

OKLAHOMA Water News

4th Quarter 2008

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New Grant Program Promotes Water Conservation Projects

The Oklahoma Water Conservation Grant Program, administered by the OWRB and created through passage of House Bill 3135 last year, makes available a total of \$35,000 during the 2009 grant cycle for the implementation of pilot water conservation projects in Oklahoma communities. Innovative projects that can serve as models for other communities will be given the most serious consideration. Specific program criteria that will enhance opportunities for selection include projects that will result in significant or measurable water efficiency improvements or water savings. The amount of matching funds and/or in-kind contributions provided by the applicant will also receive priority.

Projects eligible for Oklahoma Water Conservation Program grants include community conservation demonstration projects, water use accounting programs, retrofit projects, school education projects,



Xeriscaping refers to landscaping and gardening in ways that reduce or eliminate the need for supplemental irrigation, such as using drought tolerant, low maintenance plants. Xeriscape demonstration projects can qualify for water conservation grants.

Photo courtesy Donna Dollins, Horticulture and Landscape Architecture Department, Oklahoma State University

xeriscape demonstration gardens, and information campaigns on capturing and using harvested rainwater and gray water. Eligible applicants include cities and towns, schools, non-profit corporations, and rural water districts. OWRB rules governing the program are being finalized.

The Oklahoma Water Conservation Grant Program's initial implementation is being funded through existing Oklahoma Comprehensive Water Plan appropriations.

Individual grant awards for any proposal, plan, or project are limited to a maximum of \$7,000. The deadline for submittal of grant applications is February 20, 2009.

For additional information or to download a Water Conservation Grant application packet, visit the OWRB's website at www.owrb.ok.gov or call Terri Sparks at 405/530-8800.



From the Director

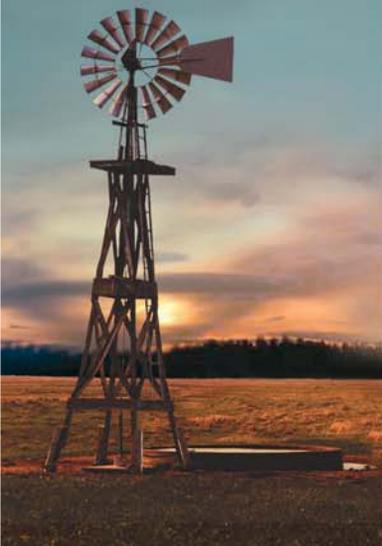
As we prepare to address the OWRB's operational requirements with the first session of the 52nd State Legislature, the OWRB has been asked to evaluate the agency's performance over the past year. Already, we've met with both the House and Senate to take a critical look back at how the OWRB met the many water-related needs of Oklahomans. While we can always do better, I am always proud to share the details of our annual success stories.

Of course, our number one past, present, and future goal is to provide Oklahomans with reliable water supply. Accomplishing this broad task is like a three-legged stool with supply symbolizing the seat and each leg represented by three primary supporting elements: determining available water, administration of



Duane A. Smith, Executive Director
Oklahoma Water Resources Board

(continued on page 4)



2008 Water Conference Draws Record Attendance

The 2008 Governor's Water Conference was held October 28-30 in conjunction with the OWRRRI Water Research Symposium. Nearly 600 individuals attended the event, about half of whom were participants in regional input meetings for the Oklahoma Comprehensive Water Plan (OCWP).

The first morning session was dedicated to an update on OCWP activities, including discussion of the role

of the U.S. Army Corps of Engineers as a major partner, by Steve Stockton, Director of Civil



Steve Stockton, USACE



Col. Funkhouser, USACE

Works, and Col. Anthony Funkhouser, Tulsa District Engineer. Dr. Will Focht (OWRRI) gave a summary of the information obtained through the local and regional input meetings. The

technical studies update was presented by representatives of Camp Dresser & McKee, OCWP lead engineering firm.



J. D. Strong, Oklahoma Secretary of the Environment, welcomes a record crowd to the conference.



Sen. Glenn Coffee

Senator Glenn Coffee and Representative Chris Bengé provided a state legislative update, and U.S. Representatives Mary Fallin and Tom Cole spoke about the importance of water issues in Congress.

The afternoon session featured an update from the Department of Interior and a presentation on water management in a variable climate by State Climatologist Dr. Ken Crawford.

The first day's events culminated with presentations by Noel Osborn (OWRB) and Scott Christenson (USGS) on initial findings of the Arbuckle-Simpson Hydrology Study.



Congressman Tom Cole

2008 Water Pioneers



Garner Garrison



Mason Mungle



Robbie Robbins

During the luncheon, attendees honored the 2008 Oklahoma Water Pioneers: Garner Garrison, Mason Mungle, and Robbie Robbins.



