In This Issue

Legislature Sets OWRB Agenda for Coming Year

Water Board Welcomes Herrmann

Board Elects New Officers

Clean Water Fund Plan Subject of June Meeting

Artesian Well Sites Needed for Arbuckle Study

Arbuckle-Simpson Study Update

Bartlesville Loan Closing Largest Ever

Grand Lake Project Underway

Benefits of Native Aquatic Plant Life to Lakes

Brueggen Honored with Employee
Award

Oklahoma Drought Monitor



Bimonthly Newsletter of the Oklahoma Water Resources Board



Duane A. Smith

OWRB Executive Director

From the Director

In June, the OWRB's Leadership Team conducted our semi-annual review of the agency's Strategic Plan, including identification of successes over the past year. Among highlights identified by the group were the excellent ratings achieved on our Financial Assistance Program's two bond issues, receipt of funding for the Beneficial Use Monitoring Program in the agency's base appropriation, creation of an online well log application system, initiation of the Arbuckle-Simpson Hydrology Study, establishment of the 0.037 milligram per liter criteria for phospho-

rus in Oklahoma's Scenic Rivers, and finalization of an agreement with Arkansas on multi-state implementation of the new criteria that will reduce the amount of harmful nutrient contributions to those very important watersheds. These and other accomplishments have not only furthered the

See From the Director, Page 2

Legislature Sets OWRB Agenda for Coming Year

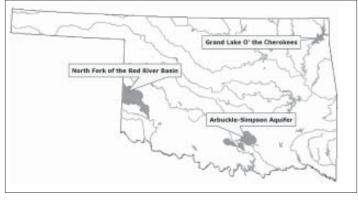
As usual, the legislative session in 2004 was eventful for the Water Resources Board. A number of important bills will influence agency activities and policies during fiscal year 2005 and beyond. The Oklahoma State Legislature adjourned sine die on May 28.

Concerning appropriations, House Bill 2007 provides \$4,122,345 for the OWRB from the state's general revenue. The amount is approximately \$100,000 more than that granted last year. HB 2007 also appropriates \$2.2 million to the OWRB's Rural Economic Action Plan (REAP) grant program, which provides financial assistance to smaller Oklahoma communities in need of water and sewer project improvements.

Senate Bill 1031 appropriates \$191,632 from the REAP Water Projects Fund, established through proceeds from the state's gross production tax, for the North Fork of the Red River Study and an investigation of algae impacts at Oklahoma lakes. The Water Board is in the second year of its North Fork study, a cooperative assessment between the OWRB and Bureau of Reclamation of water quality, quantity, and base flow hydrology on Sweetwater Creek and the North Fork of the Red River watersheds, with a particular focus on Lugert-Altus Reservoir. The

second phase of the study will determine the potential effects of groundwater withdrawals in the basins and include development of models to evaluate the augmentation of Lugert-Altus Reservoir's dependable yield. The reservoir is a vital irrigation source for the cotton

See Legislature, Page 2



Major OWRB studies for which the State Legislature granted funding in fiscal year 2005. The investigation of algae problems at Grand Lake is the first in a statewide effort to study that issue in targeted lakes throughout Oklahoma.

From the Director . . . Continued from page 1

agency's mission and our status as Oklahoma's water agency but also have provided Oklahoma citizens with better protection and management of their precious water supplies.

The team also revisited and updated our "high priority" projects through 2009. We again emphasized the need to update the Oklahoma Comprehensive Water Plan, expand our efforts to study and evaluate the state's surface and groundwater resources, recapitalize the dwindling Statewide Water Development Revolving Fund to meet future community water and wastewater infrastructure needs, further develop and fine-tune our water quality monitoring programs, improve implementation of Oklahoma's Water Quality Standards (including establishment of standards for groundwater), and improve the way we manage our growing database of water-related information for both the public and Water Board staff. For the revised OWRB Strategic Plan, the group determined that the agency should pursue additional strategies to deal with Tribal water claims, review state water law, and expand public outreach.

