

Desired Future Conditions Process Underway

By: Brenner Brown

In 2005, the Texas Legislature passed House Bill 1763, which mandated that groundwater conservation districts (GCDs) work together to manage common aquifers. As written in the House Bill 1763 summary, "Multiple GCDs in the same management area must jointly establish desired future conditions for such area, although the conditions may vary by aquifer, aquifer subdivision, geological strata, or geographic area..."¹

The initial phase of the process requires the GCDs within a groundwater management area to establish a joint planning committee made up of a designated board member from each district. This committee is required to meet at least annually and to determine desired future conditions for the aquifers within their groundwater management area before a statutory deadline of September 1, 2010. The Texas Administrative Code defines desired future conditions as

the desired, quantified condition of groundwater resources (such as water levels, water quality, spring flows, or volumes) for a specified aquifer within a management area at a specified time or times in the future... or in perpetuity, as defined by participating groundwater conservation districts within

*a groundwater management area as part of the joint planning process. Desired future conditions have to be physically possible, individually and collectively, if different desired future conditions are stated for different geographic areas overlying an aquifer or subdivision of an aquifer.*²

Once the planning committee of a groundwater management area has approved desired future conditions, the committee

submits them to the Texas Water Development Board (TWDB), which will then determine if the desired future conditions are physically attainable. TWDB will also calculate the managed available groundwater quantity for each district within the groundwater management area. The managed available groundwater returned



Groundwater management areas

to the districts is the amount of water that may be permitted for beneficial use in accordance with the desired future conditions of the aquifer. Statute dictates that "a district, to the extent possible, shall issue permits up to the point that the total volume of groundwater permitted equals the managed available groundwater."³

In the four years since the passage of this bill, a great deal of work has been accomplished by many of the groundwater management areas (GMAs) around the state. To date, GMA 8 and GMA 9 have officially submitted desired future conditions to TWDB, and GMA 1 has adopted desired future conditions.

This year's legislative session left the desired future conditions process untouched. Groundwater management areas must submit their desired future conditions by September 1, 2010.

¹ Texas Water Code § 36.108

² 31 Texas Administrative Code § 356.2

³ Texas Water Code § 36.1132

American Membrane Technology Association Conference Held in Austin

By: Sanjeev Kalaswad

The American Membrane Technology Association held its annual conference and exposition at the Hilton Hotel in Austin, July 13–16, 2009. Approximately 500 people attended the conference, which featured products and services from 80 exhibitors.

The U.S. Bureau of Reclamation, the Texas Commission on Environmental Quality, and the Texas Water Development Board joined forces to host two simultaneous day-long pre-conferences on July 13, 2009. One of the pre-conferences focused on the U.S. Environmental Protection Agency’s Membrane Filtration Guidance Manual and the other on federal- and state-funded research projects.

The American Membrane Technology Association is the premier organization in North America dedicated solely to the solution of water supply and quality challenges through the application of membrane technology.

Water IQ

By: Holly Vierk

Water IQ is a statewide public awareness water conservation program that educates Texans about their water resources. Water suppliers, utilities, cities, state agencies, school districts, and nonprofit groups are encouraged to participate in the program. Water IQ offers an easy-to-identify brand, a variety of materials, and a network of groups and communities dedicated to educating Texans about water conservation.

The Texas Water Development Board (TWDB) has recently revised the WaterIQ.org water conservation public awareness Web site, which provides an opportunity for Texans to learn more about water conservation efforts throughout the state. Communities can provide information about their local and regional water conservation efforts by exchanging links from their community Web site to the Water IQ site.

TWDB also provides water conservation brochures and other educational materials for indoor and outdoor water conservation at home and for agricultural water use. These publications are free in limited quantities, and additional copies may be ordered for a nominal fee.

For water conservation public awareness information, please contact Holly Vierk by e-mail at Holly.Vierk@twdb.state.tx.us, or call 512-463-4305.

Groundwater Conference Scheduled for October

By: Brenner Brown

The Texas Water Development Board in conjunction with Texas A&M University will be hosting the third annual Groundwater 101 conference October 13–14. This year’s conference will be combined with the Aquifers of the Upper Coastal Plains conference, part of the Groundwater Division’s series of conferences that will eventually cover all major and most minor aquifers in the state.

