

OKLAHOMA Water News

1st Quarter 2007



Inside

New Bartlesville Plant Serves Northeast OK

OCWP Public Input Meetings Begin in April

Reflections: Joe Taron

USGS/OWRB Drought Publication Available

OWRB Data Offers Insight into Drought's Impacts on Groundwater

Tulsa Receives EPA Award

OWRB Fiscal Year Expenditures

Oklahoma Drought Update

New Bartlesville Plant Serves Northeast Oklahoma

While Bartlesville city leaders explore future sources to supplement existing drinking water supplies at Lakes Hulah and Hudson, the community is quickly establishing itself as a model regional water supplier for northeast Oklahoma.

To meet prospective growth in the region, the City's new state-of-the-art drinking water treatment plant—dedicated last September—currently serves 55,000 customers and is designed to meet the projected needs of numerous surrounding communities, including Dewey, Ramona, Ochelata, five rural water districts, and private water companies in the area, through at least the next 40 years. A \$44.5 million dollar loan through the Water Resources Board's Drinking Water State Revolving Fund program, the agency's largest loan ever to an Oklahoma community, and more than \$2.3 million in local funds enabled construction of the facility, which is named after former Mayor and project champion Ted D. Lockin.



The new Ted D. Lockin Water Treatment Plant is designed to treat 26,000,000 gallons per day.

The low interest rate of the OWRB loan, fixed at 3 percent throughout its 20-year life, will save Bartlesville and its water customers more than \$13 million in finance costs. Interest on the loan will bring the total project cost to about \$62 million. Three annual water rate increases already in place will provide the revenue for repayment.

In addition to setting the standard for regional water systems throughout the state, the Bartlesville facility is the first in Oklahoma and one of just a few in the United States to employ an "Actiflow"

(continued on page 2)

From the Director

Another legislative session is underway, and once again, water is a dominant theme. The many filed bills address familiar water-related subjects, including modification of the existing moratorium on out-of-state water sales, establishment of citizen/lake advisory committees, priorities of water use, expansion of Water Board membership, and of course water planning and infrastructure financing. If there is a common thread running through this and related environmental legislation it would most certainly be "sustainability."

Never before in the state's history have citizens—the constituents of Oklahoma legislators—conveyed such a strong and unified message concerning the

(continued on page 3)



**Duane A. Smith, Executive Director
Oklahoma Water Resources Board**



Bartlesville (continued from page 1)

process, which can treat a much larger volume of water in a much shorter time-frame than conventional systems. The plant also recycles all of the water used in the treatment process, resulting in significant water savings and reduced production of wastewater.

This project clearly demonstrates how regional systems, where customers from many towns and water districts are served by a common source, can provide the most efficient, economical and reliable water supply. Through economy of scale, where an increase in the number of partners results in a decrease in the average cost required of each member, regionalization helps alleviate funding constraints and minimizes the potentially devastating impacts posed by increasingly stringent water quality regulations that result in higher treatment costs. Through the State Public Water System Assessment, a crucial aspect of the ongoing update of the Oklahoma Comprehensive Water Plan, and increasingly strong financing incentives, the state is positioning itself as the primary facilitator of regional planning projects. This first-ever broad inventory of Oklahoma's water system infrastructure will identify those areas and systems that could benefit most from unified system operation, maintenance, and administration.

Where system densities, service area size, and geographic factors prove advantageous, projects identified through the Water Plan will stand a greater chance of receiving priority funding for implementation through financing programs offered by the OWRB and other state and federal agencies.

OCWP Local Input Meetings Begin in April

The future is now for Oklahomans who live in and near Beaver County as they will be the first state residents to have an opportunity to share their opinions about what should be included in Oklahoma's upcoming 50-year water plan.

The first of approximately 40 meetings across Oklahoma will begin at 6:30 p.m., Thursday, April 12, at the Beaver County Fairgrounds Pavilion.

"Oklahoma's future depends in large part on the availability of clean water," says Mike Langston, assistant director of the Water Research Institute. "Our government leaders need to know the concerns Oklahomans have about the state's water resources."

The Oklahoma Legislature mandates that the OWRB develop and periodically update a comprehensive water plan. The OWRB, in conjunction with the Army Corps of Engineers and other organizations, is also conducting technical studies of projected water demands and water supply infrastructure needs.

