

KANSAS - OKLAHOMA
ARKANSAS RIVER COMMISSION

2019

ANNUAL REPORT



Published 2021



Kansas-Oklahoma Arkansas River Commission

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June 9, 2021

The President
United States of America

The Honorable Laura Kelly, Governor
State of Kansas

The Honorable J. Kevin Stitt, Governor
State of Oklahoma

Dear Mr. President and Governors:

Pursuant to Article XI of the Kansas-Oklahoma Arkansas River Commission, submitted herewith is a copy of the report covering the activities of the Commission for 2019. The budget covering the anticipated expenses of the Commission for July 1, 2018 – June 30, 2019, and proposed budgets for FY2020 & FY2021 are included in the report.

The 2019 annual meeting was hosted by the State of Oklahoma and held in Bartlesville, Oklahoma. Reports of the Treasurer as well as the Engineering, Legal, and Budget Committees were presented, along with new committee assignments.

Sincerely,

Earnie Gilder
Federal Commissioner and Chairman

Kansas-Oklahoma Arkansas River Compact Commission

2019 Annual Report

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DIRECTORY AND
CREDENTIALS**

**KANSAS - OKLAHOMA ARKANSAS RIVER COMMISSION
2019**

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The Honorable Laura Kelly, Governor

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7/2019

**2019 MEETING AGENDA
AND MINUTES**



Kansas-Oklahoma Arkansas River Commission

**MEETING AGENDA
KANSAS – OKLAHOMA ARKANSAS RIVER COMMISSION
Fifty-fifth Annual Meeting**

Wednesday, July 24, Members will visit the Joseph H. Williams Tallgrass Prairie Preserve near Pawhuska, Oklahoma, beginning at 1:30 p.m. then will convene at the Hilton Garden Inn, Bartlesville, on July 25 to consider the items below.

**Hilton Garden Inn, Garden C/D Room
205 SW Frank Phillips Boulevard, Bartlesville, Oklahoma 74003
Thursday, July 25, 2019
9:30 a.m.**

1. Call to Order, Federal Commissioner and Chairman Earnie Gilder
2. Chairman's Remarks – Introductions and Announcements
3. Presentation of Credentials (New Appointments to the Commission)
4. Approval of the Minutes of the 54th Annual Meeting
5. Report of the Federal Chairman
6. Report of the Kansas State Commissioner
7. Report of the Oklahoma State Commissioner
8. Report of the Secretary
 - a. Consideration and Approval of 2016-2017 Annual Report
9. Report of the Treasurer
10. Engineering Committee Report
11. Legal Committee Report
12. Finance Committee Report
13. Reports of the State and Federal Agencies and Others
14. New Business and Committee Assignments, if any
 - a. Discussion on scope of projects eligible for funding with surplus funds
15. Adjournment

KANSAS – OKLAHOMA ARKANSAS RIVER COMMISSION

MINUTES OF THE FIFTY-FIFTH ANNUAL MEETING

July 25, 2019
9:30 a.m.

Hilton Garden Inn, 205 SW Frank Phillips Boulevard
Bartlesville, Oklahoma

1. **Call to Order – Chairman and Federal Commissioner Earnie Gilder.** Chairman and Federal Commissioner Earnie Gilder call to order the Fifty-fifth Annual Meeting of the Kansas-Oklahoma Arkansas River Commission at 9:32 a.m. on July 25, 2019, in the Garden Room of the Hilton Garden Inn located at Bartlesville, Oklahoma.

2. **Chairman’s Remarks - Introductions and Announcements:**

Chairman Gilder welcomed everyone to the 55th annual meeting of the Kansas-Oklahoma Arkansas River Commission meeting, and invited the attendees to introduce themselves.