Rep. Chris Bengé



Congresswoman Mary Fallin



Water Solutions for Oklahoma

Oklahoma Comprehensive Water Plan



Mayor Mick Cornett

The second day of the conference opened with a welcome from Oklahoma City Mayor Mick Cornett, followed by Tom Price, Chesapeake Senior Vice President of Corporate Development; Chickasaw Nation Governor Bill Anoatubby; Bill Mullican, Texas Water Development Board; and ODEQ Executive Director Steve Thompson.



Gov. Bill Anoatubby

After the break, attendees heard from two OCWP panels: Protecting Oklahoma's Water

Interests and Regional Water Solutions for Oklahoma.

The second day's luncheon featured

winner of the annual statewide 4H speech contest for high school students with the theme of "water." The three presentations included "Is water the Next Oil?" by Jenna Murray (Fletcher), "Conservation: Choice not Chance" by Chrystal and Miranda Patton (Chattanooga), and "Water Rights" by Tanner Alread (Union City).



Jenna Murray (left), Chrystal and Miranda Patton (below).



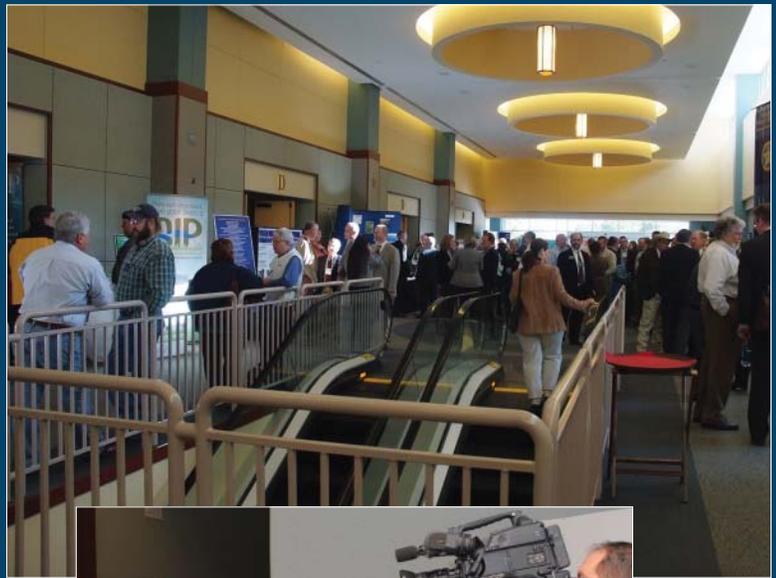
Tanner Alread

The OWRRI Water Research Symposium followed the luncheon and continued through October 30.

For more information and to view selected presentations, go to www.owrb.ok.gov/news/waterconference.php.



During the conference, attendees had the opportunity to visit 23 exhibits, such as the Bureau of Reclamation (above) and American Farmers and Ranchers (left) exhibits.



OWRB Chairman Mark Nichols pauses for an interview for OETA's Oklahoma agriculture program, "Sunup."

From the Director (continued)

water rights, and infrastructure development. Each of the legs not only supports our reliable supply goal, but each supports and is dependent upon the other in Oklahoma's water management scheme. Water quality, another vital component, could be considered the rug upon which the stool sits.



The OWRB continues to expand the technical knowledge—through supply/demand studies and investigations of the Arbuckle-Simpson and Garber-Wellington aquifers and other sources—required to tell us exactly how much surface and groundwater is available to satisfy Oklahoma's varied and growing needs.

Water rights and permit administration has always been a core mandate of the OWRB and it has never been more important than it is today. As a result, we've instituted projects to modernize our supporting database and programs to increase staff efficiencies and provide improved service to the public. Existing water use permits are being scrutinized as we work to cancel or reduce under utilized rights.

Using as a foundation our existing water and wastewater financing program, which will exceed two billion dollars in approved projects in 2009, infrastructure will be a key to providing future water supply to Oklahomans, particularly in implementing the updated Oklahoma Comprehensive Water Plan. Financial Assistance Program funds are leveraged not only to multiply, many times over, the benefits derived from the program, but create much-needed jobs to strengthen the state's economy.

And we are using water quality monitoring data through our Geographic Information System to determine the effectiveness of wastewater treatment facilities in maintaining the quality of our rivers, streams, and lakes.

Senator Susan Paddock will lead an effort during the upcoming legislative session to evaluate state agency data collection programs and requirements. I believe that nowhere in state government is data more crucial to decision-making than in the water management arena. Virtually all water-related activities—from hydrologic studies to water quality and quantity monitoring to pollution control—depend upon continued implementation of emerging technology and maximizing the utility of water data, upon which we depend to make sound and defensible water management decisions.

