

OKLAHOMA WATER NEWS

Bimonthly Newsletter of the Oklahoma Water Resources Board



*from
the desk
of the
Director...*

It was my pleasure late in January to visit with many of you at public meetings throughout the state concerning the updated Oklahoma Comprehensive Water Plan. Although the 1980 OCWP spawned numerous improvements in management of our water resources, the 15-year interim since its publication has seen profound changes in social, political and economic conditions. Declines in the world oil market and the agricultural industry impacted Oklahoma's economy, significantly altering growth patterns in population, industry, water use and all other factors related to economic well-being.

Another change expected to dominate the 21st century is the federal government's declining role in state funding for new water projects.

Recognizing that a dynamic plan is crucial if the state is to move forward with confidence that its water supplies are adequate and protected, the 1994 Legislature, in House Bill 2036, directed the OWRB to continuously update the Water Plan. This first update is the document we have introduced at hearings in January.

We have worked hard to make the OCWP more realistic, responsive and implementable. The primary objective was to explore solutions to water resource problems from a policy perspective. The policy approach focuses on assessing general needs, identifying problem areas and opportunities, establishing objectives, and recommending specific policy choices

Continued on page 2

Water Board Mentors Students In Solving Pollution Problems

High school students attending the Environmental Summit at the Omniplex Science Museum in Oklahoma City January 17 dove into a real water pollution problem. Paul Koenig, OWRB environmental specialist who heads up a Phase I Clean Lakes Study at Lake Arcadia, described the lake's potential pollution problems and asked the 80 students to help him solve them.

The Board's Diagnostic and Feasi-

bility Study, enabled by a \$148,000 grant from the U.S. Environmental Protection Agency and state matching funds, will begin in February. The OWRB staff's technical expertise earlier earned recognition by EPA as the leader in Region VI in Clean Lakes initiatives.

Lake Arcadia, a water supply, flood control and recreation lake north of Oklahoma City, was completed by

Paul Koenig of the Water Resources Board answers questions for a group of students during their brainstorming session. The larger group of 80 broke into small groups to discuss solutions to Arcadia's pollution problems.



We're Moving!

Early in February, the Oklahoma Water Resources Board will move to 3800 N. Classen. Since the April 19 bombing that disabled the OWRB offices at 600 N. Harvey, the Water Board has been temporarily housed in the State Insurance Building.

Now, we proudly move into our new offices at 3800 N. Classen, Oklahoma City, 73118. Call us at:

(405) 530-8800.
FAX (405) 530-8900.

the Corps of Engineers in 1986 and already shows signs of aging.

Largemouth bass populations are declining and bio-diversity is low; water quality is variable; sediments, trash and pollutants are increasing in the watershed.

Its proximity to Edmond and Oklahoma City have made it popular with fishermen, campers and recreationists who crowd its shores and parks every warm weekend.

"After breaking into brainstorming groups of 10, the students came up with a list of intelligent, incisive suggestions for stemming pollution in the watershed," said Koenig. They

Continued on page 2

Director, continued from page 1

to achieve desired goals. The Plan addresses 11 categories of water policy issues from new perspectives. Public meetings such as those just completed, give Oklahoma citizens opportunities to shape the final Water Plan document, and indeed, the destiny of our state.

We appreciate your being part of this process and we look forward to your continued interest and participation.

Mentor, continued from page 1

included filtering inflows to the lake; planting grass cover to prevent erosion and sedimentation; cleaning up



Koenig describes the OWRB Clean Lakes Project at Lake Arcadia to students attending the Environmental Summit in Oklahoma City January 17.

trash by volunteers or prisoners, stricter enforcement and stiffer penalties for littering; educating farmers, industries and citizens in the use of chemicals; building barriers to slow inflow; providing brush cover to protect young fish; encouraging civic groups and Arcadia Lake homeowners to "adopt" segments of shoreline for cleanup; constructing terraces and other conservation structures in the watershed; and pinpointing pollution by monitoring before and after rains.

The students who participated in the Sixth Annual Environmental Summit came from high schools throughout the Oklahoma City metro area. The Summit was sponsored by the Omniplex and Students Acting for a Vital Earth (SAVE).

Canton Advisory Committee Reaches Accord

An agreement signed at the December 12 Board meeting proved that Oklahomans can work out problems amiably and on their own. The agreement was forged by the Water Resources Board on behalf of the Oklahoma City Water Utilities Trust, the U.S. Army Corps of Engineers, Canton recreationists, Oklahoma City Boat Club members, and fish and wildlife interests. The Canton Lake Agreement signaled accord between all who shared an interest in the operation of Canton Lake, Oklahoma City's water supply lake located 100 miles northwest of the city.

"It's a splendid example of mediation between friends, before a problem gets out of hand," said OWRB Executive Director Gary Sherrer.

During last summer's prolonged dry spell, the lake became the center of a debate among those groups, all of whom had different ideas concerning use of Canton's waters.

The Corps of Engineers, who operates the lake, suggested that the Water Board coordinate a committee to address the issues concerning water levels at Canton.

Water in Canton Lake, on the Canadian River in northwest Oklahoma, is released from the dam to flow down the river for storage in Lake Overholser and Lake Hefner. The water supply "belongs" to the Oklahoma City Water

Utilities Trust. However, recreationists at Canton said low water levels resulting from big water releases impair fishery and have catastrophic effects on the Annual Walleye Rodeo, a fishing tournament that attracts some 180,000 fishermen. On the other end of the river channel and the other side of the debate are members of the Oklahoma City Boat Club, whose interest is maintaining water levels and protecting Lake Hefner's national reputation as a prime sailboat lake.

"We brought together all the interests, put the various issues on the table, and engaged in amiable discussions," Sherrer said.

The Canton Lake Advisory Committee represented the Oklahoma City Water Utilities Trust, the Oklahoma Water Resources Board, Corps of Engineers, Canton Lake Association, Oklahoma City Boat Club and Oklahoma Department of Wildlife Conservation. The dialogue developed in a half dozen meetings resulted in two important measures.

The first was that the Corps of Engineers adopt a seasonal pool plan in an effort to protect the fishery. The second was the adoption of a release policy to guide Oklahoma City Water Utilities Trust in determining when releases of Canton Lake water are needed.



Present at the Board meeting were Mike Mathis and Duane Smith of the OWRB, Jim Couch of the Oklahoma City Water Utilities Trust, Buddy Kidd of the Oklahoma City Boat Club, Curt Roggow of Congressman Frank Lucas' office, Bill Stewart of the Canton Lake Authority and Dean Couch of the OWRB.

Dr. Lloyd Church Died Dec. 27

Dr. Lloyd E. Church, retired Wilburton dentist, lifetime soil and water conservationist and member of the first Water Resources Board, died at the age of 99. Wilburton's mayor honored Dr. Church by requesting businesses to close during the afternoon funeral on December 29.

Church was born in 1896 near Carmen, Cherokee Strip, Oklahoma Territory. He had been a resident of Wilburton since 1952, when he moved from Clinton.

He was a friend and advisor to Sen. Robert S. Kerr, and their discussions formed the foundation upon which Kerr built support for the Arkansas River Navigation Project.

In Wilburton, Church spearheaded the Fourche-Maline watershed project of 14 flood control structures. One of these, a 185-acre lake that supplies water to Wilburton and Latimer County RWD #1 was named "Doctor Church Lake in his honor."

Church served on the Planning and Resources Board and was named by the 25th Legislature to chair the Water Study Committee. The committee recommended creation of the Oklahoma Water Resources Board in 1957, an agency Dr. Church served for two decades, until his retirement in 1977. Church was named "Oklahoma Water Pioneer" at the 1985 Governor's Water Conference.

Friends may address memorials to the Lloyd E. Church Foundation, Eastern Oklahoma State College, Wilburton, 74578.

Texans Target Cedar Trees

Farmers and ranchers in the Texas Hill Country have long exterminated cedar trees as water wasters in their dry lands. Now, five years of research at the Texas Agricultural Research Station at Temple backs up the ranchers' claim. Researchers concluded that clearing native mountain cedar (named the ashe juniper by scientists) provides more recharge to the Edwards aquifer.

Over a two-year period, two 40-acre tracts in Uvalde County were studied for rainfall and evaporation before any cedars were cut. Researchers axed only small, young trees on one

plot and left mature trees standing. The other plot was untouched. Careful studies revealed that the cleared land yielded about 60,000 more gallons of groundwater recharge per acre in the first year of study. Because grasses have replaced the young cedars, total water savings amount to 150,000 gallons per acre per year.

In similar studies nearby, U.S. Department of Agriculture researchers determined that clearing 80 percent of the mountain cedars from rangeland yielded increased spring flows. USDA researchers say they noted an increase of about 20 percent in spring flows with 30 percent less rainfall.

Freeman Named to RDC Board

Joe S. Freeman, chief of the OWRB Financial Assistance Division, was elected to the executive committee of the Oklahoma Rural Development Council at its December meeting. He replaces Anna Belle Wiedemann of the Department of Agriculture.

Freeman joined the OWRB in 1990 and was promoted to chief of the Financial Assistance Division in 1993. In that position, he oversees the state loan and grant program that makes loans and grants available to Oklahoma cities, towns, rural water and wastewater districts for the construction or renovation of water and wastewater facilities.

Freeman is a member of the Governor's Oklahoma Rural Enterprise Team and Oklahoma Funding Coordinating Task Force.

The ORDC, with a membership representing state, federal, local, tribal and private interests, was formed to assess rural development needs, identify suitable resources and prepare long-range plans to meet the needs.

ORWA Plans Annual Meeting

Gene Whatley, executive director of the Oklahoma Rural Water Association, announces the 26th Annual ORWA Technical Conference and Exposition will be held April 10-11 in Tulsa.

The Marriott Southern Hills, 1902 East 71st Street, will host the meeting and offer a special \$57 room rate.

According to Whatley, ORWA will sponsor a golf tournament and barbecue for its members and friends on April 9. For more information, call ORWA at (405) 672-8925.

Well Measurement Underway

"Neither snow, nor rain, nor heat, nor gloom of night stays these couriers from the swift completion of their appointed rounds," is inscribed on a New York Post Office, but it could as well describe the Water Resources division. Every January since the mid-70's, OWRB teams have begun the annual well measurement program, a statewide effort to measure water levels in selected wells. The current network consists of 798 wells.

It began in the Panhandle on January 8, as Gary Glover and Gene Dousette were the first to the field. According to Mark Belden, who oversees the effort, 250 wells will be measured in the Panhandle. "We pay special attention to the area underlain by the Ogalalla Aquifer because it is a vital irrigation water supply and sensitive to the enormous demands put upon it," Belden said.

He also noted that the number of wells in the network has declined from more than 1,000 measured in previous years. To provide a balanced assessment of the state's groundwater supplies, the Board seeks wells to replace those abandoned, plugged or made inaccessible. Wells in the network include municipal, industrial, irrigation, domestic and observation wells in all 77 counties.

With the assistance of OWRB Field Office staff, the program will be completed by its March 31 deadline.

You're on a Board or Council?

The Oklahoma Rural Water Association announces a new, understandable, easy-to-read text for officials and board members of small cities and rural water and wastewater systems.

Entitled "Water Board Bible," it is a how-to guide in holding effective meetings, streamlining daily operations, designing effective employee policies, generating revenues, insuring against liability, setting realistic rates and many other helpful topics.

It is a handbook of modern water utility management aimed at both new and experienced board/council members; city administrators and clerks; water and wastewater system operators, managers and superintendents.

The "Water Board Bible" costs \$15 and may be ordered by calling (405) 672-8925 or writing the Oklahoma Rural Water Association, P.O. Box 95349, Oklahoma City, 73143-5349.

THE FLOOD CURRENT

JANUARY - FEBRUARY 1996

State NFIP Coordinator Reports on Mitigation Activities

The following article is a report from Ken Morris, State NFIP Coordinator, on his recent trips to Virginia to participate in a separate national hazard mitigation conference and workshop.

On December 6-8, I attended the First Biennial National Mitigation Conference in Alexandria. Most NFIP State Coordinators and State Hazard Mitigation Officers from around the nation were in attendance to participate in discussions related to the conference theme, "Partnerships for Building Safer Communities." The goal of the conference was to bring together the people that make mitigation happen; from my viewpoint, the event was an overwhelming success with more than 900 in attendance.

Opening presentations were delivered by James Lee Witt, FEMA Director, and Richard Moore, Deputy Director of FEMA, who stated that we will build a better and safer America only through working together. Their remarks emphasized the importance of an all-hazards approach to effectively address mitigation at the national level. In recent years, wildfires, floods, earthquakes, tornadoes, wind and ice storms, and social and economic impacts have all had staggering impacts upon our communities. In Oklahoma alone, we had four Presidential disasters declared during 1995, three involving flooding.

At the conference, I was pleased to discover that FEMA leadership is working very closely with the model building code organizations. Establishing model codes to address an all-hazards approach is a top priority at the national level, an effort which should benefit floodplain managers in Oklahoma. Model code packages that meet all federal requirements of the national flood, hurricane, earthquake

and mitigation assistance and grant programs may be close to becoming a reality.

While at the conference, I had interesting conversations with several FEMA officials and Alison Nicholson, my counterpart in Arkansas. Alison will coordinate the 1997 Association of State Floodplain Managers (ASFPM) Annual Conference in Little Rock. Having the 1997 conference so close to home will enable many Oklahoma floodplain managers to attend. I offered Alison my assistance, as well as that of the Oklahoma Floodplain Management Association, to provide support for Arkansas in its hosting duties. Also on the meeting front, I spoke with George Hosek, Chairman of ASFPM, and he indicated that the San Diego conference in June will be one not to miss. Already, James Witt has agreed to address the gathering. I encourage all community floodplain managers to plan and budget now for this conference which will provide

a great opportunity to impact policy at the national level.

While in Alexandria, I also visited with David Preusch of the Michael Baker, Jr. Engineering Company about conducting a one-day workshop on flood mapping procedures and requirements. It is likely that this effort will be held in conjunction with the Oklahoma Floodplain Management Association Spring Technical Workshop scheduled for May 7 at the Midwest City Library.

On December 14, I traveled to Arlington as one of nine participants from across the nation selected to assist in development of a training and education strategy and implementation plan for federal mitigation programs. FEMA's Elizabeth Lemersal provided the necessary guidance and direction for the group whose task was to identify the most important program initiatives. The number one initiative proved to be training for building code officials on mitigation. Also of top importance to group members was mitigation evaluation and cost/benefit analysis and team building training. The results of this

Continued on page 5



In January, 20 flood awareness billboards were erected by the OWRB, as coordinator of the National Flood Insurance Program in Oklahoma. Billboard sites in the Oklahoma City metro area, Jones, Guthrie and Chickasha were selected for their proximity to roads that frequently flood. The flood awareness effort is in cooperation with the Federal Emergency Management Agency "Cover America" campaign. The message will remain in place through September.

Mitigation, continued from page 4

rewarding effort will greatly assist FEMA in establishing future mitigation training programs. This opportunity also allowed me to discuss with Elizabeth various policy issues of interest to Oklahoma floodplain managers, as well as hear the concerns of other states.

As the state-federal mitigation partnership grows, don't be surprised if you are asked to assist in a similar exercise. Please remember, mitigation will continue to work in Oklahoma only if each one of us pitches in, contributes to the common cause of floodplain management, and guides our respective communities in a responsible manner.

OWRB Notes Value of NFIP Compliance

The OWRB reminds local communities of the importance of complying with terms associated with National Flood Insurance Program participation. According to Ken Morris, State NFIP coordinator, while implementation of program requirements requires some effort from community officials, the benefits far outweigh the time spent administering the program.