Federal:

Earnie Gilder, Federal Commissioner
Chuck Shively, Alternate Federal Commissioner

State Commissioners Present:

Kansas:

David Barfield
Doug Blex
M. Bruce Falk

Oklahoma:

Julie Cunningham
Bryce Benson

State Commissioners Absent:

J. Ross Kirtley, Oklahoma

State Committee Members Present:

Kansas:

Chris Beightel, Kansas Department of Agriculture/Division of Water Resources
Kenneth Titus, Kansas Department of Agriculture/Division of Water Resources

Oklahoma:

Kent Wilkins, Oklahoma Water Resources Board
Jonathan Allen, Oklahoma Water Resources Board
Yohanes Sugeng, Oklahoma Water Resources Board
Mary Schooley, Oklahoma Water Resources Board

Others Present:

Mike Abate, US Army Corps of Engineers, Tulsa District, Tulsa, OK
Mark Rude, Southwest Kansas Groundwater Management District #3, Garden City, Kansas
KC Kraft, USDA Natural Resources Conservation Service, Water Resources Staff, Oklahoma
Bill Millis, City of Stillwater, OK
Jeff Lanterman, Kansas Department of Agriculture/Division of Water Resources
Jeremey Seiger, Oklahoma Department of Agriculture, Food and Forestry

3. Presentation of Credentials (New Appointments to the Commission):

Chairman Gilder said there were no new appointments to the Commission.

4. Approval of Minutes of the Fifty-fourth Annual Meeting

Chairman Gilder stated the minutes of the 54th KOARC meeting held in Hutchinson, Kansas, had been distributed. He asked if there were any corrections. There were none, and Commissioner Barfield moved to approve the minutes, and Commissioner Cunningham seconded. The motion passed unanimously.

5. Report of the Federal Chairman

Federal Chairman Gilder provided copies of charts to the Commissioners that reflected the flooding that began northwest of Tulsa, Oklahoma, in the spring of 2019. A pie chart identified the flood storage of 11 reservoirs based on conservation pool elevations; a second chart depicted the percentages of the lakes' storage on May 2, 2019, and a comparison of one aerial photo in January 2019 and May 27, 2019, showing the flooded areas.

6. Report of the Kansas State Commissioners:

Commissioner David Barfield thanked Oklahoma for arrangements for the meeting, tour, and hospitality. He provided a written report for the Commissioners and highlighted activities in the State of Kansas. The State elected a new Governor, Democrat Laura Kelly, whose emphasis has been to restore the state budget for schools and child welfare. Her Administration has been supportive of on-going initiatives in water resources management, and she appointed Michael Beam as Secretary of Agriculture, and Tom Stiles has been promoted within his division. He deferred to Commissioner Blex to speak to matters of the legislative session as regards taxes, budget, and school finance issues; there was no substantive water legislation this year. He updated the Commission on climate conditions and recent flooding events in southeast Kansas

and reservoirs holding at 60-100% flood pool storage for an extended period of time. For the first time since 2010, none of Kansas is currently in any form of drought. The minimum desirable stream flows (MDS) were established to protect ecological water quality and domestic needs which has been curtailed now.

Regarding Arkansas River Basin matters, Commissioner Barfield updated the Commission on the City of Wichita aquifer storage and recovery project requested changes, and the state water use on-line reporting system where the implementation of a filing fee of \$20 to file the paper resulted in 91% of water rights reported. The data is immediately available, saves resources, and improved efficiency. He also spoke about the new tools for management of the Ogallala to encourage conservation -- Local Enhanced Management Areas (LEMAs) put into place to provide for allocations based on the rate of decline in an aquifer which is being challenged in court; and, Water Conservation Areas (WCAs) implemented in 2015 allows a water right owner to development a management plan to reduce withdrawals and extend the usable life of the Ogallala-High Plains Aquifer. The LEMA tool is designed to address a particular problem and develop management actions to implement a goal. The NW KS GMD #4 LEMA was put into place after two hearings and was opposed by a group of intervenors challenging the constitutionality of the LEMA which is now under judicial review. He said it is a very important tool and they hoped to have a decision by the court this summer. The agency receives more and more requests for WCAs each year, mostly for individual water right holders with a suite of water rights seeking flexibility in use to achieve conservation goals; however, there is an increasing number of corporate WCAs making a difference over more significant footprints.

