

# OKLAHOMA Water News

3rd Quarter 2012

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## *OWRB Awards Grants, Takes Action to Mitigate Worsening Drought*

At its September meeting the OWRB approved emergency funding to alleviate the ongoing drought-related problems of five Oklahoma communities and water systems.

In accordance with an OWRB rule, a limited amount of funding for drought grant assistance to rural and municipal water facilities may be enabled whenever Oklahoma is suffering from drought conditions and a formal state drought emergency has been declared. Governor Fallin proclaimed a "State of Emergency Due to Drought" on July 30.

Funding for the five projects amounts to almost \$291,000—just short of the total maximum amount available (\$300,000) through the Drought Grant Program—and is allocated as follows:

- \$43,498 to Chattanooga Public Works Authority to complete a new well;
- \$88,293 to the Sayre Public Works Authority to develop new wells;
- \$26,870 to Cherokee County Rural Water District #3 to provide relief to eight families whose natural springs dried up;
- \$71,942 to the City of Tonkawa to rehabilitate its wells in order to boost production; and
- \$60,186 to the Perkins Public Works Authority to develop a new well.

Oklahoma is currently experiencing its third major drought episode in the last six years, one of the driest periods since 1936, the Dust Bowl days. According to the U.S. Drought Monitor, 95 percent of the state is now suffering from extreme drought conditions while only three percent of Oklahoma was in that category three months ago. In fact, much of the nation continues to suffer from drought's many and varied impacts.

Once again, statewide drought has drastically reduced river flows and lake and aquifer levels, causing severe impacts to household, agricultural, municipal, industrial, and recreational water users. Apart from the abnormally hot temperatures, the difference this year is that Oklahoma entered 2012 with an existing water deficit due to last year's drought.

"Oklahomans depend upon spring rains to fill reservoirs and livestock ponds, recharge aquifers, and provide a healthy boost to the year's first round of crops. Unfortunately, we started the year dry, then precipitation was woefully inadequate in advance of the growing season and peak

*(continued on page 4)*

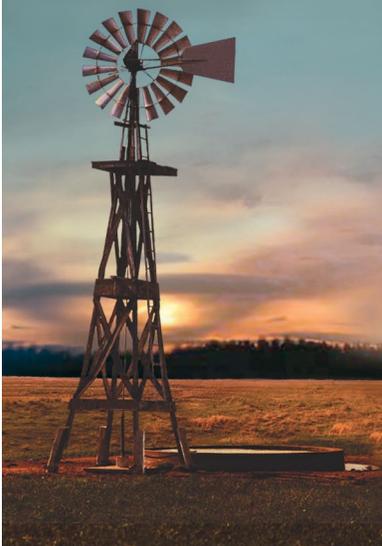
## *From the Director*

In July, I had the honor of testifying before the U.S. House Committee on Science, Space, and Technology to provide one state's viewpoint on the value of drought monitoring and forecasting specific to implementation of the National Integrated Drought Information System (NIDIS). With virtually the entire nation suffering from an extended drought episode and our weather prediction capabilities more refined than ever, establishment of an effective drought early warning system has never been more important, or more within our grasp. This is one of the primary federal directives of NIDIS, created in 2006 to improve the coordination of meaningful drought research and prediction.

*(continued on page 2)*



J. D. Strong, Executive Director  
Oklahoma Water Resources Board



From the Director (continued)

Oklahoma, like the nation in general, remains largely vulnerable to the vagaries of drought and its considerable economic and social impacts. Drought is now largely accepted as a normal aspect of our climate. Reducing its impacts requires improved insight—targeted research, long-term monitoring, and development of tools that enhance our ability to predict the probability of drought, or at least detect its early onset, so that states can effectively prepare for these disasters. Through improved weather technology—bolstered in large part through our research community at the National Weather Center in Norman—and support from both the states and Congress, I am confident we can achieve this worthy goal.

