OKLAHOMA Water News

1st Quarter 2015

Inside

Water for 2060 Grants Awarded

Three Water for 2060 grants were approved in February for Boise City, Fort Supply, and Shattuck for water system improvement projects that will save these rural communities more than 17 million gallons of water each year.

Governor Mary Fallin presented ceremonial checks to representatives from the communities during Water Appreciation Day at the Capitol on March 11. District legislators Senator Bryce Marlatt and Representative Casey Murdock also attended the ceremony to support the infrastructure investment and continued drought management efforts.

Later that day, during the OWRB's March meeting, a fourth Water for 2060 Grant was approved for the Frontier Development Authority in Butler, Oklahoma, for system improvements that will save the community 6.5 million gallons of water per year.

In a press release, Governor Fallin pointed out that the state is entering its fifth year of drought, and that communities, agricultural producers, and industries all need help in dealing with current shortages and preparing for future droughts.

"Responsible use of water remains the most immediate, direct, and cost-effective way to accomplish these goals," said Fallin.

All four projects will focus on water use efficiency through water loss reduction.

(continued on page 2)

From left: Rick Schlegel, Cardinal Engineering; Ford Drummond, OWRB Member; Sam Hamilton, Town of Shattuck; Representative Casey Murdock; Governor Mary Fallin; J.D. Strong, OWRB Executive Director; Senator Bryce Marlatt; Linda Lambert, OWRB Vice-Chairman; Rudy Herrmann, OWRB Chairman; Ed Fite, OWRB Member; Joe Freeman, OWRB; Bob Drake, OWRB Member; Mary Schooley, OWRB; and Jerri Hargis, OWRB

From the Director

The rainy season is upon us, yet the state has unfortunately entered into year five of drought. To put this timeline in perspective, Oklahoma's worst drought on record measured approximately seven years during the 1950s—a sobering thought as nearly three million Oklahomans and many communities across the western half of the state continue to struggle with current or imminent water shortages. Without doubt, current drought conditions painfully remind Oklahoma's citizens, public officials, and water planners about the need to plan ahead, to conserve more water, to manage the water we have more efficiently, to focus on badly needed infrastructure improvements, and to educate our fellow Oklahomans on our respective roles in overcoming these water challenges.

(continued on page 2)

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

Water for 2060 Grants (continued)

The Town of Shattuck, which provides water for a population of 1,190, received a Water for 2060 grant for $500,000. This funding, supplemented by a Rural Economic Action Plan (REAP) grant and local funding, will be used to replace 12,000 feet of water lines that have been experiencing nearly 60% water loss due to age and deterioration. The project will result in an estimated savings of 12.3 million gallons of water per year. Sam Hamilton, Shattuck's Town Administrator, accepted the ceremonial check from Governor Fallin on March 11.

Boise City, located near the middle of Cimarron County, received a Water for 2060 Grant for $135,000. This funding will be used to replace 2,275 feet of water lines that have been experiencing nearly 50% water loss due to age and deterioration. This project will result in an estimated savings of 1.1 million gallons of water per year. City Council Member Eldon Soell accepted the ceremonial check from Governor Fallin.

Fort Supply, located in Woodward County, provides water purchased from the City of Woodward for a population of 350. A Water for 2060 Grant for $397,700 will be used in conjunction with a REAP Grant to replace 10,150 feet of water lines that have been experiencing around 60% water loss to age and deterioration. This project will result in an estimated savings of 3.7 million gallons of water per year. Fort Supply Mayor Mike Lowden accepted the ceremonial check from Governor Fallin.

During the OWRB meeting on March 11, one additional Water for 2060 grant was approved for the Frontier Development Authority in Butler, located in Custer County. The system serves a population of 373 with water purchased from the City of Hobart through its Foss Master Conservancy District allotment. The $467,300 grant will be used for

(continued on page 3)

From the Director (continued)

With spring also comes the state legislative session, and it is indeed a busy time at the Capitol. While a few water policy issues continue to simmer, one of the most important issues facing the OWRB this legislative session will be the finalization of the state budget, which will ultimately dictate the agency's operating budget for the coming fiscal year. As they do continually throughout the year, each OWRB program coordinator is reviewing opportunities to garner any available savings and efficiencies to address looming budget challenges. Our team continues to meet with legislative leaders and committees to discuss the OWRB's ongoing efforts to provide the best possible service to Oklahomans regardless of budgetary circumstances, as well as the growing importance of our efforts given the current drought conditions faced by more than two-thirds of the state. We also remind legislators that even if the state weren't facing a fifth year of crippling drought, Oklahoma communities would continue to seek our water planning expertise, resource data, and infrastructure financial assistance.

