-quality management strategies dealing with water odors, flushing, nutrient runoff and wastewater reclamation.

"While receiving statewide and international awards are certainly a source of pride," Henderson noted, "our primary goal is helping to improve quality-of-life issues in our hometown. It's gratifying that well-respected professional and governmental organizations point to us as role models for other communities."

Other awards the Trinity River Vision project has received include the CLIDE award in 2003 from the Center of Development Excellence, sponsored by the North Central Texas Council of Governments. Also, the Tarrant Regional Water District earned a Citation of Honor in 2005 by the Texas Society of Architects for its role in developing the Trinity Uptown plan and its significant contributions to the architectural profession by improving natural and built environments in Texas.

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BENBROOK TO EAGLE MOUNTAIN PIPELINE CONSTRUCTION NEARS

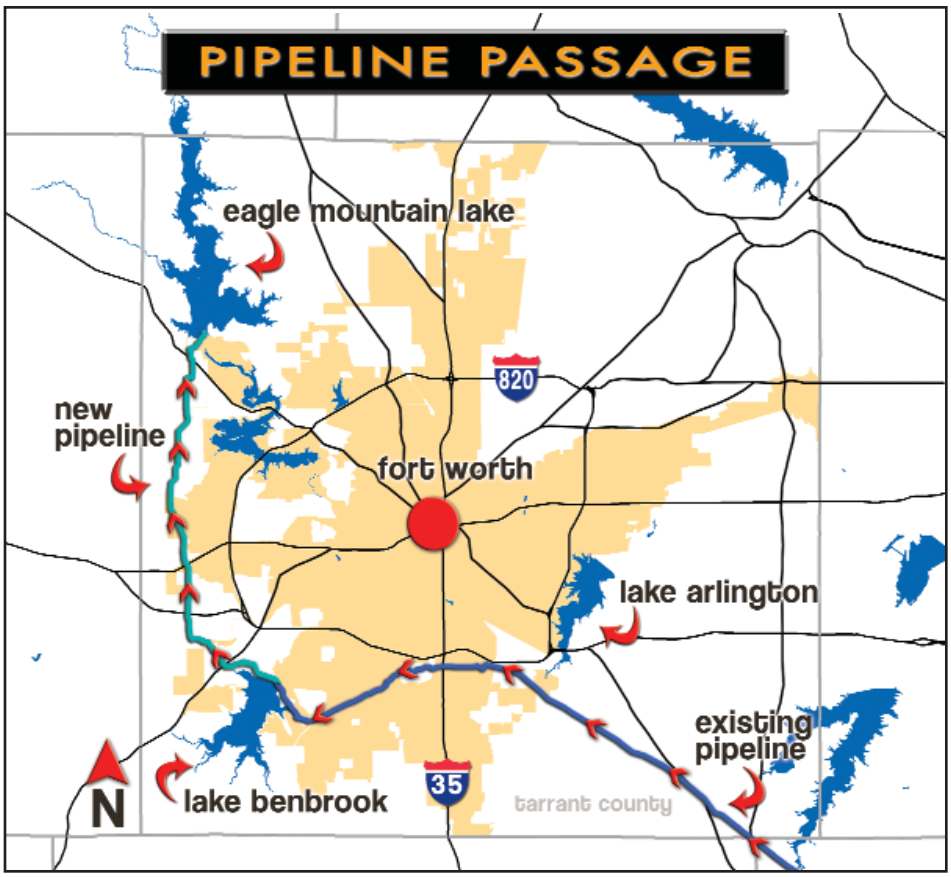
Work on the 19.5 mile project expected to begin in April 2006

Construction of the $140 million pipeline connection between Lake Benbrook and Eagle-Mountain Lake is tentatively scheduled to begin in April 2006.

The 19.5 mile project will allow TRWD to move water from its East Texas reservoirs, Cedar Creek and Richland-Chambers, to Eagle Mountain Lake. The connection will significantly increase TRWD's ability to replenish the water supply at Eagle Mountain during drought conditions.

The pipeline also will supply additional water to the water treatment plant currently being built by the City of Fort Worth at Eagle Mountain Lake to accomodate the population growth in that area.

Planners expect the pipeline to be operational by Spring 2008.