Commissioner Barfield updated the Commission regarding the Quivira National Wildlife Refuge Impairment Complaint involving the US Fish and Wildlife Service's management of a wetland that is part of the North American Central Flyway. The Service filed an impairment complaint and KDA-DWR's investigation found that upstream junior groundwater pumping is regularly impairing the Service's senior right. The agency had been working with GMD #5 to development a plan of 15% reduced pumping and monitoring but an agreement has not been reached, and KDA-DWR is now planning to administer some 1600 groundwater rights instituting annual allocations with the option of multiyear flexibility to move allocations around.

The cities of Hays and Russell purchased the 7,000-acre R9 Ranch and its 30 water rights, with the intent to convert the irrigation rights to municipal use to supply the cities. Because the changes will move 2,000 acre-feet more than 35 miles a separate water transfer process will be triggered. The water right changes have been contingently approved, and following judicial review, will undergo the water transfer process.

Commissioner Blex updated the Commission on the activities of the Kansas Legislature. In 2017, the Water and Environment Committee had been separated as a stand-alone committee from the Agriculture and Natural Resources Committee. The previous Governor took about \$8 million in appropriations. However, in 2018 the chairman resigned and the Water and Environment committee went back to the Agriculture Committee and received about \$5 million for water issues. He said there were no major water issues this year but there is funding if there is a blue-green algae problem. He concluded his remarks.

Oklahoma Commissioner Julie Cunningham asked how funding is spent to mitigate blue green algae at Redmond Reservoir, and Commissioner Blex responded pilot areas had been identified to implement Best Management Practices above federal reservoirs to reduce phosphorous loading and streambank stabilization. Agencies are working together to share

funding and expertise for research and projects for sedimentation and other issues. Everyone hates floods but decisions are made in times of drought and Commissioner Blex stated he would like to see the state achieve the ultimate goal in the Water Vision Plan of 1/10th of 1% of sales tax dedicated to water planning, which will require an initiative petition to get the vote of the people. There was discussion about dedicated funding, and a need for a plan to share the money among agencies to work together utilizing their expertise; flood planning and flood control management of reservoir storage, support for small structures for storage, and work with the Corps of Engineers to development plans in place when money is available.

7. Report of the Oklahoma State Commissioners:

Commissioner Julie Cunningham presented the Commissioner's report for Oklahoma beginning with an update on recent flooding and partial dam failure which is an opportunity educate the public about dams and reservoir under the OWRB authority. There is a need reservoir yield studies as it is unknown how much water can be stored by capturing flood water. She informed the Commission that Oklahoma has a new Governor from the business community who has hired a new Cabinet that is focused on making Oklahoma a "Top Ten" state with a focus transparency, higher accountability, and corrections reform. The Governor is also embarking on a rebranding campaign. The OWRB is under the Cabinet Secretary of Energy and Environment who reports to the Governor regarding agency process improvement, developing 4-year/1-year goal setting, and the budget -- which was flat this year -- allowing the agencies to manage funding efficiently. The SOEE agencies will be working on an online natural resources guide that will inform corporations looking to locate in Oklahoma about resources available such as navigation system, mining products, water rights and water storage, wildlife, and tourism. The OWRB will be working with the Departments of Commerce and Tourism, recognizing the dollars that come into the state in those arenas, as well as major water users in the agricultural, municipal, and industrial sectors.

