

OKLAHOMA Water News

1st Quarter 2011

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OCWP Feedback Meetings Kick Off in Panhandle

State agency officials and policy and planning specialists were on hand April 19 at the County Fairgrounds Pavilion in Beaver for the first of thirteen regional Oklahoma Comprehensive Water Plan (OCWP) meetings across the state during April and May. The purpose of the meetings, open to the public, is to review OCWP draft findings, including regional reports, which detail current water use as well as future usage scenarios and options to address water issues, and statewide water policy recommendations collected and compiled during the last four years through a public input process that has engaged thousands of Oklahoma citizens.

The OWRB, as the state agency responsible for coordinating the 2012 OCWP Update, is hosting the meetings along with the Oklahoma Water Resources Research Institute, which was contracted to coordinate the OCWP's vital public participation component.

The interim OCWP draft and associated documents, officially released on the OWRB's website in early April for public review and comment, presents fifty-year projections of water use in the state's planning regions, options to meet forecasted deficits in supply or related problems, and water policy recommendations developed by Oklahoma citizens and stakeholders that will be submitted to the State Legislature upon the plan's conclusion in February 2012.

In addition to attending regional feedback meetings, citizens are also encouraged to submit comments through the OWRRI's website at <http://okwaterplan.info>, email at waterplan@okstate.edu, or by calling 405-744-9994. ♦



Participants at the April 19 OCWP feedback meeting in Beaver, the first of thirteen meetings held across the state during April and May. CDM engineer John Rehring explains some of the methodologies used to produce the detailed technical findings in the Panhandle regional report. Several area water managers were in attendance to verify provider information and comment on the contents of the report.

Following the technical portion of the day, evening meetings are being held in each region to review plan recommendations that have been developed through the public participation process.

From the Director

The highly anticipated interim draft of the 2012 Oklahoma Comprehensive Water Plan Update is now available for review on the OWRB's website. Regional technical reports and other ancillary documents will be finalized over the coming months. I am extremely proud of this initial draft, which assesses our water supplies, offers solutions to anticipated problems, and presents dozens of sensible, well-vetted water policy recommendations. Already, the quality, complexity, and volume of OCWP reports distinguish this plan from any other, and more importantly, it lays a solid foundation for all future Oklahoma water planning endeavors. I believe most Oklahomans will agree that the considerable time and resources expended in development of the 2012 OCWP Update have been well worth it.



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

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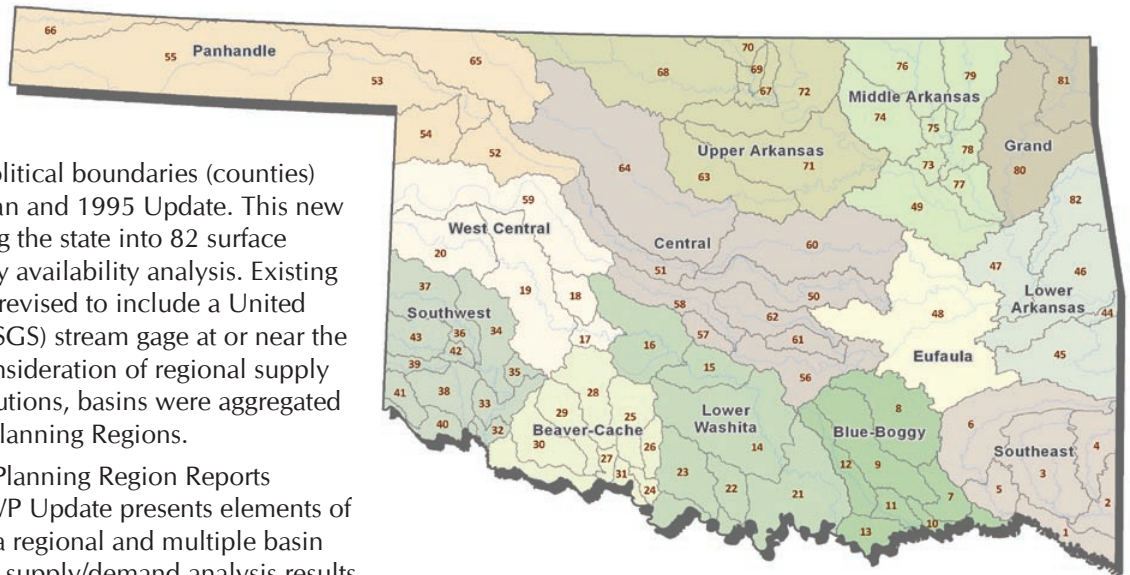
OCWP Regional Reports Focus on Local Water Issues

For the 2012 OCWP Update, studies were conducted according to specific geographic boundaries (watersheds) rather than the traditional political boundaries (counties) used in the original 1980 Plan and 1995 Update. This new strategy involved subdividing the state into 82 surface water basins for water supply availability analysis. Existing watershed boundaries were revised to include a United States Geological Survey (USGS) stream gage at or near the basin outlet. To facilitate consideration of regional supply challenges and potential solutions, basins were aggregated into 13 distinct Watershed Planning Regions.

Each of thirteen Watershed Planning Region Reports produced for the 2012 OCWP Update presents elements of technical studies from both a regional and multiple basin perspective, including water supply/demand analysis results, forecasted water supply shortages, potential supply solutions and alternatives, and supporting technical information.

(continued on page 3)

Statewide OCWP Watershed Planning Region and Basin Delineation



From the Director (continued)

Watershed Planning Region Reports will eventually benefit virtually every Oklahoman in establishing reliable and beneficial water supplies. Each report presents fifty-year projections of regional water use as well as options to meet forecasted deficits in supply or related problems. The reports have been carefully designed to allow the water system manager, farmer, irrigator, industrial operator, business owner, and casual citizen to make intelligent and informed decisions concerning water use and sustainability. Particular emphasis has been placed on twelve water supply “hot spots,” areas where future water deficits necessitate early and more aggressive water planning.

Thirteen regional meetings in April and May are allowing water users in every watershed across Oklahoma to learn about their particular usage patterns and what our projections say about the availability of future supplies to sustain and expand local growth. At each location, a separate evening session provides Oklahoma citizens with a unique forum to learn about and comment on dozens of recommended water policy actions developed over the past four years. Those in attendance are encouraged to suggest the most practical methods to accomplish those actions, which will be submitted to the State Legislature and Governor early next year.

While the OCWP presents invaluable information for use in guiding future state water management and policy decisions, its ultimate success will be judged by how well its initiatives are fulfilled. There are countless good ideas sitting on a shelf somewhere that simply lacked a good mechanism for implementation. That’s why we’re giving

special consideration to shaping policy recommendations in a manner that provides the best vehicle for their execution, whether through funding, regulatory changes, legislative action, or combinations thereof. On the technical side, we’re developing planning guidance to assist water providers in applying water supply and demand information to their particular systems. The plan also includes a highly configurable computer-based analysis tool, called Oklahoma H2O, which allows a water system or another user to test various scenarios of water use according to select needs and sources of supply. A separate hydrologic model can be used to perform or update sophisticated evaluations of yield, which is a critical aspect of reservoir and water supply management.

This is truly a momentous year for the Oklahoma Water Resources Board, its Board members and staff, not to mention all of our OCWP partners. I encourage all Oklahomans to join us by reviewing the Water Plan, getting more informed, attending a Water Plan meeting near you, calling your legislator to voice your opinion about water issues of particular importance to you, and, in general, playing an active role in our state’s bright water future. 💧

Regional Reports (continued)

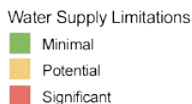
Regional reports open with a summary of regional characteristics—percent of statewide water demand comprised by the region, the largest demand sectors, major sources of water supply, percentage of demand satisfied by each source (surface water, alluvial groundwater, and bedrock groundwater), projected surface water gaps and groundwater depletions, and options to address future deficits or other supply/demand issues. Regional report summaries also feature two maps that provide a quick glimpse of

where problems may occur and what solutions are available with color coded overviews of water supply limitations and rankings of the potential effectiveness of water supply options.

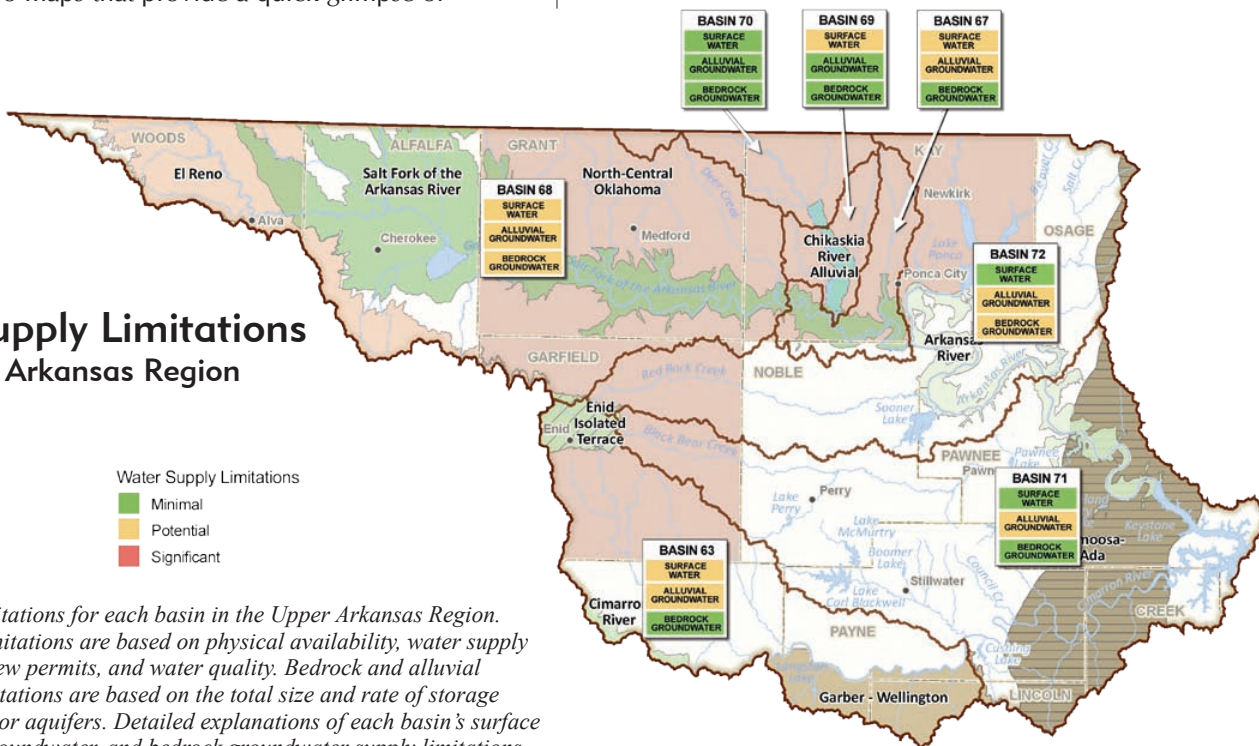
The remainder of the regional section focuses on the three primary determinants of water supply (physical availability, permit availability, and water quality), demand by water use

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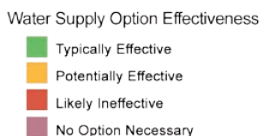
Water Supply Limitations Upper Arkansas Region



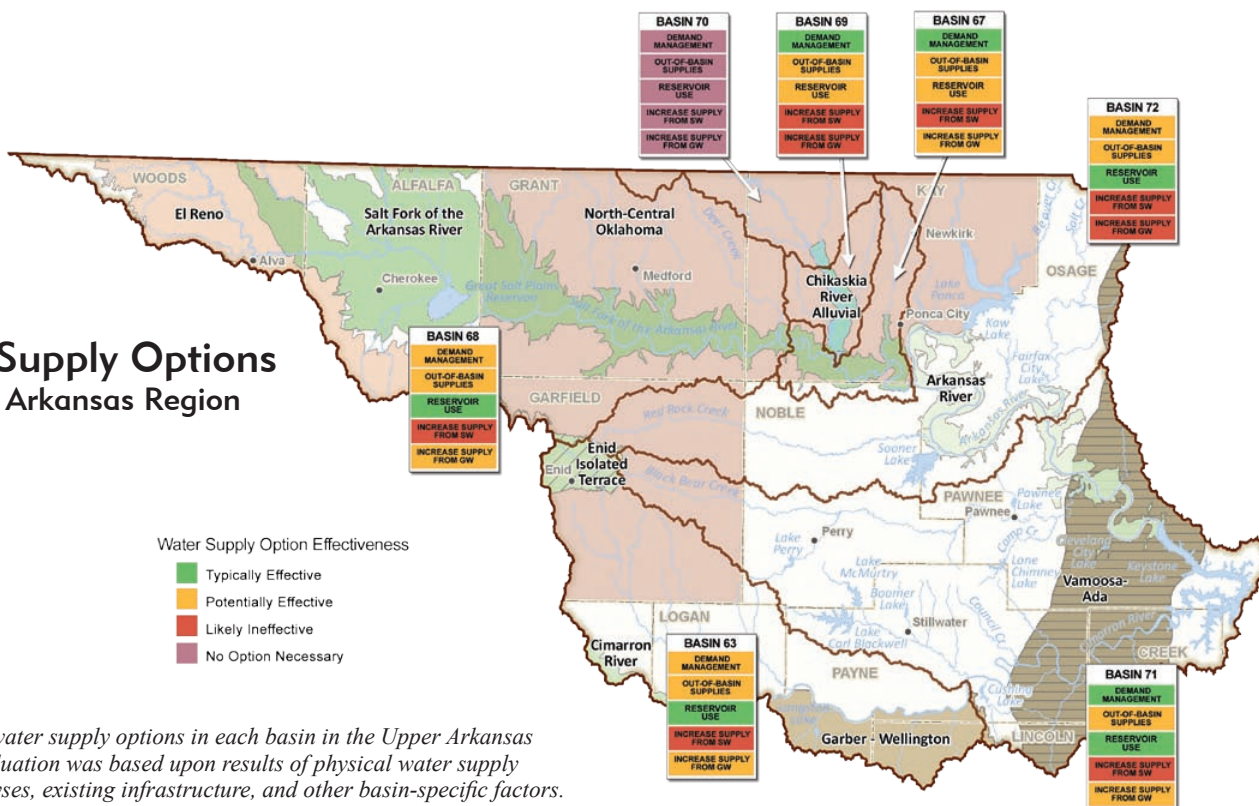
Water supply limitations for each basin in the Upper Arkansas Region. Surface water limitations are based on physical availability, water supply availability for new permits, and water quality. Bedrock and alluvial groundwater limitations are based on the total size and rate of storage depletions in major aquifers. Detailed explanations of each basin's surface water, alluvial groundwater, and bedrock groundwater supply limitations are provided in individual basin summaries and supporting data and analysis.



Water Supply Options Upper Arkansas Region



Effectiveness of water supply options in each basin in the Upper Arkansas Region. This evaluation was based upon results of physical water supply availability analyses, existing infrastructure, and other basin-specific factors.