"Communities know the value of membership in the NFIP, specifically the availability of affordable flood insurance and reduced loss of life and property due to floods," he points out. "Substantial benefits could be lost if local officials fail to enforce established development permitting system or are lax in their record-keeping and enforcement responsibilities."

According to Morris, the consequences of noncompliance with a community's NFIP agreement include:

- ❖ flood insurance will no longer be available;
- ❖ federal agencies may not provide grants or loans for insurable buildings in identified special flood hazard areas in the community;
- ❖ no federal mortgage insurance may be provided in identified flood hazard areas; and
- ❖ in the event of a federally declared disaster, no federal or state disaster assistance would be made available to insurable structures in identified flood hazard areas or non-participating communities.

Spring Workshop Dates Set

The OWRB and Federal Emergency Management Agency will host five workshops for floodplain administrators throughout the month of April. The one-day gatherings, held each year across the state, serve to educate local officials on various aspects of floodplain management, especially regulation of community development to reduce the loss of life and property due to flooding.

Individual sessions will focus on such basic subjects as determining the base flood elevation, completing an elevation certificate, administering a local permitting system and reading floodplain maps.

Workshop dates and locations are listed below.

April 2 - Antlers
Oliver's Inn & Restaurant
SH 3 & South High Street

April 18 - Woodward
High Plains Institute
3921 34th Street

April 3 - Checotah
Fountain Head Lodge
Lake Eufaula

April 30 - Lawton
Howard Johnson Hotel
I-44 & Gore Boulevard

April 16 - Midwest City
Public Library
Reno & Midwest Boulevard

To register, call the OWRB at (405) 525-4740. After Feb. 5, call us at (405) 530-8800

Ten Rules of Floodplain Management

The following suggestions for community floodplain management officials are courtesy of "Water Talk," the newsletter of the Minnesota Department of Natural Resources.

1. Post your flood insurance rate map and floodway map next to your zoning map. This serves as a constant reminder that you have a floodplain ordinance in effect.

2. Review all development proposals for possible floodplain management implications.

3. Ensure that all residential developments have adequate road access during the 100-year flood. A major goal of floodplain zoning is to protect the lives of floodplain dwellers and rescue personnel.

4. Specify the base flood elevation on every building permit which authorizes construction within the floodplain. Either modify existing permit forms or adopt new ones that provide for the entry of the BFE.

5. Review proposed development to assure that all necessary permits

have been received from appropriate federal and state agencies.

6. Ensure that the floodway is not obstructed by fill or structures.

7. Do not allow floodproofed basements below the BFE.

8. Require permits for the replacement of manufactured homes located in the floodplain and ensure that the appropriate BFE is recognized. Your ordinance needs revision if it doesn't clearly allow you to regulate the siting of mobile homes in flood-prone areas.

9. Require certification and records of as-built elevations and floodproofing measures. These records are especially valuable when a new owner seeks the purchase of flood insurance.

10. If applicable to your community (and it should be), make sure that the permittee is aware that a certificate of occupancy or zoning compliance must be secured before legal occupation of the authorized floodplain development. This is your last opportunity to ensure compliance with the ordinance.

At the January 9 Board Meeting:

The Board held its regular monthly meeting at the Oklahoma Bar Association, 1901 N. Lincoln. In opening remarks, Executive Director Gary Sherrer noted that the meeting would be the last "away from home." Sherrer said the OWRB plans to move to new offices at 3800 N. Classen before the next Board meeting on February 13.

Joe Freeman, Financial Assistance Division chief, asked and received approval for emergency water/sewer improvement grants of \$35,000 to RWSG & SWMD #2 (Beckham Co.), \$25,000 to the Town of Marshall (Logan Co.), and \$100,000 to Rural Water District #13 (Cherokee Co.) and loans of \$170,000 to RWD #13 (Cherokee Co.) and \$2.1 million to RWD #5 (Rogers Co.) The Board approved an extension of term on a previous loan to Beaver Public Works Authority (Beaver Co.) and refinancing under the Small Community SRF loan program administered by the Board. Members also approved release of some collateral securing the 1989 loan to Morrison PWA (Noble Co.)

Freeman reported that the Water Board's SRF program was the first in the nation to apply and the first to receive a matching grant from the EPA to support wastewater projects.

Mike Mathis, chief of the Water Resources Division (a recent combination of the Planning and Water Management Divisions) asked and received approval for 10 temporary permits and seven regular permits for the use of groundwater. The Board also approved amendments to two regular groundwater permits and one prior groundwater right. The Board approved four regular permits and one application to change the point of diversion and area of use of stream water.

New D/PC operators licenses were approved for Michael Barksdale, Steve Bechtel, Floyd C. Cox and Wendell Whichard. Five licensed firms added operators: South Eastern Drilling, Chris W. Brennan, operator; Associated Environmental Industries Corp., Ronald E. Newton, operator; National

Environmental Service Co., Ike Ray, operator; Techrad Environmental Services, Inc., Ben Baggett, operator; Anderson Engineering, Daniel E. Steinshour, operator.

Mathis brought before the Board a protested application to amend the regular groundwater permit of Seaboard Farms, Inc. The firm's permit was approved with the condition that no water be taken until an unplugged well on an old homestead is plugged according to OWRB rules and regulations.

Mike Melton, assistant to the director, announced that the OWRB will sponsor a Legislative Reception at the Capitol to give legislators an opportunity to get acquainted with Board members and Water Resources Board programs.

FINANCIAL ASSISTANCE PROGRAM UPDATE

Approved at January 1996 Board Meeting

FAP Loans (4.472%; 28.5 year maximum term)

Cherokee County RWD #13	\$ 170,000.00
Rogers County RWD #5	\$ 2,100,000.00

FAP Grants

Beckham County RWSG & SWMD #2	\$ 35,000.00
Cherokee County RWD #13	\$ 100,000.00
Town of Marshall	\$ 25,000.00

SRF Loans

None

TOTALS AS OF 1/9/96

	FAP Loans	FAP Grants	SRF Loans
APPROVED	164	381	36
Amount	\$204,075,000.00	\$21,206,077.00	\$146,354,834.23
FUNDED	155	344	30
Amount	\$192,060,000.00	\$18,729,834.41	\$132,079,534.23

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Bimonthly Newsletter of the
Oklahoma Water Resources Board
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*from
the desk
of the
Director...*

Water Board Welcomes Friends To Open House in New Offices

Governor Frank Keating and legislative leaders joined more than 300 friends, colleagues and families of the Water Resources Board who vis-

ited new OWRB offices on March 18. The celebration marked the end of a tiresome 11-month journey that began April 19 when the workers

March 18 was a joyful landmark occasion for the Water Resources Board. It was our pleasure to welcome to our new offices Governor Frank Keating, Senate President Pro Tempore Stratton Taylor, Speaker Glen Johnson, other legislators and staffers, customers, friends, colleagues from other state agencies, and retired and former OWRB employees.

We were proud to show off our new offices and grateful for the opportunity to thank our Board, our friends in the Oklahoma Legislature, and all others who had supported us through the tragic aftermath of the bombing.

However, the most important signal we sent on March 18 was that we are back and better than ever -- healed, healthy and rededicated to the single purpose of serving our customers in the most efficient manner possible. □



Governor Keating told OWRB employees and friends that "out of evil, good must come. The Water Board's recovery is certainly a sign of good."

evacuated their bombed-out building across the street from the Alfred P. Murrah Federal Building. Two employees were killed, six were hospitalized with serious injuries, and more than 30 were treated and released.

In their new quarters at 3800 N. Classen, Executive Director Gary Sherrer told them, "It's a new beginning for us. We've been through a difficult situation to get here, but now we're beaming with pride at our accomplishments."

Sherrer pointed out that although Gov. Keating, Speaker Johnson and President Pro Tempore Taylor had generously offered special legislative appropriations to assist after the bombing, the OWRB had declined and done it on its own. "We're proud of that fact," said Sherrer.

Gov. Keating recalled the bombing aftermath as "terrible days following that senseless act that so monstrously and savagely took the lives of so many." He emphasized the belief that out of evil, good must

Continued on page 2

**OKLAHOMA WATER
RESOURCES BOARD**

Open House, continued from page 1 come. The Water Board's recovery is certainly a sign of good.

OWRB Chairman Ross Kirtley said he was proud of the Water Resources Board. "I have never seen people snap back with such determination and tenacity. With stitches and bandages, they were back on the job in the next day or two," he said.

In the interim between the bombing and the move to the Classen address, the Water Board worked out of the State Insurance Building at 1901 N. Walnut. □



Enviro Conference April 24-25

The Third Annual Governor's Conference on the Environment on April 24-25 at the Marriott Hotel in Oklahoma City will have as its theme "Industry, Economy and the Environment: A New Horizon." The conference is sponsored by the Office of the Secretary of Environment.

Registration costs \$75 and includes all conference materials, breaks, two luncheons and tickets to the Governor's Reception. For more information or to register, please call Kelley Smith at (405) 530-8895.

ICWP Announces New Policy

A water policy roundtable sponsored by the Interstate Council on Water Policy and Western States Water Council in Washington, D.C., March 20-22 focused on appropriate federal and state roles in water management and development of water policy.

ICWP announced a new National Water Policy Charter, unveiled at the National Press Club on March 21 and attended by press and ICWP members. Present were OWRB Executive Director Gary Sherrer, Board Members Mike Henson and Ervin Mitchell, Assistant Director Duane Smith and OWRB Hydrologist Terri Sparks.

ICWP is an organization of state and regional government water managers. The Charter is a blueprint for managing the nation's water resources and responds to public concern for reduced government spending, a balanced budget and a clean environment.

The Charter sets forth these principles to guide the nation's decision makers:

- ◆ Manage water for long-term goals,

recognizing both human needs and the health of water-dependent ecosystems.

◆ Manage ground and surface water as an integrated system, by hydrologic units, including both quality and quantity.

◆ Realign government roles and responsibilities, shifting authority to state, regional and local entities.

◆ Improve government performance and consolidate government water programs for greater effectiveness and responsiveness to the public.

◆ Set water management priorities based on relative risk and costs and benefits.

◆ Recognize and include all affected interests in policy-making.

◆ Emphasize water management program results.

◆ Use economic and other incentives to achieve water management objectives.

◆ Increase awareness and improve the quality of public dialogue.

Sherrer Addresses Irrigators

Executive Director Gary Sherrer was the featured dinner speaker at the Third Annual Meeting of the Oklahoma Panhandle Agriculture and Irrigation Association in Goodwell February 24.

At the same meeting, OWRB member Ervin Mitchell of Balko was reelected to represent Beaver County on the OPAIA Board.

Sherrer introduced Scott Christenson



of the U.S. Geological Survey, who outlined a proposal pending before the Oklahoma Legislature to evaluate the impact of large, long-term withdrawals of groundwater on the Ogallala (High Plains) Aquifer in the Panhandle. The bill seeks state funds to match federal money appropriated for USGS groundwater flow modeling and water quality and quantity monitoring of the Ogallala.



Executive Director Gary Sherrer meets Rep. Glen Johnson, Speaker of the House of Representatives, at the front door.



Reese Daugherty of the Financial Assistance Division visits with Cecil Wildman, of Spear and McCaleb Co., Inc.



Danny Spiser, retired from the OWRB, recalls old times with Norma Aldridge, formerly of the OWRB, now employed by the DEQ.

*Open House at
3800 N. Classen*



Friends and family of OWRB employees toured the new offices, including Stella Strauss, OWRB senior personnel officer; Carla Espinoza of OPM; Claire Belden, daughter of OWRB geologist Mark Belden (in the background); and Ernie Birchfield, husband of Librarian Susan Birchfield. Also in the background, right: Brent Riley of the FA Division.



James Simpson came with his dad, Larry Simpson of the Association of Central Oklahoma Governments, who visits with Bob Fabian, OWRB hydrogeologist.



Mary Whitlow greets Gov. Keating, Todd Lamb of the Governor's staff, and Sen. Stratton Taylor, Senate President Pro Tempore.



Board Members Bill Secrest and Richard McDonald visit as Connie Ziegelgruber of Planning and Management looks on.



Mike Melton, assistant to the director, takes retired OWRB Division Chief J.A. Wood on a tour of the new facility.



Brenda Maxey of the Board's Financial Assistance Division invited husband Steve to the Open House.



Executive Director Gary Sherrer welcomes Board Member Jack Givens and wife, Helen Jane of Mangum; and Board Member Ervin Mitchell of Balko.

\$50 Million FAP Bond Issue Keeps Exceptional AA Rating

Board develops innovative strategy to provide reserve fund without assistance of appropriation

In another of its successful, first-in-the-nation feats, the OWRB Financial Assistance Division designed a sound plan to provide the necessary reserves for its October bond issue, independent of a legislative appropriation. Instead, the Board purchased a surety bond as additional collateral, and Standard & Poor's awarded the issue a AA rating. It was the masterstroke to a program that already had earned a solid reputation.

The Financial Assistance Program was established in 1982 by a series of laws and a \$25 million appropriation from the Oklahoma Legislature to the Statewide Water Development Revolving Fund. The immensely successful program provides low-interest loans to qualified entities for the construction, renovation and repair of water and wastewater facilities.

Interest accumulated on the Revolving Fund enables the Water Board's grant program. Grants up to \$100,000 provide emergency assistance to cities, towns, rural water and sewer districts for the solution of critical water and sewer problems.

By mid-March, the Board had approved 163 loans totaling nearly \$200 million and 382 emergency grants totaling \$21 million.

A separate and equally successful initiative is the Wastewater Facility Construction Loan Fund, (SRF) created by the legislature in 1988 to replace diminished EPA funding. The fund is made up of state seed money enhanced by EPA capitalization grants to assist in the financing of sewage collection and treatment facilities. Since its creation, \$18.4 million in state matching funds and eight EPA capitalization grants for \$92.8 have enabled 38 SRF loans totaling \$147 million. □

Joe Freeman, Financial Assistance Division chief, emphasizes that this is the first time Standard & Poor's has allowed a AA rating on an issue with surety bond collateral.

"Institutional investors have strong confidence in the Board's programs," said Freeman. "This confidence was reflected in full subscription of the bond issue by investors within an hour after trading began," he said.

This bond issue is the Board's seventh, and all have received the exceptional S&P rating. Proceeds from the bond sale support the Board's vital loan and emergency grant programs.

FAP NEWS

AN UPDATE OF THE OWRB FINANCIAL ASSISTANCE PROGRAM



A grant from the Board's Financial Assistance Program contributed to the funding of the sanitary sewer lift station at Burbank's new total retention lagoon wastewater treatment system.

The staff of the Financial Assistance Division take pride in customer service. They are, standing: Tiger Feng, engineer; Stan Halley, environmental specialist; Joe Freeman, chief; Reese Daugherty, engineering supervisor; Brent Riley, financial analyst; Marc Hullinger, engineer; Paul Hodge, assistant chief. Seated: Karen Yuan, engineer; Brenda Maxey, financial analyst supervisor; Laura Oak, financial analyst; Angela Roberson, financial analyst; Kelley Bailes, secretary. (not pictured, Shelley Bacon, administrative assistant.)



Small Community Program "Second Chance"

The Water Resources Board has good news for Oklahomans who prefer small town living to a big city lifestyle. The good news is a loan program tailor-made for small communities, who previously may have had few financing options for constructing or upgrading wastewater collection and treatment systems.

The Board's Small Community SRF Program targets communities with populations less than 10,000 -- small systems for whom compliance with the Clean Water Act and state and federal mandates may be most difficult. It makes low-interest loans available from loan repayments and interest and investment earnings accumulated in the SRF account.