Commissioner Cunningham updated the members on the State's progress of implementation of the eight priority recommendations of the Oklahoma Comprehensive Water Plan including legislation on water reuse, and marginal quality water and mapping project with detailed information on the 3,000-5,000 ppm TDS zones. Regarding implementation of the OCWP for water supply reliability, staff is completing technical studies for the 23 groundwater basins to quantify groundwater, reservoir yields and capacity; and, continues efforts to work with communities to develop regional water plans and drought planning, diversifying water supplies, and sharing resources. The Produced Water Working Group is working with Jacobs Engineering with participation from the Oil and Gas Industry, and the Water for 2060 Excellence Awards for the second year has recognized projects the areas of water efficiency and conservation. She described the City of Enid's water infrastructure project from Kaw Reservoir including a raw water conveyance pipeline, and water treatment plant and distribution system improvements to ensure the long-term availability of water to the Enid area. The city is also planning for economic growth as well as drought. The OWRB has released the 2018 Beneficial Use Monitoring Program providing data about 1,300 streams, lakes, and groundwater well sites that involve 130 lakes, 100 stream segments, and the Groundwater Monitoring and Assessment Program data collected from 750 groundwater wells in 21 major aquifers. Staff continues data

migration into the database to allow greater public access to the data and also will be compatible with the USGS database for coordinating updates on water use and demand.

Regarding Water Infrastructure Financing, Commissioner Cunningham stated the OWRB finance program, which has reached over \$4 billion in funding, is looking to facilitate planning and design for smaller communities and assist with financing preliminary engineering and design work to determine cost and be ready for construction. In conclusion, she updated the members on the legislative session's renewal of the Gross Production Tax funding, outreach to the new legislators regarding water issues, and action for an instream flow from eastern/southeastern Oklahoma interested in protecting fish species in light of increased recreation and development in the area. The 2012 water plan recommended an Instream Flow Advisory Group, working with and Carollo Engineers who has completed a study in northeast Oklahoma in the Illinois River Basin, a state scenic river. The group is working with the Legislature, Farm Bureau, Oklahoma Municipal League, and oil and gas industry and others to move forward on a voluntary program, and study of the economic impact.

Commissioner Benson spoke of the USGS gage on the Salt Fork of the Arkansas River in northwestern Oklahoma which reached two feet above flood level in May, the first time in 10 years, which had not been seen by many people as it is usually dry in August. He said there had been little drought areas in red on the map, the lakes are full, and Canton Lake--Oklahoma City's backup supply--is 10 feet above normal, setting a record, with boat ramps being closed for over a month. The situation creates an economic downfall for small communities. He said northwest Oklahoma had seen a decline in oil and gas activity, particularly new wells, as drilling has moved south and west to the Kingfisher area. He said the water flow has been unbelievable, and there should be an economical way to capture and store excess water to alleviate future water problems. Commissioner Barfield agreed and he asked about the 4-year decline in earthquake activity. There was discussion about limited injection of produced water, Oklahoma's advisory council, the shutdown of disposal wells along with monitoring by the Oklahoma Geological Survey, produced water recycling efforts, and use of marginal water to reduce injection. Commissioner Benson said there are still earthquakes, but the numbers have decreased.

8. Report of the Secretary

a. Consideration and approval of 2016-2017 Annual Report

Mary Schooley, Commission Secretary, recommended the 2016-2017 Annual report be published as one report and a draft had been circulated. She recommended three changes to the draft: (1) regarding reference to the 2015 minutes, a notation the document is in the 2015 report; (2) removing the compact in the 2016 report so there is one copy of the compact and rules in the combined report; and (3) amend the 2017 report table of contents to include the July 26, 2017, minutes rather than the November 2016 meeting minutes. The 2018 report will be compiled with the approved minutes for the 2018 meeting.

Ms. Schooley reviewed the cost estimation for publishing the report, depending upon the number of reports requested by each state. After discussion, it was decided that a digital format of the report would be provided to each state which would distribute the reports as required in that state. The Commission Secretary will provide a copy to the President in the form acceptable to the White House. The report will also be available on each state's agency website.

Commissioner Barfield moved to approve to adopt the combined 2016-2017 report with amendments as noted, as well as the 2018 report. Commissioner Benson seconded. The motion carried unanimously.