*“Typically, we ignore drought until the situation is dire, lament the impacts, and justifiably call for help. But invariably it rains, at which point we forget there was ever a problem and go back to business as usual.”*

Prediction aside, to truly address drought’s devastating impacts we must first change our attitudes. Typically, we ignore drought until the situation is dire, lament the impacts, and justifiably call for help. But invariably it rains, at which point we forget there was ever a problem and go back to business as usual. We must break this “hydro-illogical” cycle.

As recurring drought episodes become more disastrous, we must consider water conservation not as a short-term fix but a long-term necessity. The first step, enabled through a priority recommendation of the 2012 Update of the Oklahoma Comprehensive Water Plan (OCWP) and subsequent passage of the Water for 2060 Act, will be development of feasible strategies to maintain statewide consumption of fresh water at current levels through 2060. I am confident that we can reach this lofty goal, not just through additional conservation measures but also by implementing incentives to promote more widespread reuse and recycling of wastewater and desalination of brackish water. Such actions could delay or even alleviate localized water shortages projected by the OCWP.

It should be no surprise to anyone that conservation will also be a focus of this year’s Governor’s Water Conference, which will be held November 13-14 at the Southern Hills Marriott in Tulsa. In addition to sessions highlighting the latest developments related to water management and quality, infrastructure financing, and other essential water matters, we have invited speakers from all over the country and from many disciplines to detail innovative examples of water conservation, efficiency and reuse.

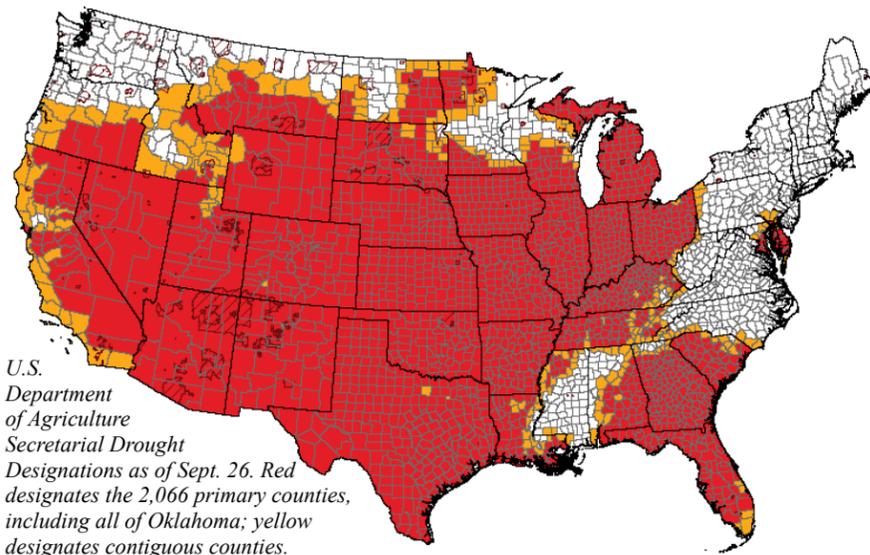


Strong (third from right at the witness table) appeared before the congressional Committee on Science, Space, and Technology on July 25 to share information on Oklahoma’s ongoing drought impacts and examine recent federal efforts to improve drought monitoring and forecasting, especially implementation of the National Integrated Drought Information System and development of a drought early warning system.

Reflecting last session’s legislation, the Conference theme (as well as the state’s new conservation awareness initiative) is “Water for 2060.”

I am tremendously excited to announce that this year’s keynote address will be delivered by Dayton Duncan, an award-winning writer and documentary filmmaker. Duncan’s latest film project, on which he served as principal writer, is entitled “The Dust Bowl,” a two-part series airing November 18 and 19 on PBS and premiering, in part, at the Governor’s Water Conference. Collaborating with renowned documentarian Ken Burns, Duncan’s latest project provides a stark reminder of what previous generations of Oklahomans learned the hard way—conservation and wise use of our water and other natural resources is a basic necessity in preparing for the inevitable, devastating droughts to come.