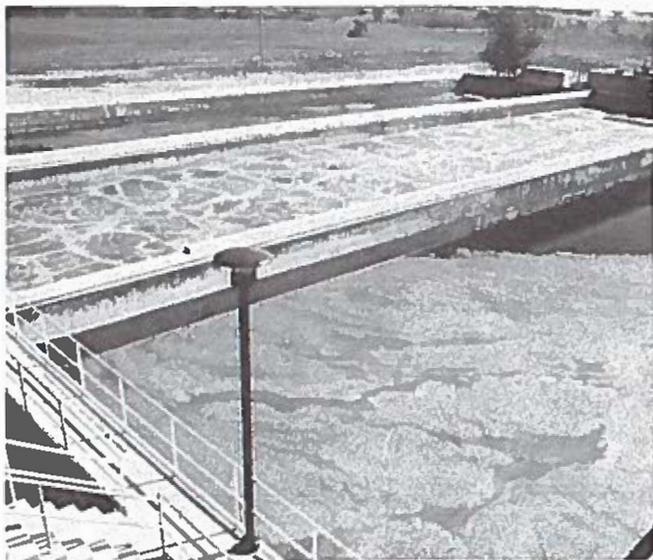
According to Paul Hodge who oversees the SRF Program of the Financial Assistance Division, small community loans enjoy fewer program requirements than larger cities whose loans are drawn from EPA capitalization grants and state matching funds. The interest rate for Small Community is sixty percent of the current fixed or variable market rate. On loans closed to date, that translates to interest rates of 2.934 percent to 3.263 percent.

Hodge noted that interest in the Small Community Loan Program has grown steadily, with nine such loans total-

ing \$9.1 million approved since 1995. Eight more Small Community loans are in the application process. □



The Town of Marshall received a \$25,000 grant from the Board's Financial Assistance Program in a ceremony at the Capitol on February 29. Present for the award were Satish Dasharathy, engineer; Rep. Sean Voskuhl, Marshall Mayor Dwayne Beeby holding the check, Sen. Ed Long and Brent Riley of the OWRB. The emergency grant assisted the town repair a collapsed interceptor and construct a new lift station at the sewage treatment plant. To date, the grant program has assisted 382 Oklahoma communities in repairing or replacing sewer and water facilities.



A loan from the Board's SRF Program enabled Bethany-Warr Acres to construct a new 3.75-mgd Bluff Creek regional wastewater treatment plant.

FINANCIAL ASSISTANCE PROGRAM UPDATE Approved at February and March 1996 Board Meetings

FAP Loans

February: 4.472% 28.5 year maximum term
March: 3.772% 1995 Bonds; 29.5 year maximum term
3.922% 1994; 28.5 year maximum term

None

FAP Grants

Town of Laverne	\$	30,000.00
Wellston PWA	\$	100,000.00
Town of Marshall	\$	25,000.00

SRF Loans

Fairfax PWA	\$	882,000.00
-------------	----	------------

TOTALS AS OF 3/26/96

	FAP Loans	FAP Grants	SRF Loans
APPROVED	163	382	38
Amount	\$204,445,000.00	\$21,336,077.00	\$147,433,834.23
FUNDED	157	352	35
Amount	\$195,355,000.00	\$19,200,839.41	\$141,204,834.23

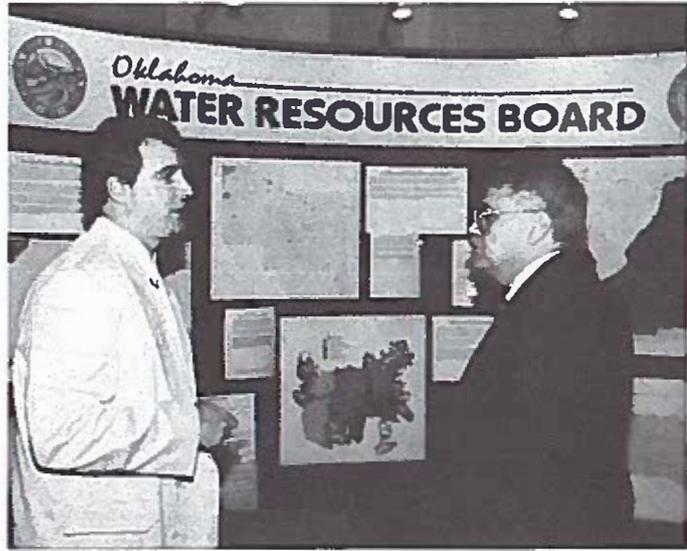
At the March 19 Board Meeting:

Derek Smithee, Water Quality Programs Division chief, was first to the podium to ask the Board's approval of Water Quality Standards Implementation Documents, required by EPA and Oklahoma Statutes. Smithee said the document will help all state permit writers by providing a sound, fair and consistent foundation upon which to build point source discharge permits. Smithee noted that Oklahoma industries had been very supportive.

Joe Freeman, Financial Assistance Division chief, asked and received approval for an emergency water improvement grant of \$100,000 to Wellston PWA. The Board approved an \$882,000 SRF loan to Fairfax PWA; and an additional project for loaned funds for Wayne PWA. Bill Secrest, Board member and Finance Committee member recommended and received approval for Boatmen's Bank to serve as trustee bank for the Board's bond issue to fund the state match for the State Revolving Fund Loan Program.

The Board approved 10 temporary permits for the use of groundwater and three regular permits and amendments to two regular permits for the use of groundwater. The Board approved three regular permits for the use of stream water. Planning and Management Division chief Mike Mathis asked and received Board approval for a \$30,000 loan under the Statewide Rural Energy and Water Conservation Program for Woods County Rural Water District #3. The loan will fund a water audit and leak detection survey and repairs. New D/PC operators licenses were approved for Roddy Qualls, Mark Lassiter, Randy K. Phillips, John W. McClure and Shawn D. Wood. Four licensed firms added operators/activities: Howard

Drilling Company, Kenny D. Skelton, operator; Venture Drilling, Inc., Jack Green and Larry G. Turner, operators; NESCO, Ike Ray, operator; and Thurman French, pump installer. □



Brad Nesom, OWRB senior drafting technician, explains map to Steve Woodall, director of research and analysis for the Cherokee Nation, Tahlequah. Nesom demonstrated the Board's Geographic Information System (GIS) capabilities at the Annual GIS Day at the State Capitol on March 18. The OWRB was one of 23 exhibitors representing state, federal and private groups, as well as equipment vendors. The Water Board is employing GIS technology to map municipal and rural water systems in the state. Nesom said GIS, a combination of computer equipment, software and data that allows the analysis and display of land-based information, will save months, perhaps years, of data collection necessary in updating the Board's popular 1980 publication "Rural Water Systems in Oklahoma." The project will map facilities of more than 800 water systems serving cities, towns and rural areas.

Mary E. Whitlow, Editor

Barry Fogerty, Photographer

James Leewright, Typography and Layout

This bimonthly newsletter, printed by the Department of Central Services, Central Printing Division, Oklahoma City, Oklahoma, is published by the Oklahoma Water Resources Board as authorized by Gary L. Stemer, executive director. Ten thousand copies are printed and mailed bimonthly at an approximate cost of 28 cents each. Copies have been deposited at the Publications Clearinghouse of the Oklahoma Department of Libraries.

OKLAHOMA WATER NEWS

Bimonthly Newsletter of the
Oklahoma Water Resources Board
3800 N. Classen Boulevard
Oklahoma City, OK 73118

J. Ross Kirtley, Chairman
Bill Secrest
Ervin Mitchell
Robert S. Kerr, Jr.
Mike Henson
Richard McDonald
Dick Seybolt
Lonnie L. Farmer
Jack M. Givens

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OKLAHOMA WATER NEWS

Bimonthly Newsletter of the Oklahoma Water Resources Board



*from
the desk
of Gary
Sherrer*

As I review the Legislative Session closed May 31, I am proud of the new responsibilities and programs awarded the Water Resources Board. I believe it's symbolic of the trust the Governor, Senate and House of Representatives have in this agency. Among the important measures enacted was an appropriation to the Water Resources Board to stay foreclosure on the state's debt to the Corps of Engineers for water storage in Sardis Reservoir. An appropriation of \$508,030 will allow Oklahomans a year in which to consider all the options in marketing Sardis water and negotiate a long-term solution beneficial to southeast Oklahomans and the state.

The Legislature also entrusted us with \$4.5 million to administer a new sewer and water grant program enabled by HB 1434 -- the Rural Economic Action Plan. REAP makes assistance available to small communities and rural areas for infrastructure improvements.

I was pleased that Governor Keating and the Legislature approved funding for a significant study that addresses the concerns of Panhandle residents concerning pollution and/or depletion of the Ogallala Aquifer. It provides \$100,000 as state matching funds for a 3-year study by the U.S. Geological Survey to determine amount of water in storage and explore potential for pollution.

HB 2824 appropriated \$1 million to the Water Resources Board for implementing a statewide weather modification (cloud seeding) program. The Board's Planning and Management

Continued on page 5

Enid High School Volunteers Presented Governor's Award

*Water Watch monitoring group mentored by OWRB
wins Governor's Environmental Achievement Award*

Enid High school science students and teachers, active in the state's longest running citizens volunteer monitoring group, were rewarded for their diligence when Governor Keating recognized them with an Environmental Achievement Award. The award was presented at the Environmental Conference held April 23-24 in Oklahoma City. From more than 60 nominations received from governmental, indus-

trial and citizen sectors, eight were selected for recognition.

OWRB Executive Director Gary Sherrer said, "It is an award the City of Enid, the students and their teachers can be very proud to win. Their program and their commitment to it deserve recognition by the State of Oklahoma," he said.

The EHS students in "Oklahoma Water
Continued on page 2



Enid High School monitors were recognized with a Governor's Environmental Achievement Award. Seated: Kevin Krey, Adrienne Nixon, advanced biology teacher; Terry Sacket, physics, chemistry teacher; James Fagan. Standing: Keith Owen, OWRB Water Watch trainer, Jessica McCreight, Sarah Hopping, Tina Moore, Justin Eck, Sara Haymaker and Juli Waterson, OWRB.

Enid HS, continued from page 1

Watch" have assisted the Water Resources Board in studies at Enid's Meadow Lake since 1993. Honored with their teachers at the special reception were Kevin Krey, James Fagan, Jessica McCreight, Sarah Hopping, Tina Moore, Justin Eck and Sara Haymaker. Their teachers are Adrienne Nixon, advanced biology, and Terry Sacket, physics and chemistry.

The Enid Water Watch monitoring program was set in motion by EHS teachers Terry and Deanne Sacket and Adrienne Nixon, with the assistance of Keith Owen, Juli Watterson and Paul Koenig of the OWRB Water Quality Programs division. The teachers long had been advocates of reinforcing classroom studies with hands-on science in the field. The OWRB Phase I Diagnostic Study of Meadow Lake, completed with an EPA Clean Lakes grant and matching funds appropriated by the legislature, determined the lake was polluted with excessive nutrients and sediments. The 12-acre lake in the park was shallow and abandoned by recreationists.

The need for willing hands to assist in the Meadow Lake Project led the Water Board's Clean Lakes staff to recruit the science teachers and students as volunteer monitors. The students have worked consistently in collecting biological data and water samples, measuring flow, recording and analyzing data, and helping in the design of a watershed protection strategy.

According to Water Watch Coordinator Keith Owen of the OWRB, the student monitoring program has been so successful that it has expanded to include monitors at the junior high level. Owen estimates some 350 EHS students have participated in the program since 1993.

On May 4, Enid High monitors demonstrated their successful methods at five sites around Meadow Lake as part of the Citizens Volunteer Monitoring Conference sponsored by the OWRB May 3-4. The conference began with classroom sessions at MetroTech in Oklahoma City on May 3, then moved to Enid on Saturday for hands-on practice in the field. At stations around Meadow Lake, EHS monitors instructed conferees in biomonitoring, flow measuring, water quality monitoring, stream modeling and a Project WET (Water Education for Teachers) activity. □

"Our" Emily March of Dimes Ambassador

Emily Lane Brown, the daughter of OWRB Secretary Kim Brown and her husband, Dean, was recently named Ambassador for the March of Dimes Birth Defects Foundation, Western Oklahoma Chapter. Emily was born December 29, 1994 with Phocomelia, the absence of a left arm, just below the shoulder. In its place, Emily has a tiny limb with two fingers that "work."

Emily made her debut as March of Dimes Ambassador at WalkAmerica in downtown Oklahoma City on May 4. She kicked off the six-mile benefit walk accompanied by her mom and dad, grandparents Terry and Earl Neese and 10 of Kim's co-workers from the Water Resources Board.

Emily reigned as Ambassador over the walk from the comfort of her stroller, but her folks declared it was the only way to keep the lively toddler from running too far ahead of them.

WalkAmerica is the single largest source of funding for the March of Dimes, which focuses on improving the health of babies by preventing birth defects and infant mortality. The national campaign encourages Americans to "walk for someone you love." And, indeed the Water Board loved Emily, with pledges of \$1481 to the March of Dimes, raised by 10 walkers, a lunch hour picnic and the sale of t-shirts, all coordinated by Kim, who chaired the OWRB in-house March of Dimes campaign.

As Ambassador, Emily will participate in many important fundraising events in the coming months in her domain west of Interstate 35 (including Ponca City but excluding the Panhandle.)

Dean and Kim Brown said they had no warning that Emily would be born with Phocomelia., but they realize she is a very special blessing. □



Emily and Kim Brown

Wendell E. Thomasson Named to Board

Governor Frank Keating announced the appointment of Wendell E. Thomasson to the Oklahoma Water Resources Board on April 17. Thomasson, a Choctaw County rancher, replaces Michael Henson on the OWRB. He is appointed to a 7-year term, the first Choctaw County resident to serve on the Water Resources Board.

Thomasson is owner and manager of Apple Farms, a cattle operation near Hugo.

He attended Mesa Junior College in Grand Junction, Colorado, and graduated from Community College of Denver with a degree in business management.

He came to the cattle business in



Wendell E. Thomasson

Farmer, Secrest Honored for Service to ORWA

Two members of the Oklahoma Water Resources Board received awards for their service to rural water users at the annual meeting of the



Lonnie Farmer, a founding member of the ORWA and member of the Water Resources Board was named Rural Water Man of the Year.

Oklahoma Rural Water Association in Tulsa on April 9-11. ORWA President Jim Murphy presented awards to Lonnie Farmer and Bill Secrest.

Farmer, a banker from Davidson, was named Man of the Year, an award recognizing exceptional contribu-

tions of time, energy and expertise in advancing rural water in Oklahoma. Farmer is one of the original incorporators of the Oklahoma Rural Water Association and has served on that Board for 26 years. He is credited with helping secure state and federal funding for ORWA training and technical assistance programs and has worked diligently for more reasonable regulation of water systems. He is assistant secretary-treasurer of the Rural Water Association and serves on the association's Legislative and Audit and Budget Committees. Farmer was appointed to the Water Resources Board in 1993.

Earlier, Farmer had pioneered a regional water supply system in southwestern Oklahoma to help water users avoid nitrate concentrations in drinking water supplies. It was Farmer's idea to blend groundwater from the Tillman Terrace Aquifer with surface water to provide a safe supply.

Also honored was Bill Secrest, vice chairman of the Oklahoma Water Resources Board, who was named 1996 Outstanding Manager. Secrest is manager of Wagoner County RWD #4 in Broken Arrow, the state's

Farmer and Secrest, continued

second-largest water district. Secrest has been a member of the OWRB since 1982, Board vice chairman since 1988 and member of the ORWA Board since 1976. He was honored in 1994 as Man of the Year.

Also recognized with a Friend of



Bill Secrest, manager of Wagoner RWD #4, receives the Outstanding Manager Award from ORWA President Jim Murphy.