9. Report of the Treasurer

Mr. Chris Beightel presented the Report of the Treasurer. He referred to the distributed report containing the details of the Commission's fund which is in an account with the Bank of America. A financial audit for fiscal year 2018 had been conducted in May 2019. (reminding the Commission the audit is typically one year in arrears) and he had provided the Chairman with one bound copy of the report and he will distribute a pdf copy to the Commissioners by email. He said the Commission passed a resolution at the 2017 annual meeting to require a criminal activity insurance bond for the Treasurer when the commission fund exceeded \$50,000. The fund balance did exceed \$50,000 for approximately two months, but the cost of the financial review brought the balance below \$50,000.00 so a bond was not secured. He hoped that approval of a water quality project will bring the balance down \$10,000.00.

Mr. Beightel reviewed the account ledger for fiscal years 2016, 2017, 2018, as distributed noting the states' assessments are current, the interest earned, and anticipated expenditures for FY2020. He said the cost of the audit review was \$700, \$50 more than the budgeted \$650; and he anticipated an expenditure of \$2,000 for a full audit in 2021. The balance at the end of FY2019 was \$49,592.00, and he projected that at the end of FY2020 the balance will be \$43,842 with approval of a water quality project.

Commissioner Barfield asked the likelihood of the water quality project going forward, because if it doesn't go forward, the balance will be over \$50,000. Commissioners Benson and Cunningham stated it has been considered for three years, and perhaps an alternative project should be found. Mr. Barfield asked if the amount should be raised to \$60,000 since it is difficult to obtain a bond in the low amount of \$50,000.00, asked if the amount is in the rules, and is it within the power of the Commission to change the amount again. Mr. Beightel said the Commission passed a resolution in 2017 and the Compact requires the Treasurer shall be bonded at the appropriate amount. Mr. Allen stated that is correct, the bond amount is set as deemed appropriate by the Commission; the amount was changed in 2017, and is still within the Commission's power to change the amount again. Commissioner Benson asked what is the amount Mr. Beightel found was needed, and he responded he only asked for a bond in the amount of \$50,000. He made several calls and was not able to find a firm that offered a bond at that low amount, if he did it would probably be expensive, and it would be easier to raise the amount.

Chairman Gilder stated he would entertain a motion. Commissioner Barfield asked and Mr. Allen responded that the resolution was written in 2017, and if the Commission wanted to act on an oral resolution now, he would recommend the Commission state what it prefers and act on it, then allow the Legal Committee to write it and submit at the end of the meeting. The meeting is on record as a public meeting and is conducted in an open forum; the resolution can be finalized in writing afterward. He added it requires a change to the Commission rules, and could be in the same form as in 2017 and change the amount in an oral motion and that will be drafted and submitted for approval. Commissioner Shively asked and Mr. Allen responded the Commission would be on record approving the action, and then it would be memorialized in

writing in the resolution. Commissioner Barfield suggested the Legal Committee prepare the resolution and the Commission consider it under New Business. Mr. Kenneth Titus suggested, and the Commissioners discussed, the appropriate amount should be at a level so as to not come back and amend the resolution in the near future. Commissioner Barfield suggested the amount be \$95,000.00, and the Commissioners agreed.

Commissioner Barfield asked and Mr. Beightel responded about meeting costs that are included under "anticipated expenditures for FY2020" in the commission fund information provided. He said the report of the Budget Committee is scheduled to be presented under item #12, however, it could be considered at this time, which the Chairman agreed.

Mr. Beightel presented the Budget Committee report for fiscal years (July-June) 2019 (approved and actual), and proposed FY2020, and FY2021. He reviewed the prepared report noting the costs for the audit review and full audit in 2021, the annual meeting costs, incidentals and a water quality project.

Chairman Gilder stated he would entertain a motion. Commissioner Bruce Falk moved to approve the budget as presented, and Commissioner Julie Cunningham seconded. The motion was approved unanimously.

10. Engineering Committee Report

Mr. Yohanes Sugeng, Oklahoma Chair, presented the Engineering Committee Report. He referred to the previously distributed written report containing the streamflow data, water quality data, and construction of reservoir conservation storage capacities in the compact basin areas for the time period, October 1, 2017, through September 30, 2018. All of the stream gages were below the mean average; all Oklahoma gaging stations showed Water Year 2018 mean flows were approximately 64% of the mean flow for the periods of record. All Kansas gaging stations showed that 2018 Water Year mean flows were approximately 53% of the mean flow for the periods of record. He reported that two new water storage structures were completed in Oklahoma that exceeded the 100-foot conservation storage minimum requirement set forth in the compact; the structures are located in Kingfisher County.