With an agenda featuring something for everyone, I urge all Oklahomans to join us for two days of riveting water discussion. Registration is available via our website at [www.owrb.ok.gov](http://www.owrb.ok.gov). See you in Tulsa! ♦



U.S. Department of Agriculture Secretarial Drought Designations as of Sept. 26. Red designates the 2,066 primary counties, including all of Oklahoma; yellow designates contiguous counties.

# WATER FOR 2060

EFFICIENCY • CONSERVATION • RECYCLING • REUSE

## 33RD ANNUAL GOVERNOR’S WATER CONFERENCE

### 10TH ANNUAL OWRRI WATER RESEARCH SYMPOSIUM

# NOVEMBER 13-14, 2012

## TULSA MARRIOTT SOUTHERN HILLS

Register online at [www.owrb.ok.gov](http://www.owrb.ok.gov).

FEATURING  
**THE DUST BOWL**

Keynote speaker Dayton Duncan is an award-winning writer and documentary filmmaker. His latest film, for which he served as principal writer, is “The Dust Bowl,” a two-part series airing November 18-19 on PBS. Duncan will present a preview of the film during the conference and be on hand to sign his companion book for the series, coauthored with Ken Burns.

Tuesday, Nov. 13			
8:30 AM SALON A-E <b>PLENARY SESSION</b>	Welcome: Ford Drummond, OWRB Chairman & Dewey Bartlett, Tulsa Mayor Keynote Address: Dayton Duncan, Author/Filmmaker, <i>The Dust Bowl</i> Water for 2060 & Beyond: J.D. Strong, OWRB Executive Director		
10:00 Break			
10:20	SALON B-D Innovations in Water Conservation, Efficiency, and Reuse	SILVER OAK ROOM Water Research Symposium Session 1	Sycamore Room Oklahoma Bar Association CLE
Noon SEQUOIA ROOM <b>LUNCHEON</b>	Oklahoma Water Pioneer Awards Water Outlook from Washington DC		
1:30	SALON B-D Innovations in Water Conservation, Efficiency, and Reuse	SILVER OAK ROOM Water Research Symposium Session 2	Sycamore Room Oklahoma Bar Association CLE
3:00 Break			
3:20	SALON B-D ROUNDTABLE DISCUSSION: Regional Water Planning	SILVER OAK ROOM Water Research Symposium Session 3	Sycamore Room Oklahoma Bar Association CLE
5:00 Adjourn to Reception			
Wednesday, Nov. 14			
8:30 AM SALON A-E <b>PLENARY SESSION</b>	Welcome: Ford Drummond, OWRB Chairman & Gary Sherrer, Oklahoma Secretary of Environment Partnerships in Sustainability		
10:00 Break			
10:20	SALON B-D Implementing OCWP Priorities: Monitoring and Infrastructure Financing	SILVER OAK ROOM Water Research Symposium Session 4	
Noon SEQUOIA ROOM <b>LUNCHEON</b>	The Blue Revolution: Cynthia Barnett, Author Poster Contest Winners 4-H Speech Contest Winners		
1:30	SALON B-D ROUNDTABLE DISCUSSION: Instream/Environmental Flows	SILVER OAK ROOM Water Research Symposium Session 5	
3:00 Break			
3:30	SALON A OWRB Monthly Meeting	SILVER OAK ROOM Water Research Symposium Session 6	
5:00 Adjourn			

\*invited

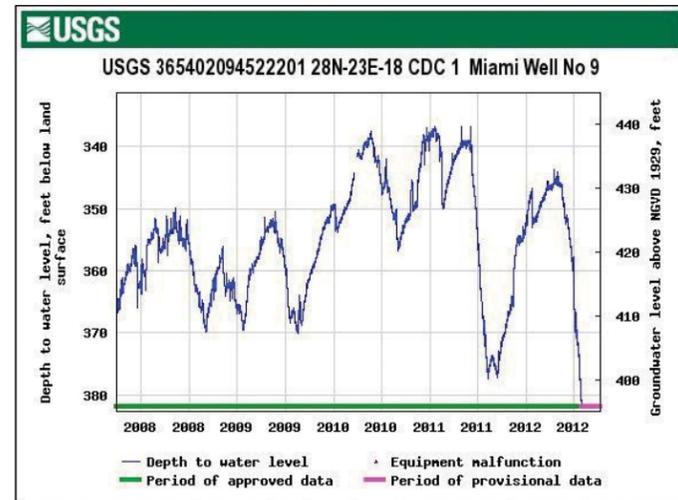
Worsening Drought (continued)