Rural Water plaque was OWRB Photographer Barry Fogerty, who has assisted the ORWA by providing photographic services for special events. Fogerty has been an employee of the OWRB since 1982. □

Thomasson, continued

1981 from a background with highway heavy construction firms. He runs the ranch with the help of his wife Kathleen and daughter, Stacy, a high school junior and honor student.

Michaele Henson, Stillwater, was honored for her service to the OWRB at the May 14 Board meeting. She was appointed to the Board in 1989, and as a former mayor of Stillwater, she was an ombudsman for cities and towns. Henson often expressed concern for the plight of communities overwhelmed with federal regulations without the funding to implement them.

In her tenure on the Board, she worked hard to reinforce the agency's image of being helpful and responsive to the needs of the public. Henson and her husband, Ray, are property managers in Stillwater.

The Board prepared a Resolution of Appreciation and a scrapbook of staff mementos, but an illness in the family prevented Henson's attendance at the May 14 Board meeting. □

New Program Will Assist Rural Communities

On May 20, Governor Keating signed HB 1434, the "Rural Economic Action Plan of 1996," or REAP. It is good news to the small cities and towns who find themselves with declining population, limited access to services and diminishing quality of life. Governor Keating and the Oklahoma Legislature -- especially House authors Representatives Mike Mass and Randall Erwin -- worked hard for its passage because they believe it is important to restore the economic health of the state's small communities.

The Oklahoma Legislature entrusted the Water Resources Board with the responsibility of helping in the administration of the program.

REAP establishes a program targeted to improving water and sewer infrastructure; constructing and repairing roads and bridges; and promoting economic development in a variety of projects to improve the quality of life in rural Oklahoma.

The Bill allocates \$17 million to be distributed to cities, towns and unincorporated areas with populations less than 7,000, but awards priority to communities of 1,500 or less and towns with less financial capacity. Of the \$17 million, the OWRB will oversee the \$4.5 million grant account to be distributed for sewer and water improvements; the Department of Transportation will administer \$7.5 million for roads, bridges and other transportation projects; and the substate planning districts will distribute \$5 million for projects to enhance economic development. Eligible as "economic development" projects may be rural water and wastewater improvements, roads and streets, health care services, telecommunications systems, municipal energy distribution systems, projects to increase employment levels and other purposes.

Since the REAP program is so new, there remain questions concerning its

Board Okays \$19 Million Loan to Ponca City

Ponca City Utility Authority will soon begin improvements to the city's wastewater system enabled by a \$19 million loan from the OWRB Financial Assistance Program approved at the

May 14 Board meeting. According to FAP Division Chief Joe Freeman, this is the second largest loan made through the Board's successful Financial Assistance Program.



Representatives of Ponca City came to the May 14 Board meeting to ask a \$19 million loan for utility improvements. Left to right: Dick Stone, city commissioner; Joe Freeman, chief, Water Resources Board Financial Assistance division; Gary Martin, city manager; Sherri Irving, assistant director of public utilities; Mayor Marilyn Andrews; Robert Howard, Ponca City Chamber of Commerce; Tom Short, assistant city manager.

With approval of this loan, the Board has provided a total of \$31 million in loans to Ponca City for infrastructure improvements, Freeman said.

Mayor Marilyn Andrews, Dick Stone, city commissioner; Gary Martin, city manager; Sherri Irving, assistant director of public utilities; Robert Howard, Ponca City Chamber of Commerce; and Tom Short, assistant city manager, represented Ponca City at the Board meeting.

Freeman said the loan is expected to modify or replace the pump station, structures, treatment facilities, lines, electrical system, computer monitoring equipment and sludge systems in the city's wastewater operation.

Board Chairman Ross Kirtley pointed out that the OWRB Financial Assistance Program is unique in the nation. The loan program has been awarded an exceptional AA rating by Standard and Poor's, enabling long-term, low interest loans. The Ponca City loan was made under another facet of the program, the State Revolving Fund Loan Program, an initiative that assists communities in financing wastewater improvements. □

"nuts and bolts." Additionally, the Water Resources Board has before it the task of setting rules to guide the communities in applying for REAP grants. Guidelines will be in place soon and communities may apply after July 1, although none will be considered for six months. The six-month period allows all communities an equal chance and time to draft their applications.

Local government organizations that will accept the grant applications are the Association of Central Oklahoma Governments, Association of South Central Oklahoma Governments, Central Oklahoma Economic Development District, Eastern Oklahoma Economic Development District, Grand Gateway Economic Development Association, Indian Nations Council of Governments, Kiamichi Economic Development District, Northern Oklahoma Development Association, Oklahoma Economic Development Association, Southern Oklahoma Development

Association and Southwestern Oklahoma Development Authority.

The Water Resources Board Financial Assistance Division that has administered the agency's well respected loan and grant program for sewer and water improvements will manage the \$4.5 million REAP water and sewer grant account. To make the application process easier and fair, the OWRB is preparing an application form to be used for all entities interested in participating in the REAP for sewer and water projects. Communities eligible may call their substate planning district or the Financial Assistance division of the Water Resources Board for a copy of the application form.

Joe Freeman, Financial Assistance division chief, notes that eligible projects are sewer line construction and repair and related storm or sanitary sewer projects, water line construction or repair, water treatment, water acquisition, distribution or recov-

ery and related projects.

According to REAP guidelines, the OWRB will establish nine separate accounts of \$450,000 and split the remaining \$450,000 between two subaccounts for INCOG and ACOG, which represent Tulsa and Oklahoma City areas respectively. The money in these accounts will be available to the local government organizations through the Water Resources Board.

Executive Director Gary Sherrer said, "We're excited about the program and the promise it holds for small communities in our state. In these coming days, we will forge the details and establish the rules that will make the REAP fair and workable."

In the meanwhile, communities who need water and wastewater improvements and meet REAP requirements may call local substate planning district offices or the Financial Assistance division of the Oklahoma Water Resources Board at (405) 530-8800. □

Sherrer, continued from page 1

division will oversee implementation of the initiative.

A legislative appropriation of \$195,000 to the OWRB Clean Lakes Program will enable more water quality gages and stream flow gages on the Poteau and Illinois Rivers. Additional gages and data requested by the Arkansas-Oklahoma Arkansas River Commission, will be cost shared by the OWRB, USGS and Oklahoma Scenic River Commission.

From the standpoint of the OWRB, it was a successful session. This agency is dedicated to spending the money entrusted to us wisely, prudently and in the best interest of the citizens of Oklahoma. □



36% Surface Water Polluted

A recent EPA report declares more than one-third of the nation's surface water is too contaminated to be considered fishable and swimmable. The Environmental Protection Agency review submitted to the president blames contaminated runoff from agriculture, industry and general urban growth, but notes results are similar to the review of three years ago.

Nutrient overloading, the most common problem, causes excessive algae and weed growth, fish kills and foul odors in waterways, the report noted. Water quality surveys reflected in the report were conducted by states and other agencies covering 616,000 miles (17 percent) of U.S. rivers; 17 million acres (42 percent) of lakes; and 27,000 square miles (78 percent) of estuaries. □

Love Canal Cleanup Closed

In accepting the final payment of \$129 million from Occidental Chemical Company to the federal government, Attorney General Janet Reno said "Today, we write the final chapter of the Love Canal story."

The 16-year dispute arose from the company's dumping 22,000 tons of chemical waste at Love Canal from 1942 to 1953. Abandoned, the dump site was later developed into a residential neighborhood. Of the final installment, \$102 million went to Superfund; the balance to FEMA, for relocating Love Canal residents. □

Workshops, Special Training Alert Floodplain Managers

Gov. Frank Keating proclaimed May Flood Awareness Month, and Ken Morris, administrator of the Board's National Flood Insurance Program, saw to it that the month was appropriately observed.

Morris points out that over 30,000 structures in Oklahoma lie in the regulatory floodplain and are not protected by flood insurance. In preparation for Flood Awareness Month, Morris trained 122 state floodplain administrators in workshops in all quadrants of the state. Throughout April, Morris and OWRB staff conducted workshops at Antlers, Fountainhead Lodge, Midwest City, Woodward and Lawton.

Workshop participants learned how to determine base flood elevations and administer and enforce flood damage prevention ordinances.

On May 7, more than 50 members of the Oklahoma Floodplain Management Association attended OFMA's annual Technical Conference in Midwest City. Instructors from the Federal Emergency Management Agency in Washington, D.C., held workshops on mapping issues.

In Tulsa on April 10, the OWRB, Oklahoma Civil Emergency Management Agency and Tulsa District Corps of Engineers staff instructed 80 members of the Southwestern Construction Codes Council on construction in the floodplain. □



Alan Johnson of FEMA, Washington, D.C., was the main instructor at the OFMA Spring Technical Conference at Rose State College in Midwest City.

Gov. Keating said the proclamation is important because it lets Oklahomans know that affordable flood insurance is available to communities that participate in the National Flood Insurance Program administered by the Water Resources Board.



Gov. Keating signed a proclamation declaring May Flood Awareness Month in Oklahoma. Water Board staff who work in the NFIP were at the capitol for the ceremony. Shown with Gov. Keating, from the left: Donnie Blanlot (McAlester), Mike Mathis, Ken Morris, Hank Elling (Lawton), Nancy Kennedy and Executive Director Gary Sherrer.

19 Get Their Feet Wet in Water Education

The Water Quality Programs lab was the setting May 21 for a workshop for Water Board employees interested in knowing more about Project WET (Water Education for Teachers), a water education curriculum developed for Grades K-12. Gary Cook, Project WET Coordinator at the Oklahoma Conservation Commission and Keith

great enthusiasm by teachers because it cuts across many disciplines in the study of water and water resources -- chemistry and physics, life science, earth systems, natural resources management, history and culture.

For more information on WET, call Gary Cook at (405) 521-2384 or Keith Owen at (405) 530-8800. □



Workshop participants were provided sticks, string, willow branches and dry grass told to build a boat. Mary Schooley, Dave Goughnour, Ken Morris (background) Sylvia Ritzky, Brian Vance and Mary Whitlow construct a boat with birch pontoons laced together with willow.

Owen of the OWRB Water Quality Programs division facilitated the workshop in which participants sampled activities in the workbook.

The national, nonprofit WET program, based at Montana State University at Bozeman, is sponsored in Oklahoma by the Water Resources Board, Oklahoma Conservation Commission and Department of Environmental Quality. In the year since its introduction in the state last June, more than 250 teachers have attended workshops. Coordinator Gary Cook says the program has been met with

FINANCIAL ASSISTANCE PROGRAM UPDATE

Approved at April and May 1996 Board Meetings

FAP Loans

3.772% 1995 Bonds: 28.5 year maximum term
3.922% 1994: 28.5 year maximum term

Roland UA	\$ 4,165,000.00
Coyle PWA	\$ 350,000.00
Krebs PWA	\$ 605,000.00
Tulsa MUA	\$ 6,750,000.00

FAP Grants

Ringling MA	\$ 25,000.00
Town of Garvin	\$ 50,000.00
Roland UA	\$ 70,000.00

SRF Loans

Owasso PWA	\$ 2,410,000.00
Tulsa MUA	\$ 4,000,000.00
Pittsburg PWA	\$ 105,000.00
Ponca City UA	\$ 19,000,000.00

TOTALS AS OF 5/14/96

	FAP Loans	FAP Grants	SRF Loans
APPROVED	167	384	42
Amount	\$212,315,000.00	\$21,461,077.00	\$172,948,834.23
FUNDED	158	353	35
Amount	\$195,705,000.00	\$19,291,707.41	\$141,204,834.23

Mary E. Whitlow, Editor

Barry Fogerty, Photographer

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OKLAHOMA WATER NEWS

Bimonthly Newsletter of the Oklahoma Water Resources Board



*from
the desk
of Gary
Sherrer*

Third Commission Determined To Settle Red River Boundary

*Oklahoma's border undecided for over 70 years
due scrutiny by team from both sides of the river*

On August 1, the Water Resources Board began oversight of a cloud seeding program authorized by an appropriation by the Oklahoma Legislature and approved by Governor Keating in the closing days of the session. It seems appropriate that the money for rainmaking came from the "Rainy Day Fund." Being a lifetime farmer-rancher, I understand the importance of rain at the right time and in the right places. Cloud seeding is a promising tool -- one that the Water Resources Board believes should be included in Oklahoma's overall total water resources management program.

In July the Water Resources Board selected an experienced cloud seeding firm from North Dakota, Weather Modification Inc., which has an impressive record of rainmaking successes in North Dakota and Texas. The Oklahoma effort got underway August 1, was fully operational August 15, and will continue through October 31. The Water Resources Board, the advisory committee and scientists at the Oklahoma Climatological Survey will evaluate the 1996 activities and make recommendations before beginning the spring cloud seeding program March 20 through May 31, 1997.

In the meanwhile, an interim study led by Representative Elmer Maddux will examine the potential for a long-term program of cloud seeding and hail suppression. The study will also research means for supporting and sustaining an ongoing cloud seeding program through local matching funds. □

A commission composed of Oklahoma and Texas legislators and others is determined to define Oklahoma's southern border and Texas' true northern border. The secret seems buried in the sandlogged, meandering Red River that has separated Oklahoma (or Indian Territory) from New Spain, Mexico and Texas since 1819.

Heading up Oklahoma's Red River Boundary Commission is Senator Robert Kerr of Altus; for the Texas, Commission, attorney Bill Abney of Marshall, Texas. The commissions held a joint meeting in Wichita Falls on June 27 and agreed to schedule a second meeting before September 1. Water Board Executive Director Gary Sherrer, who also serves on the commission, pointed out the border was first negotiated by John Quincy Adams in 1819 as the boundary separating the United States and Mexico. Adams insisted the south bank belonged to the United States. A 1867 treaty with the Kiowa, Comanche and Apache gave the tribes territory north of the middle of the river channel between the 98th Meridian and the North Fork of the Red as their permanent home.

A controversy kindled between the United States and Texas when Oklahoma Territory was created in 1890. Texas claimed that the North Fork of the Red in the area called "old Greer County" was the boundary, while the

U.S. declared the boundary to be the south or main fork of the river. The Supreme Court ruled against Texas in 1896, stating the south or main fork was the boundary and that the south bank of the Red River was indeed the line



Defining banks of the meandering Red River presents problems to the boundary commission.

between Oklahoma Territory and Texas.

The sluggish river and its sandy beds lay in peace until the opening of the Burkburnett oilfield in the Big Bend area in 1918. Land prices soared, and Texas and Oklahoma again became intensely interested in knowing exactly where the state line lay and which

Continued on page 2

Red River, continued from page 1

state owned or controlled the minerals under the riverbed. Texas and Oklahoma were fast to claim the oil-rich sands under a variety of laws. Texas fell back on a 1837 act reserving beds of streams over 30 feet wide; Oklahoma claimed the whole riverbed, declaring the Red River "a navigable stream;" north shore owners asserted riparian rights. The riverbed bristled with derrick rights. Disputes re-fired and more than one operation was run out of the riverbed by Texas Rangers. Early in 1919, attorneys for both states met in Fort Worth and tried without success to resolve the issue. On March 20, 1920, the feds intervened and appointed a receiver to take over the 42 miles of riverbed and stop all financial transactions. The federal receiver was Frederick A. Delano, an uncle of Franklin Delano Roosevelt, former railroad executive and member of the Federal Reserve Board. Oklahoma flew to the courts for relief.