The Water Research Institute, located at Oklahoma State University but serving all of Oklahoma, is assisting the Board with the planning process. The Institute is focusing on two major thrusts: citizen input and research to investigate identified water issues and concerns.

"As a state, we're facing difficult decisions on a variety of water-related issues that will affect us, our kids, and their kids," Langston says. "We strongly encourage all citizens to attend at least one meeting in their area. This is their opportunity to set the agenda for the water plan."

Though the ultimate responsibility for writing the Oklahoma Comprehensive Water Plan lies with the OWRB, Langston said the WRI promises that every issue raised, concern expressed, question asked, and suggestion offered will be faithfully communicated to the OWRB.

More information on the planning process is available at <http://environ.okstate.edu/owri/waterplan>. For specific information about the upcoming Local Input Meetings, contact Jeri Fleming by e-mail at waterplan@okstate.edu or by phone at 405-744-9994.

Scheduled OCWP Local Input Meetings (to date):

April 12, Beaver
 April 19, Goodwell
 April 26, Woodward
 May 3, Alva
 May 8, Sayre
 May 15, Lawton
 May 17, Weatherford
 May 31, Altus
 June 19, Enid
 June 21, El Reno
 June 28, Kingfisher
 August 7, Shawnee
 August 23, Kellyville

Water Appreciation Day

9:00 a.m. to 4:00 p.m.

May 8, 2007

Water Appreciation Day represents a unique opportunity for over 25 state, federal, and local organizations to gather and demonstrate the importance of Oklahoma's water resources and provide information on their water management, conservation, and educational programs.

State of Oklahoma
OWRB
 WATER RESOURCES BOARD
 the water agency

DID YOU KNOW?

Oklahoma is underlain by 23 major groundwater basins containing 320 million acre-feet of water in storage, though only one-half of that amount may be recoverable.

Irrigation is the number one use of groundwater in Oklahoma. The approximate total allocated groundwater use in Oklahoma is 3.2 million ac-ft/year.

Oklahoma contains approximately 1,120 square miles of water area in its lakes and ponds and approximately 78,578 miles of rivers/streams.

The number one use of the state's surface water is public water supply. The approximate total allocated stream water use in Oklahoma is 2.6 million ac-ft/year.

An estimated 34 million acre-feet of water flows out of the state each year through Oklahoma's two major river basins, the Red and Arkansas.

From the Director (continued from page 1)

protection of our water resources. The current drought and increased competition for water resources are most certainly important factors in this renewed focus on environmental stewardship, but citizens are also better informed and proposed water uses are undergoing tremendous public scrutiny. The state's water resources belong to the people of Oklahoma, and ultimately, they will decide how our waters are best utilized.

A primary legislative priority for the OWRB this session is removing the cap on Gross Production Tax revenues to the Water Projects Fund, the source of OWRB funding for updating the Oklahoma Comprehensive Water Plan and related implementation of identified projects through the Financial Assistance Program. Removing the cap could double the amount of available funds for the Board to accomplish its planning mandate. The additional funds would accelerate completion of the Water Plan update process, anticipated in 2011, and enable a more accurate and comprehensive assessment of water supply and infrastructure needs in the state. Just as important, additional monies for the Revolving Fund would allow immediate implementation of priority planning projects, many of which came to light during the dog days of last summer's drought. We can expect more of the same this summer.

Another important legislative pursuit is funding for the OWRB's water rights administration program. Currently, the sole funding source for the program consists of assessment of modest fees to holders of stream water rights. The ongoing drought, increased competition for limited water resources, greater scrutiny of proposed water uses, including more protests, and the need for more comprehensive hydrologic studies to accurately identify and appropriate available water make it necessary for the OWRB to seek out additional resources through which to manage water rights.

As chairman of the Western States Water Council, the water arm of the Western Governors Association, I have been

advocating several initiatives to enhance water programs in the western U.S. The Rural Water Supply Act, contained in S. 895, seeks to help the country's rural communities obtain reliable water service. Recently passed by the U.S. Senate but pending President Bush's approval, the bill directs the Bureau of Reclamation to establish a program to plan, design, and construct rural water supply projects. Specifically, it authorizes \$15 million a year for planning new water delivery infrastructure and would establish a loan guarantee program within the Bureau to help communities finance new water projects and pay for maintenance on existing water systems. This bill is of particular interest to Oklahomans as the state's 450 rural water systems provide drinking water to 600,000 residents.