Mr. Sugeng stated that the report includes water quality data; however, the committee had discussed including more detailed information. Oklahoma's Water Quality Chief was unable to attend today, and he asked the Commission what it would like to see presented. Commissioner Barfield stated the Kansas representative was also unable to attend, so the Commission may not be able to determine that today. There was discussion about the water quality responsibilities divided among three agencies in Oklahoma, what agencies needed to be involved, whether to have a separate water quality committee, what to report, and what coordination would be necessary. Commissioner Cunningham said the States' nonpoint source agencies should also be involved -- Ms. Shanon Phillips with the Oklahoma Conservation Commission was considering the Commission funding for a water quality project. The ODEQ is responsible for NPDES, TMDLs, and municipal discharge; the ODAFF is responsible for CAFOs. Commissioner Barfield stated in some of the state's larger compacts, water quality is a large focus, but not all the compacts. It was discussed what type of coordination is desired, what type of report could be presented, and whether it should be similar to the Arkansas-Oklahoma Arkansas River Commission, which is extensive and coordinated among the agencies, and written into the compact. Mr. Jeremy Seiger with ODAFF described the agricultural

responsibilities in Oklahoma, and committed to working with the committee. Commissioner Cunningham stated she would contact the director of the Oklahoma Conservation Commission.

Mr. Kenneth Titus, Kansas Legal Committee member, stated the Commission has the authority to set up any special committee and he suggested a generic committee be outlined and people appointed to that committee. The Legal Committee can prepare a formal resolution creating a standing committee to be considered at next year's commission meeting.

Commissioner Barfield moved the compact create a special water quality committee for this year, with Mr. Tom Stiles or his designee representing Kansas, and to meet at least once this year and develop a framework for coordinating a water quality report, and to create a standing committee on water quality next year. Commissioner Blex seconded. Chairman Gilder stated there is a motion and second.

Commissioner Cunningham appointed OWRB Water Quality Division Chief Bill Cauthron to coordinate with Oklahoma entities. She said the goal this year would be to make a recommendation on what the committee would look like, the purpose, and how it would report to the Commission.

Chairman Gilder called for the vote. The motion was unanimously approved.

No action was required on the Engineering Committee report.

11. Legal Committee Report

Mr. Jonathan Allen, Oklahoma, presented the Legal Committee Report. He said the Legal Committee did not have an assignment from the last meeting. He said there is an item added to New Business, and there is discussion on an earlier Legal Committee report about the scope of a project the Commission might be able to fund, which he will discuss at that time.

12. Budget (Finance) Committee Report

Mr. Chris Beightel presented the Budget Committee report under the Report of the Treasurer. (Item 9.).

13. Reports of the State and Federal Agencies and Others

1. Tulsa District US Army Corps of Engineers - Mr. Mike Abate, Chief of Civil Works Branch, Tulsa District Corps of Engineers, presented the report, distributing a copy of the slide presentation. He described the Civil Works mission area and projects that include 50 projects in the Red River Basin and the Arkansas River Basin (illustrated on a map): 12 Section-7 lakes, 23 lakes with gated spillways, 8 COE hydropower projects, 5 navigation locks and one chloride control project. In the Arkansas River System, there are 3.78 million acre-feet of conservation storage at the Corps Lakes, and 11.9 million acre-feet of flood control storage. Regarding the Tulsa District FY 2018-FY 2020 Civil Works Budget, Mr. Abate detailed the FY 2018 allocations, FY 2019 Allocations, and noted the 1% or \$2,471,000 that was recently added for the flood events. He referred to the FY 2020 President's Budget of \$93.8 million, explaining Congressional Work Plan funding appropriating more dollars above the President's budget, last year being \$2.2 billion, and anticipating an additional \$2.2 billion. He noted Congress passed

the National Flood Insurance Act in May appropriating \$19 billion of flood supplemental which Tulsa is competing for some funding. Mr. Abate updated the Commission on the status of high priority projects in the district that include the Keystone Dam Safety Modification Study, the Tulsa West-Tulsa Levee Feasibility, and the Arkansas River Corridor Feasibility, as well as the associated cost-sharing rules and funding mechanisms.