Of course, another reliable measure of this agency's success can be determined by progress made in furthering Oklahoma's water policies during the State Legislative session. Initially, as we reviewed both the high and low points of the session from the Board's perspective, the

most obvious disappointment surrounded the defeat of Senate Bill 903. The bill, as last amended, would have provided much-needed funding for the Revolving Fund and State Financial Assistance Program as well as for the Water Plan update. Although other state needs took precedent in 2004, we made significant headway in educating newer members of both the House and Senate about local water/sewer project needs and potential shortfalls in revenue to make required improvements. And I believe we have bipartisan support in the State Legislature for a statewide water planning effort, which would be required to identify and fund those projects. Similarly, the State Legislature restated its confidence in the OWRB and staff in providing direct support for several important technical water studies and projects, including phase two of the North Fork of the Red River study, which includes potential augmentation of water supply at Lake Lugert-Altus, and initiation of a revegetation and wildlife habitat project at Grand Lake.

So on closer inspection of our achievements during the past year, I view the Water Board's glass as definitely half *full*. While it's true that much work lies ahead to reach the lofty goals we have set for ourselves and this agency, with continued dedication and the technical expertise and professionalism possessed by our staff, it remains only a matter of time.

Legislature . . . Continued from page 1



This February 2004 photo of an exposed dock at Lugert-Altus Reservoir (only 22 percent full at the time) demonstrates the lake's chronically low water level, an important aspect of the OWRB's current study of the North Fork of the Red River Basin. (Photo courtesy Oklahoma Climatological Survey.)

industry in southwest Oklahoma. The second study will investigate the impact of algae on public water supply and aquatic life at several lakes in the state, beginning with Grand Lake O' the Cherokees, in northeast Oklahoma.

SB 1031 also authorizes \$500,000 in REAP (gross production tax) funds for the Arbuckle-Simpson Hydrology Study and authorizes the OWRB to assist the South

Pittsburg County Water Supply Trust Authority in providing water to their member communities.

House Bill 2284, an amendment to the Oklahoma Floodplain Management Act, directs the OWRB to establish and administer accreditation standards for community floodplain managers in the state. The bill strengthens Oklahoma's overall floodplain management program and will play a vital role in floodplain management and flood damage mitigation in Oklahoma.

House Bill 2440 extends the existing moratorium on out-of-state water sales, passed in 2002, from three to five years; the prohibition was scheduled to expire next year. Beginning November 1, the moratorium remains in effect unless otherwise directed by the Legislature or until a comprehensive study of statewide water resources is completed. [The OWRB is currently preparing for its decennial (10-year) update of the *Oklahoma Comprehensive Water Plan*.] The legislation does not apply to sales or other exportation of less than eight million gallons of water each month. Also exempt is water contained in agricultural crops, animal and dairy products, beverages, or processed or manufactured products, as well as products transported in cans, bottles, packages, kegs, or barrels.

Senate Bill 1259 changes the name of a seven-mile segment of the North Canadian River flowing through downtown Oklahoma City to the "Oklahoma River." The City is currently in the final stage of a \$54 million project to rehabilitate the waterway and accentuate its potential tourism benefits.

Board Elects New Officers

At their June 8 meeting, the Oklahoma Water Resources Board elected new officers: Ervin Mitchell, Chairman; Lonnie Farmer, Vice Chairman; and Bill Secrest, Secretary. Former Board Chair, Grady Grandstaff, had previously announced that upon expiration of his term at the end of May 2004, he would not be returning to the Board. Currently, the Board is operating with eight members, with a vacancy for District 2, representing recreational water use.

Water Board Welcomes Herrmann



Rudolf John Herrmann (Tulsa) represents irrigation water use interests. He is a retired President and CEO of Dover Resources Inc. He earned a B.S. in Industrial Engineering from Iowa State University and an MBA from the Harvard Business School. He is currently an Adjunct Assistant Professor in the Master of Science in Engineering and Technology Management Program at Oklahoma State University. Mr. Herrmann is an at-large member and his term will expire in May 2007.

Clean Water Fund Plan Subject of June Meeting

The OWRB's Financial Assistance Division hosted a public meeting on June 29 to present and receive comments on the draft FY 2005 Clean Water State Revolving Fund (CWSRF) Intended Use Plan and Priority Project List. The OWRB, which administers the CWSRF loan program, is responsible for preparing the annual plan, a document that establishes program goals, identifies sources and uses of funds, and provides a ranked listing of projects proposed by entities requesting to receive loan funds.