A Fort Worth Operations crew works to repair an eroding slope and install two new drainage pipes at Sump 6 on the Upper West Fork of the Trinity River in Fort Worth. The work, which also includes the installation of new drainage inlets, will improve the system's ability to catch and move stormwater from city streets into the sump and on to the Trinity River during rainfall events.

CEDAR CREEK WATERSHED STUDY: A PROACTIVE APPROACH TO RESERVOIR MANAGEMENT

Developing a plan to improve the water quality of Cedar Creek Reservoir is the primary focus of a comprehensive Water District led study, now in its second year. A team of researchers that includes scientists from Texas A&M University, the Texas Water Resources Institute and TRWD are investigating the sources of increased sediment and nutrient levels within the lake.

The $5 million study, referred to as the North Central Texas Water Quality Project, is being funded by the U.S. Environmental Protection Agency and the U.S.D.A. Natural Resources Conservation Service. It will eventually be expanded to include the watersheds of Eagle Mountain Lake and Richland-Chambers Reservoir.

The Cedar Creek investigation began after TRWD's environmental staff noticed a disturbing trend of rising chlorophyll a levels in the water supply lakes managed by the Water District. Chlorophyll a measurements are a reflection of nitrogen and phosphorus concentrations within a body of water.

High nutrient loading can cause excessive algal growth that impacts water treatment, create taste and odor problems in drinking water and diminish a lake's recreational value. Sediment loadings reduce reservoir capacity and water clarity.

The study is based on data collected by TRWD since 1989. Researchers are using three computer models (SWAT, QUAL-2E, and WASP) to tie the water quality data together with the watershed's hydrology, land use and soil components to visualize how sources of pollution are making their way into the reservoir.

After integrating the data and calibrating the models, researchers can get a more realistic picture of what's happening in the Cedar Creek watershed, said Russell Persyn, assistant professor of the Texas A&M Biological and Agricultural Engineering Department. "The modeling tools allow us to see how changes in land use or pollutant loadings might impact the reservoir's overall water quality."

TRWD employees Jay Coker (left) and Bob Pritchett (right) collect water quality samples at Cedar Creek Reservoir.

Targeting sources of pollution has been a difficult task, said Woody Frossard, TRWD director of environmental services. He said one of the biggest surprises of the study was that the nutrient loading couldn't be blamed on any one particular source. "The nutrients driving this reservoir are coming from very diffuse sources – like wastewater treatment plants, urbanization (stormwater runoff), row crops, and maybe even from processes taking place within the lake. The lack of a major contributor will make it much more challenging to implement a plan."

Researchers say a key finding of the investigation is the noticeable

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BYPASS BEING BUILT TO INCREASE HIGH-CAPACITY PUMPING EFFORTS

Work is currently underway on a temporary pipeline at the Richland-Chambers Booster Pump Station in Ennis that will increase TRWD's high-capacity pumping efforts from the East Texas reservoir. Construction of the pipeline, which is directly related to the severe drought currently affecting the area, will boost the Water District's efforts to refill its terminal storage at Lake Benbrook and Lake Arlington before June 1 in order to prepare for summer operations.

The pump station will increase TRWD's daily high-capacity pumping ability from 258 to 304 million gallons per day.

Work on the project is expected to have the booster station operational by the end of January.

TRWD TEAMING WITH HAMLINE UNIVERSITY TO PRODUCE EDUCATIONAL MODULES FOR CHILDREN

Alex the Frog helps guide students through a series of interactive activities about protecting our water resources.

Hamline University's Center for Global Environmental Education (CGEE) has developed a series of interactive modules for TRWD that can be used to teach children about the water cycle, watersheds, ecosystems and pollution prevention. The modules, which feature many entertaining stories and activities, are geared toward students in fourth through ninth grades.

The modules will initially be located on the TRWD Web site, and should be available to users within the next couple of months. Also, the program can be packaged as an interactive computer kiosk that can be displayed and used at public events.

In addition, TRWD and CGEE are partnering to create a custom-designed module featuring the Richland-Chambers Water Reuse Project. It will contain stories about the importance of water reuse in replenishing water supplies and the role of the wetlands in water treatment.

CGEE won international recognition in 2004 for its work on the "Waters to the Sea: The Chattahoochie River" project that was billed as one of the top environmental multimedia productions of the year.

