

In This Issue

Board Sets Ogallala Yield & Approves Water Quality Standards

Report Confirms Eucha/ Spavinaw Algae Problem

FLOOD CURRENT:

Planning Opportunity is Storms' Silver Lining

Governor Declares March & May as Flood Months

Flood Forum Confronts Needs for Flood Insurance

OWRB Kicks Off Year of Clean Water

Hulah Lake Level Plummet

New Web Site for OSE

WATER RESOURCES UPDATE:

Reservoir Storage/Drought Indices

Financial Assistance Program Update

OKLAHOMA Water News

Bimonthly Newsletter of the Oklahoma Water Resources Board

From the Director



Duane A. Smith
OWRB Executive Director

In the most historic and aggressive attempt by the State of Oklahoma to limit the deleterious impacts of pollutants on state waters, the OWRB established the first-ever numeric water quality standard for phosphorus in Oklahoma's designated Scenic Rivers at the March Board meeting. Related action at the April Board meeting reflects the new standard in agency rules. The State Legislature will now consider the implications of this new proposed water quality management strategy.

In other Water Board news, recent efforts to remarket the agency's 1994, 1995, 1997, and 1999 six-month variable rate bonds have secured the lowest rate in OWRB history. The bonds, totaling \$145,720,000, sold for 1.4% interest, resulting in an exceptional loan rate of 2.072% for our borrowers.

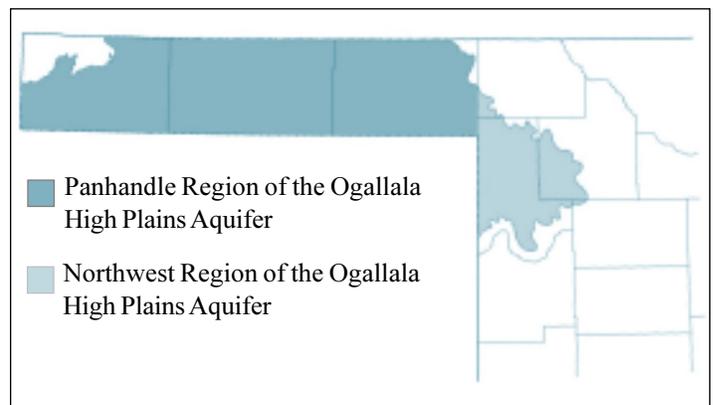
See From the Director, Page 2

Board Sets Ogallala Yield & Approves Water Quality Standards

Responding to citizen concerns expressed during the March meeting, members of the Oklahoma Water Resources Board conditionally approved a new groundwater permit regulation that reduces the proportional share of water available to users of the Ogallala Aquifer's northwest region.

The March 12 decision will reduce the amount of water annually available for future users to 1.4 acre-feet per acre of land in parts of Ellis, Harper, Dewey, and Woodward Counties. (One acre-foot of water equals approximately 325,000 gallons.) However, Board members voted to "grandfather in" existing users, allowing them to maintain the temporary allocation of 2.0 acre-feet per year, the amount applied to all major state aquifers for which comprehensive hydrogeologic investigations, or maximum annual yield studies, have yet to be performed.

Last year, OWRB staff completed separate studies on the two major Ogallala regions underlying the western area of Oklahoma. Results from the studies indicated the



maximum annual yield of the Northwest Ogallala region to be 1.4 acre-feet while the Panhandle region (encompassing most of Cimarron, Texas, and Beaver Counties) was determined to be the existing allocation of 2.0 acre-feet. The permanent allocation of 2.0 acre-feet for the Panhandle region was also approved by the Board.

"As expected, we had many irrigators and other impacted individuals approach the Board with significant concerns due to the proposed 30 percent reduction in their allocated groundwater usage," says Mike Mathis,

See Board Sets Yield & Approves Standards, Page 2

From the Director . . . Continued from page 1

As advancements in this dynamic “Information Age” compel us to reinvent our present and future, the OWRB strives to follow suit through integration of improved strategies to convey agency services and information to our many customers. Leading these efforts are staff in the Water Board’s Information Services Section who are working to develop a Web-based, interactive program to allow visitors to the agency’s site (www.owrb.state.ok.us) to file water use permit applications in the comfort of their homes or offices—no fax, no phone call, no trip in the car. The initial “pilot” phase of this project, scheduled for implementation late this summer, will provide online forms for citizens to file requests for temporary provisional permits.