...Oklahoma's worst drought on record measured approximately seven years during the 1950s—a sobering thought as nearly 3 million Oklahomans and many communities across the western half of the state continue to struggle with current or imminent water shortages.

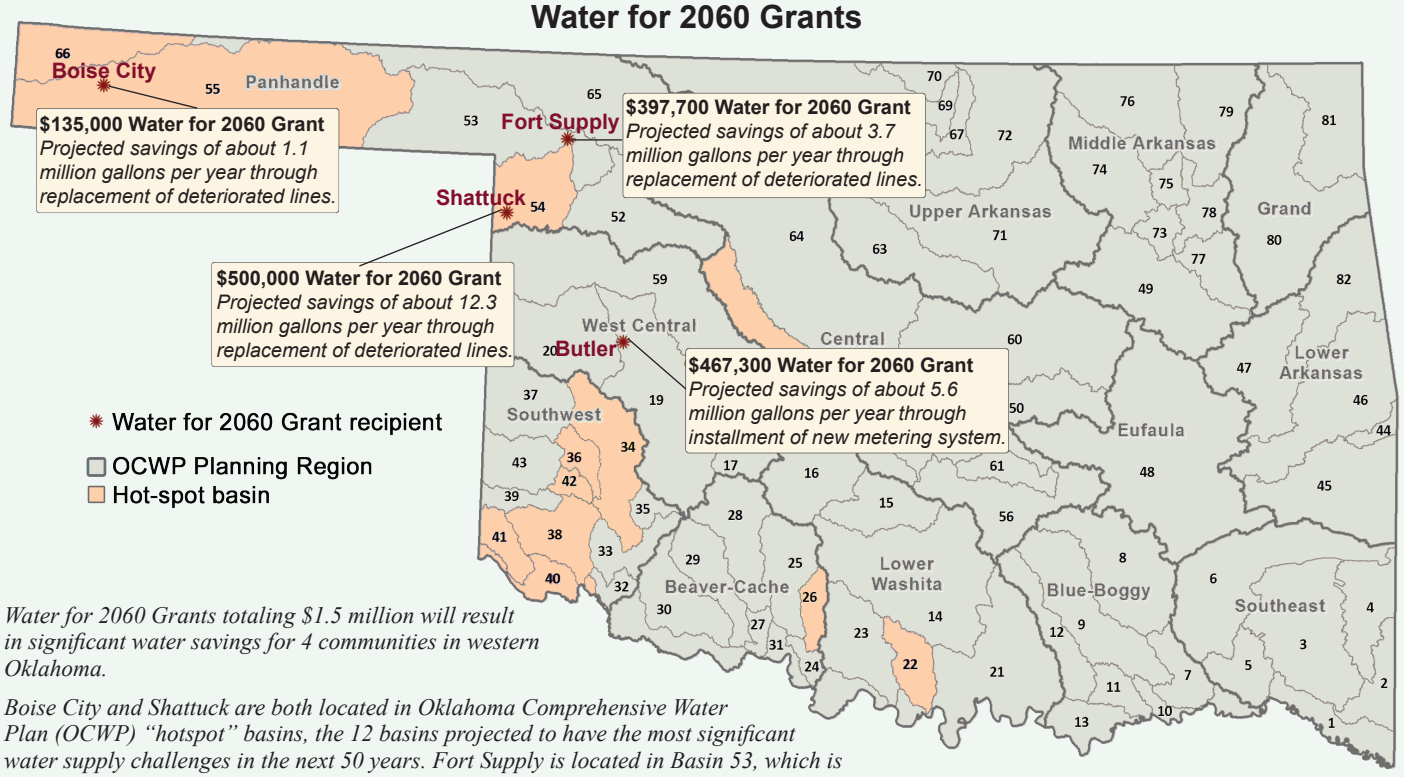
Beyond the budget, most water legislation proposed at the beginning of the session is now dormant after failing to meet deadlines. We continue to follow HB 1116, an attempt to get badly needed water to a rural water district adjacent to the Lexington Correctional Facility, as well as HB 1420, which repeals several outdated and unused sections of the Weather Modification Act. Furthering the goals of Oklahoma's Water for 2060 initiative, HB 1826 seeks to expand the use of gray water, while HJR 1013 expresses the legislature's opposition to the new "Waters of the United States" regulation proposed by the EPA and Corps of Engineers.

