

Report of OWRB Activities for 2014

Throughout 2014, the OWRB fulfilled its mission of enhancing the quality of life for Oklahomans by managing, protecting, and improving the state's water resources to ensure clean, safe, and reliable water supplies, a strong economy, and a healthy environment.

Water for 2060

The Water for 2060 Advisory Group met quarterly in 2014 to review current information and discuss future strategies for meeting the goal of consuming no more fresh water in 2060 than is consumed today. During the meetings, public water supply managers, agriculture producers, and experts from other water use sectors provided insights to the group on existing conservation, efficiency, and reuse practices, encouraging the development of ideas for supporting and extending these activities. In November, the group began structuring an outline for recommendations that will be included in a report to the Legislature and Governor in 2015.



Advisory Group member meeting. The Water for 2060 Status Report, available online at www.owrb.ok.gov/2060, contains meeting summaries and other Advisory Group information.

Legal Developments

Permits for Water Reuse Projects Authorized by Legislature

Senate Bill 1187, enacted in May of 2014, authorizes the Oklahoma Department of Environmental Quality (ODEQ) to consider and issue permits for point-source discharges into sensitive public and private water supplies. This new development was vital for communities like Norman, whose long-term water plan through 2060 relies heavily on water reuse. Norman intends to discharge its "highly

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treated” wastewater effluent into Lake Thunderbird, which is one of the primary sources for its municipal water supply.

Well Spacing Rules: Sensitive Sole Source Groundwater Basins

In October of 2013, the OWRB issued its order determining the Maximum Annual Yield from the first sensitive sole source groundwater basin or subbasin (“Sensitive Basin”) recognized since the enactment of Senate Bill 288. Pursuant to the terms of that Order, the OWRB amended its administrative rules in 2014 by adding spacing restrictions for new wells overlying the Sensitive Basin. The new amendments interpret and implement 82 O.S. sections 1020.9, 1020.9A, and 1020.9B,

which were enacted as part of Oklahoma’s first legislative act addressing the connection between groundwater and stream water.

The new rule language prohibits the OWRB from authorizing the drilling of groundwater wells which are “likely to degrade or interfere with springs or streams emanating in whole or in part” from the Sensitive Basin. The rules now prohibit drilling new groundwater wells within 1320 feet from any spring which emanates from the Sensitive Basin and flows 50 or more gallons per minute (gpm), prohibit new groundwater wells within 2 miles from any spring which emanates from the Sensitive Basin and which flows 500 or more gpm, and

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prohibit new wells within 1 mile from any stream segment which emanates from the Sensitive Basin and has a base flow of 500 gpm and is identified as perennial in the USGS National Hydrology Dataset.

While the new rule language permits certain exceptions to the new well spacing requirements, it puts the burden on applicants seeking an exception to show that the new well is not likely to degrade or interfere with springs or streams emanating from the Sensitive Basin. Specifically, applicants seeking an exception will have to demonstrate that the dimensions of the applicants' land preclude them from complying with the new well spacing restrictions. Applicants must also demonstrate that the cumulative impact of pumping from the proposed well combined with pumping from existing wells will cause less than a 25% reduction of flow in the subject spring or stream to qualify for the exception.

Finally, the administrative rules governing the taking and use of groundwater were further amended to add tables that identify and describe springs known to emanate from the Sensitive Basin by name, USGS Identification Number, GPS coordinates, and legal description. The tables are organized to identify which springs flow at least 50 gpm and which springs flow at least 500 gpm.

Sale of "Surplus" Water under OK Stream Water Statutes

A recent Oklahoma Court of Civil Appeals opinion, Rural Water, Sewer & Solid Waste Mgmt Dist. No. 1 v. City of Guthrie, rejected a claim that Oklahoma's stream water laws required a municipality to sell surplus treated water to a rural water district. The plaintiff in that case, a rural water district, argued that the defendant, a municipality adjacent to the district's service area, was required to sell its surplus