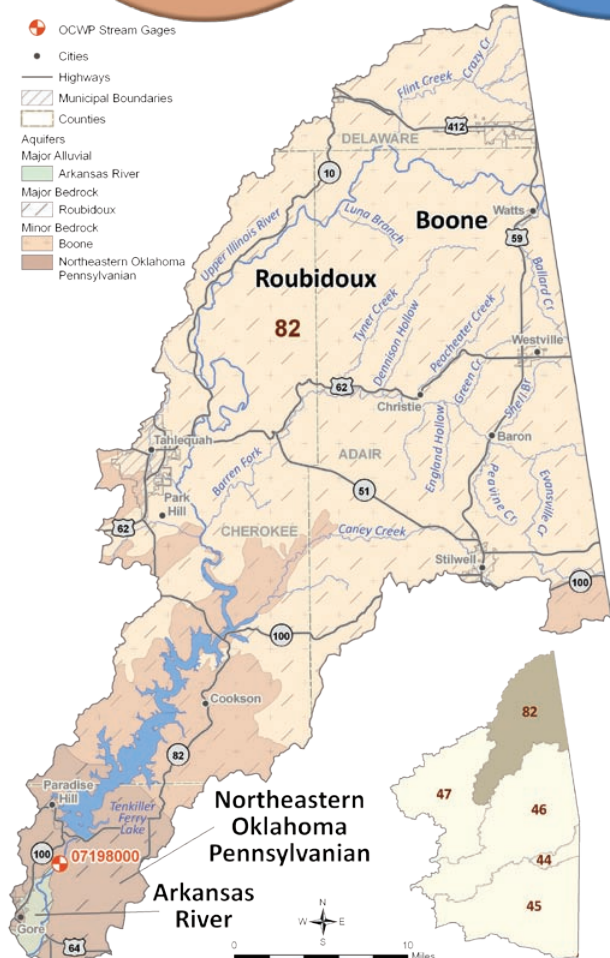
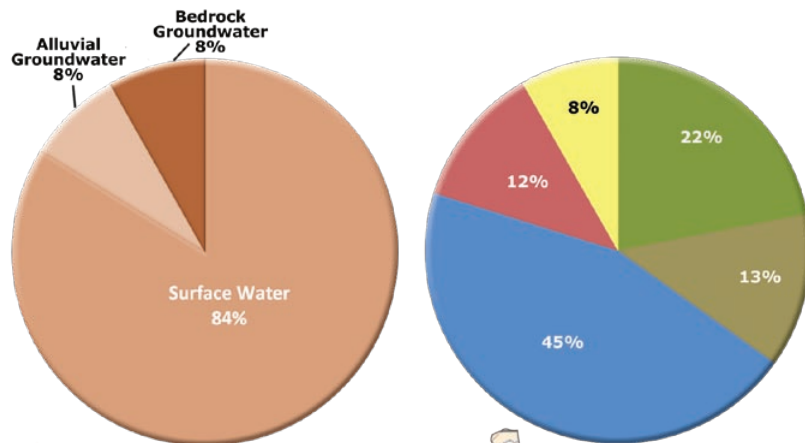


Regional Reports (continued)

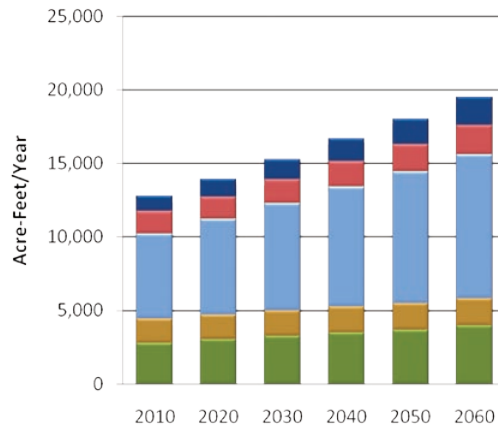
sector, regional provider information, and potential reservoir site viability. Numerous maps, charts, and graphs accompany this information.

Each report concludes with a ten-page summary of that region's planning basins. In all, 82 basins are analyzed in terms of current supply and demand, potential future surface water gaps and groundwater depletions, and evaluations of long-range water supply options. ♦

Current Demand by Source and Sector
Lower Arkansas Region, Basin 82



Total Water Demand Distribution by Sector
Lower Arkansas Region, Basin 82

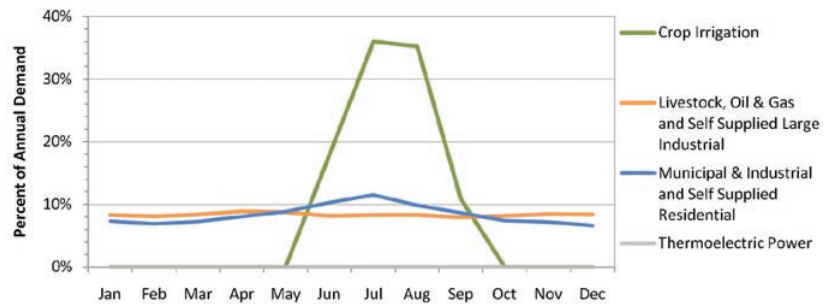


- Thermolectric Power
- Municipal & Industrial
- Livestock
- Crop Irrigation
- Self Supplied Residential
- Self Supplied Industrial
- Oil & Gas

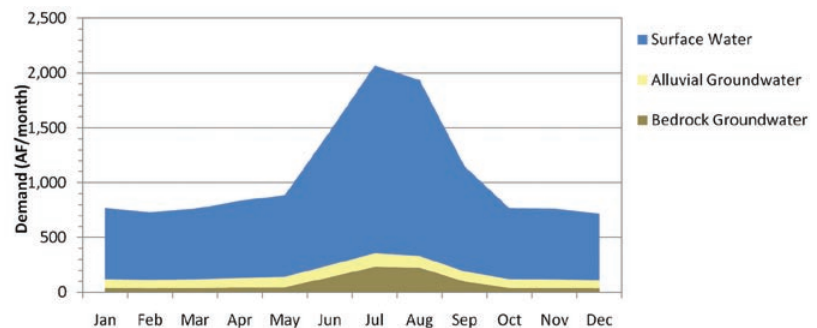
TOTAL DEMAND
12,840 AFY

These charts show demand from Basin 82 in the Lower Arkansas Region and exemplify the many illustrations used to summarize data in reports for each of Oklahoma's 82 planning basins (found in their respective regional reports). Basin 82 accounts for only 6% of the water demand in the region (12,840 AFY), and most of the demand is in the municipal and industrial demand sector. Crop irrigation use, while significant, is primarily seasonal.

Monthly Demand Distribution by Sector (2010)
Lower Arkansas Region, Basin 82



Monthly Demand Distribution by Source (2010)
Lower Arkansas Region, Basin 82



OCWP Draft and Reports Now Available Online

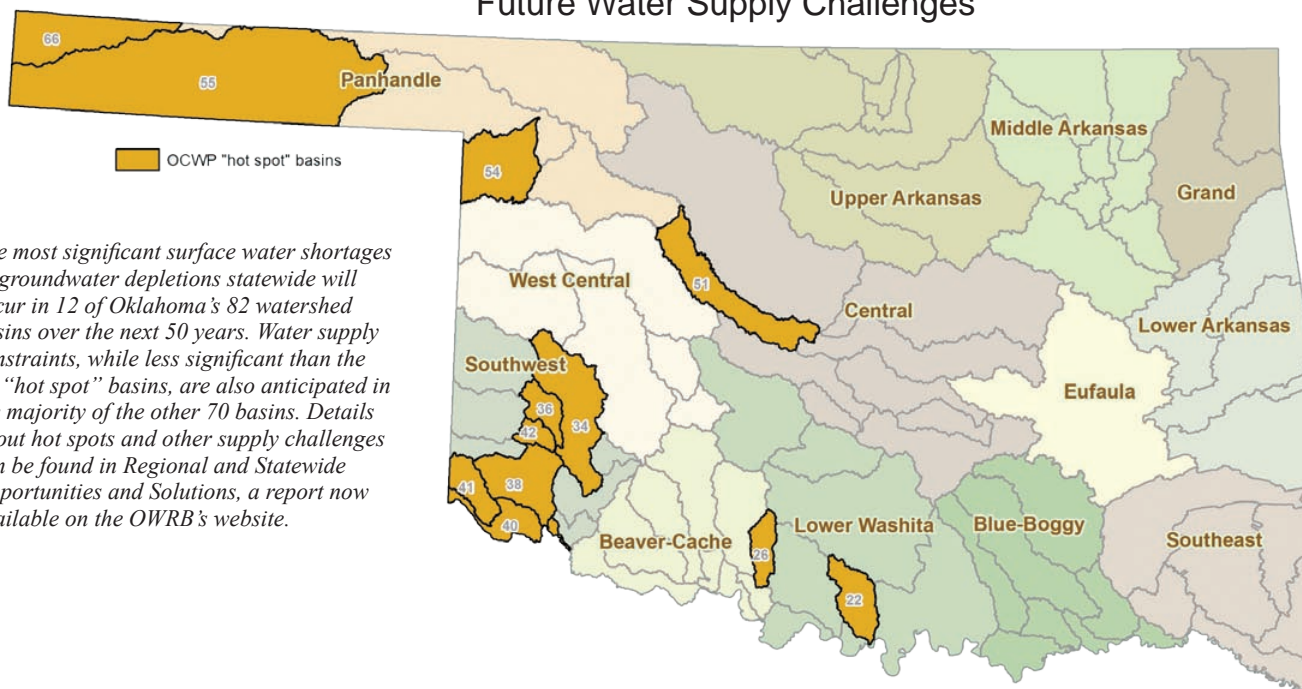
Several OCWP documents are now available on the OWRB's website (www.owrb.ok.gov) for review, including the Statewide Water Assessment, Regional and Statewide Opportunities and Solutions, and Water Policy and Related Recommendations for Oklahoma reports, all part of the 2012 OCWP Executive Report. The Executive Report will serve as a concise compilation of technical and policy information produced over the five-year planning period. In addition to background information on water planning and management in Oklahoma, the Executive Report will include a statewide assessment of water supplies, future projections of demand, and potential options to alleviate anticipated deficits of particular concern. The report's Water Policy Recommendations section will present, for formal legislative consideration, dozens of suggested measures to address Oklahoma's key water problems and issues.

Thirteen Watershed Planning Region reports are also available. These reports provide the major technical component of the 2012 OCWP Update. Each Watershed Planning Region Report presents information from both a regional and local perspective, including water supply/demand analysis results, forecasted water supply shortages, potential supply solutions and alternatives, and supporting technical information.

Additional information gained during the development of the 2012 OCWP Update is provided in various technical reports providing more detailed assessments of water availability and demand, including study methodologies, conducted by the OWRB's lead engineering partners. State and federal agencies, organizations, special interest groups, and citizens lent their expertise in investigating and providing recommendations for numerous policy and technical issues of special importance. ♦

- ### OCWP Recommendation Topics
- Agricultural Use
 - Climate Variability
 - Conservation
 - Cooperative Stream Gaging Network
 - Dispute Resolution
 - Drinking Water Infrastructure
 - Education
 - Emergency/Drought Planning
 - Green Projects
 - Hydrologic Studies
 - Infrastructure Development
 - Instream/Environmental Flows
 - Interagency Coordination
 - Interstate Water Issues
 - Interstate Water Sales
 - Local & Statewide Water Planning
 - Nonpoint Source Pollution
 - Quality/Quantity Monitoring
 - Regionalization of Water Supply Systems
 - Reservoir Maintenance & Development
 - Riparian Rights
 - Sales & Transfers
 - Source Water Protection
 - State-Tribal Water Issues
 - Supply Augmentation
 - Surface/Groundwater Interaction
 - Water Use Administration
 - Water Use Permitting

Top Twelve Basins with Most Significant Future Water Supply Challenges



The most significant surface water shortages or groundwater depletions statewide will occur in 12 of Oklahoma's 82 watershed basins over the next 50 years. Water supply constraints, while less significant than the 12 "hot spot" basins, are also anticipated in the majority of the other 70 basins. Details about hot spots and other supply challenges can be found in Regional and Statewide Opportunities and Solutions, a report now available on the OWRB's website.

6th Annual Water Appreciation Day Draws Large Crowd

The sixth annual Oklahoma Water Appreciation Day was held on March 9 at the State Capitol. The OWRB hosted the event, which featured 32 state and federal agency and water-related organization booths and displays. Participants



Water Appreciation Day featured 32 state and federal agency and water-related organization booths and displays as well as hundreds of interested citizens and officials.

included the following: The U.S. Army Corps of Engineers; U.S. Geological Survey; U.S. Bureau of Reclamation; OK Water Resources Board; OK Climatological Survey; OK Geological Survey; OK Department of Environmental Quality; OK Department of Commerce; OK Department of Agriculture, Food and Forestry; OK Scenic Rivers Commission; OK Department of Wildlife Conservation; OK Department of Mines; OK Conservation Commission; OK Water Resources Research Institute; OK Floodplain Managers Association; OK Groundwater Association; OK Rural Water Association; Blue Thumb; OK Clean Lakes and Watersheds Association; OK Municipal League; OK Aggregates Association; Choctaw & Chickasaw Nations; American Farmers and Ranchers; Citizens for the Protection of the Arbuckle-Simpson Aquifer; Richard Wheatly Company, Inc; Guernsey; CDM; Land Legacy; Oklahomans for Responsible Water Policy; and Inside Native America (radio).

Each year, Water Appreciation Day presents a unique opportunity to demonstrate the importance of Oklahoma's water resources, as well as provide information on their water management, conservation, and educational programs for state legislators and other government officials.



OWRB Executive Director J.D. Strong discusses the Water Plan during a live broadcast by Inside Native America.



OWRB Director of Planning Kyle Arthur presents an update on the final year of development of the Oklahoma Comprehensive Water Plan to several newly elected Representatives.

At noon, during a meeting organized by Representative Skye McNeil, OWRB Executive Director J.D. Strong and Director of Planning Kyle Arthur presented an update on the final year of development of the Oklahoma Comprehensive Water Plan to several newly elected Representatives and members of the public. ♦

Governor Proclaims May Flood Awareness Month

Because spring marks the unofficial beginning of the state's flood season and to make citizens aware of flooding problems and solutions, Governor Mary Fallin has designated May 2011 as "Flood Awareness Month" in Oklahoma.

Earlier, Governor Fallin proclaimed March as "Flood Insurance Month," part of a state campaign to spread the word about the availability of affordable flood insurance through the Federal Emergency Management Agency's National Flood Insurance Program (NFIP). Oklahoma currently has almost 400 NFIP member communities, which consist of municipalities, counties, and tribes.

"Severe flooding episodes occur in Oklahoma virtually every year, most frequently in the spring and fall," says Gavin Brady, State Floodplain Manager. "Implementation of sound floodplain management and building strategies, particularly through the NFIP, is the most effective way for communities to avert potential flood damages." However, he encourages communities to go "above and beyond" minimum NFIP standards. Brady points out that 89% of homes in Oklahoma's designated floodplains have no flood insurance.