At the national level, I recently visited Washington, D.C., with my colleagues on the Western States Water Council to meet with key congressional members, committee staff, and federal agency partners. It was also a great opportunity to discuss Oklahoma water issues with our delegation, all of whom are to be commended for their hard work and commitment to Oklahoma's water resources. During the meetings, I was accompanied by the OWRB's new Director of Federal and Congressional Affairs, Britnee Preston. Brittnee comes to the OWRB from Congressman Markwayne Mullin's office where she served as Deputy Chief of Staff and Legislative Director. It is evident that she is well-respected in Washington, D.C. Her proven ability to navigate the complexities of Congress and the federal government is invaluable, and the OWRB is fortunate to have Brittnee on the team.

In addition to legislative initiatives, the OWRB and partners recently hosted the 10th annual Water Appreciation Day at the State Capitol on March 11. During the event, Governor Mary Fallin honored us by presenting to local representatives from Shattuck, Fort Supply, and Boise City recently authorized Water for 2060 Drought Grant checks. Throughout the day and during the check presentation, we sought to showcase the significant impact that conservation and efficient infrastructure can make by saving several million gallons of water annually in rural, drought-impacted communities that don't have the resources to address their water infrastructure needs.

Personally, I enjoy Water Appreciation Day most because of the opportunity to showcase the many groups and agencies that collaborate every day to ensure that all Oklahomans have continued access to safe, reliable water supplies to use and enjoy in a multitude of ways. The event also serves as an important reminder that even as we endure our fifth year of drought, the OWRB and many other Oklahomans remain committed to developing drought-proof strategies in the near term and formulating long-term planning solutions to prepare for inevitable droughts of the future.

Water for 2060 Grants



Water for 2060 Grants totaling $1.5 million will result in significant water savings for 4 communities in western Oklahoma.

Boise City and Shattuck are both located in Oklahoma Comprehensive Water Plan (OCWP) "hotspot" basins, the 12 basins projected to have the most significant water supply challenges in the next 50 years. Fort Supply is located in Basin 53, which is projected by 2020 to have groundwater use that exceeds recharge rates, and by 2030 to have possible surface water gaps during months with low streamflow conditions. Butler is located in Basin 19, where the projected 2060 water demand shows a 30% increase over the 2010 demand. Meeting the Water for 2060 Goal of using no more fresh water in the year 2060 than was used in the year 2010 is of vital importance for hot-spot basins and basins projected to have future water supply issues.

Each of Oklahoma's approximately 700 public water supply systems will need to take a close look at the enormous water loss that results from aging or inefficient infrastructure. Water reclaimed through system upgrades, along with water saved through conservation or reuse, will be critical for meeting the challenges of increased demand.

For more information on "hotspot" basins and water supply issues for each of the 82 OCWP basins, visit www.owrb.ok.gov/ocwp. For more information on Water for 2060, visit www.owrb.ok.gov/2060.

the replacement of all current meters with automatic radio read metering systems, hand-held drive-by units, software, laptops, and other necessary hardware, as well as the replacement of the master meter. The transition to automatic meters will make it much easier to detect and locate leaks, and will lead to greater customer conscientiousness and responsibility. These improvements are expected to save the system more than 6.5 million gallons per year.

All Water for 2060 grant recipients submitted project plans demonstrating water efficiency and drought resiliency, documenting percent efficiency to be achieved with the project.

The Water for 2060 Act, passed in 2012, established a bold, statewide goal of consuming no more fresh water in 2060 than was consumed in 2010 while preserving Oklahoma's population growth and economic development goals.

Appointees to the Water for 2060 Advisory Council are currently studying a wide range of innovative conservation measures, incentives, and related project financing options to solidify Oklahoma's water future. The Council's report will be finalized and presented to Fallin and state legislative leaders by the end of 2015.

Standards Revision Update

On February 19, the OWRB approved the following revisions to Oklahoma's Water Quality Standards (OAC 785:45 and OAC 785:46): (1) a Water Effect Ratio and Dissolved Translator for use in calculating permit limits for copper and zinc for the Broken Bow OPDES permit related to discharge of wastewater to a tributary of Yanubbe Creek, and (2) several amendments to clarify language associated with dissolved oxygen criteria.

In order to allow for further evaluation and consideration of the comments received during the public comment period, staff did not recommend for approval the previously proposed portions of OAC 785:45 related to Water Quality Standards for wetlands.

As noted in the draft agenda that was posted for the OWRB's monthly board meeting, the agency opted to pull the wetlands water quality standards proposal at this time for further work with concerned stakeholders.

The OWRB is committed to the open and constructive rule-making process. The decision to spend additional time on this proposal and the consideration and incorporation of suggestions offered by the public demonstrates the effectiveness of this process.

RiskMAP Activities Expanded Through Partnerships

Through its participation in the Federal Emergency Management Agency (FEMA) RiskMAP program, the OWRB's Floodplain Management team has assisted in facilitating flood studies for several Oklahoma communities.