We look forward to working with Sen. Paddock and other members of the State Legislature to strengthen both the effectiveness and efficiency of our water programs.

OWRB FY 2010 Budget Request Summary

Gross Production Tax Cap Removal

Additional \$2,400,000-\$2,600,000 Annually

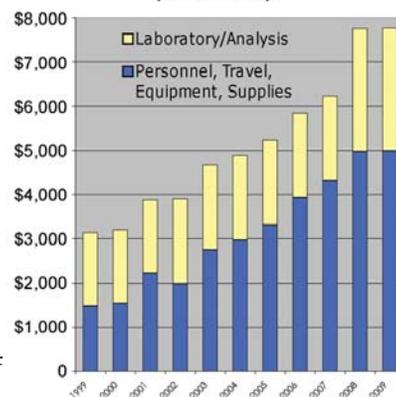
This funding is requested to enhance and supplement development of the Oklahoma Comprehensive Water Plan Update and related activities. Current funding for these integral planning projects comes from the State's Gross Production Tax, but the originating fund is capped. Additional revenue provided through removal of the cap would allow the OWRB to initiate studies and projects in areas where critical water supply needs have been identified, further enhance knowledge concerning water available for appropriation, and implement required infrastructure projects statewide.

Beneficial Use Monitoring Program (BUMP)

Additional \$1,000,000 Appropriation (OWRB \$500,000/ODEQ \$500,000)

The cost of data collection and analysis continues to rise exponentially. Current funding for BUMP, Oklahoma's only statewide water quality monitoring program, is sufficient to collect data on only about 22 percent of the state's water resources. Adjusted for inflation, this request attempts to restore funding to 1998 levels, thus allowing for more comprehensive water quality protection through monitoring by OWRB staff and lab analysis by the Oklahoma Department of Environmental Quality.

**Average Per Site Cost
BUMP Streams & Lakes Monitoring
(1999-2009)**



Business Cost Increases

\$465,000 Appropriation

This request allows the OWRB to deal with rising costs associated with employee retirement, insurance, workers' compensation, and related benefits and provides the agency with funding to address vehicle costs and critical infrastructure needs.

Supplemental Request—Sardis Reservoir Water Supply Contract Repayment

\$71,671,000 Appropriation

This funding would be used to address repayment of water supply storage costs for Sardis Reservoir and thus avoid potential disruption of federal aid to the state for highway, human services, and other programs that rely on federal funds.

OKLAHOMA WATER RESOURCES BOARD

Oklahoma Comprehensive Water Plan

As a critical component of the OCWP's policy development and public participation phase, 11 Regional Input Meetings (RIMs) were held throughout the state in 2008. At the meetings, participants selected from wide-ranging backgrounds identified Oklahoma's emerging water problems and concerns, and then narrowed those down to priority water issues for more intense discussion of solutions at smaller planning workshops, to be held in 2009. In addition, an educational water law seminar was held in July.

Technical work in support of the Water Plan included initiation of the Water Supply/Demand Study, including development of a water allocation model to assist in this analysis, completion of a statewide public water system survey to collect comprehensive water supply data from hundreds of suppliers, and the formation of water use stakeholder groups to provide input into the demand forecast methodologies. Areas of research during 2008 included the initiation of efforts to investigate marginal quality water resources and uses, groundwater recharge potential, and surface water quality trends.

OCWP Surface Water Quality Trends Analysis

In late 2008, a workgroup consisting of local, state, federal, and academic water quality experts was formed to assist OWRB staff in determining a scope of work for the planned OCWP Surface Water Quality Trends Analysis. Specifically, all existing data sources will be inventoried and "mined" to establish ongoing trends in water quality for individual surface waters throughout the state. Waters will be assessed for multiple parameters, including nutrients, minerals, sediments, and bacteria. Results, which will provide planners with invaluable information on the viability of both current and future water supplies, will be included in the Oklahoma Comprehensive Water Plan, due for completion in 2011.

OWRB Leverages \$36 Million for New Water Projects

In October, the OWRB and Department of Environmental Quality (ODEQ) made approximately \$2.5 million in funding available to leverage construction of water projects throughout Oklahoma. The funds accrued for the past two years from state Gross Production Tax revenues earmarked equally for both the Oklahoma Comprehensive Water Plan and OWRB State Financial Assistance Program (FAP). The released money is being used to match an EPA Drinking Water State Revolving Fund (DWSRF) program Capitalization grant of more than \$13

million. In turn, the combined funds allow the OWRB to leverage \$36 million in loans for water treatment and distribution projects.

The move should help to mitigate the potential

impact of the nation's current financial crisis on the substantial infrastructure financing requirements of Oklahoma's cities, towns, and rural water systems.