Brady adds that Oklahoma consumers should be aware that their basic homeowner's insurance policy does not provide coverage to protect against damages created by flooding. He encourages citizens to consult their community's latest floodplain maps or visit with a local insurance agent to assess their need for flood insurance. ♦

Drought Update

Reservoir Storage

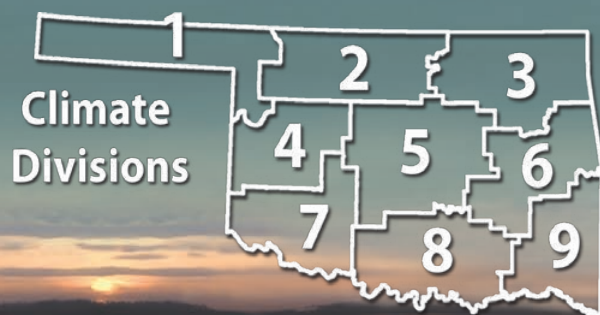
As of May 9, ten reservoirs (of thirty-one selected major federal reservoirs across Oklahoma, listed at right) are operating at less than full capacity, according to information from the U.S. Army Corps of Engineers (Tulsa District); eleven reservoirs have experienced lake level decreases since April 11.

Palmer Drought Severity Index

According to the latest Palmer Drought Severity Index (see table below), six climate divisions in Oklahoma are currently experiencing drought conditions.

Standardized Precipitation Index

The latest monthly Standardized Precipitation Index (see table below) indicates near long-term dryness in all of Oklahoma's nine climate divisions.



Storage in Selected Oklahoma Lakes & Reservoirs (May 9, 2011)

| LAKE | Change in Elevation (feet) 4/11-5/9/11 | Current Flood Control Storage (acre-feet) |
|-------------------|--|---|
| North Central (2) | | |
| Fort Supply | -0.04 | 544 |
| Great Salt Plains | -0.15 | 2,014 |
| Kaw | 6.46 | 124,162 |
| Northeast (3) | | |
| Birch | 1.28 | -298 |
| Copan | -0.23 | 501 |
| Fort Gibson | 2.95 | 66,249 |
| Grand | 2.67 | 94,514 |
| Hudson | 2.60 | 39,038 |
| Hulah | 0.15 | 916 |
| Keystone | 2.05 | 4,224 |
| Oologah | 1.19 | 43,791 |
| Skiatook | -0.22 | -51,876 |
| West Central (4) | | |
| Canton | 0.04 | 555 |
| Foss | -0.43 | -10,827 |
| Central (5) | | |
| Arcadia | 0.14 | 149 |
| Heyburn | 0.25 | 322 |
| Thunderbird | -0.03 | -18,070 |
| East Central (6) | | |
| Eufaula | 6.15 | 273,716 |
| Tenkiller | 26.76 | 372,888 |
| Southwest (7) | | |
| Fort Cobb | -0.34 | -1,637 |
| Lugert-Altus | -0.10 | -69,369 |
| Tom Steed | -0.64 | -20,658 |
| South Central (8) | | |
| Arbuckle | -0.30 | -3,095 |
| McGee Creek | 1.16 | 7,347 |
| Texoma | 0.76 | -111,311 |
| Waurika | -0.20 | -13,752 |
| Southeast (9) | | |
| Broken Bow | 19.51 | 148,154 |
| Hugo | 5.63 | 61,957 |
| Pine Creek | 13.10 | 53,326 |
| Sardis | 4.03 | 34,956 |
| Wister | 21.25 | 297,414 |

| CLIMATE DIVISION | Standardized Precipitation Index (through April 2011) | | | | Palmer Drought Severity Index |
|-------------------|---|----------------|----------------|----------------|-------------------------------|
| | 3-month | 6-month | 9-month | 12-month | May 9, 2011 |
| Northwest (1) | Very Dry | Moderately Dry | Near Normal | Near Normal | Mild Drought |
| North Central (2) | Moderately Dry | Moderately Dry | Moderately Dry | Near Normal | Mild Drought |
| Northeast (3) | Moderately Wet | Near Normal | Near Normal | Near Normal | Incipient Moist Spell |
| West Central (4) | Extremely Dry | Very Dry | Very Dry | Moderately Dry | Moderate Drought |
| Central (5) | Moderately Dry | Very Dry | Very Dry | Moderately Dry | Moderate Drought |
| East Central (6) | Near Normal | Near Normal | Moderately Dry | Near Normal | Moist Spell |
| Southwest (7) | Extremely Dry | Extremely Dry | Very Dry | Moderately Dry | Severe Drought |
| South Central (8) | Extremely Dry | Extremely Dry | Very Dry | Moderately Dry | Moderate Drought |
| Southeast (9) | Near Normal | Very Dry | Very Dry | Very Dry | 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

*Rudy Herrmann, Chairman • Mark Nichols, Vice Chairman • Linda Lambert, Secretary
Ford Drummond • Ed Fite • Marilyn Feaver • Kenneth K. Knowles • Richard Sevenoaks • Joe Taron*

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.



1st Quarter 2011

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FINANCIAL ASSISTANCE PROGRAM UPDATE

Loans & Grants Approved as of April 22, 2011

FAP Loans—327 for \$706,125,000

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—243 for \$1,007,891,004

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—128 for \$692,364,642

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—554 for \$48,961,486

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—562 for \$33,482,977

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—2 totaling \$200,000

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.

American Recovery & Reinvestment Act Funding—\$60,617,376

Through the OWRB's conventional CWSRF and DWSRF loan programs, ARRA funds are utilized to provide additional subsidization to Oklahoma communities for water and wastewater infrastructure improvements as well as to provide benefits to the state's environment and create jobs for Oklahoma workers.

Total Loans/Grants: 1,804 for \$2,437,305,123

Estimated Savings: \$869,659,021

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

2nd Quarter 2011

Inside

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Committee

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Chair

Buchanan Joins OWRB
Finalizing the OCWP

OWRB Contemplates
Important Water
Management Issues

Instream Flow Group
Considers Environment and
Economy

Drought Update

Legislative Leaders Announce Water Committee

Successful implementation of 2012 Oklahoma Comprehensive Water Plan initiatives received early support last month as House Speaker Kris Steele and Senate President Pro Tem Brian Bingman ordered the formation of a joint legislative committee to review the OCWP and facilitate the development of long-range water policy for Oklahoma.

The committee has already begun working over the current legislative interim and will continue to work during next year's legislative session, possibly extending into the following year.



Rep. Kris Steele

"Responsible allocation of water—our most precious natural resource—is among the greatest responsibilities we have today to the citizens of tomorrow," said Steele, R-Shawnee. "With the updated Water Plan nearly complete, we must no longer defer action on this vital issue."

The committee's co-chairmen will be Rep. Phil Richardson and Sen. Brian Crain. "Its membership will be bipartisan and geographically diverse and the committee will take all interests into account, whether they are rural, urban, tribal, or anywhere in between," Steele added.

"The water board has labored for years to put together a fair, unbiased, evidence-based report on water in Oklahoma. We must allow them to continue their work without the appearance of any premature political influence, so the committee will not be taking any official actions until after the water plan has been finalized," Steele said. "In the meantime, it is prudent for the Legislature to begin at least reviewing the parts of the plan that are publicly available. The plan is lengthy and complex, so we need to make sure we're doing our due diligence in preparing ourselves to act upon it next year."

Steele and Bingman said water policy will be a top priority in the Legislature next year and urged legislators to approach the issue with open minds.

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Sen. Brian Bingman

From the Director

While no Oklahoman is a stranger to drought and its many devastating impacts, I don't recall a summer that has been so dry and so hot so soon. Multiple sources report that most of the western half of the state is currently experiencing exceptional or extreme drought—the worst possible categories. Already, our farmers and ranchers have been hit hard, and many cities and towns are initiating water restrictions. The combination of exceedingly hot weather and meager rainfall, coupled with pre-existing high nutrient concentrations in several state lakes, has resulted in the "perfect storm" of conditions leading to toxic algae blooms that pose a substantial public health threat and limit recreational opportunities. Long-range forecasts call for more of the

(continued on page 2)



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



Water Committee (continued)

“We simply cannot afford to waste time or play political games with our water policy. It is too important to the future of our state,” Steele said.

“Water policy is a complex and sometimes emotional issue, but I am confident that the leadership and

will power exists within this Legislature to meet this challenge,” Bingman, R-Sapulpa, pointed out.

Announcement of individual committee members is expected soon. ♦

From the Director (continued)

same, so imminent relief is unlikely.

This drought episode demonstrates, yet again, the need for sound, proactive water planning. In fact, this current drought would undoubtedly be much harder on state citizens if it were not for the OWRB’s loan and grant programs—the direct result of a 1980 Oklahoma Comprehensive Water Plan recommendation—that have funded billions of dollars in water projects making our systems more resistant to water shortages and better equipped to serve a growing customer base. However, over the next 50 years, Oklahoma faces a daunting infrastructure need, estimated at \$87 billion for drinking water projects alone, which our current program is ill-equipped to handle. A recommendation to develop a more robust financing program is included in the draft 2012 OCWP Update and is currently under consideration for priority implementation by our nine-member Board. At least six other initiatives, directly resulting from unprecedented OCWP public input, have also been submitted to the Board for elevation to priority status.

Recognizing that sound data is imperative to intelligent water management decisions, a second OCWP draft priority recommendation calls for stable, long-term funding to strengthen state programs to monitor and study our water resources. Enhancing our ability to ascertain, at any given time, the status of Oklahoma’s water quantity and quality will heighten our ability to implement tools to address and prevent future water problems.

A related draft priority recommendation focuses on more sustainable and realistic permitting of water use. Transitioning from a permitting system based upon average annual water flows to one that incorporates “real world” seasonal variability and availability has substantial merit, as does recognition of the interrelationship of surface and groundwater withdrawals in certain critical areas of the state, such as the Arbuckle-Simpson aquifer region.

In the absence of a valid, accepted formula to calculate nonconsumptive water uses (such as recreational and environmental flows) in OCWP demand forecasts, the OWRB formed a workgroup of experts and stakeholders to study the issue. The Board is considering the workgroup’s suggested process to evaluate the benefits and obstacles to incorporating instream flow considerations into the state’s current water rights administration and planning programs. Tools developed for the OCWP update could be utilized to account for these nonconsumptive uses in appropriate stream systems throughout the state.

Excess and surplus water, probably the most contentious OCWP issue, involves the determination of water available on a basin-specific level for use outside the basin, as well as establishment of protections to ensure that areas of origin are never water deficient. This quantification process, which is required of the OWRB as part of each Water Plan update, has traditionally involved only direct application of 50-year supply and demand information. However, the Board will deliberate incorporation of additional mechanisms that account for instream flow protections, Federal and Tribal reserved water rights, interstate compact requirements, downstream needs, and other factors.

A particularly well-supported recommendation that arose from this OCWP public input process was establishment of regional planning groups to address and implement unique local water management and planning priorities. A specific aspect of this recommendation that will be considered by the Board is the most effective level of authority that could be assigned to these groups. At a minimum, regional planning group representatives could provide extremely useful and well-informed feedback for prioritizing issues and funding decisions in their respective regions.

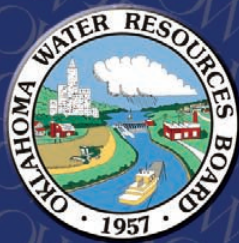
The final draft priority recommendation under Board consideration is consultation regarding water issues between the State and Oklahoma’s Tribal governments. Public participants and other OCWP partners made it abundantly clear that we need a more formal and deliberate process to finally address our mutual issues and concerns.

I cannot stress enough that our existing body of water law, which has evolved slowly and purposefully since statehood, has served the state very well over the past several decades. Neither Board members nor agency staff advocate any significant changes without considerable forethought to the potential impacts. If it’s not broke, why fix it?

Whatever the Board decides, implementation of important OCWP initiatives will receive a tremendous boost through the newly formed joint legislative water committee. The State Legislature and Governor represent the final vital partners—in addition to Water Board members, agency staff and state citizens—imperative to a successful Water Plan that results in a secure water future for Oklahoma. ♦

Save the Date

October 18-19, 2011



OKLAHOMA

Governor's Water Conference



Embassy Suites Hotel and Conference Center
Norman, Oklahoma

OWRB Elects Lambert as Chair

At its monthly meeting in June, the Oklahoma Water Resources Board elected three new officers, including the first woman chairman in the agency's 54-year history.

The incoming Chairman is Linda Lambert, an Oklahoma City businesswoman, who represents industrial water use. She is the President of LASSO Corporation (an oil and gas development investment corporation), President of ENERTREE, L.L.C., a Director of OGE Energy Corp., Director of InvesTrust, Chairman of the Board of Mercy Health Center, and past Vice Chairman of the Oklahoma City Public Schools Trust.

"I am honored to assume this responsibility to oversee the state's vital water business, especially working with other Board members and agency staff to finalize the 2012 update of the Oklahoma 50-Year Comprehensive Water Plan and implement its many water policy initiatives," says Lambert, who was appointed by Governor Brad Henry in March 2007. "I especially look forward to working closely with Speaker Steele, President Pro Tem Bingman, and other members of the new joint committee on water to review the Water Plan and begin preparations for urgent and sustainable water legislation during next year's session."

According to J.D. Strong, Executive Director of the OWRB, the leadership and support of outgoing Board chairman Rudy Herrmann has been instrumental in both furthering the Water Plan and improving the agency's overall water management strategy. "Rudy's rare insight into often complex water issues has resulted in continued growth and refinement of our programs and mandates. I know Linda also brings her own unique viewpoint to the position so this strong leadership will remain consistent as water takes center stage on the political landscape in Oklahoma."

Buchanan Joins OWRB

Tom Buchanan (Altus) is the newest member of the Oklahoma Water Resources Board. He replaces Mark Nichols.

A Jackson County farmer for more than 30 years, and the current General Manager of the Lugert-Altus Irrigation District, Buchanan will represent irrigation water interests as an At Large member.



Tom Buchanan

Ford Drummond (Bartlesville) was elected Vice Chairman. Drummond, representing agricultural use interests on the Board, is the owner and operator of a large family ranch in Osage County and a member of the BancFirst Corporation Board of Directors. Previously, he spent several years in Washington D.C. as a Congressional advisor and served as Legislative Counsel to the American Medical Association, where he worked on health care legislation and regulations, and as General Counsel for BMI-HealthPlans, a regional health insurance company.

Now serving as Secretary is Joe Taron, a retired dentist from Shawnee, who is the Board's rural residential water use representative. Dr. Taron is a founding member of the Pottawatomie County Development Authority, where he served as chairman for 30 years. He received the Oklahoma Water Pioneer Award in 2004.

The nine Water Board members, appointed by the Governor, define policy and conduct the state's water management and protection activities. They serve staggered seven-year terms and represent all geographic areas of the state and diverse groups of water users. ♦

Finalizing the OCWP

Since last April, when the initial draft of the 2012 OCWP Update was made available to the public on the OWRB's website and the first of thirteen OCWP regional feedback meetings were held, OWRB staff have been consumed with finalizing both the draft OCWP Executive Report, and with help from CDM, the agency's lead engineering firm, the thirteen Watershed Planning Region reports.

Work on the Executive Report has included prioritization and analysis of OCWP water policy recommendations. Currently, seven priority recommendations—the result of both public/stakeholder input and technical evaluations—are under consideration by Water Board members: Monitoring and Studies, Instream/Environmental Flows, State/Tribal Water Consultation and Resolution, Excess and Surplus Water, Water Management and Supply Reliability (Conjunctive Management and Seasonal Allocation), Local and Statewide Water Planning (Regional Planning Groups), and Water Project and Infrastructure Financing.