Other on-line form programs under early development at the OWRB will allow our customers to obtain water well logs and related well records, submit water use data, enter volunteer water quality monitoring data, submit requests for various financial assistance, and register for the annual Governor’s Water Conference and other meetings. These developments, which will vastly improve our customer service, enable our customers to make better water quality and quantity-related decisions, and reduce staff process time, were previously identified through the agency’s ongoing strategic planning process under Web site development and redesign goals. This is truly an exciting time at the OWRB!

Board Sets Yield & Approves Standards . . . Continued from page 1

Chief of the OWRB’s Planning and Management Division. “I believe the Board’s decision to conditionally approve staff’s recommendation fairly reflects those concerns and is both consistent with Oklahoma’s groundwater law and future conservation of this vitally important water resource.”

Mathis pointed out that the maximum annual yield determination will not affect “prior rights” to use groundwater. Prior rights are groundwater rights established by the Oklahoma Groundwater Law prior to July 1, 1973. In addition, water well spacing requirements of 1,320 feet will now be applied to new water wells.

The Water Board’s hydrogeologic investigations determine how much water can be safely withdrawn from an aquifer to ensure a minimum basin life of 20 years. To arrive at a basin’s maximum annual yield, investigators map the total land overlying the basin, often divided into sub-basins for yield determinations, and estimate the amount of water in storage. Next, they determine the rate of natural recharge and total discharge, transmissibility (the rate at which water moves through the formation), and potential for pollution from natural sources. The balance of available water is then allocated proportionately to each acre of land overlying the basin. Prior to final consideration of this prorated amount, hearings are held to allow public input into the determinations. The Ogallala maximum annual yield hearings were held in July and September 2001.

To date, hydrogeologic investigations have been completed on six major bedrock aquifers, including the Ogallala, and 10 major alluvial and terrace formations; three studies are underway on bedrock aquifers while three are pending on alluvial/terrace formations.

Also at the March Board meeting, the nine members considered numerous amendments to agency rules, including proposed revisions to Oklahoma Water Quality Standards. Of particular importance was the proposed standard limiting levels of phosphorus to 0.037 milligrams per liter (mg/L) in Oklahoma’s designated



The Illinois River. Near the Oklahoma/Arkansas border, phosphorus loads average more than 380,000 pounds per year.

Scenic Rivers, which the Board approved along with the Standards rules.

Previous to the Board’s decision, methods to control excess phosphorus and other nutrient levels in Oklahoma waters (including Scenic Rivers) through state Water Quality Standards were limited to narrative criteria. Now, sewage treatment plants and other wastewater dischargers and nonpoint nutrient sources must ensure that their effluent or runoff will meet the 0.037 mg/L phosphorus limit. The Board also ruled to phase-in full implementation of the standard over 10 years to allow sufficient time for compliance by waste dischargers, including those more ambiguous, nonpoint sources of excess phosphorus, such as poultry operations.

The Water Quality Standards serve to protect Oklahoma waters through the assignment of beneficial uses, criteria to protect those uses, an antidegradation

. . . Continued

policy, and the application of certain limitations for additional protection to special waters.

Oklahoma's Scenic Rivers, including portions of the Illinois River, Baron Fork River, Lee Creek, Little Lee Creek, Flint Creek and the Upper Mountain Fork River, receive special, additional protection under State law due to their exceptional ecological and recreational characteristics. However, in the Illinois River alone (at a point near the Oklahoma/Arkansas border), phosphorus loads average more than 380,000 pounds per year, and more than 600,000 pounds is estimated to enter Tenkiller Lake each year.

Report Confirms Eucha/Spavinaw Algae Problem

Excess algae growth has been confirmed as the major threat to the quality of Tulsa's surface water supply, according to a report officially released in March by the OWRB.

The report, "Water Quality Evaluation of the Eucha/Spavinaw Lake System," affirms that algae problems are directly related to the infusion, or "loading," of nutrients, primarily nitrogen and phosphorus, from the shared watershed of the two lakes. The abundance of those nutrients, most likely the result of diffuse waste that enters area streams from numerous poultry operations in the watershed, greatly accelerates the growth and reproduction of algae. Much of the watershed area, a total of 415 square miles, exists in the State of Arkansas.

Left unchecked, algae growth can cause significant taste and odor problems in drinking water, although it is not a health risk. To date, the City of Tulsa has spent more than \$4 million to correct the situation, which increases drinking water treatment costs and could eventually result in the lakes' demise as a source of supply. Late last year, in an attempt to halt further pollution, the City of Tulsa and Tulsa Metropolitan Utility Authority (TMUA) filed a lawsuit in U.S. District court against six out-of-state poultry companies that are believed to be primarily responsible for the problem.