Also recently passing the Senate and awaiting the President's signature is HR 5136, which would establish a National Integrated Drought Information System (NIDIS) at the National Oceanic and Atmospheric Administration. The measure would authorize a total of \$81 million through fiscal 2012 to provide usable, reliable, and timely drought forecasts and assessments of current droughts impacting Oklahoma and the nation. Through creation of the Oklahoma Mesonet and the outstanding work of numerous weather professionals housed at the Weather Center in Norman, Oklahoma is a national and worldwide leader in climate monitoring and prediction. Now that NIDIS is authorized, attention turns to federal funding for the program.

In March, we will kick off the first of 40 public listening sessions to be held throughout the state this year to define the agenda for the recently initiated update of the Oklahoma Comprehensive Water Plan. The sessions, as well as the entire stakeholder participation process that is being accentuated as part of the update, will be facilitated by the Oklahoma Water Resources Research Institute. For meeting dates and related information, or to join the official email notification list, visit the official OCWP Web site for public participation and policy development at <http://environ.okstate.edu/owrri/waterplan/>.

Reflections

by Joe Taron
2004 Oklahoma Water Pioneer

According to Joe Taron, retired Shawnee dentist and 2004 Oklahoma Water Pioneer, regional cooperation is the key to solving Oklahoma's current water crisis, and there are growing signs that a lot of people agree with that assessment.

Taron, longtime chairman of the Pottawatomie County Development Authority (PCDA), attended the 27th annual Governor's Water Conference in Oklahoma City in November, after returning from a trip to Washington in search for ways to make water from the Wes Watkins Reservoir easier for Shawnee, and eventually maybe Tecumseh, to treat and drink.

Despite the drought, declining lake levels, and treatment problems, Taron was encouraged by the central message of the Conference, which stressed regional cooperation. "I felt like there was more of a cohesive awareness, concern and understanding of the problem and wanting to resolve it than I've ever witnessed," says Taron. It was pointed out at the conference, he adds, that more water flows out of Oklahoma every day than is used in the state. "Part of that is riparian, but some of it is just poor management and poor planning."

At the water conference, emphasis was placed on the development of the Comprehensive Water Plan to deal with Oklahoma's water problems. The Plan will be developed after an extensive set of public hearings, workshops, meetings and feedback sessions. "It's hoped that through this process, we will wind up with intelligent and well-planned decisions incorporating the best management practices," Taron says.

"The consensus that I see is that the best way to resolve these water problems is on a regional basis, not as city by city by city," says Taron. He adds that one additional advantage would be that if any grant money is available, it would be possible for a regional group to legally assume debt and employ eminent domain powers.

Taron believes that all water issues should be dealt with on a regional basis—treatment, distribution, even bringing water from Eastern Oklahoma to the west. About 350 people attended last November's Oklahoma Governor's Water Conference, and Taron was very impressed by the amount and depth of dialogue on pertinent water issues. "I've been going to them for 20 years," he says, "and I felt this was the best one."

This article is adapted from "Taron: Cooperation Holds Water Key," an article originally appearing in The Shawnee News Star, November 16-17, 2006.

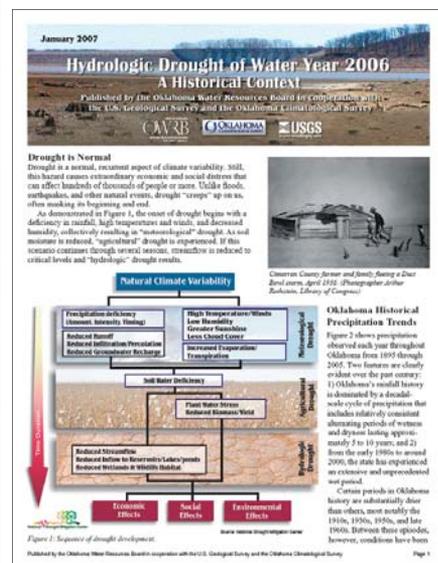
"The consensus that I see is that the best way to resolve these water problems is on a regional basis, not as city by city by city."

Joe Taron

USGS/OWRB Drought Publication Available

The OWRB and U.S. Geological Survey, with help from the Oklahoma Climatological Survey, have published a report on state drought conditions in 2006. Entitled "Hydrologic Drought of Water Year 2006: A Historical Context," the report includes discussions of historical precipitation trends in Oklahoma as well as recent streamflow and groundwater level trends focusing on the eastern reach of the Canadian River.