In a flurry of Supreme Court opinions between 1921 and 1923 the Court held that title to the bed of the river (between the 98th meridian and North Fork) did not pass to Oklahoma at statehood; the Red was not a navigable river; disposal of former Indian lands on the north bank carried with it a right to the bed of the river only to the medial line; the southern half of the riverbed was decreed to belong to the public domain; none of the riverbed oil activity could be operated under mining laws; and indeed, the south bank of the river was the boundary.

Residents in Texas and Oklahoma are quick to claim their part of the riverbed.

These Red River Boundary Commissions and Chairman Kerr are determined that these commissions will succeed where earlier ones failed. Major issues before the commissions include definition of public lands (under the jurisdiction of Interior's Bureau of Land Management); ownership boundaries of BLM and private landowners along the river; determination of in-lieu taxes due counties where public lands are located; and states' jurisdiction in matters concerning wildlife and game laws, criminal laws and property disputes.

Dr. Charles Mankin, director of the

Oklahoma Geological Survey and member of the commission, points out the boundary should meet these criteria:

- ❖ feature that is recognized easily by all parties;
- ❖ feature that does not change though decades of time;
- ❖ feature that is present throughout the entire length of the river.

Mankin suggests as possible Red River south bank boundaries the edge of the active watercourse (which is easy to see but subject to frequent changes); the edge of stable vegetation (also easy to see but changes along the river's course); or the stabilized banks of the river (easy to see, does not change, but is more difficult to justify downstream.)

Sherrer visited the Red River at

Burkburnett, along with other members of the commissions and federal authorities.

The capricious riverbed can shift a half mile overnight.

Sherrer emphasizes that setting a boundary will have nothing to do with settling private property disputes. "Those will have to be decided by the courts," he said. "Although everyone agrees the boundary is the south bank, actually defining that line is a whole different can of worms," Sherrer said. But if any commission is going to do it, it will be this one," he declared. □

Board Develops New Permit to Cut Costs for Small User

"Limited use" permit reduces waiting and red tape for water users who need up to 15 acre-feet a year

On June 12, Governor Keating signed into law HB 875 that enables the Water Resources Board to offer Oklahomans a new user-friendly permit. The quick and easy new permit allows the use of small amounts of stream water or groundwater and runs through the permitting process in 30 days. Now the OWRB executive director can authorize the issue of the limited use permit to all applicants who meet the few requirements and pay the \$125 permit fee

According to Executive Director Gary Sherrer, up to 15 acre-feet of stream water can be allocated under regular, seasonal, temporary, term or provisional temporary permits; groundwater in regular, temporary, special or provisional temporary permit categories.

Under ordinary circumstances, the Water Resources Board will issue a "limited use" permit if:

- ❖ there is water available;
- ❖ the applicant plans to put the water to beneficial use without waste;
- ❖ the withdrawal of water will not adversely affect domestic and other users;
- ❖ he/she owns or leases the land on which the groundwater well will be drilled, or
- ❖ he/she owns the stream water

diversion point or has an easement for lines to cross another's property.

Sherrer said the main benefit is that the new permit requires only that the stream water applicant publish one notice in the county of the diversion and the downstream county and allow 10 days for comment. A groundwater applicant notifies by certified mail all owners of land within 600 feet of the boundaries of his/her land, then waits 10 days for written comment. Within 10 days after the end of the comment period, the executive director will approve or deny the permit.

Sherrer points out that it bypasses the usual hearing process and approval by the Board, which takes 60 to 90 days or longer on traditional permits.

"We've designed the permit to be quick and easy for applicants who need to get a business up and running right away," Sherrer said. "We think it will be a big benefit to small businesses and manufacturers, small public water suppliers, builders and developers and farmers and ranchers who irrigate a few acres and water livestock or poultry, and others whose water needs are not great."

Phyllis Robertson, who oversees the Board's permitting section, says

there definitely is a need for the "user friendly" new permit, noting that 737 of the permits now on file at the Water Resources Board allocate 5 acre-feet of water or less.

The only other requirement of permittees is that they file an annual water use report on forms provided by the Board every January.

For information on the "limited use" permit, call the Planning and Management division (405) 530-8800. □



FEMA Holds Regional Meeting

Ken Morris, National Flood Insurance Program coordinator, represented the OWRB at a Partnership Workshop sponsored by the Federal Emergency Management Agency for Region VI officials. The annual meeting held in Hot Springs June 17-19 attracted disaster managers from Arkansas, Louisiana, Oklahoma, New Mexico and Texas.

According to Morris, it offered an opportunity for state emergency management officials, floodplain regulators and FEMA representatives to discuss state issues and get them integrated into federal policy. "The partnership format provides FEMA insight into problems local administrators encounter in the field," Morris said.

Participants worked in five groups to prepare issues statements, some of which were resolved on the spot; others that will be forwarded to FEMA's Washington headquarters for consideration. Work groups were the Director's Group; Preparedness, Training and Exercise; Response and Recovery; Mitigation; and Operations Support. On June 19, James Lee Witt, FEMA national director, met with the states' top emergency management officials to explore more effective ways of preparing for and coping with natural and manmade disasters. FEMA initiated the partnership format last year to give states the flexibility to design programs that suit their individual risks. R.L. "Buddy" Young, FEMA Region VI administrator was also a featured speaker and workshop facilitator. Young pointed out that, "Each state may have a different risk, and it's important that they prepare for that risk." □

Water Board Stretches Staff

If it were not for the Water Board's willing crew of seasonal helpers and Carl Albert scholars, many important tasks might go undone. Members of the versatile group are assigned to every division, helping out in a variety of tasks that suit their special talents.

Seasonal helpers, most of them university students or recent graduates, are especially important to the Water Quality Programs division, where an enormous amount of critical water quality data must be gathered in the warm weather months. Carl Albert scholars can lend their talents to the Water Resources Board for terms of six months to two years and offer the advantage of not counting against the agency's allotment of full-time employees.

It's a win-win situation. The Water Resources Board gains willing and talented helpers; the students gain hands-on experience in their field of study. □

PHOTO RIGHT: Karen Yuan, left front, is a Carl Albert fellow assigned to the Financial Assistance division; Shanon Haraughty is a CA fellow who assists in the Water Quality Programs division; Charles de Coune, a CA intern, works in the Financial Assistance division; and Jason Milner, a CA fellow is assigned to the Planning and Management division.

BELOW: Christy Hobbs, left, is a zoology graduate from the University of Oklahoma; Darrin Lee, enrolled in the masters program in geography at OSU, is assigned to the Board's Planning and Management division; Kevin Koon, pursuing a masters in geography at OSU, works this summer in the Administrative Services division; Damon Wright is a student in environmental science at OSU; William Hahn is studying biosystems engineering at OSU. Hobbs, Wright and Hahn all are working in the Board's Water Quality Programs division.



Front: Sherrie Effinger, a third grade teacher at Jones, works at the reception desk until school resumes; Julie Cunningham, a Carl Albert fellow, pursues a masters in environmental science at OU; Katrina Conrad-Legler, a May graduate of the OU College of Law, assists in the Office of the General Counsel; Jennifer Halstead is a graduate student at OU working on a masters degree in environmental science; Myles Mungle (right) pursues a degree in biosystems engineering at OSU. Cunningham, Halstead and Mungle all are assigned to the Water Quality Programs division of the OWRB.



Volunteers Dip Secchi Disks

Seventeen members of the Water Quality Programs division and recruits from Oklahoma Water Watch took part in the Great American Secchi Dip-In June 29-July 7. The annual outing to test the clarity of the nation's lakes is sponsored by the EPA and North American Lakes Management Society. Volunteers are asked to take secchi readings and turn in brief data sheets.

Staff Learns CPR and First Aid

Twenty members of the Water Resources Board staff attended CPR and first aid classes sponsored by the Red Cross at Board Offices on July 11. Mona Poteet, Red Cross trainer, demonstrates correct position to Hank Elling who attended from the Lawton Field Office.



Board Honors Mike Henson

Michael (Mike) Henson holds a framed Resolution of Appreciation presented to her by fellow Board members on her retirement from the Board. Shown with her at the June 11 reception are Board Chairman Ross Kirtley and Robert S. Kerr, Jr., member.



Water Wisely to Stay Green all Summer

Until the second week in July, Oklahoma had been impaled upon its second-worst drought in history. Rains for the first half of 1996 had been scarce and scattered, especially in central and north central regions where crops, lawns and gardens stung under drought stinging in drought. On July 6, nearly half (43) of Mesonet weather stations recorded temperatures of at least 110 degrees. Hot temperatures and high water use stressed municipal water supplies and budgets, and many cities and towns strained to meet demands pressed by hot, dry weather. Widespread rains relieved most problems, but in Oklahoma's unpredictable climate, drought stands always at the door.

Water conservation indoors and out offers opportunities to extend water supplies and save money. During the winter months, 90 percent of household water use occurs inside the home; in the summer, 50 to 80 percent of water used by the household is outdoors for lawn care. Unfortunately, most water used outside is wasted in inefficient lawn watering practices. Use these tips from the experts to have green grass and healthy shrubs all summer long -- and a little green in your pocket as a bonus.

1. Bermuda grass needs from 1 to 1.5 inches of water every five days.
2. Water turf areas separately from shrubs, flowerbeds and trees.

3. Group landscape plants together according to their water needs to avoid overwatering one plant to meet the needs of another.

4. Water turf areas with sprinklers; trees, shrubs, garden flowers and groundcovers are best watered with low-volume drip, spray or bubbler emitters.

5. Plant low water-use plants such as native or adapted desert willow, redbud, honey locust and juniper trees; shrubs such as youpon holly, pyracantha and honeysuckle; and iris, day-lilies and wildflowers.

6. Water during the early morning or evening to reduce losses to evaporation and avoid watering during high winds.

7. Use sprinklers which throw large droplets of water instead of a fine spray. Use soaker hoses to apply water exactly where you want it.

8. Be generous with mulches in flower and shrub beds. Mulch materials are inexpensive, cover and shade soil, minimize evaporation, slow weed growth and erosion.

9. Water trees differently, since their water requirements are greater than grass. Water deeply with a soaker hose. Otherwise, trees develop shallow roots which break up paved driveways and sidewalks. □

--Courtesy "The Cross Section"

REAP Grant Applications Available

At the July 9 meeting of the Water Resources Board, members adopted rules for administering the grant program set in place by the Rural Economic Action Plan of 1996, or REAP. OWRB Executive Director Gary Sherrer said applications and assistance in completing the forms are available from the Financial Assistance division.

Of the \$17 million in grant funds allocated to assist small communities and rural areas, the OWRB will oversee \$4.5 million for sewer and water improvements. The new program is so similar to the Board's existing grant program that REAP was added as another facet of the Financial Assistance Program.

According to Joe Freeman, Financial Assistance division chief, grant funds will be distributed equitably among cities, towns and unincorporated areas with populations less than 7,000, with priority given communities with populations of 1,500 or less and entities with less financial capacity. Freeman says the Board welcomes applications now, although no projects will be considered for six months.

For applications, rules, information or assistance, please call the Financial Assistance division at (405) 530-8800. □

Success Stories Abound in Leak Detection

Ask any manager of a rural water district in Oklahoma what makes or breaks a water system and he or she will tell you it's the bottom line. Success depends on the ability to deliver treated water to customers on a dependable basis and at a reasonable cost.

Rural water districts that have participated in the Statewide Rural Energy and Water Conservation (Leak Detection) Program have improved profits by significantly reducing energy costs and leakage. The program, coordinated by the Oklahoma Water Resources Board and the Oklahoma Rural Water Association has provided eligible districts with interest-free loans up to \$30,000 with these remarkable results:

Annual water loss and energy savings of \$89,041 after repairs to leaking lines, pumping equipment and meters at M&L Water District, Inc., in Okmulgee County. Costs/savings were especially high because M&L's water supply was purchased.

Water loss savings of \$2,300; energy savings estimated at \$2,600 in a single year at Cherokee County Rural Water District #13. Water losses ranged from 10 to 31 percent. Water audit and leak detection recommendations were made to improve pumping and plant operations.

Water loss/energy savings estimated at \$11,640 at West Davis Rural Water Corporation. Annual water losses estimated at 33 percent reduced to 10 to 15 percent. Water audit and leak detection recommendations included repair of leaky check valves and adopting more efficient operational procedures at two pump stations.

According to Hydrologist Terri Sparks, who oversees the program, no-interest loans are available to water districts, nonprofit corporations, municipalities and public trusts that provide water service to populations of 10,000 or less. The program targets rural communities which lose millions of gallons of treated drinking water through water line leaks and malfunctioning meters. Sparks points out that no-interest loans are available for water audits, leak detection surveys and associated repairs.

The leak detection program is funded by \$300,000 in oil overcharge money from the U.S. Department of Energy. It is administered by the Oklahoma Water Resources Board with assistance in water audits and leak surveys by the Oklahoma Rural Water Association.

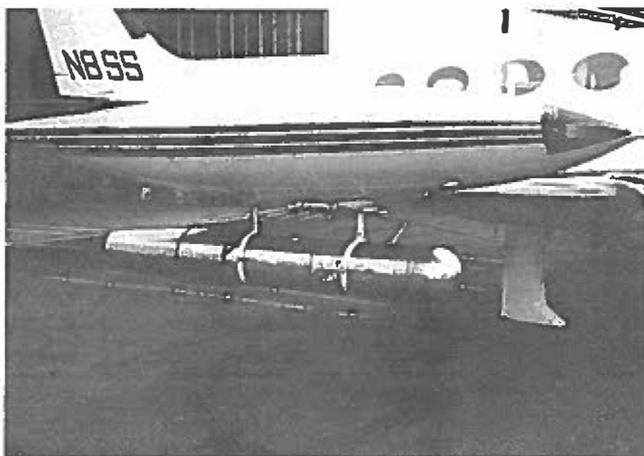
For information, call Terri Sparks in the Planning and Management division of the OWRB at (405) 530-8800. □

Statewide Cloud Seeding Project in Place

Too often this summer, farmers and ranchers watched promising clouds form then fade, drifting away without depositing the precious moisture needed by parched crops and pastures. Now perhaps there is a remedy for Oklahoma in a program of weather modification (cloud seeding) that has brought drought relief to other states. Although weather modification has not been conclusively demonstrated in Oklahoma, Kansas reports a 10 percent increase in rainfall and 27 percent reduction in hail. Similarly, North Dakota logged a seven to 14 percent increase in rainfall with a 45 percent reduction in hail and Texas, through a carefully controlled seeding experiment, has declared 10 to 45 percent increases in precipitation. Those states have successfully utilized a cloud seeding strategy over many years in which specially equipped aircraft deliver silver iodide and/or dry ice into promising cumulus clouds to initiate rainfall.

Oklahoma's statewide cloud seeding program will be conducted by

Weather Modification, Inc. of Fargo, North Dakota. Patrick Sweeney, president of WMI, will dedicate three project aircraft, two mobile radar units and trained flight and ground crews to the operation. Project Director Dr. Terry Krauss will be on site during all operations.



Cloud seeding equipment such as this Cessna 340 with wingtip generator and flare rack will be used in Oklahoma's weather modification effort that got underway in August.

The program will be conducted in two segments -- one underway now through October 31 and a second effort in the spring of 1997.

According to Mike Mathis, OWRB Planning and Management division chief and a meteorologist, the planes will carry and inject silver iodide and/or dry ice seeding into selected cloud formations. The seeding agent provides particles upon which the cloud's tiny droplets of moisture can condense.

These seeding agents are effective when cloud temperatures are 32 degrees F or colder and introduction of such materials into a supercooled cloud causes the liquid droplets to freeze. With millions of repetitions of this freezing action, additional heat is produced. This heat of fusion makes the cloud more buoyant, thrusting it higher, helping it grow larger and enabling it to produce more rain for a longer period than it would have without seeding. The ice crystals formed in the cloud also grow by merging with frozen or supercooled droplets until they are heavy enough to fall, melting into raindrops on their fall to earth.