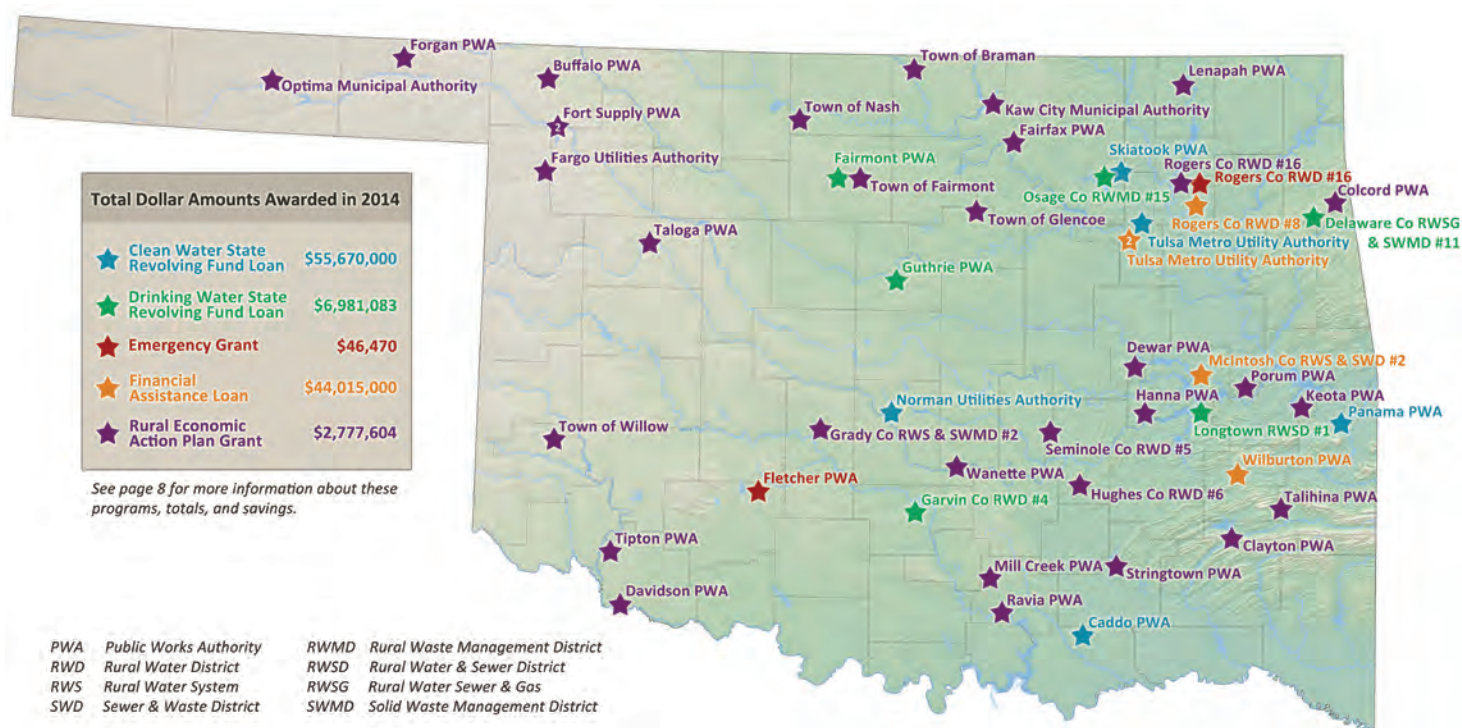
treated water to the rural water district, which would then be sold to customers in the rural water district's service area. Section 105.21 of Title 82 of the Oklahoma Statutes requires the owner of any works for storage, diversion or carriage of water containing water in excess of the owner's appropriation for beneficial use shall be required to sell such water at reasonable rates. The Oklahoma Court of Civil Appeals affirmed the District Court's grant of summary judgment to the municipality, holding that section 105.21 applied only to stream water, and did not apply to "water that has been appropriated by or is in treatment facilities of a municipality."

In a related case between the same rural water district and the same municipality filed in the US District Court for Western District of Oklahoma, the rural water district obtained a \$1.27 million jury verdict and injunctive relief against the municipality. In that case, the district sued for the return of customers and for damages suffered when the neighboring municipality encroached upon the district's service area, in violation of 7 U.S.C. §192(b), which mandates that districts must be allowed to operate free of competition within their respective service areas during the term of repayment of their loan from the federal government.

Financial Assistance Program

During 2014, the OWRB's Financial Assistance Program provided more than \$100 million in financing to Oklahoma communities and water systems for water and wastewater infrastructure projects. This included 34 grants for the year totaling \$2,823,075 and 16 loans totaling \$106,666,083, saving borrowers an estimated \$30,702,133 when compared to traditional financing options.

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Water Quality Standards

The 2014-15 proposed amendments to Chapter 45 include the following: clarification and modification of language associated with dissolved oxygen criteria, the addition of several amendments regarding the development of water quality standards applicable to wetland waterbodies, and the addition of site-specific Water Effect Ratio and Dissolved Translator for use in calculating permit limits for copper and zinc for Broken Bow Public Works Authority's permit related to discharge of municipal and industrial wastewater to a tributary of Yanubbe Creek. The proposed amendments to Chapter 46 include clarification of language associated with Fish and Wildlife use support assessments for dissolved oxygen. A public hearing will be held on January 20.