Community water systems receiving funds include Ardmore, Broken Bow, Cherokee, Coweta, Duncan, Edmond, Lawton, Osage #15, Skiatook, Rogers #3, Jay, Tuttle, Wagoner #7, Rogers RWD #5, and Checotah.

FY 2008 Expenditures & FY 2009 Budget

Activity Name	FY08 Expended	FY09 Budgeted
Administration	\$2,484,654.15	\$2,891,736.00
Water Quality	3,757,036.19	3,588,168.00
Financial Assistance	1,793,130.21	2,667,462.00
Planning & Management	3,730,185.73	5,037,813.00
Secretary of Environment	9,548,516.31	9,867,958.00
Totals	\$21,313,522.59	\$24,053,137.00

Fund Name	FY08 Expended	FY09 Budgeted
General Appropriations	\$4,433,183.21	\$4,601,524.00
Drillers & Installers Indemnity Fund		75,000.00
Rural Economic Action Plan (REAP) Fund	325,028.48	112,214.00
Water Resources Revolving Fund	380,571.33	527,288.00
Drillers & Installers Regulation Fund	14,216.90	11,046.00
Water Infrastructure Development Fund	1,365,893.44	2,379,272.00
Federal Funds--OWRB	2,203,240.06	2,524,700.00
Federal Funds--OSE	9,368,007.51	9,648,499.00
Environmental Remediation Fund		18,000.00
USGS Cooperative Agreement	627,747.42	308,650.00
Interagency Reimbursement Fund	1,246,729.71	1,740,676.00
DW Loan Administration Fund	446,880.83	791,696.00
CW Loan Administration Fund	870,272.44	914,572.00
CW Loan Fund	31,751.26	400,000.00
Totals	\$21,313,522.59	\$24,053,137.00

**Original Funds
(Gross Production Tax):**
\$2.6 million

**Total Funded
(Federal plus Match):**
\$13,072,828

Total Savings:
\$3,921,848

LEVERAGED AMOUNT:
> \$36 million
> 1,400 direct jobs

Annual Report 2008

Arbuckle-Simpson Hydrology Study Update

The Arbuckle-Simpson Hydrology Study, which was initiated in October 2003, is nearing completion. The hydrologic investigation is essentially complete, with researchers writing final reports. Currently, the primary focus of the Study is conducting computer simulations with the groundwater-flow model to test different water management options for the Arbuckle-Simpson aquifer. These simulations are based on determining the effects of groundwater withdrawals on stream flows at different equal proportionate shares and different maximum annual yields.

OWRB staff continue to evaluate various management strategies and methods to implement Senate Bill 288 in keeping with technical, legal, and administrative constraints. The OWRB plans to hold informal public meetings in the aquifer area in 2009 to present initial results of the simulations and to solicit input on various management strategies.

Garber-Wellington Water Management Study

The Garber-Wellington Water Management Study was initiated in June 2008 to address growing concerns about the future of water availability in central Oklahoma. The primary purpose of the study is to obtain the necessary hydrologic information to develop a water management plan that will ensure sufficient good quality water to support a growing population and economy.

The four-year investigation is a cooperative effort between OWRB, Association of Central Oklahoma Governments (ACOG), U.S. Geological Survey (USGS), U.S. Bureau of Reclamation, Oklahoma Geological Survey (OGS), Tinker Air Force Base, and other state and federal agencies. The USGS will be key in developing a groundwater flow model that will be used to predict the impacts of long-term groundwater withdrawals on the aquifer and to simulate water management strategies.

Current efforts include developing the geohydrologic framework and water budget. In February, USGS staff plan to measure water levels in about 300 wells across the aquifer to update the 1986-87 potentiometric surface (water level) map. Comparison of the two maps will provide information on how the aquifer storage has changed over the past 20 years.

Garber Wellington Aquifer



Water Quality Programs

The OWRB's Water Quality Division has been working diligently in the past year to build partnerships to address the state's data needs. The Oklahoma Cooperative Program between the OWRB and the United States Geological Survey (USGS), which includes stream gaging and technical studies critical to the update of the Comprehensive Water Plan, provides much needed information to assist in State water quality and quantity management.

Through a successful partnership with the Grand River Dam Authority (GRDA), the OWRB continues bathymetric mapping on Grand Lake and the agency is conducting detailed dissolved oxygen monitoring on Grand and Lake Hudson to support FERC re-licensing. Additionally, Oklahoma Water Watch, the OWRB's volunteer monitoring program continues to educate and work with volunteer groups on both lakes.