Dock on Southwest side of Lake Hefner in Oklahoma City. Recent September rains did little to restore lake levels in central Oklahoma.

demand summer months,” says J.D. Strong, OWRB Executive Director. “By July, around the peak time of Oklahoma’s drought impacts, we were receiving dozens of inquiries every day either reporting drought-related water problems or requesting some type of technical or financial assistance.”

Strong adds that OWRB staff continue to work closely with the water user community to locate alternative water supply sources, modify and strengthen water rights claims and permits, recommend water well drillers, provide long-range planning assistance to water systems, and resolve conflicts between users.



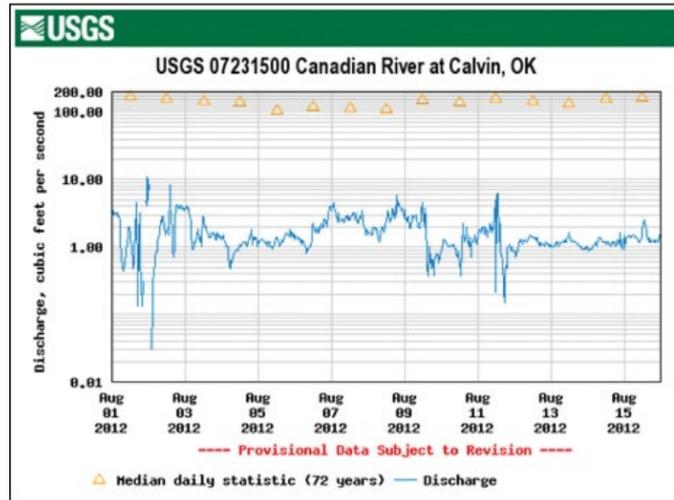
Groundwater levels at this site in Ottawa County have plummeted below low levels in 2011.

On a more optimistic note, the OWRB’s enormously successful loan and grant programs have helped improve dramatically the drought resistance of treatment and distribution systems, according to Ford Drummond, Chairman of the OWRB.

“Where during the early 1980s we saw hundreds of communities and rural districts rationing water or experiencing system failure due to unprecedented demand on aging infrastructure, this summer only a handful of water systems statewide were forced to institute mandatory water rationing. That is largely attributable to the fortification



This recent photograph at a site on the Canadian River near Konawa (southeast of Oklahoma City) shows no discernible flow. A USGS streamflow hydrograph for this site (below) demonstrates the degree of low streamflow compared to the median average over the site’s 72-year period of record.



of Oklahoma’s water and sewer systems through OWRB financial assistance,” Drummond says.

According to Bob Drake, who serves as Chairman of the OWRB’s Drought Committee, Oklahomans must become more vigilant in preparing for inevitable droughts. “Conservation—along with wise development and infrastructure upgrades—is imperative, as recognized in the 2012 Oklahoma Comprehensive Water Plan Update and by the newly enacted Water for 2060 initiative. All water users must be fully committed to pursuing innovative strategies and to curbing wasteful practices and old habits that leave us more vulnerable to drought.”

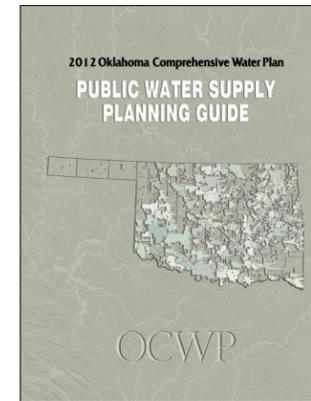
Concerning Oklahoma’s infrastructure, the 2012 OCWP Update identified more than \$82 billion in drinking water and sewer infrastructure needs through 2060. State Question 764, which will appear on the November general election ballot, seeks voter approval to amend the Oklahoma Constitution to establish a new Water Infrastructure Credit Enhancement Reserve Fund that would increase agency financing capacity to keep pace with this future demand, thus keeping rates more affordable for all Oklahomans. ♦