The OWRB continues its joint participation in a study of phosphorus levels and Oklahoma's scenic rivers to determine the total phosphorus threshold response level at which algae production results in undesirable or harmful conditions. In 2002, the Oklahoma Water Resources Board promulgated into its Water Quality Standards a total phosphorus criterion of 0.037 mg/L for all of its Scenic Rivers. Both Oklahoma and Arkansas have since worked to reduce phosphorus inputs into these waters, resulting in substantial reductions, but falling short of achieving full compliance with the criterion. The two-year, \$600,000 study has been funded by stakeholders in Arkansas, with both states' Governors appointing three members to a committee overseeing the effort. The OWRB's Water Quality Division Chief, Derek Smithee, is serving as co-chair. Several update meetings were held in 2014; the next meeting is scheduled for the spring of 2015 in Tahlequah and will be open to the public.

OWRB FY14 Expenditures and FY15 Budget

Activity Name	FY14 Expended	FY15 Budgeted
Administration	\$2,153,505.46	\$2,516,576.00
Water Quality	3,984,921.51	4,181,859.00
Financial Assistance	2,564,282.51	5,475,516.00
Planning & Management	3,899,275.27	5,372,367.00
Information Technology	650,842.56	997,815.00
Totals	\$13,252,827.31	\$18,544,133.00
Fund Name		
General Appropriations	\$5,365,456.38	\$5,068,102.00
Drillers & Installers Indemnity Fund	0.00	20,000.00
OWRB Revolving Fund	1,389,057.52	2,814,951.00
Water Resources Revolving Fund	1,000,636.89	1,171,092.00
Drillers & Installers Regulation Fund	25,000.00	32,798.00
Water Infrastructure Development Fund	1,196,390.76	2,284,137.00
Federal Funds - OWRB	1,774,834.32	1,822,943.00
USGS Cooperative Agreement	279,154.00	275,275.00
DW Loan Administration Fund	480,942.43	2,090,539.00
CW Loan Administration Fund	1,741,355.01	2,534,296.00
CW Loan Fund	0.00	400,000.00
Totals	\$13,252,827.31	\$18,514,133.00

Monitoring

Through the Beneficial Use Monitoring Program (BUMP), lake sampling was conducted quarterly at 75 lakes across Oklahoma in 2014 (as part of a five-year rotation for the 130 lakes included in the program). Stream sampling was conducted at 84 stations on a 6-week rotation. The physical, chemical, and biological data collected at these sites are used to identify water quality trends, document impairments to beneficial uses, and identify sources of pollution in support of Oklahoma's Water Quality Standards and federal Clean Water Act requirements.

Staff faced several challenges due to low water levels, particularly in southwestern and western Oklahoma. For example, two sites at Waurika Lake were inaccessible due to shallow water conditions.



As of mid-December, the conservation pool at Waurika Lake was only at about 30%, leaving two out of five sampling sites inaccessible to OWRB monitoring staff.

In July, a Nutrient Limited Watershed (NLW) pilot study was initiated at Crowder Lake, which is currently listed in the Water Quality Standards as nutrient threatened. This study is designed to assess water quality in the reservoir and streams in the watershed to determine which beneficial uses are impacted and if the impairment is due to elevated nutrients.



OWRB biologist Josh Bailey collects winter macroinvertebrate (aquatic insect) samples from the Mountain Fork River near Smithville in southeast Oklahoma. An analysis of these samples provides critical information about the water quality conditions of the stream segment.

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The OWRB's biological monitoring team completed a two-year National Rivers and Streams Assessment in September. Funded through the US Environmental Protection Agency (EPA), the probability-based study included collection of a variety of biological samples, including fish, benthic macroinvertebrates, and benthic algae, as well as a stream habitat assessment at each site. Water quality samples were also collected to determine concentrations of various nutrients, cations, anions, turbidity, and toxicants. During 2013-14, 57 sites were sampled for the study; an additional 100 sites will be sampled over the next three years using the same probability-based design.

Sampling has been completed for year two of the Groundwater Monitoring and Assessment Program (GMAP), the OWRB's new statewide groundwater quality and quantity monitoring program. Staff visited more than 170 quality monitoring sites during the year, and collected data from more than 1,000 sites for water-level measurements. Data from six aquifers monitored in 2013 are currently available online in the 2014 BUMP Report. Data from the eight aquifers monitored in the second year of the program will be published next spring in the 2015 BUMP Report.



OWRB groundwater specialist Kevin Kilhoffer measures and samples an irrigation well at a GMAP site in the Arkansas River alluvial aquifer.

Hydrologic Studies

The OWRB continued several ongoing hydrologic studies during 2014. The Rush Springs aquifer study, initiated in 2011 in support of the Upper Washita River Basin project, is scheduled to be completed by the end of 2015. A 20-year update of the Enid Isolated Terrace aquifer hydrologic investigation is nearing completion as well.