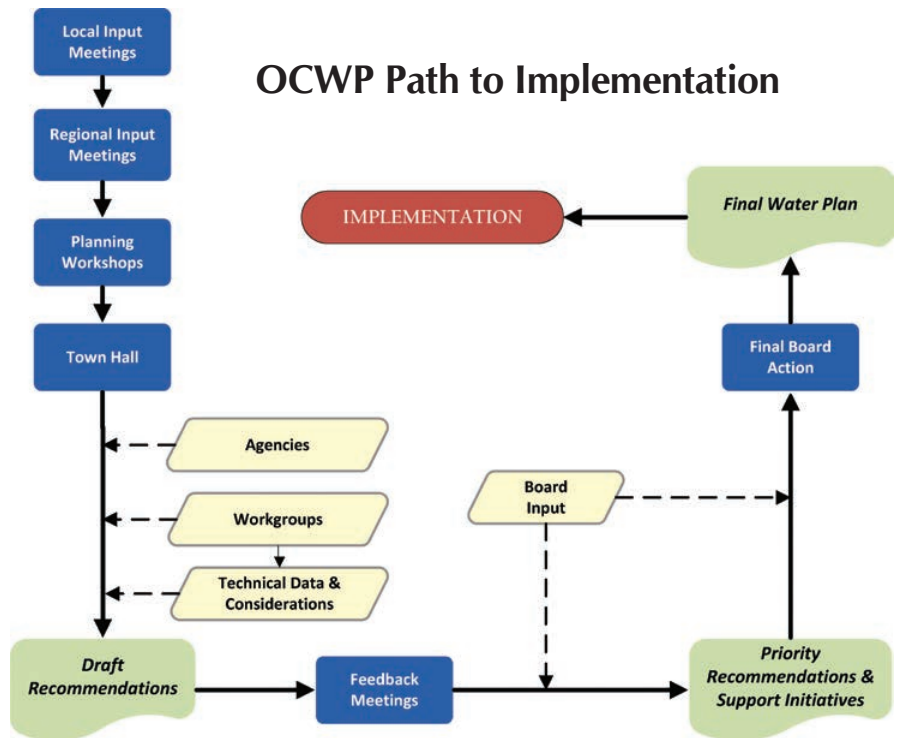
Featured in the Executive Report, these high priority issues for implementation will include more specific details about recommended legislative action and estimated funding needs. The Executive Report, the topic of public comment at the Board's monthly meeting on September 13, will be formally considered by the Board at its October 17 meeting.

Watershed Planning Region Reports, the hallmark product of the OCWP's technical analysis phase, have been reviewed by numerous individuals, both internally at the OWRB and externally by OCWP partners, including citizens and water system operators at the regional feedback meetings. OWRB staff continue to incorporate their general suggestions and supplementary information, which includes updates and corrections to the provider customer, supply, wholesale transfer, and water demand forecast data. The reports include detailed information on approximately 770 separate primary public water providers that collectively supply approximately 94 percent of the state's current population.

Revisions have also involved continuous updates to maps; each report contains more than 20 maps with the most up-to-date information on surface and groundwater sources at a regional and basin level. Clarification of key points has been a primary focus for review and update, as well as corrections to text and the addition of charts, tables, graphics, and new maps to make the information as coherent and useful as possible.

According to Kyle Arthur, OWRB Director of Planning, the goal for the Executive and Watershed Planning Region reports is to provide every state citizen with the means to access the most comprehensive, accurate, and updated information about water resources in every corner of the state. This has meant finding creative ways to present often highly technical

OCWP Path to Implementation

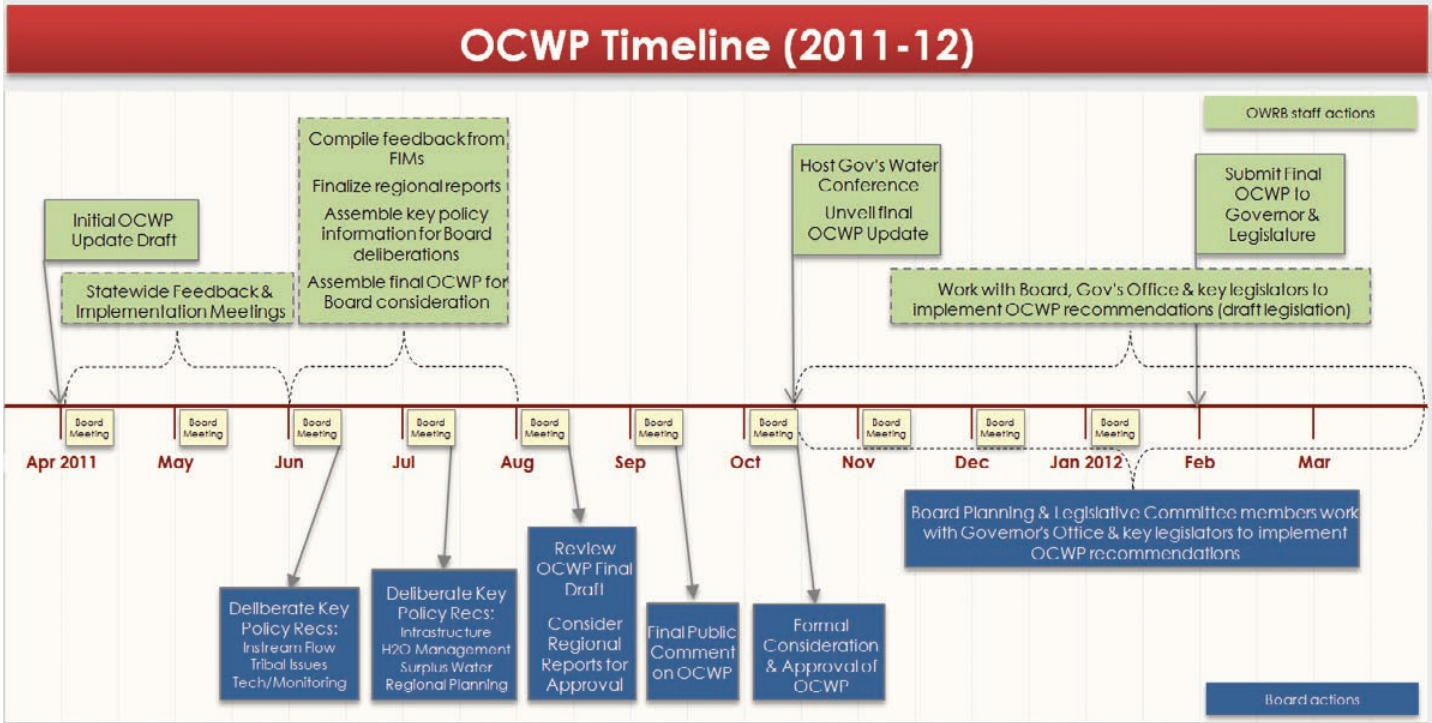


information in an easily readable format. "All the information has been gathered," says Arthur, "and our job now is to present it to the people of the state in the best possible way."

The schedule for plan finalization includes presentation of the final version to the public at the Governor's Water Conference in October, when it has been formally adopted by the Board. 💧

2012 OCWP Update Objectives

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



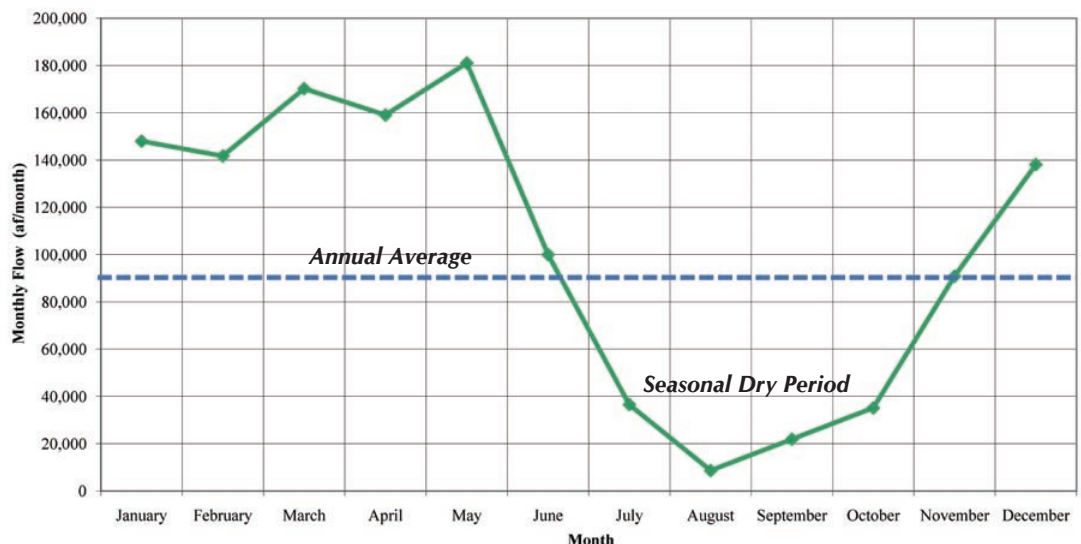
OWRB Contemplates Important Water Management Issues

Among the seven OCWP initiatives under primary consideration for implementation by OWRB members are seasonal water use allocation and conjunctive management, collectively under the "Water Management and Supply Reliability" priority recommendation. In light of projected statewide and regional increases in consumptive demands, this recommendation seeks to strengthen Oklahoma's water management program to ensure reliable future water supplies for all users.

Under current Oklahoma Stream Water Law, the OWRB is required to determine if unappropriated water is available based on *average annual* flow. OWRB staff are recommending the organization of a workgroup to investigate transitioning to an allocation program that recognizes *seasonal variability* in both the use and availability of surface water resources. Technical information collected for the 2012 update, which included a monthly analysis of water demands and the probability of surface water gaps during inevitable dry periods, indicates that seasonal permitting could reduce the likelihood of future gaps.

Also under Board consideration is commission of a stakeholder workgroup to evaluate the suitability of a potential conjunctive management program in Oklahoma. While state law clearly distinguishes between surface and groundwater supplies and use, recent information—including data from research conducted as part of the Arbuckle-Simpson Hydrology Study—reveals a distinct hydrologic connection between the two. A prioritized comprehensive hydrologic evaluation of groundwater basins across the state could be conducted to characterize specific, valid groundwater/surface water interactions, while a stakeholder workgroup could determine the feasibility and structure of a modified allocation program. ♦

Mean Monthly Streamflow (Period of Record)
Poteau River



Instream Flow Group Considers Environment and Economy

According to “Instream Flow Issues & Recommendations,” a supplemental report developed by the OCWP Instream Flow Advisory Group, the meaning of the term “instream flow” has evolved over the years. However, it usually describes the amount of water set aside in a stream or river to ensure that downstream environmental, social, and economic benefits are met.

Ideally, to define this amount, stakeholders determine the balance of needs while scientists develop a flow regime that meets the requirements of the stakeholders. Once a flow regime is recommended, successful implementation should be consistent with state and regional water resources management plans and should result in the long-term sustainability of the surface water supply in the basin.

There is no scientifically credible rule of thumb for defining the amount of water that should remain in a river to satisfy all instream flow needs, and while scientists have dramatically improved their understanding of the impacts of altering the flow in rivers, how much change is acceptable is a complex trade-off between human values and benefits. The only way to develop an instream flow recommendation that satisfies everyone is to create an inclusive, transparent and fair stakeholder process that allows all water interests to be heard. This approach results in flow allocation decisions that are regarded as fair and reasonable by all parties.

The issue posited to the Instream Flow Advisory Group was why instream flow needs should be considered in Oklahoma. Since the benefits of having access to water for consumptive use are significant and generate, directly and indirectly, billions of dollars in revenue for the state, the group determined that great care is required to develop an instream flow policy that ensures enhancement, rather than impairment, of economic benefits, whether locally or statewide.

According to Oklahoma Department of Wildlife Conservation, more than one million Oklahomans enjoy fishing, hunting and/or wildlife viewing in the state. There are 1,200 fishing tournaments in Oklahoma every year and retail sales for fishing activities in the state amount to millions of dollars each year. Tourism is the third largest economic impact driver in Oklahoma, largely due to the appeal of the state’s streams, rivers, lakes and reservoirs. It is clear that maintaining healthy, productive streams and lakes provides recreational benefits, but there is also a significant economic incentive to do so, provided that other economic activities are not adversely affected.

The complete OCWP supplemental report, “Instream Flow Issues & Recommendations,” can be found on the OWRB’s website at www.owrb.ok.gov. “Instream/Environmental Flows” is currently being considered by the OWRB as one of seven priority OCWP recommendation topics. ♦

Why is instream flow important?

Natural stream and river systems provide many beneficial values and services, including flood mitigation, groundwater recharge, navigation, nutrient transport and recycling, pollution attenuation, water supplies, biological productivity, aesthetic values, and recreational opportunities such as fishing, boating, swimming, and wildlife viewing. Instream flow is necessary to sustain these and other utilitarian and intrinsic values. A good understanding of how instream flow levels and regimes relate to these values, and the scale of alteration from the natural condition, is necessary for informed river management.

How does one determine how much flow a river needs?

There is usually not just one flow level that a river needs to stay healthy. If the objective is to preserve riverine values, that can only be done by preserving the processes and functions of the river ecosystem. The structure and function of riverine systems are based on five riverine components; hydrology, geomorphology, biology, water quality, and connectivity. Inter- and intra-annual flow prescriptions are needed to preserve the ecological health of a river. And some flow needs, such as those that flush sediments from stream substrates or maintain channel integrity, may be quite high.

Isn’t instream flow really an issue of “water for fish” versus “water for people”?

Aren’t people more important than fish? Any normal person would answer this question with an emphatic “yes.” However, the issue of instream flow isn’t that simple, and it’s certainly not a simple choice between people and fish. Instream flow protections are implemented by many western states as a mechanism to protect myriad uses of that water, including navigation, canoeing, boating, livestock watering, and dilution of municipal/industrial discharges. All of these uses have value to people. In fact, many regions of Oklahoma are sustained largely through revenues from fishing and water-based recreation – activities that absolutely depend upon sufficient stream flows and lake levels. An informed and effective instream flow management program, and its desired result of healthy and diverse aquatic resources, is never easy. It involves the integration of scientific knowledge and societal demands within a set of legal limitations. It’s much more complicated than “keeping a little water in the creek for the fish.” In fact, it’s more about “water for people” than one may realize!

Information adapted from Instream Flow Council (IFC) FAQs. The IFC is an organization that represents the interests of state and provincial fish and wildlife management agencies in the U.S. and Canada dedicated to improving the effectiveness of their instream flow programs.

Drought Update

Reservoir Storage

As of July 5, twenty-four reservoirs (of thirty-one selected major federal reservoirs across Oklahoma, listed at right) are operating at less than full capacity, according to information from the U.S. Army Corps of Engineers (Tulsa District); twenty-eight reservoirs have experienced lake level decreases since June 7.

Palmer Drought Severity Index

According to the latest Palmer Drought Severity Index (see table below), all nine climate divisions in Oklahoma are currently experiencing drought conditions. Four regions (Southwest, Northwest, West Central, and South Central) are in the extreme drought category.

Standardized Precipitation Index

The latest monthly Standardized Precipitation Index (see table below) indicates near long-term dryness in all climate divisions. The Northwest region is in the exceptionally dry category over the past six months.