According to the publication, two features are clearly evident over the past century: 1) Oklahoma's rainfall history is dominated by a decadal-scale cycle of precipitation that includes relatively consistent alternating periods of wetness and dryness lasting approximately 5 to 10 years; and 2) from the early 1980s to around 2000, the state has experienced an extensive and unprecedented wet period. The report warns that Oklahoma may be experiencing the beginnings of yet another, perhaps extended, dry cycle.



Copies of the report are available through the OWRB's Web site at www.owrb.ok.gov or by calling the agency at 405-530-8800.

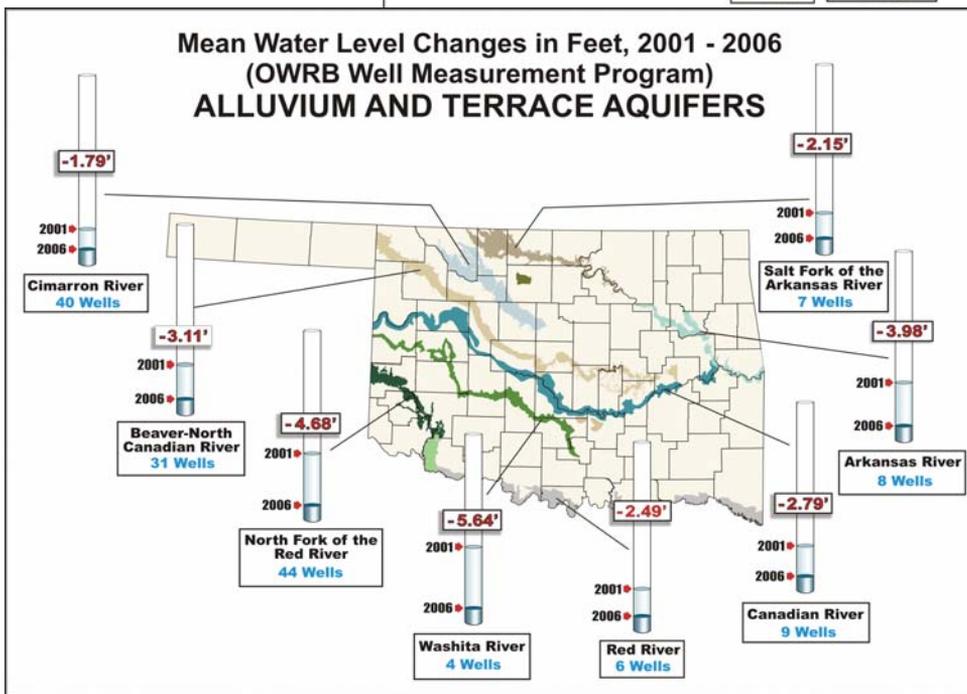
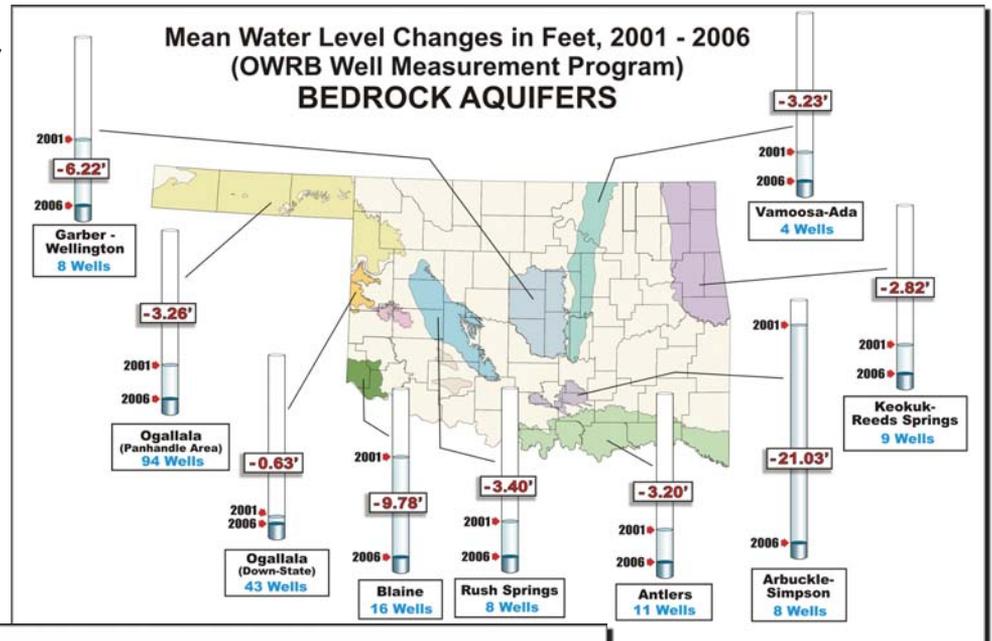
OWRB Data Offers Insight into Drought's Impacts on Groundwater