Hydrologic investigations of the Elk City Sandstone and Gerty Sand aquifers are now underway. Through a contract with the US Geological Survey (USGS), the OWRB is also conducting hydrologic investigations on the North Canadian River and Canadian River alluvium and terrace aquifers (due for completion in 2015), North Fork of the Red River aquifer (due for completion in 2016), and Salt Fork of the Red River aquifer (due for completion in 2017).

Lake Rehabilitation

Despite the extreme drought in Southwest Oklahoma, EPA-funded aquatic plantings at Fort Cobb Lake have done well. The Oklahoma Department of Wildlife Conservation (ODWC) will continue to maintain these founder colonies of plants with hopes for their spread in the next several years.

OWRB staff surveyed and supplemented aquatic plantings in Lake Stanley Draper after an extended draw-down period (approximately 6 years). Unfortunately the invasive species *Phragmites australis*, Common Reed, has also survived the drawdown and will require additional treatment for control. Work on Stanley Draper is a cooperative effort between the City of Oklahoma City, the ODWC, and the OWRB.



OWRB staff team up with the Oklahoma Department of Wildlife Conservation and the OKC Parks and Recreation Department in September to plant both emergent and submersed plants at various sites around Lake Stanley Draper.

An evaluation of Lakes Hefner and Overholser was completed in 2014 to determine the feasibility of implementing in-lake best management practices to improve water quality for water supply and fish and wildlife beneficial uses. This project showed that withdrawing deeper water from Lake Hefner during the stratified period would improve water quality; however, wholesale improvements cannot be expected for either lake until significant reductions of nutrient loads from the North Canadian River are made.

Staff continued to work cooperatively with the Central Oklahoma Master Conservancy District (COMCD) to monitor and improve water quality in Lake Thunderbird, where an innovative system to oxygenate lake water has been installed. COMCD operation of the system has resulted in progressively improved quality of the raw water supplied to Norman, Del City, and Midwest City over the last three years.

Dam Safety Program

In accordance with last year's initiative, OWRB staff completed 22 low hazard-potential dam inspections and provided inspection reports with breach inundation maps to dam owners at no cost. Staff also developed more than 2,300 simplified breach inundation maps for low hazard dams across the state. This process allowed the OWRB to determine which dams may require further hazard classification analysis. Breach inundation maps of 13 high hazard-potential dams were developed, provided to

dam owners at no cost, and integrated into site-specific Emergency Action Plans to assist emergency managers in the event of dam failure. Technical workshops on hydrology and hydraulic dam breach modeling were conducted for engineers, and Emergency Action Plan training was conducted for high hazard-potential dam owners.



OWRB dam safety staff measure the elevation of a dam in Adair County to determine its hazard classification.

Floodplain Management Program

The OWRB is continuing with seven FEMA RiskMAP Discovery projects throughout Oklahoma. The first preliminary Flood Insurance Rate Maps for portions of the Polecats-Snake Watershed in the City of Broken Arrow and Wagoner County will be released in late 2014. Options for converting remaining communities with paper FIRM maps to a digital format are being explored.

The OWRB continues to train and accredit floodplain administrators in Oklahoma's 398 participating National Flood Insurance program (NFIP) member communities. With assistance from the Oklahoma Floodplain Managers Association, the OWRB conducted 15 Community Assistance Visits and more than 50 Community Assistance Contacts during the year.

Permitting

In 2014, OWRB permitting staff processed 101 regular groundwater permits and 47 surface water permits for a total of 129,503 acre-feet of water. More than 2,000 Provisional Temporary permits were also processed in 2014 for 114,816 acre-feet. (Provisional Temporary permits allow use for up to 90 days and do not require public notice and hearing.)

Well Driller/Pump Installer Program

During 2014, OWRB staff licensed 14 new Well Drilling and Pump Installer firms and 57 new operators. Staff maintained licenses for 386 licensed firms and 678 licensed operators. The OWRB also received more than 8,500 well completion, boring, geothermal, and plugging reports for the year. There are currently more than 163,000 records in the OWRB's well log database, accessible to the public via the OWRB website. OWRB staff processed multiple variance applications and performed routine well inspections and firm visits, resolving complaints and discussing violations of minimum construction standards. Additionally, staff conducted multiple training sessions for well driller continuing education. 💧

OWRB Fact Sheets

Eleven new OWRB fact sheets have been created on the following topics: Water for 2060, Dam Safety, Floodplain Management, Groundwater Monitoring, Lakes Monitoring, Lake Restoration, Provisional Temporary Permitting, Rivers & Streams Monitoring, Water Quality Standards, Water Use Permitting, and Well Driller Licensing. The fact sheets are available online at www.owrb.ok.gov/factsheets.