Storage in Selected Oklahoma Lakes & Reservoirs (July 5, 2011)

| LAKE | Change in Elevation (feet) 6/7/11-7/5/11 | Current Flood Control Storage (acre-feet) |
|----------------------|--|---|
| North Central | | |
| Fort Supply | -0.48 | -835 |
| Great Salt Plains | -0.42 | -4,541 |
| Kaw | 0.81 | -21,491 |
| Northeast | | |
| Birch | -1.09 | -1,906 |
| Copan | -0.53 | 1,549 |
| Fort Gibson | -6.85 | -17,765 |
| Grand | 0.00 | 2,760 |
| Hudson | -0.16 | 7,735 |
| Hulah | 0.21 | 1,440 |
| Keystone | -2.86 | -25,863 |
| Oologah | -2.83 | 5,379 |
| Skiatook | -1.38 | -67,247 |
| West Central | | |
| Canton | -1.95 | -31,938 |
| Foss | -0.78 | -19,470 |
| Central | | |
| Arcadia | -0.43 | -765 |
| Heyburn | -0.66 | -355 |
| Thunderbird | -0.91 | -14,165 |
| East Central | | |
| Eufaula | -2.58 | -34,308 |
| Tenkiller | -2.78 | 6,026 |
| Southwest | | |
| Fort Cobb | -0.95 | -4,323 |
| Lugert-Altus | -6.56 | -96,567 |
| Tom Steed | -1.04 | -25,443 |
| South Central | | |
| Arbuckle | -1.15 | -5,355 |
| McGee Creek | -0.24 | -364 |
| Texoma | -1.50 | -332,914 |
| Waurika | -0.84 | -19,115 |
| Southeast | | |
| Broken Bow | -1.80 | -19,908 |
| Hugo | -1.32 | -10,260 |
| Pine Creek | -1.50 | -3,831 |
| Sardis | -0.55 | -7,632 |
| Wister | -1.65 | 3,164 |

| CLIMATE DIVISION | Standardized Precipitation Index (through June 2011) | | | | Palmer Drought Severity Index |
|-------------------|--|-------------------|----------------|----------------|-------------------------------|
| | 3-month | 6-month | 9-month | 12-month | July 2, 2011 |
| Northwest (1) | Extremely Dry | Exceptionally Dry | Very Dry | Very Dry | Extreme Drought |
| North Central (2) | Very Dry | Very Dry | Very Dry | Moderately Dry | Moderate Drought |
| Northeast (3) | Near Normal | Near Normal | Moderately Dry | Near Normal | Mild Drought |
| West Central (4) | Extremely Dry | Extremely Dry | Extremely Dry | Very Dry | Extreme Drought |
| Central (5) | Moderately Dry | Very Dry | Very Dry | Very Dry | Severe Drought |
| East Central (6) | Near Normal | Near Normal | Very Dry | Moderately Dry | Mild Drought |
| Southwest (7) | Very Dry | Extremely Dry | Extremely Dry | Moderately Dry | Extreme Drought |
| South Central (8) | Very Dry | Extremely Dry | Extremely Dry | Very Dry | Extreme Drought |
| Southeast (9) | Near Normal | Moderately Dry | Very Dry | Very Dry | Moderate Drought |

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.

Linda Lambert, Chairman • Ford Drummond, Vice Chairman • Joe Taron, Secretary

Tom Buchanan • Ed Fite • Marilyn Feaver • Rudy Herrmann • Kenneth K. Knowles • Richard Sevenoaks

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.



2nd Quarter 2011

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FINANCIAL ASSISTANCE PROGRAM UPDATE

Loans & Grants Approved as of June 2, 2011

FAP Loans—327 for \$706,125,000

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—243 for \$1,007,891,004

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—129 for \$693,114,642

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—554 for \$48,961,486

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—562 for \$33,482,977

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—2 totaling \$200,000

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.

American Recovery & Reinvestment Act Funding—\$60,617,376

Through the OWRB's conventional CWSRF and DWSRF loan programs, ARRA funds are utilized to provide additional subsidization to Oklahoma communities for water and wastewater infrastructure improvements as well as to provide benefits to the state's environment and create jobs for Oklahoma workers.

Total Loans/Grants: 1,817 for \$2,489,775,110
Estimated Savings: \$869,877,571

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

3rd Quarter 2011

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OCWP Priority Recommendations

Drought Update

Water Conference to Focus on Water Plan Inauguration

This year's Oklahoma Governor's Water Conference, to be held Tuesday and Wednesday, October 18-19, at the Embassy Suites Hotel and Conference Center in Norman, Oklahoma, will focus on the inauguration—the official roll-out—of the 2012 OCWP Update in advance of submittal to the Governor and State Legislature in February 2012.

Tuesday morning's featured speaker is Charles Fishman, author of *The Big Thirst: The Secret Life and Turbulent Future of Water*. Fishman, a former reporter for the *Washington Post*, explores our relationship to water and failure to appreciate and respect it, suggesting ways to rethink how we use water to ensure that we'll always have plenty.

Six OCWP Panels will cover the following topics: the value of water; water supply limitations, options, and solutions; innovations in conservation, recycling, and reuse; regional planning in neighboring states; environmental/instream flows; and project and infrastructure funding. The program will conclude with a Joint Legislative Water Committee open meeting.

The OWRRI will host its water research symposium during concurrent sessions. There will also be two sessions on hydrologic studies, as well as a meeting of the Oklahoma Association of Reclamation Projects.

Tuesday's luncheon will feature the Oklahoma Water Pioneer awards ceremony and a congressional water outlook featuring Congressman Lankford. Wednesday's luncheon will feature 4H speech contest winners and a talk on ancient Israeli water systems by Dr. Dan Warner.

Registration information and a more detailed agenda can be found on the OWRB's website at www.owrb.ok.gov. ♦



Charles Fishman,
GWC keynote speaker

From the Director

Convened to examine the forthcoming Oklahoma Comprehensive Water Plan (OCWP) and make policy decisions regarding the state's most pressing water issues, the Joint Legislative Water Committee (JLWC) has hosted four meetings to date. The initial meeting on August 17 focused on the most sensible starting point—the evolution and current status of Oklahoma's surface and groundwater law. The OWRB's General Counsel, Dean Couch, was joined by tribal water experts, including New Mexico attorney Charles DuMars, to provide the necessary context and a frank assessment of laws governing the use and protection of our water resources.

(continued on page 2)



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



From the Director (continued)

At their August 31 meeting, JLWC members participated in a day-long discussion of technical studies and findings related to the 2012 Update of the OCWP. OWRB staff outlined the extensive work and results accomplished over five years in assessing current and future water demand and availability for all major use sectors and options to address projected water deficits.

It required two JLWC meetings, held September 21 and October 5, to sufficiently delve into the OCWP's draft water policy recommendations, with special attention afforded to the eight considered priorities for implementation. OWRB staff joined with me in responding to several insightful questions from the members that demonstrate their sincere commitment to understanding the many water issues facing Oklahoma and strengthening the state's long-term ability to utilize and protect this precious resource. On that note, I commend Committee members—especially Senator Brian Crain and Representative Phil Richardson, who serve as co-chairmen—for their attention to detail and intense desire to learn more about our water resources. And I look forward to working more closely with the members and Legislature as a whole to develop sensible water legislation over the coming years. All JLWC meeting presentations and handouts are available on the OWRB's OCWP web page.

In the midst of JLWC meetings, and following receipt of more than 400 solicited written comments, at its September meeting the nine-member Water Resources Board listened to about two dozen citizens and representatives of special interest groups who personally addressed the Board concerning the OCWP's technical work and policy recommendations. In its subsequent discussion, it was clear that the Board took these comments and remarks to heart. This represents the final step in our extensive and unprecedented public input process.

In conclusion, this is a tremendously exciting time as staff puts the finishing touches on the final 2012 OCWP Update, including the *Executive Report* and 13 Watershed Planning Region reports. This second update of the OCWP is inspired by Oklahoma's water leaders of the past—W.C. Austin, Red Males, Lloyd Church, Doc Coker, Robert S. Kerr, Francis Borelli, Newt Graham, and many other recognized water pioneers—who left behind an impressive legacy of achievement. Often against great odds, they leveraged key support with fortuitous timing to establish multipurpose projects throughout Oklahoma that today provide millions of citizens with vital water supplies, protection against devastating flood events, and a fertile trading route to ports throughout the world. They were bold, decisive, and steadfast in their convictions. Their courage calls to mind the noted Greek historian Thucydides who stated, "The bravest are surely those who have the clearest vision of what is before them, and yet notwithstanding, go out to meet it." ♦

What is the "Water Plan"?

The culminating publication of the Oklahoma Comprehensive Water Plan is the *OCWP Executive Report*, a summary of the state's water supply, projected water use, and pertinent issues and policy recommendations. This document will be printed, bound, and available for the public in early 2012.

Currently, the draft *Executive Report* is available for download on the OWRB website at www.owrb.ok.gov along with 13 Watershed Planning Region reports and 21 other supplemental and technical background reports, altogether totalling more than 3,500 pages of detailed information about Oklahoma water.

Additionally, the OCWP Communication Portal, created by the Oklahoma Water Resources Research Institute (OWRRI) at <http://okwaterplan.info>, contains information from the public meetings held from 2007-2011, including a list of all public comments and meeting reports.

Unlike previous state water plans, the 2012 Update of the *Oklahoma Comprehensive Water Plan* is more than just a single document, but rather a compilation of reports and other documents available to the public on the web.

OCWP Documents

OCWP Executive Report

Watershed Planning Region Reports:

| | | |
|----------------|-----------------|--------------|
| Panhandle | Southwest | West Central |
| Upper Arkansas | Middle Arkansas | Grand |
| Lower Arkansas | Eufaula | Southeast |
| Blue-Boggy | Lower Washita | Beaver-Cache |
| Central | | |

OCWP Study Workgroup & Supplemental Reports:

- Water Policy & Related Recommendations for Oklahoma
- Climate Issues & Recommendations
- Agricultural Water Issues & Recommendations
- Water Quality Issues & Recommendations
- Instream Flow Issues & Recommendations
- Tribal Water Issues & Recommendations
- Marginal Quality Water Issues & Recommendations
- Artificial Aquifer Recharge Issues & Recommendations
- Infrastructure Financing Needs & Opportunities
- Water Conveyance Study

Technical Background Reports:

- Reservoir Viability Study
- Drinking Water Infrastructure Needs Assessment by Region
- Water Supply Permit Availability Report
- Physical Water Supply Availability Report
- Provider Survey Summary Report
- Conjunctive Water Management in OK and Other States
- Water Demand Forecast Report
- Climate [Change] Impacts to Streamflow
- Conservation & Climate Change (Water Demand Addendum)
- Oklahoma Statewide Water Quality Trends Analysis
- Programmatic Workplan



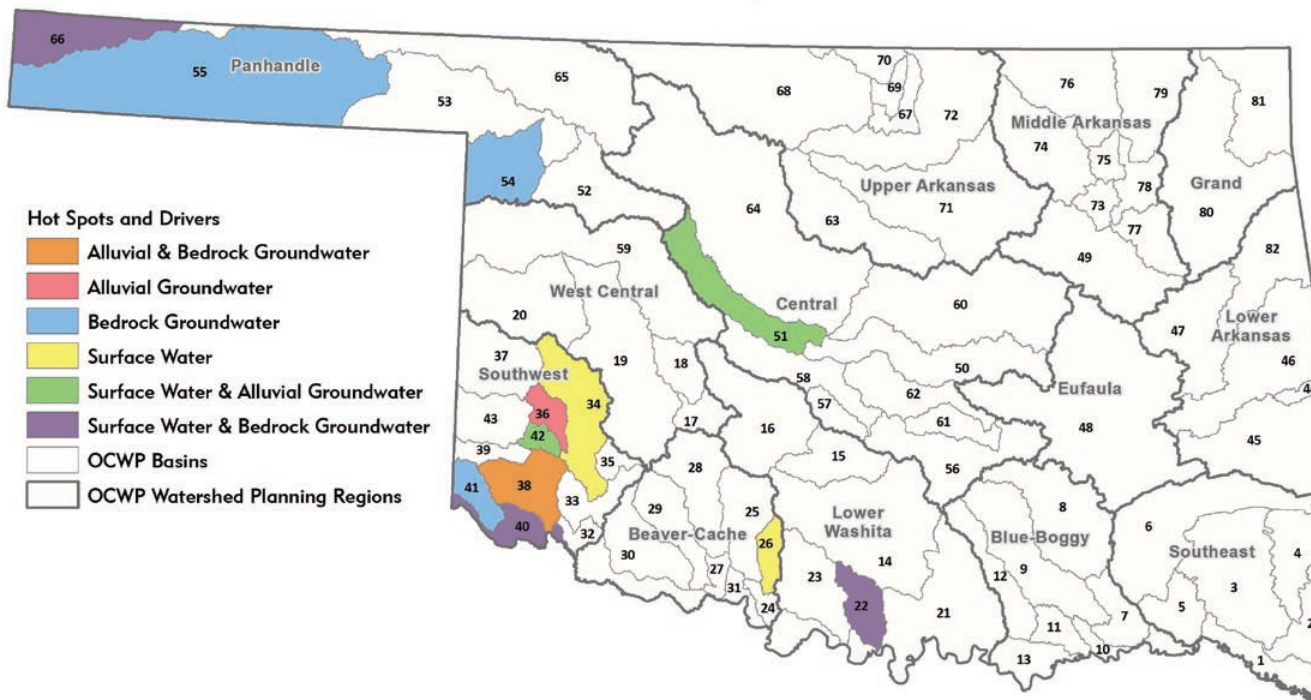
| Tuesday, Oct. 18 | | | |
|------------------------------|---|--|-------------------------------|
| 8:00 AM OKLAHOMA BALLROOM | Welcome: Linda Lambert, OWRB Chairman and OK Lieutenant Governor Todd Lamb Keynote: Charles Fishman, Author, <i>The Big Thirst</i> 2012 Update of the Oklahoma Comprehensive Water Plan: J.D. Strong, OWRB Executive Director, and Kyle Arthur, OWRB Director of Planning | | |
| 9:30 Break | | | |
| 10:00 | UNIVERSITY BALLROOM | ROOM G-H | |
| | OCWP PANEL 1: The Value of Water | Water Research Symposium Session 1: Updates and New Developments | |
| 11:30 OKLAHOMA BALLROOM | LUNCHEON Oklahoma Water Pioneer Awards Water Outlook from Washington DC: Congressman James Lankford | | |
| 1:30 | UNIVERSITY BALLROOM | ROOM G-H | ROOM I-J |
| | OCWP PANEL 2: Water Supply Limitations, Options & Solutions | Water Research Symposium Session 2: Effects of Drought in Oklahoma | Hydrologic Studies & Tools I |
| 3:00 Break | | | |
| 3:30 | UNIVERSITY BALLROOM | ROOM G-H | ROOM I-J |
| | OCWP PANEL 3: Innovations in Conservation, Recycling & Reuse | Water Research Symposium Session 3: Social and Economic Studies of Water Resources | Hydrologic Studies & Tools II |
| 5:00 Reception | | | |

| Wednesday, Oct. 19 | | | |
|------------------------------|---|---|--|
| 8:00 AM OKLAHOMA BALLROOM | Welcome: Linda Lambert, OWRB Chairman, and Secretary of the Environment Gary Sherrer Joint Legislative Water Committee Update: House Speaker Kris Steele and Senate President Pro Tempore Brian Bingman Federal Update: Col. Michael Teague, Tulsa District Engineer, USACE | | |
| 9:30 Break | | | |
| 10:00 | UNIVERSITY BALLROOM | ROOM G-H | Room A-B |
| | OCWP PANEL 4: Regional Planning Experiences in Other States | Water Research Symposium Session 4: Applications in Environmental Engineering | OBA Energy/ Natural Resources Law Session |
| 11:30 OKLAHOMA BALLROOM | LUNCHEON Poster Contest Winners; 4-H Speech Contest Winners Ancient Israeli Water: Dr. Dan Warner | | |
| 1:30 | UNIVERSITY BALLROOM | ROOM G-H | ROOM I-J |
| | OCWP PANEL 5: Instream/Environmental Flows | Water Research Symposium Session 5: Water Quality Management Success Stories | OCWP PANEL 6: Water Project & Infrastructure Funding |
| 3:00 Break | | | |
| 3:30 | UNIVERSITY BALLROOM | ROOM G-H | Room A-B |
| | Joint Legislative Water Committee Open Meeting: Sen. Brian Crain & Rep. Phil Richardson | Water Research Symposium Session 6: Stream Water-Groundwater Interaction | OBA Indian Law Session |
| 5:00 Adjourn | | | |

OCWP Hot Spot Basins Identified

Many of the 82 OCWP basins are projected to experience surface water gaps and/or groundwater depletions. Some of these water supply shortages are relatively minor as indicated by the magnitude of the shortages and the probability of occurrences. Others are much more severe and may require

more immediate attention in order to mitigate large and recurring water deficiencies. The 12 basins with the most significant water supply challenges have been labeled OCWP "Hot Spots." Details of the identification and analysis of Hot Spots can be found on the OWRB website in the *OCWP Executive Report* and the *OCWP Water Supply Hot Spot Report*. ♦



Arbuckle-Simpson Report Now Available Online

Simulated effects of withdrawing water from the Arbuckle-Simpson Aquifer in south-central Oklahoma are now available online in a USGS report at <http://pubs.usgs.gov/sir/2011/5029/>.