Mr. Abate prefaced his presentation on the spring flood events in the basin with a brief primer on "Water Management 101" and the COE approach of managing the Arkansas River System Water Control Plan to balance the percent of storage contained in the individual project flood pools, the focus on eleven principle reservoirs, and the additional upstream projects in the subsystem. He provided the timeline and rainfall data associated with the 2019 flood event in April-May as illustrated on a map depicting flash flood warnings and flood watches from April 1 to May 28, 2019, with 35% of flash floods from Kansas, Missouri, and Oklahoma alone. There were 14 Pool of Records set at USACE reservoirs during the 2019 flood which were also illustrated on a map. He showed photos and explained the releases from Kansas projects John Redmond and Elk City reservoirs, and Oklahoma's Kaw, Keystone, Oologah, Fort Gibson, and Eufaula reservoirs. The flood of 1986 saw 305,000 cfs released at Keystone and over 8 million acre-feet of water flow through Keystone -- the full storage was used and the water kept coming. Comparatively, 4.4 million acre-feet were released in 1986 within hours; the 2019 event occurred over months. Releases from Oologah, Keystone, and Fort Gibson end up at Muskogee which was hit hard this year. He said there were constant inspections, and much debris in the water. He explained the management of the navigation system during high flows involving Robert S. Kerr Lock & Dam, and W.D. Mayo Lock & Dam, and a special situation occurred where barges struck the Webbers Falls dam and regulated releases were made for the salvage operation of the barges.

In conclusion, Mr. Abate made three points. If none of the projects were not in place, Muskogee would have seen flows in excess of 900,000 cfs and flood stage would have been 7 feet higher. Secondly, in response to questions about prelease and waiting for the water on the ground -- weather forecasting is not always right, and even if releases were made based on the forecast, -- hypothetically emptied Keystone Dam -- there would have still been 275,000 cfs, when it only holds 1.7 million acre-feet, so Keystone could've been emptied three times. Finally, the COE is supporting federal levees and assisting 8 entities with repairs, and currently conducting evaluations, which he described.

Follow up discussion by the Commission included how the COE competes with the federal funds through benefit cost ratio on the project and that current funding is for already approved areas; forecast informed reservoir management and that water (and snowmelt) need to be on the ground before the COE can make judgement on the releases while realizing there is a management risk factor; and the COE works closely with the National Weather Service and River Forecast System. Mr. Abate stated the system performed extremely well, the concern is about the loss of life and the levees were built to save lives not property. He said there needs to be another flood supplemental to address damage and repairs will require approximately \$75 million just in the Tulsa District.

Mr. Abate said that post flood evaluation is very expensive. an after action report has been done and is largely communication, the pdf maps were massive and resolution was an issue as well as emailing large files. There was discussion about truth and perception, getting information to the people, and better coordination between state and federal: the cities and state established emergency operations, and there was COE representation to be the voice and get out

the information. There is a lot the COE can do, and that can be improved; there will be a COE 101 Class to educate stakeholders about water management, the COE base of authority, discuss emergency management and regulation, mitigation and repair. Commissioner Barfield commented it is a difficult job, there is criticism because people don't understand managing a massive system, and the regional Governors are meeting to see how to make things better.

2. Mr. Yohanes Sugeng, Oklahoma Water Resources Board, stated Oklahoma has worked with the states of Arkansas, Louisiana, and Mississippi to update the estimations for probable maximum flood prepared by the National Weather Service for the entire United States. He said it has not been updated since 1979. The pilot report, which also includes the Kansas-Oklahoma compact area, will be available soon and he can present the update at the 2020 meeting.