It is anticipated that approximately \$127.9 million will be available for water pollution control loans during FY 2005. To date, 30 communities have requested proposed projects to be placed on the FY 2005 Project Priority List to receive financing in the amount of approximately \$120.6 million.

Initiated by the 1987 amendments to the Federal Clean Water Act, the CWSRF loan program was established in Oklahoma to provide a renewable financing source to help Oklahoma's communities address their water pollution control needs while protecting surface and groundwater quality. The program enables eligible public sewer entities to receive low-interest financing for projects, including treatment works and urban storm water runoff



projects and nonpoint source pollution control activities. Repayments of these loans, along with annual federal and state funds and investment income, provide financing for future loans.

A copy of the draft plan is available on the OWRB's Web site at www.owrb.state.ok.us or may be obtained by contacting Julie Cunningham at (405) 530-8800. Entities wishing to be included on the State's FY 2005 Intended Use Plan should contact the OWRB and submit a pre-application form available at www.owrb.state.ok.us/forms/faforms.

An OWRB Clean Water SRF loan of almost \$9 million in December 2001 provided the financing necessary for construction of this flow equalization basin and other improvements at the City of Miami's wastewater treatment plant.

Mark Your Calendars

25th Annual Governor's Water Conference

October 19-20, 2004

Cox Convention Center Oklahoma City, Oklahoma

Artesian Well Sites Needed for Arbuckle Study

As part of the ongoing hydrology study, the OWRB is soliciting information from local citizens on flowing artesian wells in the Sulphur area of the Arbuckle-Simpson aquifer. Public assistance will be crucial in identifying the location of area wells, which hydrologists and geologists will use to establish historic trends in groundwater flow, availability, and usage. An artesian well is one that has been drilled into a pressurized aquifer, such as the Arbuckle-Simpson, where the underground pressure is great enough for the water to rise inside the well, and, in some cases, discharge to the surface without a pump.

The first flowing well drilled in the Sulphur area was the Bridgeman Well, drilled in 1889, but proliferation of flowing wells did not occur until the 1920s and 1930s. According to the U.S. Geological Survey, the total flow from artesian wells in 1987 was only about 10 percent of that reported in 1939. The Vendome Well—one of the most significant landmarks in the Chickasaw National Recreation Area, originally drilled in 1922—once flowed at an estimated 2,500 to 3,500 gallons per minute. Today, however, it yields only about 400 to 500 gallons per minute.

It has become evident that artesian flow in the aquifer has decreased drastically over time, although many artesian wells still exist and are utilized in the Arbuckle region. Because a number of these wells were drilled a generation ago, records have been lost and their locations remain a relative mystery. Once the well sites are located and flows determined, researchers

Arbuckle-Simpson Study Update

OWRB staff in the Planning and Management and Water Quality Divisions recently initiated periodic stream flow and stage height monitoring at sites on the Blue River, Pennington Creek, Mill Creek, Honey Creek, Delaware Creek, and Oil Creek. In addition, groundwater level recorders have been installed on 10 existing wells in the Arbuckle-Simpson region. In May, geology students from Oklahoma State University assisted the OWRB by measuring water levels from several water wells in the Hunton Anticline area (the aquifer's eastern region). The U.S. Geological Survey will soon install a stream gage on Honey Creek downstream of Turner Falls.

OWRB staff are currently reviewing historical precipitation records and permitted water use reports. OSU is also assisting the Water Board in a literature and data review of the region's hydrology, including an investigation of petroleum-related information to better understand the geologic and hydrologic properties of the aquifer. To gain a more accurate representation of surrounding geology, Dr. Todd Halihan of OSU has initiated electrical imaging of water wells in the region. The OWRB has also hired two graduate student researchers, Ivy Graham (OSU) and Brent Wilson (OU), to assist in the study. In particular, Wilson is currently conducting a historical review of flowing artesian wells in the Sulphur area while Graham updates information on springs emanating from the aquifer.