"For approximately six weeks in late 2000, taste and odor problems were significant enough that Tulsa was required to completely abandon the Eucha/Spavinaw supply until it cleared up," reports Derek Smithee, Chief of the OWRB's Water Quality Division. "Now that we have a target for mitigation, we can begin the real work of reducing nutrient loads to the lakes."

The Water Board's report culminates a three-year cost-share study with the City of Tulsa to quantify and address Eucha/Spavinaw water quality problems. The report points out that because most of Spavinaw's water enters the lake through the adjoining Eucha Lake dam, remediation efforts must be directed at both reservoirs.

The lakes have been categorized as having high or excessive algae content. Excessive algae growth robs the water column of oxygen required for fish propagation.

"Data collected over the past 20 years or so indicates that, in particular, the Illinois River's Scenic River status is seriously threatened by excess nutrients," according to Derek Smithee, Chief of the Board's Water Quality Division. "Setting a numerical standard for phosphorus is the necessary first step to short-circuit the detrimental impacts that nutrients can have on our scenic rivers and other vulnerable waters of the state."

In addition to actual Standards approval, the Board approved rules in March pertaining to Standards implementation, taking and use of groundwater, well drillers and pump installers licensing, and the OWRB's Financial Assistance Program.

This absence of oxygen, or anoxia, results in a significant impairment of the lakes' fish and wildlife benefits. It also encourages the growth of algae types that produce a foul taste and make Eucha and Spavinaw generally less desirable for recreation.

"This comprehensive water quality investigation, which involved substantial field work and data analysis, will greatly assist the City and state in cleaning up this invaluable water resource," says Richard Sevenoaks, who serves on both the nine-member Water Board and TMUA.

Specific recommendations offered by the report to rectify the nutrient problems and subsequently restore lake benefits include: reducing phosphorus loading to Spavinaw Lake by 45 percent, reducing phosphorus loading to Eucha Lake by 70 percent, implementing a phosphorus management plan for the Eucha/Spavinaw watershed, and tracking and identifying sources of nutrient loads entering Eucha and Spavinaw Lakes.

"Because the report recommends actual percentile reductions in phosphorus entering the Eucha/Spavinaw Lake system, we can now effectively mitigate the taste and odor episodes," Smithee adds.

The report can be accessed and downloaded from the Technical Reports and Publications page of the OWRB's Web site at www.owrb.state.ok.us.



Eucha Dam and spillway

FLOOD CURRENT



Planning Opportunity Is Storms' Silver Lining

W. Kenneth Morris, CFM
State Floodplain Manager, OWRB



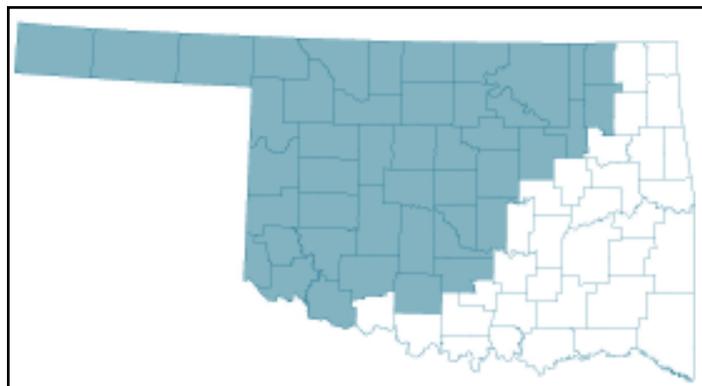
Ken Morris

On January 30, the second major winter ice storm in two years jolted Oklahoma, knocking out power to more than 245,000 residents, suspending travel, and closing schools in many areas. The event once again reminded us that natural disasters frequently strike without warning.

The subsequent disaster declaration, signed by President Bush within two days of the event, makes state and affected local governments in 45 counties eligible for federal funding to pay 75 percent of the costs associated with debris removal and emergency services. In addition, at press time, almost 25,000 Oklahomans had applied for individual assistance.