DROUGHT

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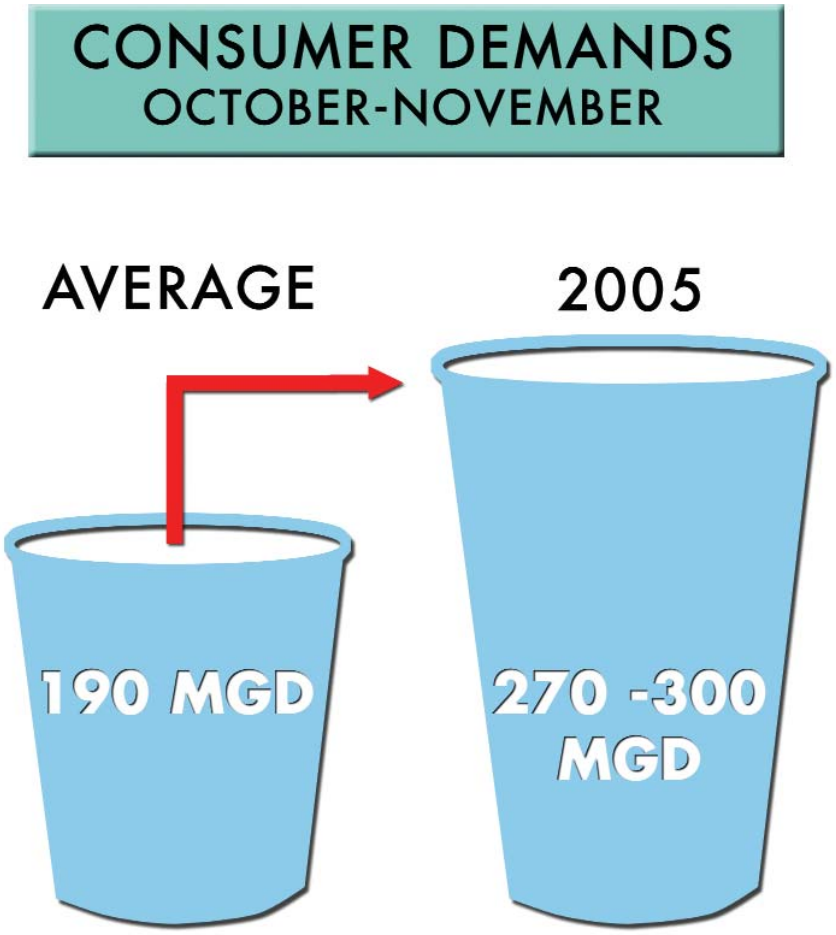
"The latest long-range weather forecasts indicate there might not be a let up in the drought for quite some time," said Marshall.

The unusually dry conditions and lack of rainfall have dramatically increased the amount of water normally used by TRWD customers during this time of the year from 190 to 290 million gallons per day. In fact, TRWD set record demands for water use in October and November according to Marshall.

As a result, TRWD has increased high-capacity pumping efforts from Cedar Creek Reservoir, and will do so at Richland-Chambers Reservoir in January. TRWD also recently implemented Stage 2 of its Water Conservation and Drought Contingency Plan after actual water demands exceeded anticpated monthly demands by 25 percent for two consecutive months .

The "Water Watch" urges residents and businesses to use a voluntary five-day watering schedule based on their address, and refrain from watering landscapes between 10 a.m. and 6 p.m. if possible.



Marshall emphasizes that all conservation efforts at this point are still voluntary, but that residents and businesses should be aware of the situation and know their efforts can make a difference.

"This is an extraordinary situation, and we all need to work together to get through it."

How often should you water your lawn?

By: Dottie Woodson, Horticulturist, Texas Cooperative Extension

Research shows lawns will survive and stay green with water every 5 to 7 days during the summer and every 15 to 20 days during the winter. An irrigation audit will identify how long you need to run the sprinkler but how often is the next question. Infrequent deep watering makes plants grow deep roots. Plant roots are opportunistic. Roots grow where there is water. Shallow frequent watering creates short roots, under six inches long. As water evaporates from the soil surface, short rooted plants need more water. Deep-rooted plants, six inch roots or longer, still have water available to absorb from the deeper soil. For lawn areas, try to stay on a five-day watering cycle during the summer and a 15 to 20 day cycle during the winter. The length of the watering cycle will depend on your type of grass, soil and time of year. Learn to adjust the sprinkler controller. The longer you stretch the watering cycle, the deeper the grass roots will grow. Water between 8:00 p.m. and 10:00 a.m. to reduce water loss due to evaporation and wind.