Other near-future activities include:

- the use of geochemistry to gain better understanding of the flow paths of Arbuckle-Simpson waters;
- utilization of fracture flow modeling to discern how the heavily fractured rocks affect the flow of groundwater through the aquifer;
- coupling of groundwater flow and rainfall-runoff models to better estimate aquifer recharge; and
- the use of tree ring analysis in reconstructing streamflow and precipitation records throughout the past 200-300 years.



The OWRB's Brent Wilson obtains the global positioning system (GPS) location of the Townsley water well in the City of Sulphur. (Photo courtesy Sulphur Times-Democrat.)

can compare current to historic flow rates, which will provide a better understanding of the dynamics of the aquifer flow system.

Specifically, OWRB researchers are seeking the following information on existing artesian wells: location, date the well was drilled, flow of the well or approximate date that flow ceased, and owner contact information.

OWRB staff will frequent the Arbuckle-Simpson area throughout the summer to inventory wells and collect other supporting data for the ongoing hydrologic study of the region's water resources. To contribute information on the location of artesian or other wells, springs, sinkholes, or caves in the Sulphur vicinity, call Brent Wilson or Noel Osborn at 405-530-8800.

Bartlesville Loan Closing Largest Ever

On April 30, the OWRB's Financial Assistance Program closed the largest Drinking Water SRF loan in the program's history-\$45,510,000. The loan was made to Bartlesville for four major projects: the construction of a new 26 million gallon per day water treatment plant with a 4million gallon treated water reservoir, improvements to the Hulah Lake raw water pump station (including flow measurement and a SCADA system), construction of a new parallel raw water line from Hudson Lake, and construction of a new finished water transmission line from the new treatment plant to the distribution system. The new treatment plant will be a regional facility serving the water needs of Bartlesville, Dewey, Osage RWD #1, Strikeaxe, Lincoln County RWD #2, Washington County RWD #5, Leeanne Water, Bar Dew Water Association, Ocheleta, Ramona, Minnesota Water District, and Washington County RWD #1.

It is estimated that over the life of the loan, Bartlesville will save in excess of \$13 million by borrowing from the OWRB. Board member Bill Secrest joined Financial Assistance Division Chief Joe Freeman at the ceremony, which preceded the financial closing and signing of documents. Other guests included Okla.

Dept. of Environmental Quality (ODEQ) officials, Tetra Tech FHC engineers, Municipal Finance officers, and local city officials.

The new plant, which will be used to treat potable water only, is necessary due to state and federal regulations passed in 1998. A pilot study completed in 2000 indicated a new plant was warranted, not only to meet the regula-

tions but to keep up with the everincreasing demands of its customers. The city was given until 2003 to comply with the regulations passed in 1998, but received an extension on the deadline after the project faced

several delays due to site location disputes. Construction on the new plant is expected to begin this summer and must be completed by June 2006. The site is located on North Sunset boulevard and Hudson Lake Road. This loan was included in the evaluation conducted last fall by Standard and Poor's, Moody's, and Fitch in determining the AAA rating on the Board's Drinking Water SRF bond issue.

Oklahoma's Drinking Water State Revolving Fund (DWSRF) Program offers low-interest loans administered cooperatively between the OWRB and ODEQ. The goal of the DWSRF is to assist communities with public water supply infrastructure construction projects to come into compliance with state and federal compliance orders by providing 70% of market interest



Bartlesville City Manager Steve Brown, Mayor Ted Lockin, OWRB member Bill Secrest and Joe Freeman, Chief of the OWRB's Financial Assistance Division

rate loans from DWSRF funds for the following drinking water categories: drinking water treatment, new intake/raw water lines, major distribution/storage system rehabilitation, new storage, and new transmission/ distribution systems. All DWSRF loans have the following general terms: 3.00% fixed interest rate (70%) of market interest rate on Series 2003 DWSRF Bonds), 0.50% administration fee, 20 years maximum payback period, 1.25 rate covenant factor, no reserve requirements (unless required by borrower's other outstanding debt), loan proceeds drawn down as cost are incurred, interest and administrative fees billed every six months, and principal billed every six months after construction completion.



The OWRB's Joe Freeman, Executive Director Duane Smith, and Bill Secrest break project ground with Bartlesville city officials at the ceremonial loan closing on April 30.