Facts About State Question 764 and the Status of Oklahoma’s Water Future

- The 2012 Update of the Oklahoma Comprehensive Water Plan identified an \$82 billion need for Oklahoma’s water and wastewater infrastructure over the next 50 years. Without adequate infrastructure, water will only be available at a much higher cost to taxpayers through increased water and sewer bills.
- The OWRB’s five successful grant and loan programs are reaching full capacity. It is estimated that these programs will be able to satisfy only 4% to 9% of the projected demand for financing through 2060.
- Small, medium, and large communities ALL need access to low-cost financing. The greatest need is in small- and medium-sized communities; more than 75% of the OWRB’s infrastructure funds are utilized by these systems.
- OWRB programs allow communities access to interest rates that are cheaper than those available in the open market, resulting in savings to both systems and their customers.
- The State Legislature and Governor Fallin authorized SQ 764 in order to ensure clean water for future generations of Oklahomans. SQ 764 is not a bond issue or a tax increase. It’s a pledge of credit.
- If SQ 764 is passed, the OWRB will be able to leverage funds in the bond market as projects are ready to begin construction. In turn, this will enable the OWRB to fund approximately \$3 billion in infrastructure projects (the largest estimated need over the next several decades) and thus ensure the availability of clean and drinkable water for future generations.

OWRB Offers Public Water Supply Planning Guide & Map Viewer

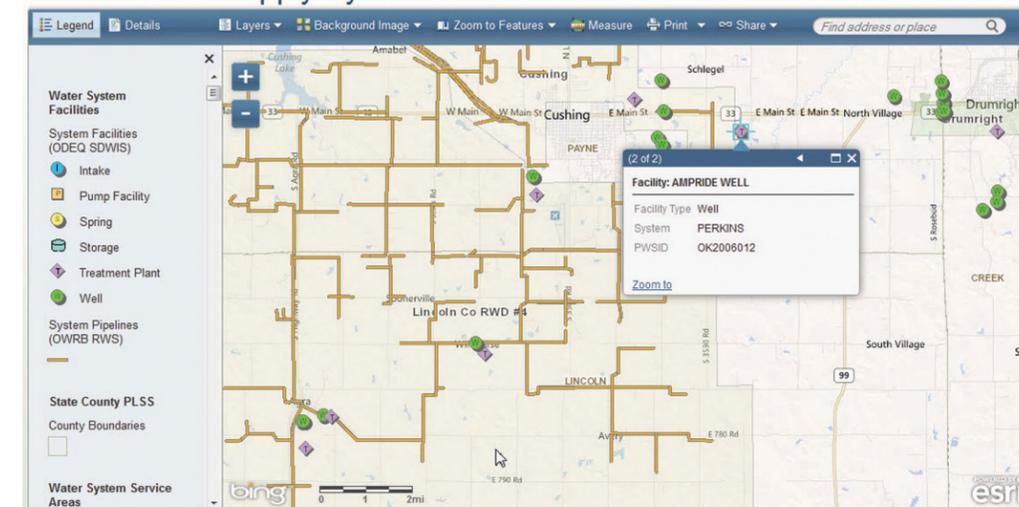
The OCWP Public Water Supply Planning Guide, a resource for developing long-range water system planning, is now available on the OWRB’s website. The guide presents basic concepts of strategic planning that will prepare water systems to respond to changing circumstances while maintaining organizational and financial stability.



Primary components of system-level planning include (1) water system data collection, including information about basic system components, current and potential water sources, and current and future demands of the service area; (2) identification of system capacity gaps, both current and potential; and (3) development and assessment of strategies to close gaps. Each section of the guide focuses on these areas utilizing worksheets that are also available in both Microsoft Excel and PDF format on the OWRB’s website.