TRWD Briefs

TRINITY UPTOWN EXHIBIT TO REMAIN AT FORT WORTH CENTRAL LIBRARY THROUGH JUNE 2006

A conceptual exhibit featuring Trinity Uptown™ will extend its stay at the Fort Worth Central Library through June 2006.

Originally scheduled to be on display through the end of this year, the exhibit was extended through June due to public demand according to Linda Christie, TRWD's director of community and government relations.

The Fort Worth Central Library is located at 500 W. Third Street in downtown Fort Worth, and is open Monday to Thursday, 9 a.m. to 9 p.m.; Friday and Saturday, 10 a.m. to 6 p.m.; and Sunday from noon to 6 p.m. There is no charge to attend the exhibit.

ANNUAL EAGLE MOUNTAIN LAKE AND LAKE BRIDGEPORT CLEANUPS SLATED FOR APRIL

The annual Eagle Mountain Community Cleanup will be held on April 1 from 8:30 to 11:30 a.m., and will be followed by free lunch and entertainment from 11:30 a.m. to 2 p.m. at TRWD's Eagle Mountain Lake Office, 10201 Lake Shore Drive in Fort Worth.

Lake Bridgeport's annual cleanup effort will be held on April 8 from 8:30 to 11:30 a.m. and will be followed by free lunch and entertainment from 11:30 a.m. to 1:30 p.m. at the TRWD Lake Office, 1710 FM 1658 in Bridgeport.

For additional information on the Eagle Mountian Lake cleanup, please call (817) 237-8585. Those interested in finding out more about the Lake Bridgeport Cleanup should call (940) 683-2349.

TEXAS AWWA TO HOST AREA WORKSHOP JANUARY 26

The Texas American Water Works Association (AWWA) will host a water conservation workshop on January 26 in the D/FW area. The special one-day workshop, hosted by the Texas AWWA Conservation and Reuse Division, is entitled "Water Conservation Success in Your Community"and will be held at the Dallas Farmer's Market Multipurpose Room, 1010 S. Pearl Street in Dallas.

For more information or to register online, please call (512) 238-9292 or visit www.tawwa.org.

MAPS OF CEDAR CREEK AND RICHLAND-CHAMBERS RESERVOIRS NOW AVAILABLE AT TRWD OFFICES

Recently completed maps of Cedar Creek and Richland-Chambers Reservoirs are now available to the general public at any of the TRWD adminstrative or lake offices. Updated maps of Lake Bridgeport and Eagle Mountain Lake were completed in September, and also are available to the public. For information on locations where you can pick up any of the lake maps, please call (817) 335-2491 or visit www.trwd.com.

RESEARCH

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changes in land use over time. What was once a mostly agricultural landscape is now dominated by more urban and pastureland areas. Frossard attributed the change in land use to higher pollutant loadings because of urban development and an increase in impervious surfaces (parking lots, streets, and rooftops).

The study team suspects runoff from urban areas is responsible for the larger nutrient loads. In addition, they believe that more impervious surfaces are leading to more intense stream flows. The higher flows are cutting into stream banks and washing the sediment downstream into the reservoir. The new watershed management plan will address those issues and more to prevent a further decline in water quality.

A Texas A&M economics group is performing a cost-benefit analysis of best management practices (BMPs). Their evaluation will help determine which techniques will be most effective at reducing the inflow of sediment and nutrients.

"The challenge that lies ahead is creating a watershed management plan that, when implemented, is embraced by the affected population," said Frossard. "The education and participation of the residents that live within the Cedar Creek watershed will be a key component to the plan's success in maintaining or reducing the existing sediment and nutrient loads."

The first phase of the educational process will target urban areas and begin next spring or early summer.

TRWD employee Jeff Burns stocks the Trinity River with rainbow trout on December 15 during the first of five winter releases planned by TRWD and the Texas Parks and Wildlife Department.

The remaining releases are as follows:

January 12 - Trinity Park

January 17 - River Park Dam

February 2 - Trinity Park

February 9 - River Park Dam

River Park Dam is located just upstream of the Bryant-Irvin Street bridge on the Clear Fork of the Trinity River.

upstream downstream

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