Results from the USGS groundwater-flow model simulations can help water managers make informed decisions about balancing human and environmental water needs across the region. This tool evaluates how aquifer withdrawals resulting from increased water demands and development could affect nearby springs and streams.

The simulations demonstrate to maintain flows to springs and streams, long-term groundwater withdrawals cannot exceed the amount of water that recharges the aquifer. The report describes this recharge rate and how it varies over time. This is the first time an aquifer has been studied this way in Oklahoma.

"This much-anticipated report not only presents the results from six years of extensive research, but it provides a vitally important guide for decision-makers in balancing local use of Arbuckle-Simpson waters with the unique needs of the region's springs and streams," says J.D. Strong, OWRB Executive Director. "Staff from both the OWRB and USGS should be commended for their dedicated work on what is

likely the most complex and high-profile groundwater study ever conducted in Oklahoma."

"With Oklahoma experiencing a severe drought, it's important to study our water resources so that managers can make educated choices about this precious resource," says USGS scientist Noel Osborn. "You can't manage what you don't measure."

The Arbuckle-Simpson aquifer provides water to public supply utilities, farms, mining facilities, wildlife conservation areas, recreational activities, and springs, streams and waterfalls. Groundwater discharge from the aquifer maintains flow to Blue River, Honey Creek, Mill Creek, Pennington Creek, Travertine Creek, and other streams. Many springs also discharge water from the aquifer, including the primary water supply for the City of Ada, Byrds Mill Spring, and the springs in Chickasaw National Recreation Area.

Results of several simulations of groundwater withdrawals and their effects on Blue River, Pennington Creek, and other streams in the eastern Arbuckle-Simpson aquifer are included in the report. This study also characterizes the geology, climate, streamflow, and groundwater use of the aquifer. USGS scientists developed a digital three-dimensional geologic model, which provides the framework for the groundwater flow model.

The Arbuckle-Simpson Hydrology Study was funded by the State of Oklahoma and the U.S. Bureau of Reclamation. More information about this study is available online. ♦

OCWP Priority Recommendations

OCWP "Priority Recommendations," identified by the OWRB as priorities for implementation, include the incorporation of recommendations frequently received from the public, water management agencies, and OCWP workgroups. Broadly, these recommendations received a higher degree of public support throughout the input process, including feedback resulting from a final round of public meetings. They were augmented by input from OWRB staff with long-standing experience in water management. More specifically, they were selected because of the urgency of the recommendation in solving Oklahoma's most pressing near- and long-term water issues, necessity in ensuring a reliable future water supply, recognition of the need to prioritize funding requests, findings of technical analyses, and input from OWRB members and staff.

Draft Priority Recommendations, scheduled for approval at the Board's October meeting, are detailed in the *OCWP Executive Report* and summarized below:

Water Project & Infrastructure Funding

To address Oklahoma's considerable drinking water and wastewater infrastructure need and the inability of current programs to meet that need, the OWRB should coordinate with a team of infrastructure financing professionals to investigate development of a more robust state funding program to meet the state's projected water and wastewater infrastructure need between now and 2060. Any potential program(s) should include a specific mechanism to address the significant financing requirement of small communities in the state, as well as encourage regionalization of water/wastewater systems, where appropriate.

Regional Planning Groups

The OWRB should work with the State Legislature to develop and authorize the creation of at least thirteen Regional Planning Groups to assist in planning and implementing OCWP initiatives at the regional level. These regional groups should be non-regulatory and consist of local stakeholders, as well as appropriate agency representatives, charged with developing regional water plans in a manner consistent with the OCWP and its implementation priorities. Such plans would include the identification of specific projects, studies, programs, research and other evaluations designed to address the unique needs and issues identified by Regional Planning Group participants. The State Legislature should establish regular appropriations to the OWRB to coordinate the activities of these groups.

Excess & Surplus Water

Pursuant to its statutory mandate found at 82 O.S. 1086.2(1), the OWRB adopts the following definition and procedure for determining excess and surplus water for inclusion in the OCWP update:

'Excess and surplus water' means the projected surface water available for new permits in 2060, less an in-

basin reserve amount, for each of the 80 basins as set forth in the 2012 OCWP Watershed Planning Region Reports whose surface water is under OWRB jurisdiction (excepting the Grand Region); provided that nothing in this definition is intended to affect ownership rights to groundwater and that groundwater is not considered excess and surplus water.

The following procedure should be utilized to calculate excess and surplus water available for appropriation:

1. Each of the 80 OCWP watershed planning basins shall be considered an individual stream system wherein water originates (i.e., area of origin) for purposes of appropriation and permitting.
2. The total annual amount of available stream water for new permits in 2060 is equal to the total Surface Water Permit Availability amount as set forth in the OCWP Watershed Planning Region Reports minus the amount of the annual Anticipated Surface Water Permits in 2060 also set forth in those reports. The in-basin reserve amount is equal to 10% of the total Surface Water Permit Availability amount plus 10% of the annual Anticipated Surface Water Permits in 2060.
3. In considering applications for permits to transport and use more than 500 acre-feet of stream water per year outside the stream system wherein the water originates, the Board shall determine whether there is "unappropriated water available in the amount applied for" by considering only the remaining amount of excess and surplus water calculated for the stream system where the point of diversion is proposed, and for stream systems located downstream from this proposed point of diversion, provided this procedure shall not be used to reduce the amount currently authorized under existing permits and water rights.
4. The Board will also exclude from consideration for any permit for out-of-basin use:
 - a. the quantity of water adjudicated or agreed by cooperative agreement or compact to be reserved for Federal or Tribal rights, and
 - b. the quantity of water reserved for instream or recreational flow needs established pursuant to law.

Instream/Environmental Flows

An instream flow program should be established to preserve water quality, protect ecological diversity, and sustain and promote economic development, including benefits associated with tourism, recreation, fishing, and spiritual and cultural heritage. The process developed by the OCWP Instream Flow Workgroup should be implemented and followed to ascertain the suitability and structure of such a program for Oklahoma. The Oklahoma Scenic Rivers Act—as codified in Title 82, Section 1452, of Oklahoma Statutes—already provides for protection of the free-flowing conditions of designated state scenic rivers. The OWRB should seek express authority from the State Legislature prior to promulgating rules to accommodate and protect instream flows elsewhere in the state.

State/Tribal Water Consultation and Resolution

To address uncertainties relating to the possible validity of water rights claims by the Tribal Nations of Oklahoma and to effectively apply the prior appropriation doctrine in the fair apportionment of state waters, the Oklahoma Governor and State Legislature should establish a formal consultation process as outlined in the OCWP Report on Tribal Issues and Concerns.

Water Conservation, Efficiency, Recycling & Reuse

To address water shortages forecasted in the *2012 Update of the Oklahoma Comprehensive Water Plan*, as well as avoid the costly development of new supplies and infrastructure, the OWRB and other relevant agencies should collaborate with various representatives of the state's water use sectors—with particular emphasis on crop irrigation, municipal/industrial, and thermoelectric power—to incentivize voluntary initiatives that would collectively achieve an aggressive goal of maintaining statewide water use at current levels through 2060. In its associated evaluation of appropriate programs and policies, the State should identify the optimum financial incentives, as well as recognize the potential for lost water provider revenues resulting from improved conservation. In particular, the following should be considered:

- Implementation of incentives (tax credits, zero-interest loans, cost-sharing initiatives, increasing block rate/tiered water pricing mechanisms, etc.) to encourage improved irrigation and farming techniques, efficient (green) infrastructure, retrofitting of water-efficient infrastructure, use of water recycling/reuse systems in new buildings, promotion of “smart” irrigation techniques, control of invasive species, artificial recharge of aquifers, and use of marginal quality waters (including treated gray and wastewater).
- Expanded support for education programs that modify and improve consumer water use habits.
- The applicability of existing or new financial assistance programs that encourage Oklahoma water systems to implement leak detection and repair programs that result in reduced loss and waste of water.

Water Supply Reliability

To address projected increases in water demands and related decreases in availability, as well as to ensure the fair, reliable, and sustainable allocation of Oklahoma's water supplies, the State Legislature should provide stable funding to the OWRB to implement the following recommendations:

- Address by 2022 the growing backlog of statutorily-required maximum annual yield studies and overdue 20-year updates on groundwater basins within the state—including validation of any interactions between surface and groundwater sources—to accurately determine water available for use.
- Develop stream water allocation models on all stream systems within the state to assess water availability at specific locations, manage junior/senior surface water

rights under various drought scenarios, anticipate potential interference between users, and evaluate impacts of potential water transfers.

- Utilize water use stakeholders (including input from the recommended Regional Planning Groups), researchers, and other professionals to develop regionally appropriate recommendations, including:
 - a. consideration of a seasonal (rather than annual) stream water allocation program to address seasonal surface water shortages and water rights interference;
 - b. consideration of a conjunctive management water allocation system to address the potential decline in surface water flows and reservoir yields resulting from forecasts of increased groundwater use in areas where these sources are hydrologically connected;
 - c. conditioning junior water use permit holders to discontinue their diversion of water during predetermined periods of shortage (i.e., “trigger” points) to enhance the availability of dependable yields in appropriate reservoirs and minimize interference between riparian users and users of reservoir storage; and
 - d. transitioning to a more conservation-oriented approach—such as metering, irrigation practice improvements, adoption of new technology, and banking of allocations—in the calculation of groundwater basin yields and allocation of groundwater use permits, including the consideration of more sustainable use and development of state groundwater supplies.

Water Quality & Quantity Monitoring

The State Legislature should provide a dedicated source of funding to enable the State of Oklahoma to accurately assess the quality and quantity of its water resources, thereby ensuring improved water quality protection, accurate appropriation and allocation, and long-term collection of data to inform water management decisions. Such funding should be directed toward development and maintenance of a permanent statewide water quality and quantity monitoring program(s), specifically allowing for:

- Integration of all state surface and groundwater quality monitoring programs into one holistic, coordinated effort.
- Stable and dedicated appropriations for critical statewide monitoring programs, such as Oklahoma's Cooperative Stream Gaging Program, Beneficial Use Monitoring Program and Nonpoint Source Monitoring Program, as well as other agency efforts to monitor point source, agriculture, mining, and oil and gas impacts.
- Creation of an ambient groundwater quality monitoring program.
- Full implementation of a statewide program for the collection of biological data to provide a better indication of long-term water quality trends in Oklahoma. 💧

Drought Update

Reservoir Storage

As of September 26, twenty-eight reservoirs (of thirty-one selected major federal reservoirs across Oklahoma, listed at right) are operating at less than full capacity, according to information from the U.S. Army Corps of Engineers (Tulsa District); thirty reservoirs have experienced lake level decreases since August 29.

Palmer Drought Severity Index

According to the latest Palmer Drought Severity Index (see table below), all nine climate divisions in Oklahoma are currently experiencing drought conditions. Seven regions (all but the Northeast and East Central) are in the extreme, or worst, drought category.

Standardized Precipitation Index

The latest monthly Standardized Precipitation Index (see table below) indicates near long-term dryness in all but the Northeast climate division. The West Central and Southwest regions are in the exceptionally dry category over the past three to nine months.



Storage in Selected Oklahoma Lakes & Reservoirs (September 26, 2011)

| LAKE | Change in Elevation (feet) 8/29/11-9/26/11 | Current Flood Control Storage (acre-feet) |
|----------------------|--|---|
| North Central | | |
| Fort Supply | -0.67 | -4,176 |
| Great Salt Plains | -4.56 | -26,078 |
| Kaw | -0.35 | -10,687 |
| Northeast | | |
| Birch | -1.24 | -5,461 |
| Copan | -0.53 | -3,470 |
| Fort Gibson | 0.35 | 1,544 |
| Grand | -0.21 | 861 |
| Hudson | -0.92 | 6,630 |
| Hulah | -0.82 | -3,863 |
| Keystone | -0.39 | -50,223 |
| Oologah | -0.58 | -54,670 |
| Skiatook | -1.33 | -101,031 |
| West Central | | |
| Canton | -0.51 | -42,491 |
| Foss | -0.76 | -33,398 |
| Central | | |
| Arcadia | -0.45 | -4,330 |
| Heyburn | -0.17 | -1,023 |
| Thunderbird | -0.83 | -27,648 |
| East Central | | |
| Eufaula | -0.80 | -328,378 |
| Tenkiller | -0.39 | -57,995 |
| Southwest | | |
| Fort Cobb | -0.90 | -13,707 |
| Lugert-Altus | -0.58 | -111,125 |
| Tom Steed | -0.84 | -39,152 |
| South Central | | |
| Arbuckle | -1.30 | -13,291 |
| McGee Creek | -0.60 | -15,292 |
| Texoma | -1.21 | -432,493 |
| Waurika | -0.63 | -42,321 |
| Southeast | | |
| Broken Bow | -1.97 | -142,008 |
| Hugo | -1.24 | -30,185 |
| Pine Creek | -2.05 | -16,626 |
| Sardis | -0.55 | -27,460 |
| Wister | -0.67 | -10,421 |

| CLIMATE DIVISION | Standardized Precipitation Index (through August 2011) | | | | Palmer Drought Severity Index |
|-------------------|--|-------------------|-------------------|---------------|-------------------------------|
| | 3-month | 6-month | 9-month | 12-month | September 24, 2011 |
| Northwest (1) | Very Dry | Extremely Dry | Extremely Dry | Extremely Dry | Extreme Drought |
| North Central (2) | Moderately Dry | Very Dry | Very Dry | Very Dry | Extreme Drought |
| Northeast (3) | Near Normal | Near Normal | Near Normal | Near Normal | Mild Drought |
| West Central (4) | Extremely Dry | Exceptionally Dry | Exceptionally Dry | Extremely Dry | Extreme Drought |
| Central (5) | Very Dry | Very Dry | Very Dry | Very Dry | Extreme Drought |
| East Central (6) | Very Dry | Moderately Dry | Very Dry | Very Dry | Moderate Drought |
| Southwest (7) | Exceptionally Dry | Exceptionally Dry | Exceptionally Dry | Extremely Dry | Extreme Drought |
| South Central (8) | Extremely Dry | Extremely Dry | Extremely Dry | Very Dry | Extreme Drought |
| Southeast (9) | Extremely Dry | Moderately Dry | Very Dry | Very Dry | Extreme Drought |

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.