Mathis says controversy and misunderstanding have swirled about the technology as long as it has existed. A common misconception concerns cloud seeding "stealing" rain from adjacent areas. He pointed out that there is no evidence that seeding clouds over one area robs another area of rain if the pattern had not been interrupted. "In fact, there is evidence from other states' programs that more precipitation has fallen in areas 100 miles or more downwind from the target area," he said.

In further explaining the seeding strategy, Mathis pointed out that clouds

selected by experts for seeding have nearly reached the rain stage, or in many cases, it is already raining. Seeding clouds can increase the efficiency of the rain mechanism and decrease the cloud's ability to produce damaging size hail. Clouds will dissipate when the general atmospheric conditions can no longer support their continued growth, whether they have been seeded or not. □

At the July 9 Board Meeting:

Executive Director Gary Sherrer reported on the meeting of the Red River Boundary Commission on June 27 in Wichita Falls, Texas, which he and General Counsel Dean Couch attended as delegates.

Sherrer also told the Board that Joe Freeman, Financial Assistance division chief, was injured in an accident on June 20, and during his absence, Assistant Chief Paul Hodge would act in Freeman's behalf.

In the Financial Assistance division portion of the agenda, Hodge asked and received the Board's approval of a \$83,470 emergency grant for the Town of Pittsburg (Pittsburg Co.) and a SRF loan for \$460,000 for Helena Public Works Authority (Alfalfa Co.) Hodge asked approval for the Glenpool Utility Service Authority (Tulsa Co.) to apply remaining loan funds to repairs to a water pump lift station damaged by flood.

The Board approved 14 temporary permits and 14 regular permits for the use of groundwater and amended four temporary and three regular permits for groundwater use. The Board approved eight regular permits for the use of stream water.

New driller/pump contractor licenses were approved for David Crane, Gerald Miligan, Steve Wolfe, Ralph Flores, Jr., Joe Hernandez, Gerald Simpson, E. Glenn Isham, David Isham and Bradford Joe Evans. Three licensed firms added operators/activities: Envirotech Services, Inc, Earl Horner; Total Support Services, Inc., Richard Reheman; Environmental Probing Service, Steve Yuza.

Jerry Barnett of the Office of the General Counsel explained draft emergency rules proposed for the Board's administration of the new Rural Economic Action Plan (REAP) grant program to be included in the activities of the OWRB Financial Assistance division. The Board approved draft rules.

Assistant Director Duane Smith asked the Board's approval of a new limited use permit proposed for addition to the permitting schedule. Smith explained it is a permit intended for users of small quantities of water -- up to 150 acre-feet a year. The Board approved draft emergency rules for REAP and the limited use permit and they await approval by Governor Keating.

FINANCIAL ASSISTANCE PROGRAM UPDATE

Approved at June and July 1996 Board Meetings

FAP Loans

3.772% 1995 Bonds; 28.5 year maximum term
3.922% 1994; 28.5 year maximum term

Salina PWA \$ 1,700,000.00

FAP Grants

Calvin PWA \$ 60,350.00
Comanche RWD #3 \$ 100,000.00
Rogers RWD #14 \$ 100,000.00
Town of Pittsburg \$ 83,470.00

SRF Loans

Helena PWA \$ 460,000.00

TOTALS AS OF 7/9/96

	FAP Loans	FAP Grants	SRF Loans
APPROVED	166	388	43
Amount	\$ 210,745,000.00	\$ 21,804,897.00	\$ 173,088,834.23
FUNDED	160	354	38
Amount	\$ 202,795,000.00	\$ 19,321,707.41	\$ 167,809,834.23

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OKLAHOMA WATER NEWS
Bimonthly Newsletter of the
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OKLAHOMA WATER NEWS

Bimonthly Newsletter of the Oklahoma Water Resources Board



*from
the desk
of Gary
Sherrer*

Emergency Grants Reconstruct Storm-Damaged Pittsburg Dam

Some of my folks at the Water Resources Board had the honor on August 22 to attend the press conference at the Capitol at which Governor Keating signed an Executive Order establishing the Oklahoma Drought Management Team (DMT.) The team, comprising state and federal agencies, will have as lead agency the Department of Civil Emergency Management and its head, Tom Feuerborn. DMT includes a Management Group, in which the OWRB participates, and an Advisory Group.

The OWRB has released regular drought reports throughout the summer, so we appreciate the importance of the DMT mission to address current and future drought problems in a manner to preserve lives and protect the health, property, environment and safety of Oklahomans. At the press conference, Governor Keating charged the team with addressing short- and long-term drought-related emergencies.

All of us in Oklahoma know that drought is never far away. We need to be prepared to deal with the myriad of economic and agricultural problems it causes. Although we are now in a rainy spell, we cannot forget that just three months ago, drought was inflicting enormous damage and financial stress to thousands of our farmers and businesses.

One of the worthy and long-term goals of the DMT is to produce a state drought plan that addresses water, agriculture, water conservation and other issues of drought. This is a timely effort by Governor Keating, and we welcome this important initiative. □

The earthfill dam that impounds the water supply for the Town of Pittsburg in southeast Oklahoma, had withstood hundreds of storms in its 90-year history. However, the intense rainstorm of April 21 was different. Violent winds whipped waves that gnawed at the crest of the dam. Tornadoes careened through the county, inflicting an estimated \$8 million in damages on nearby McAlester. Six inches of rain raised the lake level a foot over the spillway.

After the storm, three holes near the top of the embankment were spurting horizontal streams of water as big as fire hoses, reported Pittsburg city clerk/treasurer Irene Johnston. A call to the Water Board brought geologist Kent

Wilkins of the McAlester Field Office and engineer Cecil Bearden from Oklahoma City to inspect damage to the dam. Bearden advised the town to immediately lower the water level at least four feet -- to a point below the leaks in the dam -- until emergency work to stabilize the structure could get underway.

The Water Resources Board is the state agency with responsibility in dam safety. The Board requires regular inspections of nonfederal dams six feet or more in height and/or impounding 50 acre-feet or more of water, a category which encompasses some 4,500 dams in Oklahoma, including the Pittsburg dam.

The dam, built before statehood by

Continued on page 2



Pittsburg City Clerk Irene Johnston holds a replica of the \$83,470 grant check presented to the Town of Pittsburg by the Water Resources Board for the repair of Pittsburg dam. Representative Mike Mass, left, Pittsburg Mayor John Labor, Senator Gene Stipe and Mike Melton, OWRB assistant to the director, attended the grant presentation ceremony July 30.

Pittsburg dam, continued from page 1

the Edwards Coal Company mining in the area, impounds Pittsburg Lake, which covers 31 acres. The dam is an earthfill structure 256 feet long, 24 feet high and 6 to 8 feet wide, sloping down to a 60 to 70-foot base. Bearden pointed out that at the time it was built, there were no required specifications for construction. He said the 15-foot wide spillway was the primary flow control, since a pipe installed for that purpose had been earlier damaged and removed.

Bearden noted the dam was classified "high hazard," a designation given to dams with homes downstream that would be lost in the event of dam failure. Below Pittsburg Lake, eight to 10 homes and families were endangered. While temporary emergency repairs were being made, Bearden recommended that Pittsburg, a town of 249 people, apply to the Oklahoma Department of Civil Emergency Management for state disaster relief funds made available under Governor Frank Keating's disaster proclamation for the region. With the assistance of Senator Gene Stipe and Representative Mike Mass, Pittsburg also requested and received an emergency grant from the Oklahoma Water Resources Board for \$83,470 and the town contributed \$15,000 in matching funds.

When emergency grouting began, engineers discovered internal erosion much more pervasive than they had suspected. Water running through the dam had carved an enormous void. The hole, assumed at the onset to be approximately 4 inches by 6 inches, was a cavity so large that it required 750 gallons of bentonite grout to fill it. According to Bearden, a dam inspector with the OWRB for 20 years, "It was one of the worst I've ever seen."

The actual repair of the dam was an excellent example of Oklahomans working together to get a job done," said OWRB Executive Director Gary Sherrer. During early emergency repairs, the Department of Wildlife Conservation volunteered its bulldozer. Then, to help the town save money, Pittsburg County volunteered workers to help in clearing ground in preparation for repairs.

The engineering firm employed to oversee repairs stabilized the structure with further emergency grouting, widened the six foot wide crest to 40 feet, flattened the downstream slope and widened the spillway. Controlled explosions leveled off a hill to make

it part of the widened spillway. Rock blasted from the channel was used to reinforce the dam. The spillway at the Pittsburg dam previously had been capable of carrying only about 21 percent of the probable maximum flood (PMF), although 50 percent is

Workmen put the final touches on the refurbished Pittsburg dam, dangerously damaged by winds and heavy rains of April 21. The 90-year-old dam on Chun Creek impounds the town's water supply.



the criterion recommended by dam safety experts. The Probable Maximum Flood (PMF) is a figure estimated by engineers and hydrologists, based on the probable maximum rainfall that could occur in the watershed in 24 hours. Today, with the widened

spillway, the structure can pass 50 percent of the PMF.

Sherrer said it was remarkable that the major reconstruction of the dam was accomplished in just three months. "Without the work and cooperation of Senator Stipe and Representative

Mass, Mayor John Labor and the town council, the citizens of the town and Pittsburg County, financial and technical assistance of the OWRB and ODCEM, the task could not have been done so well and so fast," he said. □

Board to Study High Plains Pollution, Depletion

A comprehensive water use and water quality study of the High Plains (Ogallala) Aquifer under Texas, Cimarron and Beaver counties will begin this fall, announced Gary Sherrer, OWRB executive director. The first year of the 3-year study will be supported with \$100,000 appropriated by the Oklahoma Legislature and \$100,000 in U.S. Geological Survey funds.

The study responds to concerns expressed by Panhandle residents regarding impacts of the growing swine industry on water supplies and water quality of the High Plains Aquifer.

Mike Mathis, OWRB Planning and Management division chief, says the project will gather information on water availability in the High Plains Aquifer, the primary source of water in the Oklahoma Panhandle. Mathis points out that the study will determine the maximum annual yield of the High Plains Aquifer underlying Cimarron and Beaver counties and update the maximum annual yield study of the aquifer underlying Texas County. A groundwater flow model will be used to project the impact of high water usage by the swine industry and the effects on water quality.

In monitoring water quality, approximately 30 monitoring wells will be sampled, says Robert Fabian, OWRB hydrogeologist, who oversees data collection. The wells will represent four categories of land use: agricultural/row crop, animal husbandry, undeveloped and urban use. Samples from these monitoring wells will be used to establish baseline water quality data.

Another phase of the study will focus on migration of pollutants in the aquifer by tracking the presence of tritium, a harmless, airborne by-product of nuclear tests 50 years ago which made its way to earth in rain. The presence of tritium in the waters of the High Plains Aquifer will help researchers estimate the time and routes of migration of contaminants.

The water quality monitoring network will be a cooperative effort of the OWRB, USGS, Oklahoma Conservation Commission and Panhandle State University. Board staff will teach OCC staff at county offices how to collect water samples, which will be analyzed at the Panhandle State University lab. The USGS will convert water quality information to data bases and reports.

Data will be integrated into the Geo-

graphic Information System (GIS), a system for collecting, digitizing, storing and managing information. Utilizing the GIS system, scientists will be able to retrieve all digitized data about any well location with relation to any other well in the system. □



Court Reinstates Agency

The Texas Supreme Court has reversed the judgement of the district court, reinstating the Edwards Aquifer Authority as a state agency charged with managing the waters of the critical groundwater basin. Years of wrangling over water rights protecting the basin from depletion ended in 1993 when the Texas Legislature created the Edwards Aquifer Authority.

U.S. District Judge Lucius Bunton had ruled that the aquifer was threatened with over pumping and that protected aquatic species in San Marcos and Comal Springs were endangered. The springs are the largest natural outlet of the aquifer.

The new Authority was short-lived because a Medina County judge declared it unconstitutional in October of that same year. The recent Texas Supreme Court ruling reverses that district court ruling and legally reinstates the Edwards Aquifer Authority and its charge to protect the aquifer.

The aquifer, which stretches just south of Austin to 100 miles west of San Antonio, is the only source of drinking water for San Antonio and several other cities. It also supplies irrigation water to six counties and feeds the San Marcos and Guadalupe Rivers.

Water level in the aquifer has been steadily declining over several years, but the recent drought has caused daily declines.

Bill West, manager of the Guadalupe-Blanco River Authority, praised the decision and urged adoption of the Texas Water Conservation Association's motto, "Till taught by pain, men really know not what good water's worth."

Lake Found under Antarctica

Russian scientists have discovered a lake miles under Antarctica's ice that may contain microbes millions of years old, kept alive under a special glacial seal. An article in the August issue of "U.S. Water News" reported that seismic and echo soundings indicate

the surface of the lake lies 2.3 to 2.6 miles beneath the ice. The lake was named Lake Vostok by the researchers, who estimate its size to be 30 miles by 140 miles and its depth to be 1,600 feet. Researchers probing the ice are not sure why there is water beneath the ice, but speculate that the weight of the glacier is forcing the lake down into a depression, liquefying it by pressure. Another theory is that warmth from radioactive decay in the Earth keeps the lake from freezing and may be keeping the microbes alive.

French scientists who analyzed the Russians' ice samples believed them to be 420,000 years old, leading researchers to estimate the lake has been sealed under the icecap for between 500,000 and a million years. Researchers are warned that drilling into the lake, which exists under extreme pressure, would cause gushes powerful enough to destroy drilling rigs near the site. For the time being, the microbes will remain undisturbed -- until researchers can figure out how to excavate them safely, and without polluting Lake Vostok.

Cloud Seeders Halt Operations

Heavy rains in the northwest and Panhandle counties have prompted state officials to call for a temporary suspension of cloud seeding activities in the region. The precipitation came close on the heels of the state's first cloud seeding on August 20.

The weather modification project has been in a "standdown" mode since August 23 after the area received significant rainfall.

According to John Girdzus, chief meteorologist for Weather Modification, Inc. of Fargo, N.D., who oversees the project, that is the standard procedure in cases where target areas receive heavy rains. Girdzus directed his crew to immediately cease all rainfall enhancement operations until conditions warrant.

The OWRB received numerous calls from Woodward area citizens who suspected that cloud seeding led to, or contributed to, the heavy rains. OWRB Executive Director Gary Sherrer said he has enormous confidence in Weather Modification, Inc., but he assured residents that at no time will the program be conducted haphazardly or in a manner that might endanger lives or property.

Girdzus said the project command center was established in Woodward due to the region's previously severe

drought conditions, but now, operations will focus on the southwest, northeast areas, still in need of rain.

As of August 31, the state's project was 100 percent operational, with two fully functional radar base units and three modified twin engine aircraft to seed clouds wherever opportunities arise in Oklahoma.

The mobile facility in Woodward, which will work in tandem with a similar unit at the primary control center in Norman, will employ a radar with aircraft tracking capabilities and a full complement of meteorological data systems. The radars are also capable of archiving information that will be used in evaluating the project.

Girdzus noted that cloud seeding programs are most effective during periods of normal rainfall and as a tool to lessen future drought problems.

The Oklahoma weather modification effort will be independently evaluated by the Oklahoma Climatological Survey at the University of Oklahoma.

The initial phase of the project will run through October 31. Following a winter recess, activities will resume March 20 through May 31, 1997.

Water Conference November 20

Planning is underway for the Seventeenth Annual Governor's Water Conference to be held Wednesday, November 20, at the Marriott Hotel, 3233 Northwest Expressway in Oklahoma City.