Suggested ways to utilize technical information provided by the 13 OCWP Watershed Planning Region reports is an important aspect of the planning guide. The Regional Reports present elements of OCWP technical studies pertinent to each of the state’s 82 surface water basins as well as a wealth of system-level information. Each report includes water supply/demand analysis, forecasted supply shortages, potential supply solutions and alternatives, and supporting technical information. The Planning Guide identifies the region and basin for each of 775 of the states major public water systems.

Public Water Supply Systems in Oklahoma

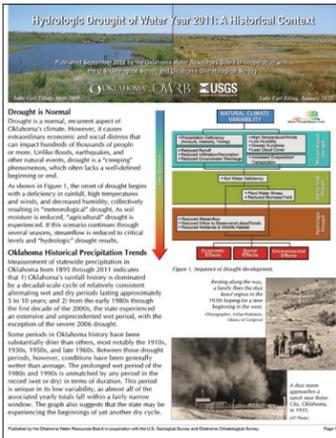


OWRB interactive map viewer: [www.owrb.ok.gov/systems](http://www.owrb.ok.gov/systems). Data layers assist with service area mapping.

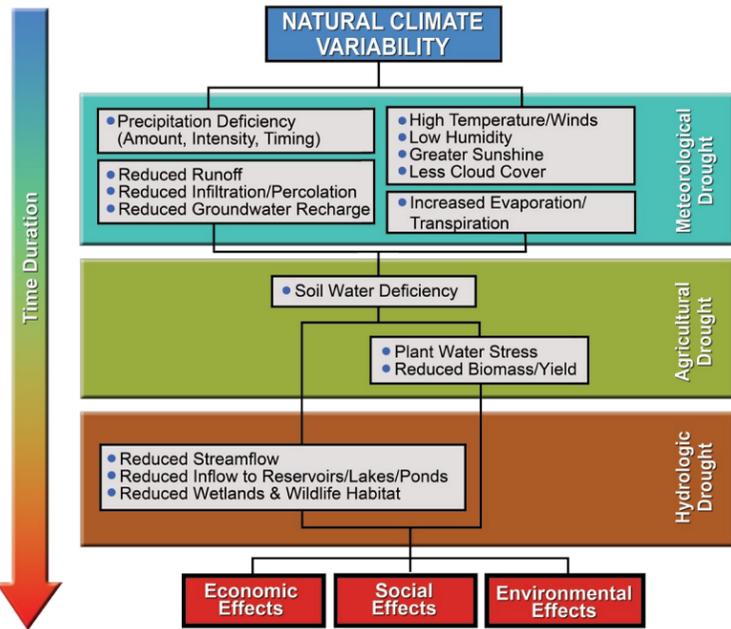
To supplement the Planning Guide, the OWRB has developed an interactive map viewer containing many data layers to assist with service area mapping. The intent of this tool is to provide a general overview of these public water supply systems and their facilities. Users can zoom in to view system boundaries, along with locations of system facilities, such as pipelines, wells, and treatment plants. ♦

# Hydrologic Drought of 2011 Fact Sheet Now Available

The OWRB, in cooperation with the U.S. Geological Survey and Oklahoma Climatological Survey, has published "Hydrologic Drought of Water Year 2011: A Historical Context," detailing the 2011 statewide drought. This fact sheet, a follow-up to the "Hydrologic Drought of Water Year 2006" fact sheet, provides information on Oklahoma's short- and long-term precipitation, streamflow, and groundwater level trends, making comparisons across the state between 2011 and historical data.



The Hydrologic Drought of 2011: A Historical Context fact sheet is available on the OWRB's website: [www.owrb.ok.gov](http://www.owrb.ok.gov)



streamflow records (since 1925). In particular, many streams in central, southern and western Oklahoma were affected. A groundwater level graph for a well near Fittstown shows October of 2011 at about 10 feet below average (1981-2011).

# Automated Meter Systems Gaining Popularity

Implementation of automated meter reading (AMR) systems—through which water supply systems can accurately monitor customer water usage—is becoming an exceedingly popular strategy to achieve efficiency and save money.