Grand Lake Project Underway

A new study coordinated by the Lakes and Special Studies section of the OWRB's Water Quality Division will focus on improving and increasing wildlife habitat at Grand Lake by introducing native aquatic plants. The additional plants will not only benefit wildlife habitat at the lake, but should also improve the lake's water quality.

Beginning in mid-July with a three-year feasibility study to determine the best plants, caging methods, and water levels for planting, the project will entail planting submergent and emergent plants at the shoreline in zero to three feet of water. Initially, plant types will include arrowhead ("Duck Potato"), American water willow ("Bass Grass"), water stargrass, bulrush, coontail, water celery, and various water lillies.

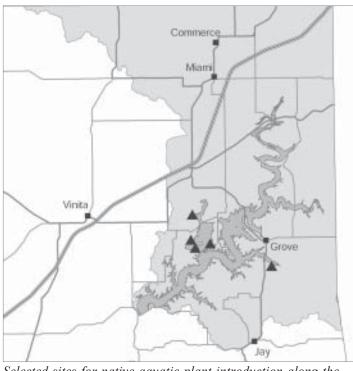
By planting "founder colonies"

and through natural reproduction by the colonies, 1000 acres of new fish and wildlife habitat can be created over the next 20 years. In the initial stages, the young and vulnerable plants will be surrounded by plastic coated wire mesh to protect them from being eaten by fish and water fowl. Visitors to Grand Lake are asked to be mindful of these cages and not disturb them.

Benefits of Native Aquatic Plant Life to Lakes

- Food Aquatic plants are an important food source for many animals. Waterfowl eat the seeds, leafy parts, and tubers of plants, such as pondweeds, arrowhead, and water pepper.
- Habitat Aquatic plants provide important living space for small animals, such as aquatic insects, snails, and crustaceans, which in turn supply food for fish and waterfowl.
- Cover Young fish and amphibians use aquatic plants as a source of cover from predatory fish and birds. This makes aquatic plants important nurseries for baby fish.
- Housing Supplies Sturdy, emergent plants, like cattail and bulrush, provide nest and den materials for many birds and mammals.
- Erosion Control Underwater and emergent plants will protect shorelines from erosion due to wave action or currents. They can help stabilize the sediment, which can increase water clarity.
- Nutrient Cycling Aquatic plants can use nutrients that would otherwise be used by algae, thereby increasing water clarity. They have an ability to soak up pollutants from contaminated water.
- Resistance to Invasion A diverse and healthy native plant community will resist invasion by non-native noxious aquatic weeds, such as Eurasian watermilfoil.

Source: The University of Washington School of Aquatic & Fishery Sciences www.fish.washington.edu



Selected sites for native aquatic plant introduction along the shoreline of Grand Lake O' the Cherokees

Brueggen Honored with Employee Award

At the May staff meeting of the OWRB, Mary Nell Brueggen of the Planning and Management Division was recognized as Employee of the Quarter. Throughout her 15 years at the Water Board, Brueggen has consistently provided excellent and efficient service in managing imaging workflow. Brueggen has demonstrated professionalism and patience in customer service, and has been diligent in processing water rights and in the preparation of public notices.

In addition to these efforts, Brueggen was nominated for her positive attitude, sense of teamwork, and creativity.



OWRB Executive Director Duane Smith with Mary Nell Brueggen

Oklahoma Drought Monitor

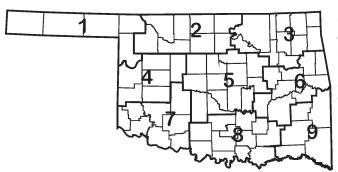
Reservoir Storage

Lake storage in Oklahoma remains generally good, although lakes in the southwest continue to experience low levels, despite recent rainfall. As of July 12, the combined normal conservation pools of 31 selected major federal reservoirs across Oklahoma (see below) are approximately 98.8 percent full, a 1.3 percent increase from that recorded on June 15, according to information from the U.S. Army Corps of Engineers (Tulsa District). Only three reservoirs have experienced lake level decreases since that time. Only seven reservoirs are currently operating at less than full capacity (compared to 10 four weeks ago). Two reservoirs—Lugert-Altus, only 51.4 percent full; and Tom Steed, 58.6 percent—remain below 80 percent capacity.