The OWRB's annual water level measurement program provides unique insight into impacts associated with the ongoing drought in Oklahoma. Data from more than 600 water wells statewide allow hydrologists to track aquifer water level fluctuations over many years, both dry and wet. According to OWRB geologist Mark Belden, who supervises the program, water levels fluctuate either as a result of varying precipitation and recharge and/or from changes in water use and groundwater pumpage. General declines in the irrigated portions of the Oklahoma Panhandle of the High Plains/Ogallala Aquifer typically range from ½ - to 1½ feet per year over the past 40 years or so. This period has been characterized by extensive withdrawals of water for irrigation, which in many areas exceed rates of recharge to the aquifer.

In most other aquifers and areas of Oklahoma, water level changes can be directly related to shifting climate patterns. Rising and falling water well levels typically reflect corresponding wet and dry periods, although measurement data may not reflect those events for a period of months or even years for deeper formations and wells. In general, there has been little significant change in groundwater storage for the majority of the state's aquifers in

the past three decades. However, the ongoing drought in Oklahoma, which climatologists say generally began around 2002 in some areas, is having a measurable effect upon aquifer levels, as shown in Table 1.

Data summarized in the table reflect mean water level changes over recent times for Oklahoma's major aquifers at 5 year (2001-2006) intervals. The data is grouped by aquifer type (bedrock or alluvium and terrace) and indicates the number of wells on which the mean is based. All listed aquifers experienced water level declines for the period of record (5 years), which is likely attributable, at least in part, to the current drought in Oklahoma.



The OWRB's annual water level measurement program has been in place for almost 30 years. Data gathered through the comprehensive network of observation wells enable OWRB hydrologists to observe water level fluctuations over a period of years or even decades.

Tulsa Receives EPA Award

The Environmental Protection Agency has awarded the City of Tulsa with a Pisces Award for its proactive approach and innovation in addressing citywide wastewater system management.

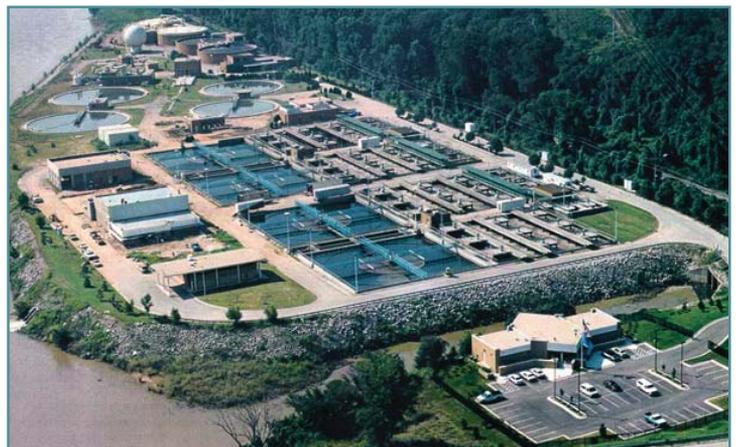
The Tulsa Metropolitan Utility Authority (TMUA) is the single largest borrower under the OWRB's Clean Water State Revolving Fund (CWSRF) loan program. Since the program's inception in 1990, Tulsa has been awarded more than \$250 million to help correct inadequacies in its sewage system brought about by recent community growth. In addition to the environmental benefit of Tulsa's CWSRF projects, the loans have collectively saved Tulsa residents about \$105 million due to the program's extremely low interest rate.