As in January 2001, the 2002 declaration also made cost-shared funding available for projects that reduce future disaster risks, including approximately \$19 million for National Flood Insurance Program (NFIP) member communities to develop "all-hazard plans." These mitigation strategies include planning for future wildfires, high winds, tornadoes, floods, terrorism, hazardous material events, and other disasters that can devastate a community. Last year, under the leadership of Albert Ashwood, Executive Director of the Oklahoma Department of Civil Emergency Management, municipalities of all sizes took advantage of this opportunity. The ultimate goal of state officials involved in emergency management is to have a comprehensive all-hazard plan in place for every county in Oklahoma. If you are a community official and have not yet taken action on this excellent opportunity, please contact Connie Dill, State Hazard Mitigation Officer, at (405) 521-2481.

On a related note, I want to recognize Norbert Schwartz and Rusty Rickart of Federal Emergency Management Agency (FEMA) Region V in Chicago for their valuable leadership in responding to the January disaster. Also, thanks to Mike Klitzke and Jim Blix, disaster assistance employees from Wisconsin and Minnesota, respectively, who were assigned the difficult task of working with communities not in the NFIP to encourage their future



Counties eligible for various public and individual federal assistance as a result of the January 30, 2002, ice storm

participation. Almost 50 communities were contacted and several have expressed interest in joining. OWRB staff—Gavin Brady, Hank Elling, Jason Shiever, and myself—assisted our FEMA Region V partners in this unexpected additional task.

To all state floodplain managers and officials: keep fighting the flood fight, enforce your ordinance in a professional manner, and attend flood management training on a regular basis.



Flooding of the Mountain Fork River due to heavy rains during late March (more than six inches in some areas). Many roads in southeast Oklahoma, including sections of state highways, were closed as rivers reached or surpassed their flood stages.

Governor Declares March & May as Flood Months

Each year in Oklahoma, thousands of citizens who experience flood damage lack the protection afforded through readily available flood insurance. To inform Oklahomans about intelligent floodplain development and warn them of dangers posed by flooding events, Governor Frank Keating has designated March as “Flood Insurance Month” and May as “Flood Awareness Month.”

“All too often, property owners and renters only become aware of flood insurance and other protection measures after a flood has financially devastated them or their community,” says Duane Smith, Executive Director of the OWRB. “The Governor’s proclamation provides the OWRB, insurance companies, and emergency management organizations with a valuable opportunity to spread the word on availability of relatively inexpensive flood insurance.”

Smith adds that the timing of the Flood Insurance Month designation is appropriate because Oklahoma’s spring flooding season is just around the corner. “Most flood insurance policies require a 30-day waiting period,” he points out. “Now is the time for those citizens who reside in designated floodplains to purchase flood insurance if they have not already.” A flood insurance policy may be purchased from any licensed property insurance agent.

“Severe flooding episodes occur in Oklahoma most frequently in the spring and fall,” says Ken Morris, state floodplain management coordinator. “Implementation of sound floodplain management and building strategies, particularly through the National Flood Insurance Program (NFIP), is the most effective way for communities to avert potential flood damages.”

On an individual basis, Morris reminds Oklahomans of the dangers of driving into floodwaters. “Almost one-half of flood-related fatalities occur in vehicles, primarily when people drive into flooded highway dips or low drainage areas at night. As little as six inches of water can cause drivers to lose control of their vehicles. Two feet of water will sweep most cars off the road,” he points out.

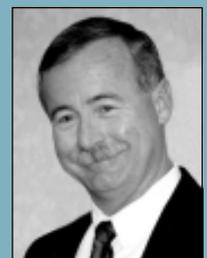
Of the 38 presidentially declared disasters in Oklahoma since 1955, 28 have involved flooding. In an effort to mitigate such emergencies, the OWRB was named the state coordinating agency for the NFIP by Governor Dewey Bartlett in 1969. The NFIP assists Oklahomans by making flood insurance available at affordable rates and helping communities make wise decisions concerning floodplain use. To be eligible for flood insurance,

participants must establish a floodplain board, recognize floodplain boundaries and restrict development in those areas. Such strategies typically result in reduced federal outlays to mitigate flood damages. The OWRB is the state agency designated to coordinate the NFIP in Oklahoma in a cooperative partnership with the Oklahoma Insurance Department, Oklahoma Department of Civil Emergency Management and the Oklahoma Floodplain Managers Association.

According to Morris, only 12 percent of all homes or structures in the state that lie in the 100-year floodplain are covered by flood insurance. He adds, “It is disheartening that relatively few people take advantage of the benefits afforded through the purchase of flood insurance, especially since it is so inexpensive and offers such comprehensive protection against one of our most common natural disasters.”