The OWRB's efforts to enhance habitat and water quality in Oklahoma lakes continues through projects focusing on the introduction of aquatic plants in Stanley Draper Lake, Grand Lake, Hudson Lake, and its new federal/state/municipally funded project in Lake Atoka. Atoka plantings for the 2008 season did exceptionally well and OWRB staff are optimistic about the project's future. The Stanley Draper EPA funded project has ended after three seasons and will now begin a maintenance program through the OWRB's partnership with Oklahoma City.

As part of the OWRB's Beneficial Use Monitoring Program (BUMP), 47 lakes were sampled during the 2007-2008 period. Staff are considering the incorporation of probabilistic monitoring into the existing program, which would allow continued sampling of a large number of water bodies along with additional intensive monitoring. An additional EPA grant was provided to begin monitoring for dissolved metals on selected lakes where little or no previous toxics data existed.

An interim revision of the Water Quality Standards completed in 2008 resulted in the addition of 84 lakes and streams to the Oklahoma Water Quality Standards. These water bodies were all identified as public water supplies. As such, water quality criteria is specifically established to protect human health from consumption of pollutants through drinking water and eating fish. These water bodies now have the Public and Private Water Supply beneficial use designated in Appendix A of the Standards document.

Environmental Benefits Reporting

Also in 2008, the OWRB began working with US EPA staff to utilize Geographic Information Systems (GIS) in prioritizing and maximizing benefits of state projects funded through the Clean Water State Revolving Fund (CWSRF) program. Through this powerful new system, GIS data (including BUMP data, Water Quality Standards regulations, and wastewater project information) is used to identify environmentally sensitive watersheds and to prioritize projects that would maximize the benefits to those watersheds.

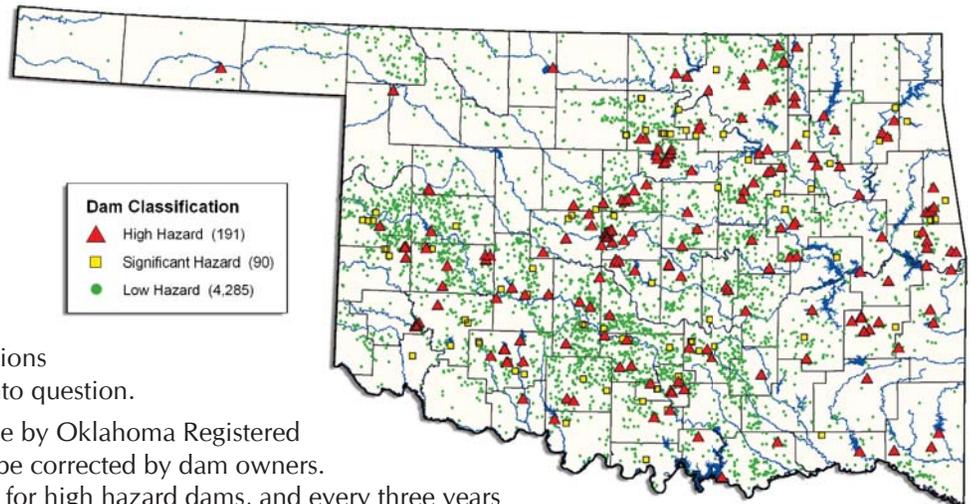
Dam Safety Program

In addition to approving applications and reviewing plans for the construction, alteration, or repair of jurisdictional dams in Oklahoma, the OWRB maintains the state's database and records of dams, including required inspection reports. Reports finding deficiencies are addressed by owners in cooperation with the OWRB. OWRB staff conduct individual dam site inspections when the condition of a dam is called into question.

The OWRB requires inspections be made by Oklahoma Registered Professional Engineers and deficiencies be corrected by dam owners. Inspections must be performed annually for high hazard dams, and every three years for significant hazard dams. Every five years, the OWRB reviews the areas below low hazard dams to determine if the hazard classification has changed.

The OWRB also works closely with the Oklahoma Conservation Commission and the NRCS to oversee 2,105 watershed flood control dams.

High and significant hazard dams are given higher priority by OWRB staff to ensure periodic inspections are performed, and most importantly, to ensure every high hazard dam has an Emergency Action Plan (EAP) in place.



Financial Assistance Program

In 2008, the OWRB's Financial Assistance Program had another outstanding year, providing almost \$164 million in funding through loans and grants for new construction and rehabilitation of water and wastewater infrastructure. With the dual goals of maintaining sound financing and environmental protection, the OWRB takes pride in the natural AAA rating on all bond issues and the use of innovative methods to meet Oklahoma's infrastructure needs.