Registration will begin at 8:00 a.m.; the program gets underway at 8:30 a.m. The Conference adjourns at the conclusion of the luncheon program about 3 p.m.

To put your name on the mailing list for an agenda and registration materials, call the Oklahoma Water Resources Board at (405) 530-8800.

Correct Address, Please

We like hearing from our customers and we want to stay in touch, but mail addressed to the Oklahoma Water Resources Board at P.O. Box 150 may be delayed or returned to sender. We no longer maintain the post office box. Please write to us at:

**3800 N. Classen Boulevard
Oklahoma City, OK 73118**

THE FLOOD CURRENT

SEPTEMBER - OCTOBER 1996

Flooding Can Happen Anytime, Anywhere

Report from Ken Morris, Oklahoma coordinator, NFIP

Is your community enrolled in the National Flood Insurance Program? If so, is it free of identified flood hazard areas? If the answer to both of these questions is yes, and you consider your community safe from flooding, perhaps you should reconsider, as have the citizens of Seiling, Oklahoma.

Seiling, a town of 1,031 people, is in Dewey County, near the North Canadian River, 36 miles southeast of Woodward. In late July, Seiling received 3.5 inches of rain in just three hours. Then, less than a week later, before the ground had time to dry, 2.5 inches of rain fell in two hours.

The resulting floods damaged 14 buildings, including seven homes. Unfortunately, none of these structures had flood insurance, and while those whose properties incurred the damage might disagree, the damage was not significant enough to prompt a Presidential Disaster Declaration. As a result, these folks have nowhere to turn for financial assistance in replacing sheet rock, insulation and other flood-damaged material.

So, the moral for NFIP communities with no significant flood hazard area is, "Continue to enforce your required Flood Damage Prevention Ordinance and inform residents, especially those at the greatest risk, of the availability of flood insurance."

Seiling officials say they have learned a valuable lesson and intend to prevent similar situations in the future. Hopefully, other communities will do the same, but before flooding occurs.

On a happier note, the annual meeting of the Association of State Floodplain Managers was an enormous success. Held this year in San Diego, California, June 10-14, more than 400 attendees enjoyed the scen-

ery and stimulating discussion related to the conference theme, "Coast to Coast, 20 Years of Progress."

Highlights of the conference included a paper presented by Frank Pagano and Diane Calhoun from the Federal Emergency Management Agency, Region VI. They described the substantial damage/improvement and development of cooperative agreements with the Building Officials Association of Texas and Texas Floodplain Managers Association. FEMA and Texas have developed a model program and their experience will be of great value to Oklahoma.

John Ivey, chairman of the ASFPM Professionalism Committee, updated conferees on progress being made toward establishment of a national certification program for floodplain managers and administrators.

Others representing OFMA were Pat Hoggard, Joe Remondini and Ron Flanagan, Tulsa; and Mike and Carolyn Schultz of Mannford. Congratulations to Pat for his election to the Board of ASFPM Region VI and Carolyn who won the women's golf tournament.

I am proud to announce that I was elected treasurer for the Association for 1997.

Make plans now to attend the 1997 conference in Little Rock in April.

Donetta Blanlot was one of 21 participants in the recent Emergency Management Institute. Blanlot, of the OWRB McAlester Field Office was invited to assist in teaching "How to Manage the Nation's Floodplains through the NFIP" at the EMI in Emmitsburg, Maryland, the first week in August. Jim LeGrotte, chief of the Mitigation Division, also assisted. The Emergency Management Institute is a fine course and we hope to bring it to Oklahoma in 1997. □



This photo in Oklahoma City during July 30 rain shows how water accumulates in poorly drained low-lying areas.

Test Your Knowledge of NFIP

True or False:

1. A structure to be sited in the floodway of a stream can be permitted as long as the increase in the base flood elevation is less than one foot.

T F

2. A community is required to provide floodplain determinations to all who ask.

T F

3. A nonresidential structure, to be located in a coastal high hazard area (Y zone) can be either elevated on piles or floodproofed to the base flood elevation.

T F

4. Manufactured (mobile) homes in a special flood hazard area must be placed on a permanent foundation.

T F

5. A lending institution would require flood insurance of a structure built in a special flood hazard area and elevated to the base flood elevation on fill.

T F

(Answers on page 5)

The Floodplain and Its Natural Values

(Courtesy Minnesota

Department of Natural Resources)

Floodplains are lowland areas adjacent to lakes, wetlands and rivers that are covered by water during a flood. Of course, the ability of the floodplain to carry and store floodwaters should be preserved and respected in order to protect human life and property from flood damage. However, undeveloped floodplains also provide many other natural and economic resource benefits. Floodplains often contain wetlands and other areas vital to a diverse and healthy ecosystem. By making wise land use decisions in the development and management of floodplains, beneficial functions are protected and negative impacts to the quality of the environment are reduced.

Parts of the floodplain that are also considered wetlands will, in addition to floodplain zonings, receive protection from federal, state and local wetland laws. These laws, such as the U.S. Army Corps of Engineers Section 404 Permit Program, regu-

late alterations to wetlands to preserve both the amount and integrity of the nation's remaining wetland resources.

The values and benefits of land located in floodplains include:

Habitat for Plants and Animals

Floodplain vegetation provides important resting, feeding and nesting areas for many waterfowl species. Undisturbed floodplains have high natural biological diversity and productivity. River corridors are frequently used as flyways for migrating birds. Fragmentation of continuous natural areas reduces their appeal and function for a wide variety of wildlife species.

Water Quality

Floodplain vegetation and soils serve as water filters, intercepting surface water runoff before it reaches the lake, stream or river. This process aids in the removal of excess nutrients, pollutants and sediments from the water and helps reduce the need for costly cleanups and sediment removal.

Green Space Corridors

Landowners and community partnerships can be formed in some cases to preserve a "green space corridor" or a multiuse area where trails, flood hazard reduction, wetland protection, fish and wildlife habitat improvement, water quality protection, environmental education and other beneficial uses can coexist.

Additional benefits of undeveloped floodplains can be realized through:

- ❖ stormwater management,
- ❖ erosion control,
- ❖ cultural resources,
- ❖ natural products,
- ❖ scientific study,
- ❖ outdoor education,
- ❖ recreational opportunities, and
- ❖ aesthetic values.

Protection and knowledgeable enhancement of floodplains and appurtenant resources is not only wise from an economic and public safety standpoint, it will help ensure that communities maintain their individual ecosystems. □

Answers to NFIP Quiz, p. 4

(1) F (2) F (3) F (4) T (5) T



In photo above, a Choctaw city utility worker stands knee-deep in water in median on Northeast 23rd Street near Choctaw Road, flooded by heavy rains of July 30. The clogged storm drain caused water to back up, inundating the street and median with dangerous floodwaters.

Water Board, ODOT to the Rescue

Ira Smith, manager of the OWRB Field Office in Woodward, had an opportunity to save two homes and a restaurant in Mooreland from potential flood damage. On August 26, more than four inches of rain fell at Mooreland, backing up several feet of water at a clogged culvert under SH 412 and threatening nearby structures. Smith, a resident of Mooreland, promptly called the Oklahoma Department of Transportation, who sent a crew to clear the ditch and culvert of deep sediment that choked the flow of water.

By doing so, the structures were saved from potential flood damage and the floodwater flowed away safely. Stormwater channels are "out of sight, out of mind" on clear days, but can quickly turn treacherous in heavy rainfalls.



Once workers cleared and cleaned the top of the storm drain, water was safely carried away. Ken Morris, who oversees the Board's NFIP, says it is critical to keep stormwater channels and storm drains clear and free of debris.

At the August 13 Board Meeting:

The August 13 meeting was held in Guymon at the Ambassador Inn, in keeping with the Board's effort to meet in all quadrants of the state during the year. Chairman Ross Kirtley thanked members of the Oklahoma Panhandle Agriculture and Irrigation (OPA) association and the Safe Oklahoma Resource Development (SORD) group for their hospitality. Mr. Kirtley introduced Board Member Ervin Mitchell of Balco, who introduced Senator Don Williams and Representative Jack Begley, Guymon Mayor Jess Nelson and City Manager Wayne Hill. Senator Williams and Representative Begley sponsored the bill authorizing and funding the High Plains groundwater study. Oklahoma's share of the study over three years would be \$300,000.

Duane Smith, assistant director, introduced Kathy Peter, District Chief, U.S. Geological Survey, who explained the importance of the cooperative study of the High Plains (Ogallala) Aquifer. She said the Oklahoma study is part of an 8-state study of the Ogallala, the world's largest aquifer and source of 30 percent of the nation's irrigation water. She said a digital flow model will assess the impact of large groundwater withdrawals on the High Plains Aquifer. Ms. Peter asked Mark Becker, project manager, to explain the water quality aspects of the study. Water quality networks will be designed to assess the quality of the groundwater in the aquifer and to collect baseline information to be used in assessing the source of any future contamination.

Financial Assistance Division Chief Joe Freeman asked and got approval for a grant and loan to Rural Water, Sewer, Gas and Solid Waste Management District #9, Delaware Co., and loans to RWD #4, Rogers Co.; Cushing Municipal Authority, Payne Co.; RWD #1, Muskogee Co., and SRF loan to Rush Springs Municipal Authority, Grady Co. The Board approved an extension of time for obligating funds for Haileyville PWA, Pittsburg Co.

On the Planning and Management agenda, the Board approved nine temporary permits and two regular permits for the use of groundwater; amended one temporary and three regular groundwater permits; approved seven regular permits for the use of stream water.

New Driller/Pump Contractor licenses were approved for Corey Walters, Cobey Walters, James Flournoy, Gary Baggs, John Detton and Jack White. Three licensed firms added operators/activities: Trust Environmental Services, Edward D. Keeley; Terracon Consultants, Inc., John Bartlett; Standard Testing & Engineering, Shawn Coughlin. □

FINANCIAL ASSISTANCE PROGRAM UPDATE

Approved at August 1996 Board Meeting

FAP Loans

3.772% 1995 Bonds; 28.5 year maximum term
3.922% 1994; 28.5 year maximum term

Cushing MA	\$ 7,155,000.00
Delaware RWSCSWMD #9	\$ 635,000.00
Muskogee RWD #1	\$ 520,000.00
Rogers RWD #4	\$ 1,465,000.00

FAP Grants

Delaware RWSCSWMD #9	\$ 100,000.00
----------------------------	---------------

SRF Loans

Haileyville PWA	\$ 419,000.00
Rush Springs MA	\$ 605,105.00

TOTALS AS OF 8/13/96

	FAP Loans	FAP Grants	SRF Loans
APPROVED	170	388	44
Amount	\$ 220,520,000.00	\$ 21,829,897.00	\$ 173,782,939.00
FUNDED	162	358	39
Amount	\$ 203,570,000.00	\$ 19,655,177.41	\$ 167,914,834.23

Mary E. Whitlow, Editor

Barry Fogerty, Writer, Photographer

James Leewright, Typography and Layout

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♻️ RECYCLED PAPER

- J. Ross Kirtley, Chairman
- Bill Secrest
- Ervin Mitchell
- Robert S. Kerr, Jr.
- Wendell Thomasson
- Richard McDonald
- Dick Seybold
- Lonnie L. Farmer
- Jack M. Givens

OKLAHOMA WATER NEWS
Bimonthly Newsletter of the
Oklahoma Water Resources Board
3800 N. Classen Boulevard
Oklahoma City, OK 73118

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OKLAHOMA WATER NEWS

Bimonthly Newsletter of the Oklahoma Water Resources Board



*from
the desk
of Gary
Sherrer*

17th Governor's Water Conference Picks "Working Together" Theme

*November 20 Conference will explore 21st Century
partnerships in planning, development, regulation*

It was my pleasure on October 11 to attend a ceremony in McAlester in which the Oklahoma Water Resources Board made the 1996 Sardis Lake water storage payment to the U.S. Army Corps of Engineers.

Senator Gene Stipe and Representative Mike Mass presented the \$508,030 check to Lt. Col. Tom Frendak, Deputy Commander of the Corps' Tulsa District. After that ceremony, federal, state and local officials met to discuss issues surrounding commencement of a Sardis Lake Water Authority (SLWA) project to provide water from Sardis to area water users.

I also signed two agreements permitting access to federal land by SLWA to establish water lines and related facilities. The payment and agreements suspend through May, legal action by the federal government to declare Oklahoma in default of the water storage obligation.

It gives the Water Resources Board and local citizens another year to investigate a workable debt repayment plan. Our work there represents a major hurdle in our continuing effort to get water to folks around Sardis Lake.

The appropriation and payment, for which we worked diligently with Governor Keating and legislative leaders, show that Oklahoma fully intends to pay its debt to the federal government.

There are two plans currently on the table that have potential to retire the Sardis debt. We are reviewing their merits and working closely with Sardis citizens in making a final decision on a repayment plan. We are encouraged with our progress. □

The Seventeenth Annual Governor's Water Conference will examine the opportunities for forging partnerships between federal, state and local agencies in accomplishing major water resource initiatives of the future. The theme



Governor Frank Keating

is "Working Together in Managing 21st Century Water Resources."

The annual conference will be held at the Marriott Hotel in Oklahoma City, with registration beginning at 8 a.m.; the morning session at 8:30. Water Resources Board Chairman J. Ross Kirtley will open the meeting and introduce keynoter J.D. Williams, Washington, D.C., attorney and expert on legal and political affairs. Williams was an associate of the late Robert S. Kerr during the years of Congressional authorization of funds for the McClellan-Kerr Arkansas River Navigation System. He is the founder and

senior partner in the Washington law firm of Williams and Jensen. He is a popular speaker and the colorful subject of articles in The Wall Street Journal, The Washington Star, The New York Times, Dunn's Business Month, Esquire, Forbes and other publications.

Following Williams' address, four respected authorities in finance will discuss "Partners in Oklahoma Infrastructure Financing," describing options and opportunities open to cities, towns, rural water districts and user groups. Panelists will be James G. Fulmer, president and CEO of Oklahoma Finance Authorities; Charles P. Rainbolt, state director of Rural Development; Joe S. Freeman, chief of the OWRB Financial Assistance

Continued on page 2



J.D. Williams

Conference, continued from page 1

division; and Leo Presley, director of the Oklahoma Department of Commerce. Panel moderator will be Gary L. Sherrer, OWRB executive director.

William B. Hathaway, Director of the Water Quality Protection Division, Region 6 of the Environmental Protection Agency, will be next to the podium with remarks concerning EPA's new partnerships with the states in accomplishing regulatory missions. Hathaway joined EPA in 1964, and has played a significant role in the agency's major efforts. In 1992, he received the Presidential Award of Meritorious Executive.

"Teamwork in Tempering Drought" is the topic of Dr. Don Wilhite's address. Wilhite is a professor of agricultural climatology and director of the National Drought Mitigation Center and the International Drought Information Center at the University of Nebraska at Lincoln. He specializes in studies of the impacts of drought on society and societal response to climatic events, particularly drought. Under United Nations sponsorship, Wilhite wrote a guidebook on drought preparedness for developing countries, and he is the author of a number of other scholarly texts and more than 70 journal articles on drought.

Covering the opposite end of the climatic spectrum, will be Patrick H. Sweeney, president of Weather Modification, Inc., Fargo, N.D., who will speak on cloud seeding as a long-term water management tool. WMI, midway in a one-year contract with the State of Oklahoma, is well known for successful cloud seeding and hail

suppression programs in the northern Great Plains, throughout the U.S., Mexico, Europe, the Middle East and Africa.

This session preceding lunch is reserved for remarks by members of the Oklahoma Congressional Delegation.