The Groundwater 101 conference will include the following topics: Aquifers 101; The Law, Groundwater, and Groundwater Conservation Districts; Groundwater Modeling 101; Drought Management Planning; Groundwater Conservation Districts—District Management Plans; Monitoring Programs; Data Resources at the TWDB; Recorder Program and WIID Tutorial; Desired Future Conditions; Water Level and Water Sampling Techniques; Water Level Monitoring Techniques; and Water Quality and Sampling Techniques

The conference will be held at Texas A&M University in College Station. There will be a small fee to cover the costs of snacks and box lunches. Although anyone interested is encouraged to attend, the course is designed primarily for groundwater conservation district staff and members of their boards of directors. Registration will be conducted through a Web site managed by Texas A&M.

Interested parties should contact Brenner Brown at 512-475-1128 or by e-mail at Brenner.Brown@twdb.state.tx.us.

Latest Research & Planning Fund Grants Reports

Contract	Description	Date
0804830788	NEXRAD data acquisition and processing	April 2009
0804830789	Hydrodynamic model	April 2009
0604830604	Flood protection study for Cameron County Drainage District No. 5	April 2009
0704830660	Analysis of historic biological data	April 2009
0604830589	GAM - Edwards-Trinity (High Plains) Aquifer	May 2009
0604830588	GAM - Nacatoch Aquifer	May 2009
0648320566	Seawater desalination pilot plant studies and development of large-scale seawater desalination projects	May 2009
0604830587	GAM - West Texas Bolsons Aquifer	May 2009
0704800734	Assist with TWAA-funded hydrographic survey assessment project	May 2009
0704830722	Flood protection plan for Travis County	June 2009
0704830696	Third cycle regional water planning, Region K	June 2009

What Roof is Best for a Rainwater Harvesting System?

By: Sanjeev Kalaswad and Jorge Arroyo

Rainwater harvesting is fast becoming an attractive water supply option in many areas of Texas; some households are even using it as their sole source of water. Although rainwater is generally clean, it can contain chemical and biological contaminants. Some of these contaminants are picked up in the atmosphere, but others are from the roof of a building when rain comes in contact with it.

Clearly, roofing material is key to the quality of harvested rainwater. Unfortunately, few studies have been conducted on this subject in Texas, but that is about to change. With the aid of Texas Water Development Board (TWDB) funding, researchers at the University of Texas at Austin are assessing the impact of the most commonly used roofing materials in Texas (composition shingle, Galvalume®, and concrete tiles) on the quality of harvested rainwater. Using existing roofs on homes in Austin and test roofs installed at the Lady Bird Johnson Wildflower Center—also in Austin—the researchers have been collecting rainwater samples since early 2009 and analyzing them for a variety of chemical and microbial constituents, including suspended solids, pH, nitrates, nitrites, heavy metals, turbidity, total and fecal coliform, and synthetic organic compounds. A green roof installed at the Wildflower Center is also being tested.

The ultimate goal of the study is to make scientifically based recommendations to the rainwater harvesting community in Texas on the selection of roofing materials for rainwater harvesting.

A final report for the project is expected by the end of 2009.

More information about the project is available on TWDB's rainwater harvesting Web site at www.twdb.state.tx.us/iwt/rainwater/rainquality.html. You may also contact the TWDB contract manager Sanjeev Kalaswad at sanjeev.kalaswad@twdb.state.tx.us.



Test roofs at the Lady Bird Johnson Wildflower Center, Austin

New Agricultural Water Conservation Grants for Fiscal Year 2009

By: Whitney Milberger-Laird

Using the agricultural water conservation fund, the Texas Water Development Board (TWDB) annually offers grants to local political subdivisions and state agencies for promoting water conservation in Texas. On April 16, 2009, TWDB approved four grant awards at a total cost of \$600,000.