Most recently, the OWRB completed its first Non-Point Source project with the Tulsa Conservation Reserve Enhancement Program (CREP) loan, which will fund land conservation in Lakes Eucha and Spavinaw Watersheds. The OWRB is also revitalizing its leveraging loan program to meet market changes and match borrowers needs. In line with continued efforts to make Oklahoma community water projects successful, the OWRB has created a disadvantaged program within the DWSRF, which allows for 30 year extended term financing. Through all these efforts the OWRB has helped Oklahomans save over \$500 million in water and wastewater infrastructure projects.

2008 Loans and Grants

CWSRF Loans

Bethany PWA	\$5,140,000
Guymon UA	\$16,400,000
Pawnee PWA	\$1,575,000
Roland UA	\$3,855,000
Tulsa MUA	\$1,250,000
	<u>\$28,220,000</u>

DWSRF Loans

Bartlesville MA	\$40,445,000
Cache PWA	\$2,000,000
Creek Co. RWD #7	\$3,290,000
Duncan PWA	\$5,770,000
Goltry PWA	\$530,000
Guthrie PWA	\$8,000,000
Guthrie PWA	\$7,320,000
Guymon UA	\$4,175,000
Jay UA	\$2,470,000
Lawton WA	\$10,845,000
Muskogee MA	\$30,410,000
Pauls Valley MA	\$10,325,000
Rogers Co. RWD #3	\$4,500,000
Wagoner Co. RWD #5	\$1,520,000
	<u>\$131,600,000</u>

Emergency Grants

Canton PWA	\$49,512
Coalgate PWA	\$75,000
Healdton MA	\$100,000
Hooker MA	\$75,000
Hulbert PWA	\$75,000
Pittsburg PWA	\$80,000
South Coffeyville PWA	\$100,000
Talihina PWA	\$70,000
Valliant PWA	\$100,000
Vera	\$100,000
Vian PWA	<u>\$75,000</u>
	\$899,512

REAP Grants

Adair Co. RWSSWMD #2	\$99,999
Alex MA	\$99,800
Atoka Co. RWD #2	\$99,999
Barnsdall	\$89,900
Beckham Co. RWD #3	\$95,690
Beckham Co. RWSSWMD #2	\$99,850
Bluejacket PWA	\$99,864
Bromide PWA	\$99,900
Burbank PWA	\$99,980
Byars PPWA	\$79,900
Canadian PWA	\$109,990
Canute PWA	\$104,000
Cherokee Co. RWD #7 - Welling	\$39,069
Crowder PWA	\$99,999
Delaware Co. RWSSWMD #10	\$98,653
Dewey Co. RWD #1	\$89,950
Goltry PWA	\$74,000
Hydro	\$99,900
Konawa	\$98,998
Lincoln Co. RWD #1	\$99,999
Marshall	\$99,999
McIntosh Co. RWD #13	\$99,116
Millerton PWA	\$79,999
Nash	\$99,250
Oakland PWA	\$79,999
Okay PWA	\$99,000
Pawnee Co. RWD #5	\$88,965
Quinlan Community RWD #1	\$99,999
Roger Mills Co. RWSSWMD #3	\$91,975
Seminole Co. RWSWMD #1	\$119,000
Stephens Co. RWD #4	\$79,999
Vera	\$99,999
Wilson PWA	\$81,500
Woodward Co. RWD #1	<u>\$140,000</u>
	\$3,238,241



Recent Developments

This year's Regional Input Meetings (RIMs) resulted in the following "General Agreement Issues":

- Drinking water infrastructure
- Funding for infrastructure
- Funding for water treatment and protection
- Water needs of municipalities
- Water sales and transfers in state
- Water sales and transfers out of state
- Land management practices
- Balancing supply and demand
- Working with other states
- Incorporating regional differences

Upcoming

The Regional Input Meeting Final Report (prepared by the OWRI) will be published in February 2009.

Planning Workshops, the next phase of the public participation process, have been scheduled for June 4, August 13, and October 22. All Planning Workshops, six in all, will be held at the Metro Tech Springlake Campus in Oklahoma City. Each day of workshops is divided into morning and afternoon workgroups with up to six concurrent workgroups each. Approximately 20 individuals will participate in each workgroup and half-day session. Workshops will be open to the public, although space may be limited.

In April, a Basic Water Science Seminar will be held in Oklahoma City for Planning Workshop participants.

Water Plan Objectives

1. Characterize demands by water use sector.
2. Identify reliable supplies to meet forecasted demands.
3. Perform technical studies in support of the evaluation of emerging water management issues.
4. Engage comprehensive stakeholder involvement to make recommendations regarding the management of Oklahoma's water resources.
5. Make "implementable" recommendations regarding the future of water management in Oklahoma based upon technical evaluations and stakeholder input.