Storage in Selected Oklahoma Lakes & Reservoirs As of July 12, 2004									
Climate Division	Conservation Storage (acre-feet)	Present Storage (acre-feet)	Percent of Conservation Storage						
North Central	505,170	505,034	99.9						
Northeast	3,710,194	3,710,194	100.0						
West Central	276,790	251,950	91.0						
Central	154,225	154,225	100.0						
East Central	3,183,243	3,183,243	100.0						
Southwest	301,810	199,778	66.2						
South Central	3,118,676	3,089,512	99.1						
Southeast	1,561,859	1,561,725	100.0						
State Totals	12,811,967	12,655,661	98.8						

Drought Indices

According to the latest Palmer Drought Severity Index (July 10, below), no regions in Oklahoma are currently experiencing drought conditions and none of Oklahoma's nine climate divisions have undergone PDSI moisture decreases since June 12. The most modest increase occurred in the Northeast climate division.



The latest monthly Standardized Precipitation Index (through June, below) indicates only moderate long-term dryness in east central and southeast Oklahoma. Among the *selected* time periods (3-, 6-, 9- and 12-month SPIs), no climate divisions indicate dry conditions. Considering longer periods (through six years), only the East Central and Southeast climate divisions report "moderately dry" conditions at various times over the past 30 months.

Palmer Drought Severity Index				Standardized Precipitation Index Through June 2004				
Climate Division (#)	Current Status 7/10/2004	Valu 7/10	ie 6/12	Change In Value	3-Month	6-Month	9-Month	12-Month
NORTHWEST (1)	MOIST SPELL	1.62	-211	3.73	NEAR NORMAL	MODERATELY WET	NEAR NORMAL	NEAR NORMAL
NORTH CENTRAL (2)	MOIST SPELL	1.17	-0.70	1.87	NEAR NORMAL	MODERATELY WET	NEAR NORMAL	NEAR NORMAL
NORTHEAST (3)	MOIST SPELL	1.51	0.73	0.78	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
WEST CENTRAL (4)	INCIPIENT MOIST SPELL	0.66	-1.85	2.51	NEAR NORMAL	MODERATELY WET	NEAR NORMAL	NEAR NORMAL
CENTRAL (5)	NEAR NORMAL	-0.17	-1.41	1.24	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
EAST CENTRAL (6)	INCIPIENT MOIST SPELL	0.93	-1.36	2.29	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
SOUTHWEST (7)	NEAR NORMAL	0.20	-1.54	1.74	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
SOUTH CENTRAL (8)	MOIST SPELL	1.02	-0.55	1.57	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL
SOUTHEAST (9)	INCIPIENT MOIST SPELL	0.96	-1.48	2.44	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL	NEAR NORMAL

Financial Assistance Program Update

Loans/Grants Approved as of June 8, 2004

FAP Loans—305 totaling \$529,975,000

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—156 totaling \$520,002,020

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-40 totaling \$162,289,895

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—395 totaling \$34,337,477

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—508 totaling \$29,820,332

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.

Total Loans/Grants—1,404 totaling \$1,276,424,724

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.

Ervin Mitchell, *Chairman*; Lonnie L. Farmer, *Vice Chairman*; Bill Secrest, *Secretary* Harry Currie, Rudy Herrmann, Jack Keeley, Mark Nichols, Richard C. Sevenoaks

Brian Vance, Writer/Editor • Darla Whitley, Writer/Layout • Barry Fogerty, Photography

This bimonthly newsletter, printed by Oklahoma University Printing Services, Norman, Oklahoma, is published by the Oklahoma Water Resources Board as authorized by Duane A. Smith, Executive Director. Eighty-eight hundred copies have been printed and mailed bimonthly at an approximate cost of 29 cents each. Copies have been deposited at the Publications Clearinghouse of the Oklahoma Department of Libraries.

www.owrb.state.ok.us

OKLAHOMA WATER RESOURCES BOARD 3800 N. Classen Boulevard Oklahoma City, OK 73118

Bimonthly Newsletter of the



STANDARD PRESORTED
U.S. POSTAGE
Oklahoma City, OK
Permit No. 310