Including the City of Wagoner, which received a \$1 million Drinking Water State Revolving Fund loan from the OWRB at its September meeting, the Board has approved eight such loans specifically for AMR systems within the last three years. The other recipients who have or are currently implementing this new metering technology include Bartlesville Municipal Authority, Stroud Utilities Authority, Okmulgee Municipal Authority, Tahlequah Public Works Authority, Logan County RWS & SWMD #1, Enid Municipal Authority, and Sand Springs Municipal Authority.

The Wagoner Public Works Authority (PWA) is contributing \$19,590 in local funds to underwrite the project, which will replace old-style mechanical water meters with a state-of-the-art system utilizing transmitters that send customer usage data electronically to the city. Rather than sending out personnel to collect data manually each month from its 3,437 customers, AMR technology will automatically collect consumption, diagnostic, and status data from meters and transmit that data to a central location for analysis, billing and troubleshooting. The anticipated lowered cost of operations is expected to save Wagoner approximately \$170,000 per year

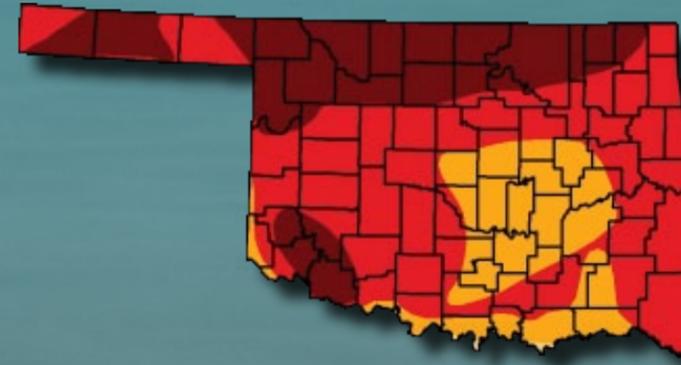
in labor and paperwork. The meters will be installed by a private contractor over a period of six months. AMR systems can also help track and detect water leaks and other system losses as well as provide direct information to water customers about their individual water usage, which often leads to improved household efficiency. According to Wagoner officials, system water losses have been as high as 35 percent. Wagoner utility customers consumed 340 million gallons of water last year from its primary water supply source, Fort Gibson Lake.

## Benefits of Automated Water Meter Reading Systems:

- Reduced personnel/operation costs.
- Improved customer service.
- Pinpoint system water leaks.
- More accurate and reliable data.
- Increased customer access to individual household water consumption data, resulting in heightened conservation awareness.

# Drought Update

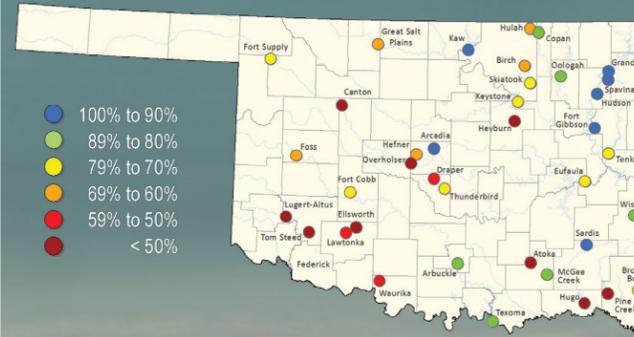
U.S. Drought Monitor  
October 2, 2012



Drought Intensity & Percent of State in Drought Category

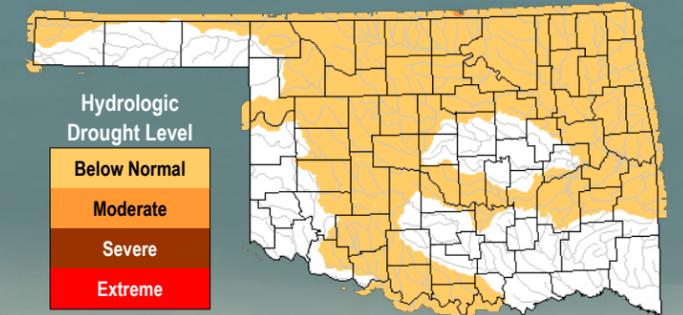
Abnormally Dry	100.00
Moderate Drought	100.00
Severe Drought	99.71
Extreme Drought	80.12
Exceptional Drought	28.21