The Oklahoma Comprehensive Water Plan, published and continuously updated by the Oklahoma Water Resources Board, establishes guidelines for the present and future use of the state's water resources and outlines policy recommendations for water resources management.

Oklahoma Comprehensive Water Plan Process



Goals of the OCWP Update

- To provide safe and dependable water supply for all Oklahomans while improving the economy and protecting the environment.
- To provide information so that water providers, policy-makers, and water users can make informed decisions concerning the use and management of Oklahoma's water resources.

For more information on the OCWP, visit the OWRB's website at www.owrb.ok.gov. For questions and comments concerning policy development and public meetings, contact the OWRI at 405-744-9994, by e-mail at waterplan@okstate.edu, or go to <http://okwaterplan.info>.

OWRB Recognized for Water Plan Public Input

In November, during the 18th Annual Celebration of Environmental Excellence, the OWRB was named the 2008 recipient of the Keep Oklahoma Beautiful Team Builders Award.

The agency was recognized for maximizing federal and state funding for the Oklahoma Comprehensive Water Plan, while working with the Oklahoma Water Resources Research Institute (OWRRI) to involve the public in the planning process through local and regional input meetings held throughout the state.



Dr. Will Focht, OWRRI Director, and Kyle Arthur, OWRB Director of Planning, accept the Keep Oklahoma Beautiful Team Builders Award for building a strong partnership to recognize the crucial role of public participation in the OCWP process.

FEMA Moves From Paper to Digital Flood Maps

Beginning with flood maps distributed on or after October 1, 2009, FEMA will provide a single paper map and Flood Insurance Study (FIS) to each mapped community and will convert all other distribution of maps and FIS reports to digital delivery.

FEMA will continue to provide free digital map products and data to Federal, State, Tribal, and local National Flood Insurance Program (NFIP) stakeholders.

Since Flood Map Modernization (Map Mod) began in 2003, FEMA has achieved a 50- to 75-percent reduction in the number of flood maps distributed in paper form. A key goal of Map Mod has been to convert the NFIP paper map inventory to digital products and to replace the distribution of paper maps with digital delivery via the Internet.

New digital map users can access easy-to-use digital images (FIRM Scans and/or FIRMettes), and users with more expertise can create custom map products and perform advanced flood risk analyses. All of these data can be downloaded, delivered on CD ROM, or accessed through a Web Map Service using a variety of FEMA-provided or commercially available software tools.

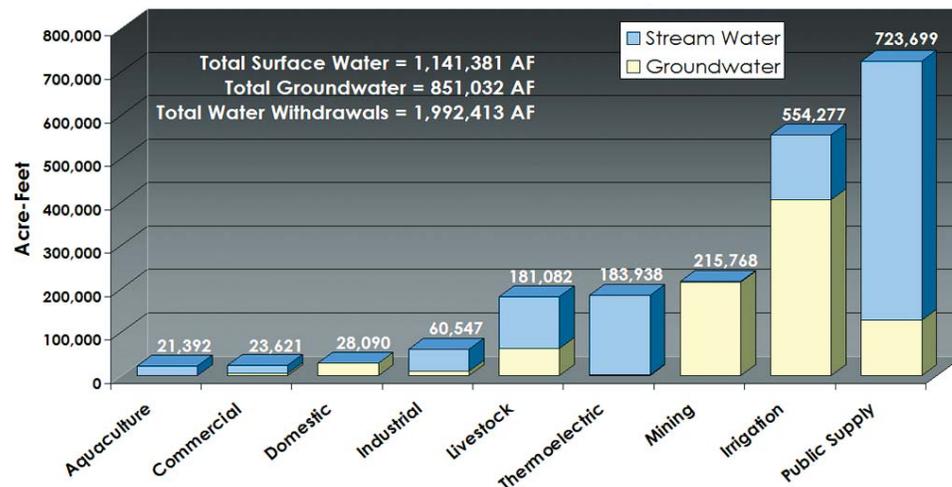
Replacing paper map products with digital versions will save money and improve the usability of FEMA flood hazard data. The FEMA Map Service Center provides users with free tools, extensive background information, and instructions for its digital products.

FEMA will continue to work closely with stakeholders to ensure these digital products and services meet the needs of the NFIP and support the reduction of flood risk nationally.

If you have questions or comments about this change, please email FEMAMapSpecialist@mapmodteam.com.

Public Supply Supplants Irrigation as Top Water Use

Preliminary statewide water withdrawal statistics indicate that total water usage in Oklahoma increased between 2000 and 2005; 1,772 million gallons per day (1,984,640 acre-feet) were used in 2000, and 1,779 mgd (1,992,413 acre-feet) were used in 2005. About 57% of the water used in 2005 came from surface water sources and 43% from groundwater sources.