Flood Forum Confronts Need for Flood Insurance

The third annual *Oklahoma Flood Forum*, sponsored by the OWRB, Oklahoma Insurance Department, Oklahoma Floodplain Managers Association, and Federal Emergency Management Agency, was held March 19 in Oklahoma City. Attending the event, held in conjunction with Flood Insurance Month in Oklahoma, were insurance agents, claims adjusters, appraisers, surveyors, lenders, and floodplain management officials from across the state. Among those who addressed the attendees were Keynote Speaker and Oklahoma Lieutenant Governor Mary Fallin (far left); Opal Ellis, Oklahoma Insurance Department (upper left); Thad Balkman State Rep. (upper right); Jack Roberts, Apache Mayor and Farm Bureau insurance agent (lower left); and Lonnie Ward, FEMA Region VI (lower right). Speakers concurred that the flood insurance industry must do a better job of providing flood insurance coverage to Oklahomans. More than 87 percent of properties in Oklahoma’s floodplains and approximately 87,000 homes and businesses in special flood hazard areas lack flood insurance coverage.



OWRB Kicks Off Year of Clean Water

OWRB staff and members of other state water quality interest groups met on February 28 to discuss plans to celebrate the upcoming 30th anniversary of the Clean Water Act. Last December, Governor Keating proclaimed 2002 as the "Year of Clean Water" in Oklahoma to commemorate the anniversary. In the next few months, as celebratory events throughout the state and nation are being planned, Derek Smithee and Juli Ridgway of the OWRB's Water Quality Division will serve as Oklahoma liaisons to the national Year of Clean Water Steering Committee.

The Clean Water Act's 30th anniversary, October 18, 2002, marks a milestone in the efforts to protect our nation's water resources and presents an excellent opportunity to enhance public appreciation for the importance of our water resources, celebrate water



OWRB's Juli Ridgway discusses Year of Clean Water events quality improvements, build a better understanding of remaining challenges and solutions, rekindle the public stewardship ethic and support for watershed protection programs, and educate our nation's young people. For more information, go to www.yearofcleanwater.org.

Hulah Lake Level Plummets

Recent drought in northern Oklahoma has depleted Hulah Lake to historically low levels. In early April, the lake's conservation storage stood at only 18 percent.



Hulah Lake (photo courtesy U.S. Army Corps of Engineers)

Hulah Lake, on the Caney River in Osage County, is the primary water supply for the City of Bartlesville. City leaders have implemented mandatory water use restrictions and are seeking various forms of assistance from state and federal officials.



Left to right: OWRB Executive Director Duane Smith, Representative Larry Adair, and Board members Harry Currie and Grady Grandstaff (Chair) at the OWRB's Legislative Reception on Feb. 12, 2002

New Web Site for OSE

The brand new Web site of the Office of the Oklahoma Secretary of Environment, supported by the OWRB, is now online at www.ose.state.ok.us.

The site includes late-breaking news on Oklahoma's priority environmental issues, access to important reports and related OSE documents, and links to other state and environmental agency Web sites.

The Secretary's Office requests that agencies with environmental activities provide a link to the OSE Web site.

Please check out this site and let us know what you think.

Welcome
OKLAHOMA WATER RESOURCES BOARD

Visit the OWRB web site at
www.owrb.state.ok.us

Water Resources Update

Reservoir Storage

Reservoir storage levels in Oklahoma remain steady, although supplies are very low in a few isolated areas. As of April 9, the combined normal conservation pools of 31 selected major federal reservoirs across Oklahoma (see below) are approximately 97.1 percent full, a 0.3 percent increase from that recorded on March 25, according to information from the U.S. Army Corps of Engineers (Tulsa District). Only six reservoirs have experienced lake level decreases since that time. Twelve reservoirs are currently operating at less than full capacity (compared to 12 two weeks ago). Four reservoirs (including Hulah, the primary water supply for the City of Bartlesville, critically low at only 19 percent; Lugert-Altus, 48 percent; Copan, 71.5 percent; and Tom Steed, 66.6 percent) **remain below 80 percent capacity**.