Risk Mapping, Assessment, and Planning (RiskMAP) is a FEMA program that provides communities with flood information and tools they can use to enhance their mitigation plans and take action to better protect their citizens. Through more precise flood mapping products, risk assessment tools, and planning and outreach support, RiskMAP strengthens local ability to make informed decisions about reducing risk.

OWRB participation has resulted in Physical Map Revisions (PMRs) to Flood Insurance Studies and maps for communities in Tulsa, Wagoner, and Rogers Counties. An additional PMR is currently underway in the City of Tulsa.

Support from local communities for Cooperating Technical Partnership (CTP) projects remains very high, with local cost match contributions meeting or exceeding 25% of total project funding. All studies completed within the City of Tulsa have employed existing topographic data (provided by the local community at no cost to FEMA), resulting in project savings estimated between $50,000 and $75,000. Total FEMA and local community support as of 2014 exceeds $2.3 million.

New topographic information (NRCS LiDAR coverage) exists for a significant portion of the State, and the majority of urban communities have acquired their own topographic information. LiDAR topographic data availability has allowed the OWRB to include additional studied stream miles and new mapping for communities that otherwise would have been cost prohibitive. The OWRB is actively engaging various Federal partners to acquire additional LiDAR data throughout the state.

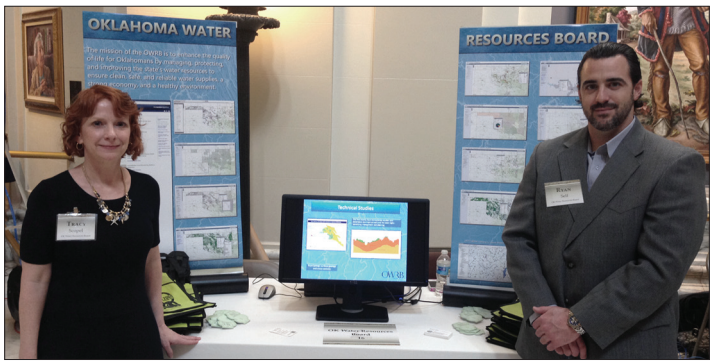
Building on the continued success and partnerships with FEMA and local communities, the OWRB is seeking to implement a multi-hazard, risk focused approach for mitigation actions statewide through its 2015-2020 RiskMAP business plan, which includes the following strategies:

- Expand digital mapping to all NFIP participating communities;
- Provide initial flood risk analysis to non-studied communities;
- Increase mitigation actions in deployed communities; and
- Advance Coordinated Needs Management Strategy deployment statewide, orienting study priorities to local needs.

For more information on the OWRB's Floodplain Management Program, visit **www.owrb.ok.gov**. For information on RiskMAP, visit **www.fema.gov/media-library/assets/documents/18274**.

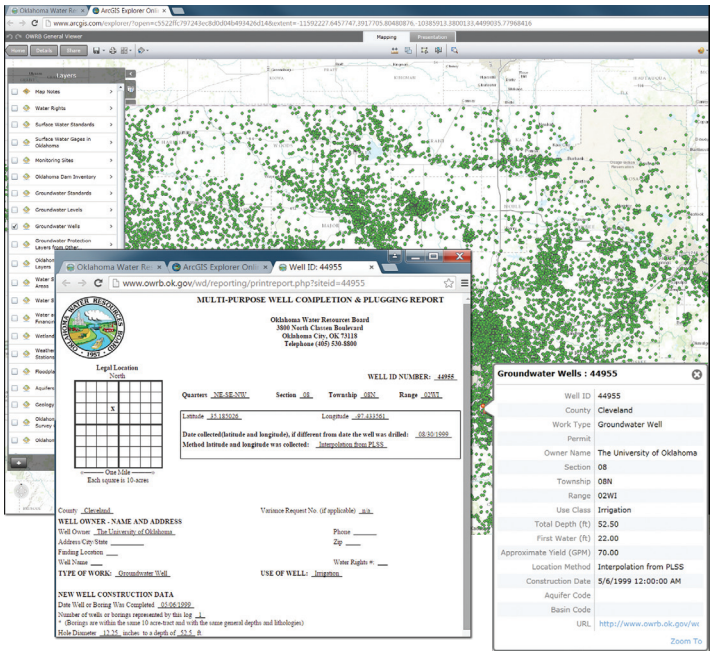
OWRB Map Viewers Showcased at Capitol

OWRB Geographic Information Systems (GIS) specialists provided demonstrations and information about the agency's interactive map viewers at the capitol on March 12 during GIS Day. The OWRB currently maintains 13 viewers available to the public at **www.owrb.ok.gov/viewers**.