Public water supply, which accounted for about 36 percent of total withdrawals in 2005, was the number one use of water. Irrigation, for which about 28 percent of water was withdrawn, was second. Irrigation was the number one use in 2000, comprising 40 percent of water use that year compared to 38 percent for public supply.

Preliminary data courtesy USGS and OWRB

Drought Update

Reservoir Storage

As of January 5, 14 reservoirs (of 31 selected major federal reservoirs across Oklahoma, see right) are operating at less than full capacity, according to information from the U.S. Army Corps of Engineers (Tulsa District); eight reservoirs have experienced lake level decreases since December 3, 2008.

Palmer Drought Severity Index

According to the latest Palmer Drought Severity Index (January 3, bottom), state moisture conditions remain generally good although moisture is trending downwards. The South Central climate division has entered the "mild drought" category.

Standardized Precipitation Index

The latest monthly Standardized Precipitation Index (through November, bottom) indicates near long-term dryness in South Central, Central, and East Central Oklahoma over the last three to six months.



Storage in Selected Oklahoma Lakes & Reservoirs (January 5, 2009)

LAKE	Change in Elevation (feet) 12/3/08-1/5/09	Current Flood Control Storage (acre-feet)
North Central (2)		
Fort Supply	0.66	1,351
Great Salt Plains	0.17	3,776
Kaw	2.50	18,382
Northeast (3)		
Birch	0.49	366
Copan	1.10	7,831
Fort Gibson	2.89	80,504
Grand	0.05	3,521
Hudson	0.71	11,505
Hulah	1.36	5,919
Keystone	-1.27	-18,185
Oologah	0.75	-102,358
Skiatook	-0.12	-9,685
West Central (4)		
Canton	-0.20	-2,620
Foss	0.46	-201
Central (5)		
Arcadia	0.09	186
Heyburn	0.16	-487
Thunderbird	-0.02	-1,860
East Central (6)		
Eufaula	0.29	-50,070
Tenkiller	0.54	4,847
Southwest (7)		
Fort Cobb	0.20	1,791
Lugert-Altus	1.37	-54,630
Tom Steed	-0.40	-20,823
South Central (8)		
Arbuckle	-0.59	-8,564
McGee Creek	-0.12	-2,425
Texoma	0.04	-21,072
Waurika	-0.10	-5,607
Southeast (9)		
Broken Bow	0.53	4,822
Hugo	0.41	11,600
Pine Creek	1.72	8,531
Sardis	0.09	1,942
Wister	1.75	15,498

Standardized Precipitation Index (through November 2008)					Palmer Drought Severity Index
CLIMATE DIVISION	3-month	6-month	9-month	12-month	January 3, 2009
Northwest (1)	Very Wet	Very Wet	Near Normal	Near Normal	Moist Spell
North Central (2)	Very Wet	Very Wet	Very Wet	Very Wet	Extreme Moist Spell
Northeast (3)	Near Normal	Very Wet	Extremely Wet	Extremely Wet	Very Moist Spell
West Central (4)	Very Wet	Moderately Wet	Moderately Wet	Very Wet	Unusual Moist Spell
Central (5)	Moderately Dry	Near Normal	Near Normal	Moderately Wet	Incipient Moist Spell
East Central (6)	Moderately Dry	Near Normal	Near Normal	Near Normal	Near Normal
Southwest (7)	Near Normal	Near Normal	Near Normal	Near Normal	Incipient Drought
South Central (8)	Very Dry	Moderately Dry	Near Normal	Near Normal	Mild Drought
Southeast (9)	Near Normal	Near Normal	Moderately Wet	Moderately Wet	Unusual Moist Spell

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

www.owrb.ok.gov

*Mark Nichols, Chairman • Rudy Herrmann, Vice Chairman • Linda Lambert, Secretary
Ford Drummond • Lonnie Farmer • Ed Fite • Jack W. Keeley • Kenneth K. Knowles • Richard Sevenoaks*

The mission of the Oklahoma Water Resources Board is to manage and protect the water resources of the state and plan for Oklahoma's long-range water needs in a responsive, innovative, and professional manner to ensure that all Oklahomans have adequate quantities of good water.



4th Quarter 2008

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FINANCIAL ASSISTANCE PROGRAM UPDATE

Loans & Grants Approved as of December 9, 2008

FAP Loans—321 totaling \$629,750,000

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

CWSRF Loans—187 totaling \$676,525,352

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

DWSRF Loans—85 totaling \$448,050,042

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

REAP Grants—512 totaling \$45,225,352

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

Emergency Grants—545 totaling \$32,238,529

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

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

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

Total Loans/Grants: 1,653 totaling \$1,832,089,275

Estimated Savings: \$577,972,251

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

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