The Lower Colorado River Authority was awarded a grant for “The Garwood Irrigation Division Volumetric Measurement and Conservation Project” to provide water measurement hardware to improve the irrigation systems in the Garwood Irrigation District. The project will fund the cost of 303 slide gates and 5 meters. The water savings from this project is estimated to be 3,400 acre-feet per year or a 4 percent reduction in Garwood’s average annual water diversion. The project is recommended as a water management strategy by the Lower Colorado Regional Water Planning Group (Region K).

Texas A&M AgriLife Research-High Plains received a grant for “Educational Enhancements to the Texas High Plains Evapotranspiration Network.” This project will provide educational products to existing irrigation users, young irrigators, and water users of tomorrow. A decision support systems tool will be improved to help farmers schedule irrigation more efficiently. A set of modern, updated, nontechnical informational videos will be produced to educate and inform young farmers and future farmers of the benefits of water use efficiency and to help promote water conservation.

Texas A&M AgriLife Research was awarded a grant for “An Estimation of Irrigated Land Using Time-Integrated Remotely Sensed Data.” This project will develop an unbiased and consistent method of using satellite imagery and image processing technology to derive and quantify irrigated agricultural areas in Texas in two phases. In Phase I, the contractor will develop a methodology to create a daily time series of time-weighted, cloud-free imageries; estimate irrigated agricultural lands; and generate timely reports of irrigated acreages and associated crop types aggregated at the county level from four different regions in Texas. In Phase II, the methodology and processing techniques will be used to estimate irrigated acreages throughout Texas.

The Panhandle Groundwater Conservation District received a grant for “Economic Impacts of Reduction

See Agricultural Grants, continued on page 4

New Deputy Executive Administrator Named

By: *Samantha Heng and Cori Leva*



Amanda Lavin

To better assist the Texas Water Development Board (TWDB) in overseeing the water and wastewater projects it finances, the agency recently divided the office of Project Finance and Construction Assistance into two separate entities. Amanda Lavin was named as Deputy Executive Administrator for the office of Project Finance. In her new position, Ms. Lavin is responsible for oversight and management of the Program and Project Development divisions. The Program Division covers policy development and management and marketing of the various financial programs administered by TWDB, including facility needs assessment and projections. The Project Development Division coordinates and oversees grant and loan applications, financial analysis, and closings.

Ms. Lavin has over 20 years of experience in the public financing of infrastructure projects in Texas, 10 of which have been with TWDB. She has held many positions here, the most recent being Associate Deputy Executive Administrator for the office of Project Finance and Construction Assistance. Ms. Lavin is also TWDB's representative to the Secretary of State's Interagency Work Group on Border Issues.

Prior to joining TWDB, Ms. Lavin worked as a financial advisor to municipalities, primarily in the Houston and Austin areas. She has experience in structuring and implementing the financing of tax-exempt securities through both municipal market sales and state funding. Lavin studied computer science at Brookdale College in New Jersey, is a former securities broker, and has served on the Advisory Council to the Texas Association of Water Board Directors.



SAVE TEXAS
THE GIS
DATE FORUM
October 5th-9th
Today's Ideas for
Tomorrow's Solutions
forum.tnris.org

The poster features a lightbulb at the bottom with a tree and landscape inside it, symbolizing ideas and solutions.

TNRIS Web Site Adds New Mapping Features

By: *Kathleen Mack*

The Texas Natural Resources Information System (TNRIS) has added an interactive mapping component to the front page of its Web site (www.tnris.state.tx.us). Using technology developed from the Geospatial Emergency Management Support System (GEMSS), the new map viewer offers real-time weather and traffic information to anyone who visits the Web site. The interactive map features are based on Microsoft Bing Maps for Enterprise (formerly Microsoft Virtual Earth) and display in both 2D and 3D perspectives. Data feeds supply real-time Doppler weather radar, precipitation, and county level weather warnings from the Iowa Environmental Mesonet, which collects environmental data originating with cooperating weather stations around the country. The traffic features are provided by Bing.