OWRB GIS staff Tracy Scopel and Ryan Self provided demonstrations and information about the agency's thirteen map viewers and the wealth of water-related data available to the public through the OWRB website.

The latest viewer added to the collection is the OWRB General Viewer, which replaces the Water Information Mapping System (WIMS). The General Viewer allows users to create custom maps utilizing more than 20 layers of water information, including background layers, such as surface water features and aquifer boundaries, and informational layers, such as the Groundwater Wells layer, which is "clickable" and links to the OWRB's well log database (shown below).



The Groundwater Wells layer on the OWRB General Viewer allows users to select any well and access information about it, such as the Well Completion and Plugging Report.

The map viewers are updated continuously, providing a user-friendly and flexible means for the public to access the latest OWRB and partner agency data.

Catch the Big Drips

Tips for Creating a Sustainable and Drought Resilient Landscape

Adapted from A Guide to Saving Water in the Home Landscape, *developed by the Oklahoma Cooperative Extension Service, Division of Agricultural Sciences and Natural Resources, Oklahoma State University*

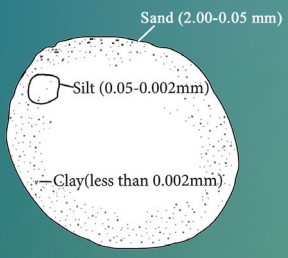
www.oces.okstate.edu

Determine your soil texture.

Sandy soil feels gritty and will not stay in a ball. Water drains quickly from this type of soil due to its large pore spaces.

Loam soil feels partly gritty and partly smooth. This type of soil forms a ball that breaks easily when squeezed and has a high water holding capacity.

Clay soil feels smooth and sticky. This type of soil drains water more slowly than sandy soils.



Relative size of sand, silt, and clay particles

Knead soil between your fingers to determine texture.

Check soil moisture before watering.

Screwdriver does not easily pass through dry soil.

Use a screwdriver to check soil moisture before watering; if it goes in easily, do not water. Soil may appear dry on the surface but moisture may be sufficient throughout the soil profile.

Choose the right turfgrass.

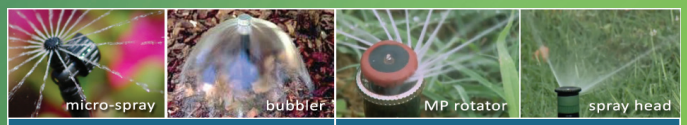
Select a turfgrass that is well adapted to Oklahoma's variable temperature and moisture. Selecting the appropriate turfgrass will reduce soil erosion and save water.

TURFGRASS	REGION	SUN REQUIREMENTS	DROUGHT RESISTANCE	HEAT TOLERANCE	IRRIGATION REQUIREMENTS
Warm-Season Turfgrass					
Bermudagrass	Statewide[1]	Full sun	Excellent	Excellent	Low
Buffalograss	Central, Western	Full sun	Excellent	Excellent	Low
St. Augustinegrass	Southern along Red River	Full sun to light shade	Good	Excellent	Medium
Zoysiagrass	Central, Eastern	Full sun to light shade	Very good	Excellent	Medium
Cool-Season Turfgrass					
Kentucky Bluegrass	Northern, Eastern	Full sun to shade[2]	Good	Fair	High
Perennial Ryegrass	Northern, Eastern	Full sun to shade	Poor	Fair	High
Tall Fescue	Statewide	Full sun to shade	Good	Good	High

[1] *May be susceptible to winter kill in Northern areas*
[2] *Recommended for lightly shaded areas in Oklahoma, requires more irrigation in full sun*

Irrigate efficiently.

Do a regular maintenance check on your irrigation system, check for leaks, and repair or replace broken sprinkler heads. Avoid watering frequently and lightly. Water based on need and weather conditions, not on a regular schedule.



TYPE OF SPRINKLER HEAD	BEST USE
Micro-spray	Containers, shrubs, trees, flower beds
Bubbler	Trees, shrubs, flower beds
Matched Precipitation (MP) Rotator	Large turf areas
Spray head	Medium to small sized turf areas

Mulch properly.

Mulching properly can reduce soil moisture loss. Add mulch to a depth of 2-3 inches; adding too much can harm plants by reducing water and air infiltration into the soil. Avoid mounding mulch around plants and trees because it can cause trunk rot.

Mow correctly.

Increasing the mowing height to 2-3 inches for warm season grass and 3-4 inches for cool-season grass during the summer will help conserve soil moisture.

Reduce thatch.

Excessive thatch can reduce water, air, and nutrient movement, leading to shallow root development. If thatch is thicker than 0.5 inches, the yard would benefit from a dethatching.