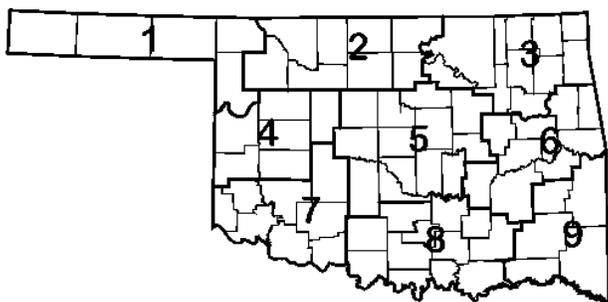
Storage in Selected Oklahoma Lakes & Reservoirs

As of April 6, 2002

Climate Division	Conservation Storage (acre-feet)	Present Storage (acre-feet)	Percent of Storage	
			Conservation	Flood
North Central	444,015	438,205	98.7	0.64
Northeast	3,478,257	3,267,696	93.9	1.50
West Central	276,790	248,909	89.9	0.00
Central	154,225	154,225	100.0	6.60
East Central	2,968,681	2,968,681	100.0	21.48
Southwest	301,810	201,369	66.7	0.00
South Central	2,795,156	2,788,386	99.8	26.66
Southeast	1,507,931	1,507,931	100.0	55.35
State Totals	11,926,865	11,575,402	97.1	14.89

Drought Indices

According to the latest Palmer Drought Severity Index (April 6, below), drought conditions continue to worsen in northwest Oklahoma. Three regions—the North Central, West Central, and Northwest climate divisions—are experiencing “moderate” drought while the Northeast region is classified in the “mild” drought category. Seven of Oklahoma’s nine climate divisions have undergone PDSI moisture decreases since March 23. The greatest decrease occurred in the West Central climate division.



The latest monthly Standardized Precipitation Index (through March, below) indicates long-term dryness throughout the past 6 to 12 months, especially in northern Oklahoma. Among the selected time periods (3-, 6-, 9- and 12-month SPIs), the Northwest and North Central climate divisions report “extremely dry” conditions throughout the last 9-month period. Also particularly dry is the West Central region, which is “very dry” over the past 6- and 9-month periods. Among periods beyond one year, the 15- and 24-month SPIs also report dry conditions for the three northern climate divisions. In particular, the North Central region is “very dry” throughout the past 15 months.

Palmer Drought Severity Index

Standardized Precipitation Index

Through March 2002

Climate Division (#)	Current Status 4/6/2002	Value		Change In Value				
		4/6	3/23		3-Month	6-Month	9-Month	12-Month
NORTHWEST (1)	MODERATE DROUGHT	-2.35	-2.19	-0.16	NEAR NORMAL	VERY DRY	EXTREMELY DRY	VERY DRY
NORTH CENTRAL (2)	MODERATE DROUGHT	-2.74	-2.31	-0.43	NEAR NORMAL	VERY DRY	EXTREMELY DRY	VERY DRY
NORTHEAST (3)	MILD DROUGHT	-1.05	-0.80	-0.25	NEAR NORMAL	NEAR NORMAL	MODERATELY DRY	MODERATELY DRY
WEST CENTRAL (4)	MODERATE DROUGHT	-2.57	-2.07	-0.50	NEAR NORMAL	VERY DRY	VERY DRY	MODERATELY DRY
CENTRAL (5)	INCIPIENT MOIST SPELL	0.97	1.07	-0.10	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
EAST CENTRAL (6)	MOIST SPELL	1.80	2.00	-0.20	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
SOUTHWEST (7)	NEAR NORMAL	-0.25	-0.46	0.21	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	MODERATELY DRY
SOUTH CENTRAL (8)	UNUSUAL MOIST SPELL	2.53	2.30	0.23	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
SOUTHEAST (9)	VERY MOIST SPELL	3.02	3.20	-0.18	VERY WET	VERY WET	VERY WET	MODERATELY WET

Financial Assistance Program Update

Totals as of April 9, 2002

FAP Loans—253 totaling \$397,835,000

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 extremely competitive low-interest rates, averaging approximately 4.762 percent since 1986.

CWSRF Loans—125 totaling \$440,064,040

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—21 totaling \$70,977,418

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—321 totaling \$27,003,540

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 1,500 inhabitants.

Emergency Grants—487 totaling \$28,854,670

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

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.

More information about the OWRB's Financial Assistance Program can be obtained by calling the OWRB at (405) 530-8800.

Grady Grandstaff, *Chairman*; Richard C. Sevenoaks, *Vice Chairman*; Ervin Mitchell, *Secretary*
Lonnie L. Farmer, Richard McDonald, Bill Secrest, Dick Seybolt, Wendell Thomasson, Harry Currie

Brian Vance, *Writer/Editor* • Darla Whitley, *Writer/Layout* • Barry Fogerty, *Photography* • James Leewright, *Graphics*

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