TNRIS is planning additional future enhancements to expand the use of this interactive technology. Future features will provide a connection between the map viewer and the Web site articles. For example, in an article describing new aerial photography acquired for a specific geographic area, the reader will be able to click on a hyperlink in the article to see the exact geographic location on the interactive map. Another future use of the map viewer will be to enhance accessibility to find, view, and download TNRIS data. These new features will provide a completely new experience for users.



Agricultural Grants, continued from page 3

of Irrigation Water Use.” The objective of this analysis is to estimate the regional and farm level economic impacts of the 50-50 management standard implemented by the district.¹ Texas Tech University and Texas A&M AgriLife Research economic teams will conduct this study to evaluate the socioeconomic impacts within the district, at farm level, and in identified areas within the district with similar hydrological characteristics.

Please contact Aung Hla at aung.hla@twdb.state.tx.us or 512-463-7940 if you have any questions on any of the Agricultural Water Conservation Grants.

¹ The District's overall management standard is to have 50 percent of current supplies, or saturated thickness, still available 50 years after the first certification of their management plan (Panhandle GCD 2008 Management Plan).

Loan/Grant Commitments April through June 2009

Organization	County	Fund	Amount
April			
City of Brady	McCulloch	CWSRF	\$2,000,000
City of Bryan	Brazos	CWSRF	\$1,270,000
Bastrop County, City of La Feria, Hays County, Guadalupe County, City of Balch Springs, El Paso Water Utilities-Public Service Board, and City of Alvin		Flood protection grants	\$1,000,000
Lower Colorado River Authority, Texas A&M AgriLife Research-High Plains, Texas A&M AgriLife Research-Irrigated Acreage, and Panhandle Groundwater Conservation District		Water-related project grants	\$598,295
May			
City of Hutchins	Dallas	CWSRF	\$3,700,000
City of Lubbock	Lubbock	WIF	\$19,945,000
City of Portland	San Patricio	EDAP	\$333,000
City of Portland	San Patricio	TWDF	\$322,000
Richland Special Utility District	McCulloch	EDAP	\$554,000
Stephens Regional Special Utility District	Stephens	DWSRF	\$5,000,000
Stephens Regional Special Utility District	Stephens	TWDF	\$6,000,000
Val Verde County	Val Verde	EDAP	\$460,000
Westwood Shores Municipal Utility District	Trinity	CWSRF	\$1,825,000
Westwood Shores Municipal Utility District	Trinity	TWDF	\$1,175,000
Zavala County Water Control and Improvements District No. 1	Zavala	EDAP	\$4,513,347
Zavala County Water Control and Improvements District No. 1	Zavala	EDAP	\$101,000
June			
City of Del Rio	Val Verde	DWSRF	\$10,000,000
McCoy Water Supply Corporation	Atascosa, Wilson, and Live Oak	RWAF	\$2,155,000
Mountain Peak Special Utility District	Ellis and Johnson	TWDF	\$1,500,000
City of Vernon	Wilbarger	TWDF	\$3,175,000
City of Wilson	Lynn	CWSRF	\$1,705,000
Total April - June 2009			\$67,331,642

- CWSRF: Clean Water State Revolving Fund
- DWSRF: Drinking Water State Revolving Fund
- EDAP: Economically Distressed Areas Program
- RWAF: Rural Water Assistance Fund
- TWDF: Texas Water Development Fund
- WIF: Water Infrastructure Fund

TWDB Legislative Wrap-Up

By: Samantha Heng

The 81st Texas Legislative Session was a positive one for the Texas Water Development Board (TWDB), as nine bills related to the agency were passed. Among them were the following:

HB 4110, Relating to the purchase, donation, and sale of promotional items by the Texas Water Development Board, was signed by the governor on June 19. This bill grants TWDB the authority to purchase and sell promotional items to further the purposes and programs of the agency.

SB 1371, Relating to the colonia self-help program, was signed by Governor Perry on May 19 and changes the current regulations for colonias. Prior to this legislation, a colonia had to be composed of 11 or more dwellings, and only nonprofits specifically organized under Section 501(c)(3), Internal Revenue Code, that had a record of experience in self-help projects could participate in the program. This bill allows for a greater pool of sponsors and removes the 11-dwelling requirement. It also gives TWDB the authority to determine whether the project will be beneficial and cost effective.