Combined with OWRB bond loan money, EPA grants, and various local funds, CWSRF loans to Tulsa have been used largely to respond to several consent orders issued by the EPA and Oklahoma Department of Environmental Quality for hydraulic overloading of the treatment plants. The city has since taken all necessary corrective actions. As Tulsa has repaid its CWSRF loans, tens of millions of dollars have been accumulated in second round funds that the OWRB has loaned out again, primarily to small Oklahoma communities. Tulsa's responsiveness in retiring the debt has also greatly enhanced the city's credit rating and has contributed to the OWRB's excellent AAA bond rating.

Utilizing an annual budget of approximately \$60 million, TMUA owns and operates four publicly owned treatment works having a combined capacity of 103 million gallons per day (mgd). The entire wastewater system includes 1,870 miles of pipeline, more than 40,000 manholes, 53 lift stations, 400 miles of force mains, and an average flow of 64.4 mgd.

Fiscal Year Expenditures Oklahoma Water Resources Board

Fund Name	FY 2005 Expended	FY 2006 Expended	FY 2007 Budgeted
General Appropriations	4,318,448	0	4,544,617
Weather Modification	0	3,946,855	0
Drillers & Installers Indemnity Fund	2,800	0	63,080
Rural Economic Action Plan (REAP) Fund	691,419	0	1,206,751
Water Resources Revolving Fund	513,218	909,562	422,021
Drillers & Installers Regulation Fund	23,719	274,274	26,643
Water Infrastructure Development Fund	0	536	524,447
CMIA Disbursing Fund	0	0	0
Federal Funds-OWRB	1,669,698	0	2,498,483
Federal Funds-OSE	7,786,321	1,193,173	9,232,270
USGS Cooperative Agreement	298,050	333,568	303,700
Stripper Well-Oil Settlement	0	232,652	0
Interagency Reimbursement Fund	1,341,531	0	1,586,772
DW Loan Administration Fund	104,188	8,010,066	769,834
CW Loan Administration Fund	753,094	152,414	1,024,269
Emergency Grant Fund	0	700,789	0
CW Loan Fund	0	0	373,735
DW Loan Fund	0	0	0
Total Expenditures/Budgeted	17,502,486	15,753,889	22,576,622
Activity Name			
Administration	2,431,073	2,319,401	2,490,384
Water Quality	3,024,492	2,427,918	3,794,310
Financial Assistance	1,580,219	1,389,803	2,800,000
Planning & Management	2,510,895	2,310,778	4,068,498
Weather Modification	0	0	0
Secretary of Environment	7,955,807	7,305,989	9,423,430
Total Expenditures/Budgeted	17,502,486	15,753,889	22,576,622



Tulsa Southside Wastewater Treatment Plant

Drought Update

Reservoir Storage

As of March 1, the combined normal conservation pools of 31 selected major federal reservoirs across Oklahoma (see right) are approximately 95.1 percent full, a 0.1 percent decrease from that recorded on January 30, according to information from the U.S. Army Corps of Engineers (Tulsa District). Nineteen reservoirs have experienced lake level decreases since that time; 15 reservoirs are currently operating at less than full capacity. Seven reservoirs are now below 80 percent capacity.

Palmer Drought Severity Index

According to the latest Palmer Drought Severity Index (December 30, right), state drought conditions remain steady. No climate divisions are currently experiencing drought. Five of Oklahoma's nine climate divisions have undergone PDSI moisture decreases since January 27.

Standardized Precipitation Index

The latest monthly Standardized Precipitation Index (through January, right) reflects improving moisture conditions throughout Oklahoma. Among the selected time periods (3-, 6-, 9- and 12-month SPIs), "moderately" dry conditions are present only in North Central Oklahoma during the past 9 to 12 months. No other climate divisions are currently experiencing dry conditions.

For more drought information, and to obtain updated information on Oklahoma's drought and moisture conditions, go to www.owrb.ok.gov/supply/drought/drought_index.php.



Storage in Selected Oklahoma Lakes & Reservoirs
(as of March 1, 2007)

CLIMATE DIVISION	Conservation Storage (acre-feet)	Present Storage (acre-feet)	Percent of Storage (acre-feet)
North Central (2)	505,170	503,877	99.7
Northeast (3)	3,698,902	3,433,641	92.8
West Central (4)	276,790	194,110	70.1
Central (5)	154,225	112,124	72.7
East Central (6)	2,968,683	2,968,683	100.0
Southwest (7)	301,810	137,089	45.4
South Central (8)	2,843,684	2,803,370	98.6
Southeast (9)	1,464,929	1,464,929	100.0
State Totals	12,214,193	11,617,823	95.1