Aerate your lawn.

Aerating reduces soil compaction and increases water infiltration.

WATER FOR 2060
EFFICIENCY · CONSERVATION · RECYCLING · REUSE

Public Forum Held for Instream Flow Pilot Study

A public meeting focused on the Illinois River Instream Flow (ISF) Pilot Study was held in January in Tahlequah, Oklahoma. Instream (or environmental) flows are those necessary to support water-related recreation (such as fishing, hunting, swimming, and boating) and tourism, as well as provide for a healthy ecosystem.

OCWP Priority Recommendation on Instream Flows

The meeting opened with a presentation by John Rehring, Carollo Engineers, about instream flow (ISF) issues in Oklahoma, and the priority recommendation in the 2012 update of the Oklahoma Comprehensive Water Plan (OCWP) to develop and implement a process to ascertain the suitability and structure of an ISF program.

The Instream Flow Advisory Group was formed as part of the 2012 Update of the OCWP and continues to meet regularly to define whether and how an ISF program might be implemented in Oklahoma. Technical support has been provided by the OWRB and US Army Corps of Engineers through a contract with CH2M Hill and Carollo Engineers.

History and Background of Instream Flows in Oklahoma

Derek Smithee, OWRB Water Quality Programs Division Chief, presented information about the history and background of instream flows in Oklahoma. Smithee pointed out that instream flow uses are considered nonconsumptive in nature and do not necessarily have to conflict with consumptive water needs, such as public water supply and irrigation.

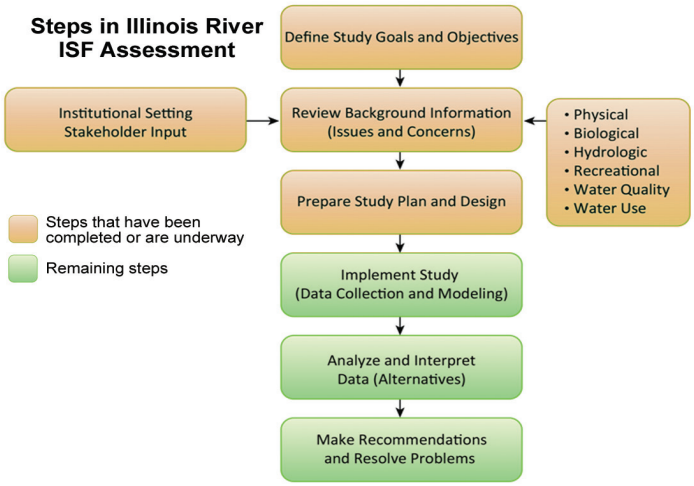
Two instream flow studies have already been completed in Oklahoma. The 2000 Barren Fork study by Dr. William Fisher of Oklahoma State University focused on the impacts of reductions in streamflow to the smallmouth bass population. Results showed that a minimum instream flow between 30 and 75 cubic feet per second (cfs) was necessary to protect the species. In 2003, OWRB rules were modified to require suspension of all future permitted withdrawals from the Barren Fork when the flow is less than 50 cfs.

The second ISF study took place in springs and streams that overlie the Arbuckle-Simpson Aquifer. Researchers were looking at how groundwater withdrawals in the aquifer would affect spring-dependent fish species. Results of this study were used to help determine the maximum annual yield of the aquifer for groundwater permitting purposes.

Instream Flow Assessment of the Scenic Illinois River

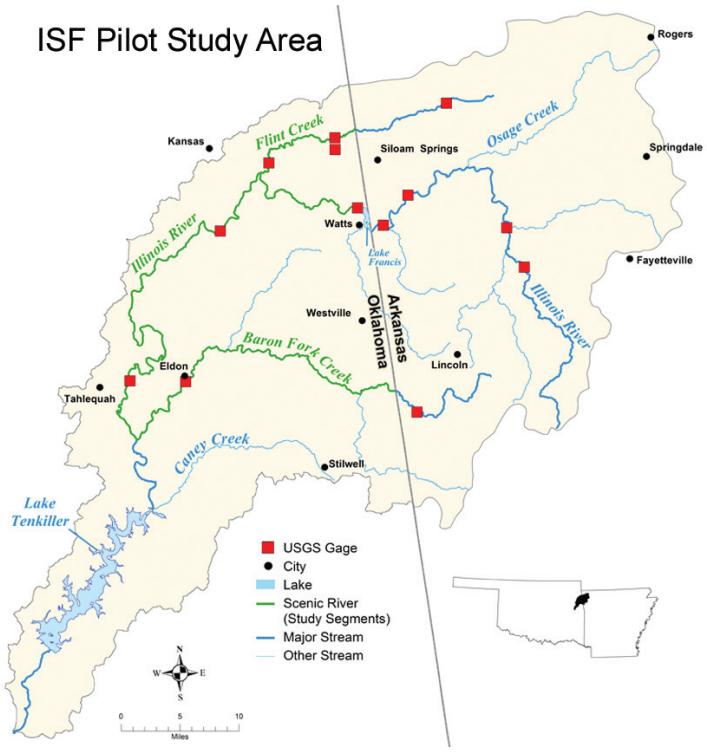
Forrest Olson, CH2M HILL, presented information focusing on the primary goals of the pilot study:

1. Develop seasonal instream flow recommendations for the Illinois River including Baron Fork and Flint creeks.
2. Gain a better understanding of the implications of a process to deal with instream flow issues consistent with the overall goal of managing water resources in Oklahoma for multiple uses. The study would help define a conceptual framework and study process that could be used statewide.



The Technical Study Work Group includes the OWRB, US Army Corps of Engineers, CH2M HILL, Oklahoma Department of Wildlife Conservation, Oklahoma Conservation Commission, Oklahoma Scenic Rivers Commission, US Geological Survey, US Fish and Wildlife Service, and The Nature Conservancy.

Throughout the study, the team will conduct outreach with interested parties to identify and document concerns and issues.

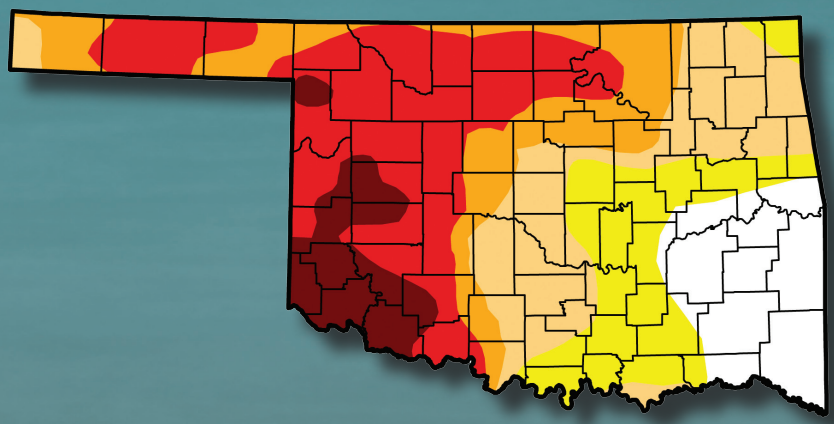


A detailed study plan is currently being developed along with a review of background information. The team will begin data collection in May or June, 2015. The initial phase of the study is estimated to be completed by the end of the year.

The meeting concluded with the opportunity for public comment. A summary of the comments and other Instream Flow Advisory Group information is available at **www.owrb.ok.gov/ISF**. For questions about the Instream Flow Pilot Study, contact Derek Smithee at 405-530-8800 or **derek.smithee@owrb.ok.gov**.

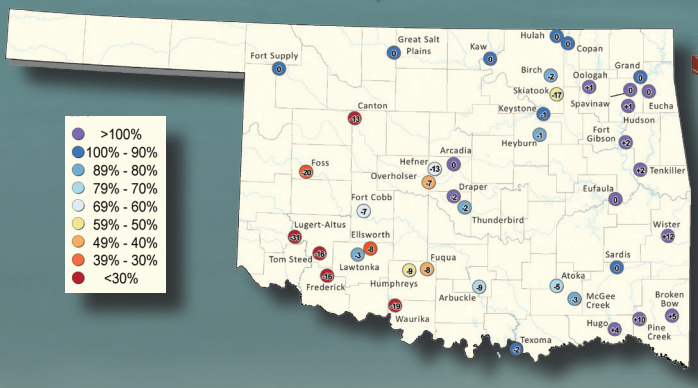
Drought Update

U.S. Drought Monitor
March 24, 2015

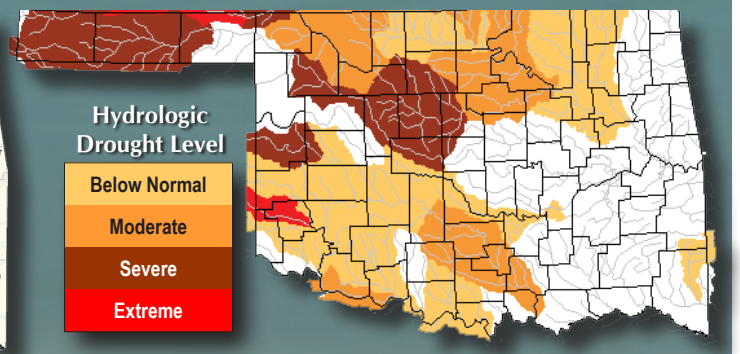


Abnormally Dry	95.95
Moderate Drought	77.48
Severe Drought	50.67
Extreme Drought	24.03
Exceptional Drought	8.61