## Reservoir Storage October 8, 2012



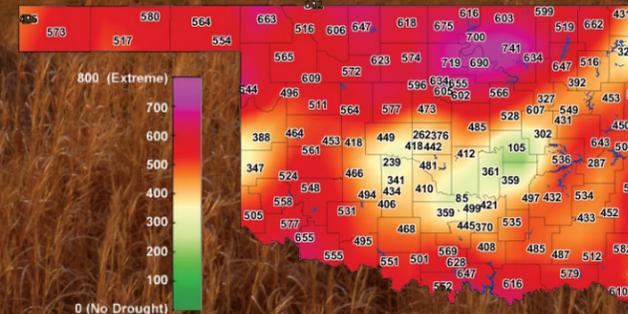
- 100% to 90%
- 89% to 80%
- 79% to 70%
- 69% to 60%
- 59% to 50%
- < 50%

## Streamflow (7-Day Average) October 8, 2012

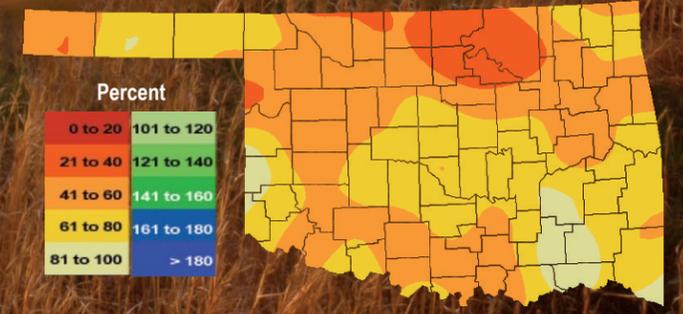


- Hydrologic Drought Level
- Below Normal
  - Moderate
  - Severe
  - Extreme

## Keetch-Byram Drought Index October 8, 2012



## Percent of Normal Precipitation Last 120 Days (June 11 to October 8, 2012)



- Percent
- 0 to 20
  - 21 to 40
  - 41 to 60
  - 61 to 80
  - 81 to 100
  - 101 to 120
  - 121 to 140
  - 141 to 160
  - 161 to 180
  - > 180

Data obtained from the National Drought Mitigation Center, U.S. Geological Survey, U.S. Army Corps of Engineers and Oklahoma Climatological Survey. For more drought information, and to obtain updated information on Oklahoma's drought and moisture conditions, go to [www.owrb.ok.gov/drought](http://www.owrb.ok.gov/drought).

[www.owrb.ok.gov](http://www.owrb.ok.gov)

*Ford Drummond, Chairman • Linda Lambert, Vice Chairman • Tom Buchanan, Secretary  
Bob Drake • Ed Fite • Marilyn Feaver • Rudy Herrmann • Jason Hitch • Richard Sevenoaks*

*Protecting and enhancing the quality of life for Oklahomans by managing and improving the state's water resources to ensure clean and reliable water supplies, a strong economy, and a safe and healthy environment.*



**3rd Quarter 2012**

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or call us at (405) 530-8800.*

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## FINANCIAL ASSISTANCE PROGRAM UPDATE

*Loans & Grants Approved as of September 18, 2012*

### **FAP Loans—343 for \$787,930,000**

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—253 for \$1,059,033,629**

The Clean Water State Revolving Fund (CWSRF) loan program was created in 1988 to provide a renewable financing source for communities to use 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—143 for \$768,074,642**

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—578 for \$51,284,406**

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—566 for \$33,776,351**

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—7 totaling \$491,000**

Through the OWRB's Drought Response Program, 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: 1,890 for \$2,700,590,028**

### **Estimated Savings: \$943,137,156**

*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](http://www.owrb.ok.gov/financing).**