The featured speaker on the luncheon program, underway at 12:30, will be Governor Frank Keating. Members of the Oklahoma Legislature are also invited to share their expectations for the 1997 Legislative Session.

Presentation of Oklahoma Water Pioneer Awards will close the Seventeenth Annual Governor's Water Conference.

The Water Pioneer Award was introduced at the 1985 Governor's Water Conference and continues to recognize lifelong achievements in the development, conservation and protection of Oklahoma's water resources.

The Governor's Water Conference is sponsored by 26 water related organizations and coordinated by the Oklahoma Water Resources Board.

Registration costs \$30 and includes luncheon. The Marriott Hotel, 3233 Northwest Expressway, offers a special Conference room rate of \$95, single or double, through November 11. Please make room reservations by calling the Marriott Hotel at (405) 842-6633.

For further information or to register for the Conference, please call the Oklahoma Water Resources Board, (405) 530-8800. To register by mail, please complete the form below, enclose check or purchase order payable to the Governor's Water Conference, and mail to 3800 N. Classen, Oklahoma City. OK 73118.



Emily's Campaign Rides On

Emily Lane Brown, daughter of OWB secretary Kim Brown and her husband, Dean, rolls on in her efforts to raise money as 1996 Ambassador for the March of Dimes Birth Defects Foundation, Western Oklahoma Chapter.

One of the many events in which Emily has participated was the Bikers for Babies ride on September 22 in Oklahoma City in which several hundred motorcyclists rode from the State Capitol to Lake Overholser. The ride contributed \$8000 to the March of Dimes Birth Defects Foundation.

Emily was born December 29, 1994 with Phocomelia, the absence of a left arm, just below the shoulder. She made her debut as March of Dimes Ambassador in May.



March of Dimes Ambassador Emily Brown sits astride a Harley in front of the Capitol as bikers prepare for the benefit ride to Lake Overholser.

Register here for the WATER CONFERENCE

Please mail completed form with your \$30 check or purchase order to:

**Governor's Water Conference
3800 N. Classen Boulevard
Oklahoma City, OK 73118**

Registration includes luncheon.

No refunds considered after November 14

Please make checks or purchase orders payable to: *Governor's Water Conference*

Name _____

Organization _____

Address _____

City _____ State _____ Zip _____

Phone (____) _____ - _____

Floodplain Managers Meet

Albert Ashwood, chairman of the Oklahoma Floodplain Management Association, announces Water Resources Board member Lonnie Farmer, mayor of Davidson, was named Elected Official of the Year at OFMA's Sixth Annual Conference September 13 at Western Hills Lodge. Each year, OFMA recognizes an elected official whose public policies demonstrate excellence in addressing present and future flood-



Water Resources Board member Lonnie Farmer, mayor of Davidson, is presented a plaque by OFMA Chairman Albert Ashwood, right. In Morris, state coordinator of the National Flood Insurance Program, center, assists in the presentation.

plain management needs. Farmer was responsible for enrolling the town of Davidson in the National Flood Insurance Program.

Marsha Blair, town administrator of Slaughterville, was recognized as Floodplain Manager of the Year for her efforts in administering the program.

The Association also elected officers for 1997. They are: T.J. Davis, Sand Springs, chairman; Donetta Blant, OWRB, vice-chair; Neill Pulliam, FHC, Inc., secretary; and Carolyn Schultz, Tulsa District Corps of Engineers, treasurer.

Boundary Settlement Closer

After 200 years and negotiation by two previous commissions, the Oklahoma Red River Boundary Commission has agreed on how to locate the Texas-Oklahoma boundary. The commission, headed by Oklahoma Senator Robert M. Kerr, met in Frederick, Oklahoma, on October 4. The border was first negotiated in 1819 by John Quincy Adams as the bound-

ary separating the U.S. and Mexico. Adams claimed the south bank for the U.S. However, the question remains, which south bank?

Last year, Oklahoma and Texas each created their own boundary commission to pick up where previous ones had left off. After two meetings, their charge still remains determining the location of the south bank. A third meeting is scheduled for November 8.

The Texas Commission, led by attorney Bill Abney, suggested that the boundary should be historically significant, practical and economical. The three possible boundaries are the south bedrock "high bluff bank;" the south line of the "active water course;" and the south "permanent vegetation line."

Texas commissioners favor the south vegetation line, while Oklahoma commissioners continue deliberations on its suitability. It would require no surveying, construction or cost. According to Senator Kerr, an important principle upon which all agree is that no private property will be taken from individuals. Meetings continue, and once agreement is reached, the commissioners will submit proposals to their respective legislatures.

OWRB Executive Director Gary Sherrer serves on the Oklahoma Red River Boundary Commission, along with Senators Kerr, Jack Bell, Gilmer Capps, Carol Martin, Billy Mickle, Darryl Roberts and Sam Helton; Representatives Randall Erwin, Terry Matlock, Bill Smith, and Fred Stanley; and Attorney General Drew Edmondson.

ODOT Wins NWC Award

The Waterways Division of the Oklahoma Department of Transportation won the Best in Show award in the National Waterways Conference's first Waterways Literature and Promotional Materials Competition at the NWC Annual Meeting in St. Louis last month.

The winning entry was a trayliner for McDonald's restaurants in Oklahoma in celebration of the McClellan-Kerr Arkansas River Navigation System's 25th anniversary. The trayliners, developed in conjunction with the Oklahoma Alliance for Geographic Education, boosted the economic, environmental and safety advantages of barge transportation. The trayliners were distributed to 110,000 McDonald's customers in Oklahoma.

Glen Cheatham and Carol King of the Oklahoma Department of Transportation's Tulsa office, and Linda S. Beckham of the Oklahoma Alliance for Geographic Education accepted the award. In addition to the top prize, ODOT won five other awards and the Tulsa Port of Catoosa received five honors, all celebrating the Oklahoma waterway's 25th anniversary. The competition attracted 45 entries in eight categories.

NWC president Harry Cook said the competition was organized to foster a greater understanding of the public value of shallow-draft navigation through excellence in waterways promotions.



Oklahoma Sen. Gilmer Capps, left, William Abney, chairman of the Texas Red River Boundary Commission; Sen. Robert M. Kerr, chairman of the Oklahoma Red River Boundary Commission; Rep. Loyd Benson and other Commission members met in Frederick October 4. (Photo courtesy the Frederick Leader)

Volunteers Label Storm Drains

Juli Watterson and Christy Hobbs of the OWRB Water Quality division, led volunteers from Enid High School and the community in a project to label storm sewers in Enid's Meadow Lake watershed October 16. The labels cautioned citizens that hazardous materials poured in the storm drains eventually find their way into Meadow Lake's waters.

Watterson coordinated the project with EPA, the Water Board, Enid High School, the City of Enid and the OSU Cooperative Extension. In a 2-hour evening session, volunteers affixed 10 labels to drains throughout Meadow Lake's drainage basin.

This project is part of an ongoing effort to clean up the lake and reduce nonpoint source pollution in the watershed. Meadow Lake has been a successful EPA-OWRB Clean Lakes restoration project. Students participating in the program are students of EHS biology teacher Adrienne Nixon and chemistry teachers Terry Sacket and Lisa Burkhart.

Enid Water Watch volunteers labeled all storm drains that could contribute pollution to Meadow Lake.



Water Board, DEQ Investigate Well Pollution

Complaints by homeowners concerning unusual odor and taste of their well water brought crews from the Water Resources Board and the Oklahoma Department of Environmental Quality to the northeastern corner of the state recently for a program of extensive water sampling. Investigators from the two agencies chose for testing all wells in a mile-wide corridor along Honey Creek and Cave Springs Branch near the Missouri border in Delaware County.

Residents in the area are concerned about the impact of pollution on their health as well as its effect on an economy reliant on tourism and water recreation.

On September 9-10, five DEQ teams sampled 55 wells for total coliform, fecal coliform and E coli, all bacteria that can affect human health. According to DEQ, coliform bacteria can come from a number of sources -- soil, grain, animal or human waste material and others. The presence of total coliform in a water sample often indicates unsafe well construction, location or activities that may allow further pollution. Fecal coliform indicates the well has been contami-

nated by human or animal waste. Of greatest concern to DEQ investigators is E coli and they warn that a water supply with E coli traces should not be used for drinking water without boiling or disinfecting.

In the 55 wells sampled, 31 water samples tested positive for total coliform; five of those positive for fecal coliform; and four positive for E coli. Investigators also tested for the presence of arsenic and nitrates and analyzed turbidity -- or clarity -- of the water drawn from the wells.

Since age, poor well construction, leaky well seals and location near pollution sources can all affect water quality, DEQ, as lead agency, asked OWRB to participate. Gary Glover, who administers the OWRB drillers and pump contractors program, routinely inspects water wells for compliance with minimum well construction standards.

Glover and a team of four from the Water Resources Board inspected 47 wells for construction faults which could potentially admit contamination. Glover and his experts meticulously inspected the wells for integrity of cement surface seals and sanitary seals, casing height above the ground surface, and proximity to house foundations, septic system and animal confinement areas. Of the 46 under scrutiny, inspectors found deficiencies in 39 of the wells.

Glover points out that some of the wells were drilled 60 to 80 years ago, long before the state adopted minimum standards for the construction of water wells. The Water Resources Board established minimum construction standards for domestic wells in 1982.

"Age can be a factor, and I suspect some of those wells are contaminated as a result of locations too near septic systems and livestock areas," Glover said.

Once repairs are completed or wells replaced, he recommends well own-

Continued on page 5

AMOUNT OF CHLORINE BLEACH NEEDED

DEPTH OF WELL	WELL DIAMETER			
	3 in.	6 in.	9 in.	12 in.
50 ft.	3 oz.	8 oz.	25 oz.	50 oz.
100 ft.	6 oz.	20 oz.	50 oz.	100 oz.
150 ft.	8 oz.	30 oz.	75 oz.	150 oz.
8 oz. = 1 cup 25 oz. = @ 3 cups 50 oz. = 6 1/4 cups 100 oz. = 12 1/2 cups 150 oz. = 19 cups 1 1/4 gals				

Wells, continued from page 4

ers near Grove, and well owners in all rural areas, regularly disinfect their wells used for drinking water. Glover points out that a well should be disinfected when it is newly drilled; after completion of any repairs to the well or pumping equipment; or when an unsafe sample has been reported. "Ordinary liquid laundry bleach contains 5.25 percent chlorine, and it works fine as a disinfectant," said Glover. However, he warned against using scented bleach because that will contaminate the well.

The Department of Environmental Quality (DEQ) recommends these steps in disinfecting a well:

✓ Pump the well enough in advance to completely remove sediment and other debris left by well construction or repairs.

✓ Add enough chlorine to make 50 to 100-parts per million (ppm) solution. (See Table.)

✓ Circulate the solution by pumping the discharge back into the well. This can be done by inserting a garden hose through the well seal at the top of the well and pumping until the chlorine is thoroughly mixed -- at least 15 minutes.

✓ Open each water tap in the system until a strong chlorine odor is present, then close the tap. This will also disinfect the house service lines.

✓ Let the chlorine stand at least 24 hours, if possible, but no less than two hours.

✓ Flush the system thoroughly by opening taps and allowing water to flow until chlorine odor is no longer present.

The volume of laundry bleach needed to make a 50 ppm solution may be doubled to make a 100 ppm solution.

For more information on sanitizing wells, call the Department of Environmental Quality at 1-800-869-1400. □

Water Board Celebrates "Day of Caring"

Staff of the Water Resources Board visited the children of Special Care School in northwest Oklahoma City on September 13, in observance of United Way's "Day of Caring."

It was the second annual observance for the 26 OWRB-ers, who pitched in to shape up the grounds, help with office tasks and entertain the children with a puppet show and party. The children ages six months to 18 years, were treated to cupcakes, punch and cookies and party decorations provided by Water Board employees.

Gary Sherrer, OWRB executive director, approved the half-day outing in ap-

preciation for United Way assistance to the Water Resources Board following the April 1995 bombing. "Our people felt like it was a way of repaying in some measure the kindnesses expressed by the community following the bombing," said Sherrer.

Shelly Bacon and Laura Oak of the Board's Financial Assistance division coordinated the OWRB "Day of Caring" activities. The Water Board's celebration was one of 50 such efforts by volunteers representing industry, business and government in the Oklahoma City metro area. □



Upper left: Mike McGaugh, cartographic drafter in the OWRB Administrative Services Division, pruned trees and tidied the grounds.

Upper right: Jann Hook, Information Services Section Head, was one of five OWRB painters who applied fresh, new paint to classroom walls.

Center: Gene Dousett, left, Planning and Management division, and Tiger Feng, Financial Assistance division, assisted in yardwork.

Bottom: Laura Oak and Marc Hullinger, of the Financial Assistance division, enjoy the role of puppeteers while performing for the children at Special Care, Inc.



At the October 8 Board Meeting:

viewed for Board members the OWRB FY-98 budget request, noting that it represented a 13 percent decrease over last year's budget. □

The October 8 Board meeting was held in the Oklahoma Department of Wildlife Conservation Auditorium. In a lengthy Financial Assistance division agenda, chief Joe Freeman asked and received Board approval for nine grants, two loans and three wastewater facility construction loans (listed in adjacent Table.) The large number of grants was made possible by the Board's \$475,738 earnings on bond issue reserve funds.

On the Planning and Management agenda, the Board approved five temporary permits and two regular permits for the use of groundwater; amended two temporary and one regular groundwater permit; approved one term permit and one regular permit for the use of stream water.

Among permits approved by the Board was the protested application of Kronseder Farms, Inc., and Pig Improvement Corp., in Woodward County. Applicants originally had requested 4,520 acre-feet of water per year to be withdrawn from 45 wells. The application was revised to request 2,920 acre-feet of groundwater to be taken from 27 wells. Of the total allocation, 2,817 acre-feet will be pumped from the North Canadian River Groundwater Basin under a regular permit; 103 acre-feet from the Marlow Formation under terms of a temporary groundwater permit. Local landowner Mark Mayo urged a different interpretation of the permit requirement to put allocated water to beneficial use declaring that "agriculture" should not include mass pig factories. Mayo said he feared that the huge operations would make part of the state uninhabitable.

New Driller/Pump Contractor licenses were approved for Marty Weder, Dennis Neitzel, Kenneth Turk, Jim Norton, Calvin Madsen, William Glunt and Marty Osborn. Three licensed firms added operators/activities: Craig Water Well Service, Jim Craig; Water Right Irrigation, Inc., Terrence Hager; AAA Drilling Company, Roy Knight.

Administrative Services Division Chief Jim Schuelein re-

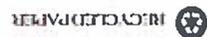
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4.372% 1995 Bonds; 28 year maximum term			
4.422% 1994; 28 year maximum term			
Wagoner RWD #2	\$		410,000.00
Hughes RWD #4	\$		250,000.00
Skiatook PWA	\$		350,000.00
FAP Grants			
Osage RWD #18	\$		75,000.00
Grady RSD #1	\$		37,400.00
McClain RWD #7	\$		45,000.00
Hughes RWD #4	\$		80,000.00
Dewar PWA	\$		24,500.00
Town of Kenefic	\$		50,000.00
Delaware RWSGSWMD #9	\$		100,000.00
Town of Kiowa	\$		50,000.00
Enid MA	\$		50,000.00
SRF Loans			
Broken Arrow MA	\$		2,820,000.00
Enid MA	\$		9,600,000.00
Henryetta MA	\$		2,100,000.00
TOTALS			
	FAP Loans	FAP Grants	SRF Loans
APPROVED	173	396	47
Amount	\$221,780,000.00	\$22,341,797.00	\$188,302,939.23
FUNDED	164	359	42
Amount	\$204,050,000.00	\$19,648,322.33	\$169,398,393.23

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