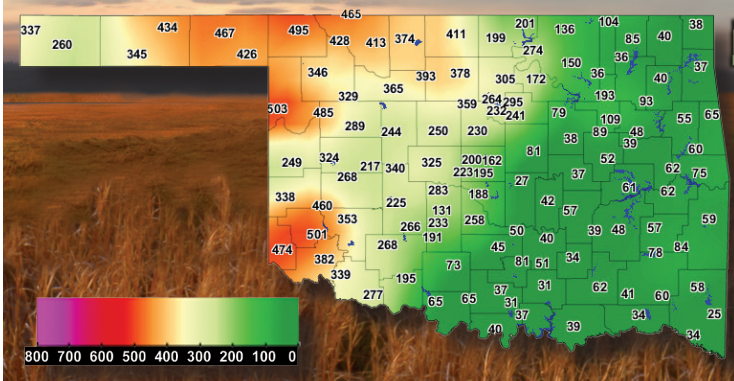
Reservoir Storage
March 23, 2015



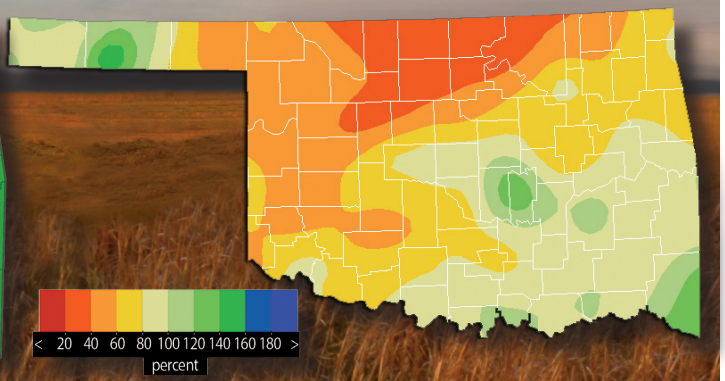
Streamflow (7-Day Average)
March 25, 2015



Keetch-Byram Drought Index
March 26, 2015



Percent of Normal Precipitation
Last 90 Days (January 2, 2015, through April 1, 2015)



Data obtained from the National Drought Mitigation Center, US Geological Survey, US Army Corps of Engineers and Oklahoma Climatological Survey. For more drought information, and to obtain updated information on Oklahoma's drought and moisture conditions, visit **www.drought.ok.gov**.

Oklahoma Water News
Oklahoma Water Resources Board
3800 N. Classen Blvd.
Oklahoma City, OK 73118

www.owrb.ok.gov

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.

Financial Assistance Program Update

Loans & Grants Approved as of March 11, 2015

FA Loans—365 totaling $935,065,000
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.

CWSRF Loans—285 totaling $1,296,094,392
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—174 totaling $ 916,958,300
The Drinking Water State Revolving Fund (DWSRF) loan program is an initiative of the OWRB and ODEQ 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—631 totaling $56,021,356
The Rural Economic Action Plan (REAP) Program was created by the State Legislature in 1996. REAP grants, used for water/wastewater system improvements, primarily target rural communities with populations of 7,000 or less, but priority is afforded to those with fewer than 1,750 inhabitants.

Emergency Grants—568 totaling $33,822,821
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—10 totaling $1,543,848
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 proceeds to fund the Program.

Water for 2060 Grants—4 totaling $1,500,000
Through the Water for 2060 Grant Program, funding is available for municipalities, counties, water/sewer districts and other public entities for projects that highlight the responsible use of water.

Total Loans/Grants Approved: 2,037 totaling $3,240,360,734
Estimated Savings: $1,108,740,257
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.***

OKLAHOMA Water News

1st Quarter, 2015

The Oklahoma Water News *is published quarterly by the Oklahoma Water Resources Board as authorized by J.D. Strong, Executive Director. Eighty-eight hundred copies of this issue have been printed by University Printing Services at an approximate cost of 32 cents each. Copies have been deposited at the Publications Clearinghouse of the Oklahoma Department of Libraries.*

The Oklahoma Water News *is available online at www.owrb.ok.gov. Follow us on twitter @OKWaterBoard for publication notification. If you no longer wish to receive a copy by mail, or have comments or article submissions, please contact Darla Whitley, Editor, at pubinfo@owrb.ok.gov or (405) 530-8800.*