Palmer Drought Severity Index

CLIMATE DIVISION	Current Status 2/24/2007
Northwest (1)	Unusual Moist Spell
North Central (2)	Near Normal
Northeast (3)	Incipient Moist Spell
West Central (4)	Unusual Moist Spell
Central (5)	Moist Spell
East Central (6)	Unusual Moist Spell
Southwest (7)	Unusual Moist Spell
South Central (8)	Unusual Moist Spell
Southeast (9)	Unusual Moist Spell

Standardized Precipitation Index
(through January 2007)

CLIMATE DIVISION	3-month	6-month	9-month	12-month
Northwest (1)	Very Wet	Very Wet	Near Normal	Near Normal
North Central (2)	Near Normal	Near Normal	Moderately Dry	Moderately Dry
Northeast (3)	Moderately Wet	Near Normal	Near Normal	Near Normal
West Central (4)	Very Wet	Moderately Wet	Near Normal	Near Normal
Central (5)	Moderately Wet	Near Normal	Near Normal	Near Normal
East Central (6)	Very Wet	Moderately Wet	Near Normal	Near Normal
Southwest (7)	Moderately Wet	Moderately Wet	Near Normal	Near Normal
South Central (8)	Very Wet	Moderately Wet	Near Normal	Near Normal
Southeast (9)	Very Wet	Very Wet	Near Normal	Near Normal

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*Rudy Herrmann, Chairman • Mark Nichols, Vice Chairman • Bill Secrest, Secretary
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The mission of the Oklahoma Water Resources Board is to manage and protect the water resources of the state and plan for Oklahoma's long-range water needs in a responsive, innovative, and professional manner to ensure that all Oklahomans have adequate quantities of good water.



1st Quarter 2007

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FINANCIAL ASSISTANCE PROGRAM UPDATE

Loans & Grants Approved as of March 13, 2007

FAP Loans—320 totaling \$628,085,000

The OWRB's Financial Assistance Program (FAP), created by the State Legislature in 1979, provides loans for water and wastewater system improvements in Oklahoma. The tremendous popularity of the bond loan program is due, in part, to extended payoff periods of up to 30 years at very competitive interest rates, averaging approximately 4.762 percent since 1986.

CWSRF Loans—180 totaling \$632,620,922

The Clean Water State Revolving Fund (CWSRF) loan program was created in 1988 to provide a renewable financing source for communities to draw upon for their wastewater infrastructure needs. The CWSRF program is Oklahoma's largest self-supporting wastewater financing effort, providing low-interest loans to communities in need.

DWSRF Loans—67 totaling \$304,448,920

The Drinking Water State Revolving Fund (DWSRF) loan program is an initiative of the OWRB and Oklahoma Department of Environmental Quality to assist municipalities and rural water districts in the construction and improvement of drinking water systems. These projects are often mandated for communities to obtain compliance with increasingly stringent federal standards related to the treatment of drinking water.

REAP Grants—465 totaling \$40,726,337

The Rural Economic Action Plan (REAP) Program was created by the State Legislature in 1996. REAP grants, used for water/wastewater system improvements, target primarily rural communities with populations of 7,000 or less, but priority is afforded to those with fewer than 1,750 inhabitants.

Emergency Grants—529 totaling \$31,019,692

Emergency grants, limited to \$100,000, are awarded to correct situations constituting a threat to life, health, or property and are an indispensable component of the agency's financial assistance strategy.

Drought Response Program Grants—3 totaling \$300,000

Through the OWRB's Drought Response Program, limited funding is available for communities in most dire need during state drought emergencies declared by the Governor. A maximum of \$300,000 is diverted from existing OWRB Emergency Grant funds to establish the Program.

Total Loans/Grants: 1,564 totaling \$1,637,200,871

Estimated Savings: \$511,926,560

Applicants eligible for water/wastewater project financial assistance vary according to the specific program's purpose and requirements, but include towns and other municipalities with proper legal authority, various districts established under Title 82 of Oklahoma Statutes (rural water, master/water conservancy, rural sewage, and irrigation districts), counties, public works authorities, and/or school districts. Applications for agency financial assistance programs are evaluated individually by agency staff. Those meeting specific program requirements are recommended by staff for approval at monthly meetings of the nine-member Water Board.

For more information, call 405-530-8800 or go to www.owrb.state.ok.us/financing.