*Linda Lambert, Chairman • Ford Drummond, Vice Chairman • Joe Taron, Secretary
Tom Buchanan • Ed Fite • Marilyn Feaver • Rudy Herrmann • Kenneth K. Knowles • Richard Sevenoaks*

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.



3rd Quarter 2011

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FINANCIAL ASSISTANCE PROGRAM UPDATE

Loans & Grants Approved as of September 13, 2011

FAP Loans—328 for \$743,840,000

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—247 for \$1,028,812,629

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—132 for \$731,874,642

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—562 for \$49,878,723

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—562 for \$33,482,977

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—2 totaling \$200,000

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.

American Recovery & Reinvestment Act Funding—\$60,617,376

Through the OWRB's conventional CWSRF and DWSRF loan programs, ARRA funds are utilized to provide additional subsidization to Oklahoma communities for water and wastewater infrastructure improvements as well as to provide benefits to the state's environment and create jobs for Oklahoma workers.

Total Loans/Grants: 1,833 for \$2,588,088,971
Estimated Savings: \$897,018,520

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.**

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2012 Update of the Oklahoma Comprehensive Water Plan

During the final year of development of the 2012 Update of the Oklahoma Comprehensive Water Plan, the most ambitious water planning effort ever undertaken by the state, the OWRB and its planning partners continued to solicit important input from stakeholders, citizens and others with a vested interest in the future of Oklahoma's water resources. Beginning in April, the OWRB initiated a final round of regional feedback and implementation meetings to gather comments and suggestions on the draft Water Plan and its various components. Open to the general public, each meeting included a unique session allowing public water supply providers to verify local infrastructure data and related water supply and demand information collected over four years of OCWP analyses. A second session provided citizens and other stakeholders with an opportunity to contribute comments on draft water policy recommendations, including implementation strategies.

Throughout 2011, OWRB staff and partners assembled a wealth of OCWP technical data and information into 13 Watershed Planning Region Reports. The reports include water supply/demand assessments, future supply challenges, and potential options to secure water for planning basins and regions through the next 50 years and beyond. Considerable attention was given to creating both sensible and functional planning documents, which will serve as indispensable technical resources for water providers, policy makers, and water users in making informed decisions concerning future local and regional water use and management. Following a public review and comment period, each report was modified, corrected, and refined prior to final collective approval of all 13 reports by OWRB members in October.

OWRB members dedicated four monthly meetings to detailed review and discussion of OCWP Water Policy Recommendations—the cornerstone policy product of the OCWP

(continued on page 2)



From the Director

As we reflect on a landmark year in water planning and prepare for potentially groundbreaking water management legislation in 2012, we need a clear execution strategy to maintain our current momentum and implement initiatives arising from the 2012 Update of the Oklahoma Comprehensive Water Plan, approved last October. With this in mind, the OCWP's priority and supporting recommendations include specific implementation plans, where applicable, that not only provide assurances that citizens have access to safe and reliable water supplies in the future, but also should help minimize water rights conflicts and related disagreements over water use and protection.

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



From the Director (continued)

From a more general perspective, the Foreword of the *OCWP Executive Report* offers four core factors critical to securing Oklahoma’s water future: infrastructure, data, management, and regional planning.

Related to infrastructure, Oklahoma must provide long-term, affordable financing—beyond what is currently available—to construct and maintain water and sewer systems that furnish safe, clean, and reliable water supplies for its citizens and communities. Failure to act will threaten the state’s future viability and growth, especially in rural areas.

Recognizing that information is the foundation for sound decision-making, the state must not only reestablish its dwindling base of reliable water data but also expand its network of stream gages, monitoring wells, and water quality monitoring sites. Equally critical is the need to upgrade and develop the models and tools necessary to quantify, manage, and allocate surface and groundwater resources with confidence.

While current water management programs have served the state well in developing, utilizing, and protecting water supplies, changing public priorities and additional stress on supplies suggest a more innovative, and in some cases, measured approach in the future. It is clearly time to initiate proactive, systematic, and judicious evaluation of existing water laws and procedures if we hope to maintain the stable and orderly utilization of water so critical to Oklahoma’s economic welfare and quality of life.

Regional planning is the fourth core factor of OCWP strategy and implementation. Most water problems are regional in nature, so it makes sense to solve them based upon local issues and priorities identified by citizens, users, and stakeholders. While statewide water planning has served Oklahoma well and oversight is still required at the state level, the time has come to encourage and formalize regional water planning as the new standard that empowers local citizens, who are more in touch with their unique needs, challenges, and potential solutions.

On our annual Water Day at the State Capitol on February 13, we will formally deliver the long-awaited *2012 OCWP Update* to Governor Fallin and the State Legislature. Concerning this monumental achievement, I have tremendous pride and confidence in the path we have chosen to follow, in the impressive work of staff and our many partners, and in the unassailable process and strong science we have utilized to generate the OCWP. While much has been accomplished in the planning phase, we have merely scratched the surface of what must be done to ensure reliable water to meet the myriad needs of all Oklahomans through 2060 and beyond. With the *2012 OCWP Update* as our road map, and the persevering spirit of my fellow Oklahomans at the wheel, our future looks bright indeed. 💧

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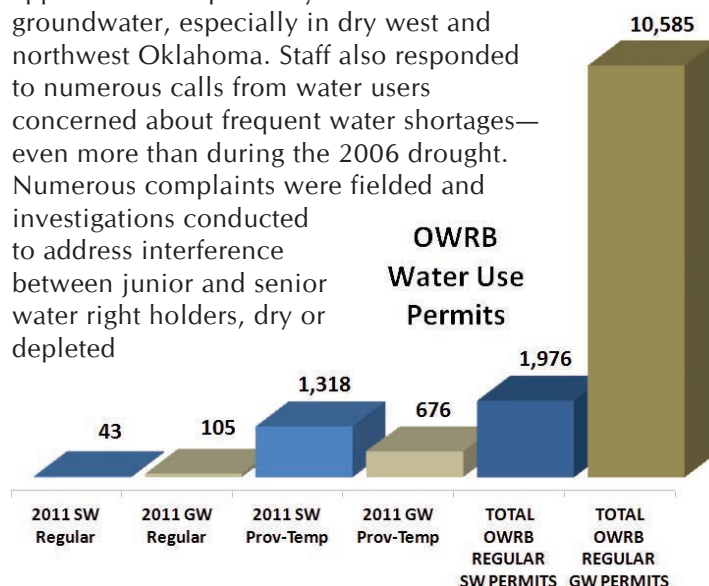
process—culminating from extensive citizen involvement since initiation of the update in 2006. In particular, from June through September, members deliberated, debated, and prioritized recommendations for immediate or prompt implementation and/or legislative consideration. Following formal public comment, the final *OCWP Executive Report*—featuring both priority and supporting recommendations, as well as an extensive summary of technical work—was formally approved by OWRB members on October 17.

The *2012 OCWP Update* was presented to the public at the Governor’s Water Conference and Research Symposium on October 18-19, and will be submitted to the Governor and State Legislature in February 2012.

In June, House Speaker Kris Steele and Senate President Pro Tem Brian Bingman announced formation of the 16-member Joint Legislative Water Committee to review the *2012 OCWP Update* and facilitate the development of long-range water policy for Oklahoma. Numerous meetings were held in the legislative interim where OWRB staff and others were invited to provide information and opinions about ongoing activities and draft OCWP documents. Joint Legislative Water Committee co-chairmen Rep. Phil Richardson and Sen. Brian Crain provided direction for the bipartisan and geographically diverse membership. Committee members and other legislators have indicated that water policy will be a top priority in the upcoming legislative session.

Water Use Permitting

In 2011, the OWRB experienced a considerable increase in water use permit applications, including many from ranchers attempting to keep pasture lands viable for cattle production and from oil and gas producers. Due to drought conditions experienced throughout the state, applicants were primarily interested in groundwater, especially in dry west and northwest Oklahoma. Staff also responded to numerous calls from water users concerned about frequent water shortages—even more than during the 2006 drought. Numerous complaints were fielded and investigations conducted to address interference between junior and senior water right holders, dry or depleted



In 2011, most permits granted were provisional-temporary that authorize relatively short-term water use. Currently, the OWRB has on file 10,585 regular permits appropriating 3,542,600 acre-feet of groundwater and 1,976 regular permits for 2,570,530 ac-ft of surface water.

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creeks, declining water wells, and falling reservoir levels that placed critical strains on crops, livestock, municipal and industrial supplies, and fish populations.

Work began on developing stream water allocation models for the Washita River, North Canadian River, and Verdigris River Systems. These models will allow staff to provide water shortage warnings—based on seniority of water right—to enhance management of available water resources.

Hydrologic Studies

The Garber-Wellington Water Management Study, focusing on the physical properties and future management of central Oklahoma's primary groundwater source, was completed last year and the final report is under review. The Rush Springs Aquifer Study was initiated in 2011 with completion projected in mid-2014. The Rush Springs, also a significant aquifer in the central region of the state, is an important source of irrigation and municipal water supply.



OWRB geologist Jessica Magers measures the groundwater level at the Spencer Mesonet site. The well was installed at the site to collect data for the Garber-Wellington Management Study. This is one of six Mesonet sites statewide with a groundwater observation well.

The OWRB has also contracted with the U.S. Geological Survey to conduct a 20-year update of the groundwater study for the North Canadian River Alluvium and Terrace Groundwater Basin from the Beaver-Harper County line to Lake Overholser at the Canadian-Oklahoma County line. The investigation will determine if there has been any significant depletion in the basin and develop a new groundwater flow model. Work is anticipated to be completed by late 2013.

The Arbuckle-Simpson Aquifer Study was completed in 2011. This year, the OWRB will consider approval and implementation of a new maximum annual yield that will provide for local use of this vital water supply while, at the same time, protecting springs and streams in the region.

Floodplain Management

The OWRB continues to assist communities in adopting new Flood Insurance Rate Maps through the Federal Emergency Management Agency (FEMA) Map Modernization program. Updated FIRM maps have been issued for 12 counties and 65 participating communities in Oklahoma. Staff also participated in FEMA RISKMap Discovery projects for the Lower North Canadian River Basin and Grand Lake River Basin. Meetings were held with communities and the public to collect data and information for use in identifying areas that may be eligible for mapping, mitigation, and compliance projects. The OWRB continues to train accredited floodplain administrators in Oklahoma's 386 participating National Flood Insurance Program (NFIP) member communities. With assistance from the Oklahoma Floodplain Managers Association, the OWRB conducted 18 training opportunities in 2011.

The OWRB is also an active participant with FEMA in the Cooperating Technical Partnership (CTP) Program, an innovative approach to fostering working partnerships between FEMA and participating NFIP communities, regional agencies, state agencies, tribes, and universities in the FEMA flood hazard mapping program. The OWRB is currently assisting the communities of Broken Arrow and El Reno with their flood hazard mapping needs.

Well Driller and Pump Contractor Program

During 2011, the OWRB Well Drilling and Pump Installer staff maintained licenses for 375 licensed Well Drilling and Pump Installer firms and 663 licensed operators. The OWRB licensed 19 new firms and 63 new operators during this period. The OWRB also received reports for 2,693 water wells, 1,846 monitoring wells/geotechnical borings, and 1,316 heat exchange wells completed this year. Staff maintain a well log database of more than 140,000 well completion, boring, geothermal, and plugging records that are accessible to the public.

Water Quality

The OWRB approved revised Water Quality Standards and Implementation Rules in March 2011 (subsequently approved by the Legislature and Oklahoma governor), which revised protocols for assessing waters of the state for the Clean Water Act "303(d)" list of impaired waters.

As part of the OWRB's Beneficial Use Monitoring Program (BUMP), 40 lakes and 117 stream/river segments were sampled by staff during 2011. Collections included water quality, shoreline, and riverine habitat, fish, algae, and macro-invertebrates. Monitoring included both ambient trend lakes and river sites as well as probabilistic lake and stream monitoring locations. BUMP lake sampling underwent a thorough reevaluation and modification to incorporate a probabilistic sampling approach to maximize benefits and efficiencies in the program while reducing expenses. Monitoring staff are currently partnering with EPA to conduct the National Lakes Assessment with field work initiating this summer. This

(continued on page 4)

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national study is designed to establish comparable lake conditions between states to facilitate standardized assessment.

Streams staff are also nearing completion on the third year of the statewide streams probabilistic program. Additionally, through an ongoing successful partnership with the Grand River Dam Authority, the OWRB continued dissolved oxygen monitoring on both Grand and Hudson Lakes to support Federal Energy Regulatory Commission (FERC) relicensing, and will begin installation and monitoring work in 2012 on W.R. Holway Reservoir to support its relicensing.

In addition to collecting water level measurements in the statewide Mass Measurement Program's statewide network of more than 500 wells, the OWRB's groundwater monitoring team assessed Swine Licensed Managed Feeding Operations compliance in an additional 550 wells through a continuing partnership with the Oklahoma Department of Agriculture, Food and Forestry. Staff also acquired a wealth of historical groundwater quality data—now available to the public—to support the Garber-Wellington aquifer study.

In response to the potential for severe impacts resulting from toxin-producing algae, OWRB staff are working with various state, local, and volunteer monitoring entities to assess the risk from harmful algae blooms.

The OWRB continues to participate in the National Flowing Waters Study. Sampling on numerous wadeable and non-wadeable streams are providing data to assess environmental integrity of the waters.

Lakes and Special Studies staff continued to work cooperatively with the Central Oklahoma Master Conservancy District to monitor and improve water quality in Lake Thunderbird where a new system to oxygenate lake water was implemented. The OWRB

and other agencies are also finalizing cooperative development of a total maximum daily load (TMDL) calculation to address Thunderbird water quality impairments, including high turbidity, algae, and low dissolved oxygen.

Lake revegetation projects included the establishment of more than 4,000 wetland plants at Eucha on 3,200 square feet of floating islands consisting of recycled plastic and 820 aquatic plants placed in enclosed pens and cages at Fort Cobb. Work continued at Stanley Draper, Grand, and Hudson Lakes to establish and spread the growth of native plants that serve as an inexpensive yet innovative method to combat erosion and suspended sediment, reduce nutrients, and provide valuable habitat for birds, fish, and aquatic insects. The OWRB also works to educate lake managers on the many benefits of establishing aquatic plants.