SB 2312, Relating to eligibility for funds from the water infrastructure fund from TWDB, was signed by the governor on June 19. This bill redefined “eligible political subdivision” to include any interstate compact commission to which the state is a party and any nonprofit water supply corporation created and operating under Chapter 67 of the Water Code.

SB 2314, Relating to the adoption of rules by TWDB regarding supplemental funding resulting from federal economic recovery legislation, was signed by the governor on June 19 and effective immediately. Under this bill, TWDB is given flexibility to adopt rules by which any capitalization grant under any state revolving fund is authorized.



TNRIS Technical Workshops

The Texas Natural Resources Information System (TNRIS) sponsors various technical workshops to support the GIS community. For a description and schedule or to register for these workshops, please visit the TNRIS Web site at www.tnr.is.state.tx.us.

Recent Publications

Report 373 Released

By: *Roberto Anaya and Merry Klonower*

The Texas Water Development Board (TWDB) recently released Report 373, *Groundwater Availability Model of the Edwards-Trinity (Plateau) and Pecos Valley Aquifers of Texas*. The sensitivity of these aquifers to drought and well discharge has elicited concerns over the availability of water. To help determine the amount of available groundwater, TWDB developed a numerical groundwater flow model. The model suggests that (1) 60 percent of the total discharge is to streams, springs, and reservoirs; (2) pumpage from wells is approximately 25 percent of the total discharge; (3) cross-formational flow across the Balcones Fault Zone boundary and into the Edwards (Balcones Fault Zone) Aquifer is about 15 percent of the total discharge; and (4) the model is generally more sensitive to variations in recharge (and, consequently, drought events) than variations in pumpage discharge, although exceptions do occur for the northwestern and southeastern parts of the aquifer.

To view or obtain a copy of this report, please visit our Web site at www.twdb.state.tx.us/publications/publications.asp.

Industrial Conservation Brochure Released

By: *Bridget Cameron*

Industries, businesses, and institutions account for 15–20 percent of the water use in Texas. To help address water conservation issues related to this diverse and complex group, the Texas Water Development Board created a new brochure. This brochure encourages businesses to conserve water by providing a water saver checklist and highlighting sources where these entities can seek advice on water audits and financial assistance. The brochure also spotlights businesses throughout the state that have implemented successful water conservation programs. Along with the new brochure, the Conservation Division provides workshops, outreach, and training to businesses to help reduce water consumption.

For more information on the Industrial, Commercial, and Institutional section of the Conservation Division or to order brochures, visit www.twdb.state.tx.us/assistance/conservation/Municipal/ici.asp or contact Bridget Cameron at 512-463-8830 or bridget.cameron@twdb.state.tx.us.

Water for Texas is published quarterly by the Texas Water Development Board, P.O. Box 13231, Austin, Texas 78711-3231; Leslie Anderson, Director; Merry Klonower, Editor; Mike Parcher, Layout; Editorial Board: Kathleen Ligon, Kathleen Mack, Larry Plagens, Jeff Walker, Janie Hopkins, Holly Vierk, Cori Leva, Holly Weyant, and Sanjeev Kalaswad.
For more information, please call 512-463-7847.
Our Mission: To provide leadership, planning, financial assistance, information and education for the conservation and responsible development of water for Texas.
Equal Opportunity Employer
The Texas Water Development Board does not discriminate on the basis of race, color, national origin, sex, religion, age or disability in employment or the provision of services, programs or activities.
1-800-RELAY TX (for the hearing-impaired)



Texas Water Development Board

P.O. Box 13231 • Austin, Texas • 78711-3231

Members of the Board

James E. Herring
Chairman, Amarillo

Jack Hunt
Vice Chairman, Houston

Thomas Weir Labatt III
Member, San Antonio

Lewis H. McMahan
Member, Dallas

Edward G. Vaughan
Member, Boerne

Joe M. Crutcher
Member, Palestine

J. Kevin Ward
Executive Administrator



PRSR.T.STD
U.S. Postage
PAID
Austin, Texas
Permit No. 1321