In a joint water resource and water quality study, the OWRB is cooperating with Oklahoma State University and the Oklahoma Conservation Commission on the Oxbow Lakes Project, an ongoing effort to identify and characterize oxbow wetlands in Oklahoma. The objective is to catalogue and initiate an assessment scheme for this unique water resource.

Phosphorus Standard Review

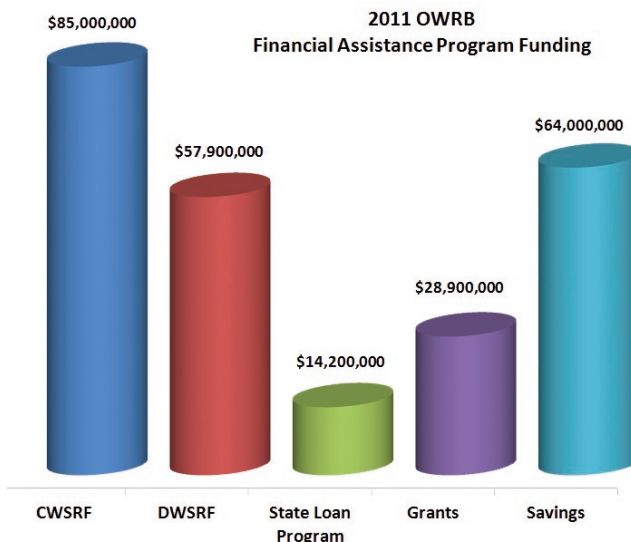
Consistent with the 2003 interstate agreement with Arkansas, OWRB staff initiated the ten-year review of Oklahoma's .037 milligram/liter phosphorus standard for Oklahoma's six Scenic Rivers. A technical advisory group consisting of state, federal, and tribal officials and point and nonpoint source dischargers from both states was formed to evaluate the current appropriateness of the numerical standard based on the latest, best scientific information available. The reevaluation will be completed later this year.

Financial Assistance

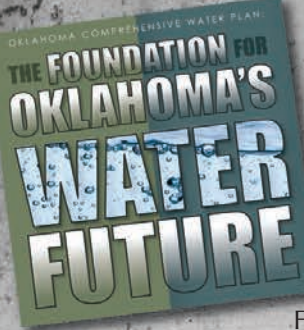
In 2011, the OWRB'S Financial Assistance Program approved 50 grants and loans totaling more than \$186 million to address water and wastewater infrastructure



More than 4,000 wetland plants were established at Lake Eucha on 3,200 square feet of floating islands consisting of recycled plastics. These plants will provide valuable habitat for birds, fish, and aquatic insects while reducing nutrients in the water column.



(continued on page 4)



32nd Annual Oklahoma Governor's Water Conference

On October 18-19, the OWRB hosted the 32nd annual Oklahoma Governor's Water Conference in Norman. After opening remarks from Oklahoma Lieutenant Governor Todd Lamb, keynote speaker Charles

Fishman, shared stories from his new book, *The Big Thirst*, focusing on innovative solutions to local water problems. Fishman emphasized that water problems are local problems, not global problems, and that the solutions need to be local as well. Serving as emcee for the conference was Linda Lambert, OWRB Chairman.



Above: Sec. Gary Sherrer, House Speaker Kris Steele, and Col. Michael Teague.



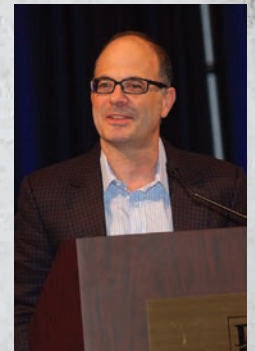
Above: OWRB Executive Director J.D. Strong introduces "The Value of Water" panel speakers (left to right) Patricia Horn, Richard Hatcher, Mark Nichols, Bill Sims, and Bob Portiss.



Linda Lambert

Also during opening comments, OWRB Executive Director, J.D. Strong, announced the completion of the 2012 Update of the Oklahoma Comprehensive Water Plan (OCWP). Six OCWP panels were held during the two days culminating with a Joint Legislative Water Committee Open Meeting hosted by Sen. Brian Crain and Rep. Phil Richardson.

The conference boasted 53 sponsors and 30 exhibitors, including all of the state's most prominent water-related agencies and organizations.



Charles Fishman



Kris Steele



James Lankford



Todd Lamb

2011 Oklahoma Water Pioneers

R. Thomas Lay served as the first attorney and General Counsel for the OWRB specializing in water rights, water pollution, water resource development projects, dam safety, and related environmental matters. Lay was instrumental in establishing the legal groundwork that enabled the success of the OWRB's Financial Assistance Program. He has been a long-time successful advocate of a broad range of water issues and is considered a true expert on Oklahoma water law.



Rick Smith joined the OWRB in 1978 as an Economist in the Planning Division, where he became one of the principal authors of the first Oklahoma Comprehensive Water Plan. During his tenure at the OWRB, Smith structured and developed the basic loan programs now offered by the OWRB's Financial Assistance Program. Since then, he has advocated the OWRB's financing options through his firm, Municipal Finance Services, Inc., which now represents more than 100 Oklahoma cities and towns.



Annual Report (continued)

needs for Oklahoma communities and rural water/sewer districts. The Program closed 3 bond issues, two in April for the State Revolving Fund in the amounts of \$85 million for Clean Water, and \$57.9 million for Drinking Water, and one in June for the State Loan Program in the amount of \$14.2 million. Financing via OWRB saved communities approximately \$64 million over traditional financing avenues.

The OCWP Infrastructure Finance Committee was created last year to address the \$82 billion in current and future water and wastewater infrastructure needs projected throughout the OCWP's 50-year planning horizon. The Committee, consisting of professionals in both the public and private sector that play integral roles in state water and wastewater infrastructure financing, are investigating options to help communities deal with the ever-increasing need for state water and wastewater project funding.

Legal Developments

On September 7, 2011, the U.S. Court of Appeals for the Tenth Circuit issued two decisions involving attempts by water users outside of Oklahoma to obtain authorization to secure water within Oklahoma.

In Tarrant Regional Water District v. Herrmann, the Tarrant Regional Water District (TRWD) had sought declaratory and injunctive remedies against Oklahoma laws that placed conditions on the use of compacted stream water outside of the state. The district court had granted summary judgment and dismissal in favor of OWRB members. On appeal, the Court of Appeals affirmed the district court on several grounds. The Court of Appeals held that the federal Red River Compact—a standing agreement between the states of

Texas, Oklahoma, Arkansas, and Louisiana—provides Congressional consent and gives the Oklahoma Legislature latitude to impose conditions on stream water apportioned to Oklahoma under the compact. The Court further held that TRWD lacks standing to assert claims for groundwater located in Oklahoma because, among other things, the statutes challenged by TRWD do not apply to groundwater. On January 19, 2012, TRWD filed a final appeal with the United States Supreme Court seeking review of the Court of Appeals decision.

In City of Hugo v. Nichols, the City of Hugo, Oklahoma and the City of Irving, Texas had sought declaratory and injunctive relief against the application of Oklahoma statutes governing stream water that restricted use of such water out-of-state. Hugo and Irving had entered into a contract for sale of water to Irving for Irving's use in Texas. Earlier, the district court had granted summary judgment to the OWRB, concluding that the Red River Compact authorized Oklahoma to enact the challenged laws. On appeal, the Court of Appeals vacated the district court's order and remanded the case to dismiss for lack of federal jurisdiction. The Court of Appeals ruled that neither Hugo nor Irving had standing. The Court's opinion held Hugo, under the doctrine of political subdivision standing, lacked standing to invoke a dormant Commerce Clause claim against the OWRB (i.e., Hugo's parent state). The Court further held that Irving's claimed injury would not be redressed by invalidating the challenged laws, and Irving lacked standing because Irving's standing was premised solely on its contract with Hugo. On January 4, 2012, Hugo filed a final appeal with the United States Supreme Court seeking review of the Court of Appeals decision.

On August 18, 2011, the Chickasaw Nation and Choctaw Nation of Oklahoma filed a lawsuit in the U.S. District Court for the Western District of Oklahoma. As subsequently amended, the lawsuit names as defendants Gov. Mary Fallin, the members and Executive Director of the OWRB, and the City of Oklahoma City and the Oklahoma City Water Utility Trust (OCWUT). The lawsuit alleges the Indian Nations have federally-protected rights to the water within a 22-county territory in southeastern Oklahoma. Among other things, the lawsuit seeks (1) declaratory judgments against any action by the OWRB on a pending application by Oklahoma City and OCWUT for a permit to use stream water from Sardis Reservoir in southeastern Oklahoma, or any other withdrawal or export of water from the area at issue, unless and until there is initiated a general stream adjudication that satisfies the requirements of the federal law known as the McCarran Amendment; and (2) permanent injunctions against any such action unless and until a general stream adjudication that satisfies the McCarran Amendment is completed. In December, the OWRB authorized its counsel to institute such McCarran Amendment adjudication proceedings, if necessary, to fairly and accurately determine all rights to the use of water in the Kiamichi, Clear Boggy, and Muddy Boggy stream systems. 💧

OWRB FY 2011 Expenditures & FY 2012 Budget

| Activity Name | FY 11 Expended | FY 12 Budgeted |
|---------------------------------------|---------------------|---------------------|
| Administration | 2,839,028 | 3,252,680 |
| Water Quality | 2,720,623 | 3,238,392 |
| Financial Assistance | 2,523,447 | 3,691,737 |
| Planning & Management | 2,794,412 | 4,849,188 |
| Secretary of Environment | <u>7,373,573</u> | <u>15,137,064</u> |
| Totals | \$18,251,083 | \$30,169,061 |
| Fund Name | | |
| General Appropriations | 3,564,668 | 4,241,494 |
| Drillers & Installers Indemnity Fund | 0 | 50,000 |
| OWRB Revolving Fund | 0 | 2,273,954 |
| Rural Economic Action Plan Fund | 72,966 | 0 |
| Water Resources Revolving Fund | 476,059 | 932,836 |
| Drillers & Installers Regulation Fund | 12,500 | 20,500 |
| Water Infrastructure Dev Fund | 1,168,979 | 1,363,852 |
| Federal Funds - OWRB | 1,256,278 | 2,739,284 |
| Federal Funds - OSE | 7,036,006 | 10,976,616 |
| Environmental Remediation Fund | 0 | 3,961,308 |
| USGS Cooperative Agreement | 337,188 | 399,552 |
| Interagency Reimbursement Fund | 1,727,729 | 0 |
| ARRA Fund | 759,651 | 15,000 |
| DW Loan Administration Fund | 490,170 | 1,145,823 |
| CW Loan Administration Fund | 1,115,546 | 1,548,842 |
| CW Loan Fund | <u>233,341</u> | <u>500,000</u> |
| Totals | \$18,251,083 | \$30,169,061 |

Drought Update

Reservoir Storage

As of January 10, fifteen reservoirs (of thirty-one selected major federal reservoirs across Oklahoma, listed at right) are operating at less than full capacity, according to information from the U.S. Army Corps of Engineers (Tulsa District); fourteen reservoirs have experienced lake level decreases since November 28.

Palmer Drought Severity Index

According to the latest Palmer Drought Severity Index (see table below), seven of nine climate divisions in Oklahoma are currently experiencing drought conditions. However, no regions are even considered in the moderate drought category.

Standardized Precipitation Index

The latest monthly Standardized Precipitation Index (see table below) indicates near long-term dryness in all but the Northeast and Southeast climate divisions. The Northwest region is in the extremely dry category over the past nine to twelve months.



Storage in Selected Oklahoma Lakes & Reservoirs (January 10, 2012)

| LAKE | Change in Elevation (feet) 11/28/11-1/10/12 | Current Flood Control Storage (acre-feet) |
|----------------------|---|---|
| North Central | | |
| Fort Supply | 0.79 | -3,565 |
| Great Salt Plains | 1.66 | 1,040 |
| Kaw | 3.42 | 2,438 |
| Northeast | | |
| Birch | -0.24 | -8,335 |
| Copan | 1.21 | 3,508 |
| Fort Gibson | -0.31 | 6,948 |
| Grand | 0.00 | 881 |
| Hudson | -0.84 | 5,414 |
| Hulah | 2.43 | 3,010 |
| Keystone | 0.12 | 9,974 |
| Oologah | 1.68 | -9,612 |
| Skiatook | -0.53 | -115,069 |
| West Central | | |
| Canton | 0.13 | -69,546 |
| Foss | -0.30 | -40,089 |
| Central | | |
| Arcadia | 0.00 | 675 |
| Heyburn | 0.07 | 33 |
| Thunderbird | -0.21 | -28,250 |
| East Central | | |
| Eufaula | 0.85 | -133,426 |
| Tenkiller | -0.65 | 7,138 |
| Southwest | | |
| Fort Cobb | 0.15 | -12,750 |
| Lugert-Altus | 0.01 | -109,673 |
| Tom Steed | -0.28 | -37,158 |
| South Central | | |
| Arbuckle | -0.27 | -10,134 |
| McGee Creek | 0.32 | -16,303 |
| Texoma | 0.96 | -251,278 |
| Waurika | -0.37 | -52,112 |
| Southeast | | |
| Broken Bow | -0.97 | 808 |
| Hugo | -5.69 | 5,234 |
| Pine Creek | -8.35 | 896 |
| Sardis | 1.42 | 4,232 |
| Wister | -13.97 | 2,174 |

| CLIMATE DIVISION | Standardized Precipitation Index (through December 2011) | | | | Palmer Drought Severity Index |
|-------------------|--|----------------|----------------|----------------|-------------------------------|
| | 3-month | 6-month | 9-month | 12-month | January 7, 2012 |
| Northwest (1) | Near Normal | Moderately Dry | Extremely Dry | Extremely Dry | Mild Drought |
| North Central (2) | Moderately Wet | Near Normal | Near Normal | Moderately Dry | Incipient Moist Spell |
| Northeast (3) | Near Normal | Near Normal | Near Normal | Near Normal | Near Normal |
| West Central (4) | Moderately Wet | Near Normal | Very Dry | Very Dry | Mild Drought |
| Central (5) | Moderately Wet | Near Normal | Moderately Dry | Moderately Dry | Mild Drought |
| East Central (6) | Near Normal | Near Normal | Near Normal | Moderately Dry | Near Normal |
| Southwest (7) | Very Wet | Near Normal | Very Dry | Very Dry | Mild Drought |
| South Central (8) | Near Normal | Near Normal | Moderately Dry | Very Dry | Mild Drought |
| Southeast (9) | Very Wet | Near Normal | Near Normal | Near Normal | Near Normal |

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

*Linda Lambert, Chairman • Ford Drummond, Vice Chairman • Joe Taron, Secretary
Tom Buchanan • Ed Fite • Marilyn Feaver • Rudy Herrmann • Kenneth K. Knowles • Richard Sevenoaks*

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.



4th Quarter 2011

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FINANCIAL ASSISTANCE PROGRAM UPDATE

Loans & Grants Approved as of January 1, 2012

FAP Loans—329 for \$744,680,000

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—249 for \$1,047,921,629

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—135 for \$743,649,642

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—568 for \$50,447,120

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—564 for \$33,666,177

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—2 totaling \$200,000

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: 1,847 for \$2,620,564,568 Estimated Savings: \$917,060,090

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.**