3. The US Bureau of Reclamation provided a written report that was distributed to the Commission members and meeting attendees. There were no representatives in attendance.

There were no other reports from state and federal agencies, or other interested parties.

14. New Business and Committee Assignments, if any.

a. Discussion on scope of projects eligible for funding with surplus funds. Mr. Allen stated the Legal Committee had presented a report in 2015 as a result of an assignment to recommend what purposes the compact funds can be used for and the Committee's conclusion at that time was there are three functions: installation/maintenance of stream flow gages; collection, analysis or reporting of scientific data of streamflow, water quality, conservation storage or other compact related missions; and taking of testimony and holding hearing, as well as must fund the annual meeting. He said Mr. Titus had additional thoughts, and he agreed, the compact specifically lists pollution prevention and abatement as purposes of the compact and activities the Commission is to encourage, but that had not been included in the Committee recommendation. He said that because the Commission is looking at ways to responsibly use the Commission funds, he invited the Commissioners to issue a new assignment to revise the recommendation to include a broader scope of projects to expend Commission funds.

Commissioner Barfield moved that the Legal Committee review the report of 2015 in respect to use of compact funds and provide any provisions appropriate for any particular focus on use of funds for pollution prevention and abatement. Commissioner Cunningham seconded.

Chairman Gilder called for the vote; the motion passed unanimously.

b. Consideration of resolution increasing amount that triggers the requirement for a criminal activity bond (as added under Report of the Treasurer). Mr. Allen stated the proposed resolution (distributed) has been drafted substantially in the same form as the 2017 resolution passed by the Commission. The changes now put the trigger point at \$95,000.00 in the Commission account, and upon reaching or exceeding that amount; the Treasurer will be required to obtain a bond. The effort is to accomplish the goal of not having to constantly require and search for a criminal activity (fidelity) bond.

Commissioner Cunningham stated the only change is the amount, \$95,000; Mr. Allen stated the language is \$95,000.00 or more, as it may be difficult to get a bond at exactly \$95,000.

Commissioner Benson moved to approve the resolution 2019-1 in the amount of \$95,000.00 as presented. Commissioner Barfield seconded, noting the action is to adopt resolution 2019-1. Chairman Gilder called for the vote; the motion passed unanimously, thereby adopting resolution 2019-1.

15. Adjournment

There being no further business, Federal Commissioner and Chairman Earnie Gilder adjourned the Fifty-fifth Annual meeting of the Kansas-Oklahoma Arkansas River Commission at 12:00 Noon on July 25, 2019, in Bartlesville, Oklahoma.

Earnie Gilder

Federal Commissioner Earnie Gilder

Alternate Federal Commissioner Chuck Shively

Chris Beightel

Commissioner Chris Beightel

Bryce Benson

Commissioner Bryce Benson

Doug Blex

Commissioner Doug Blex

Julie Cunningham

Commissioner Julie Cunningham

M Bruce Falk

Commissioner M. Bruce Falk

J. Ross Kirtley

Commissioner J. Ross Kirtley

List of Exhibits

Agenda

Attendance List

Commission Directory

Kansas Commissioner Report

Oklahoma Commissioner Report

Report of the Treasurer

Engineering Committee Report

Budget Committee Report

Reports of State and Federal Agencies and Others

New Business Items

Signature: *Earnie Gilder*
Earnie Gilder (Aug 1, 2021 11:01 CDT)
Email: egilder@interstateproperties.com

Signature: *Christopher W Beightel*
Chris Beightel (Aug 1, 2021 11:01 CDT)
Email: chris.beightel@ks.gov

Signature: *Don Blex*
Don Blex (Aug 5, 2021 11:20 CDT)
Email: dblex@totalcsi.com

Signature: *M Bruce Falk*
M Bruce Falk (Aug 11, 2021 11:53 CDT)
Email: bs-falk@sbcglobal.net

Signature: *Julie Cunningham*
Julie Cunningham (Aug 23, 2021 11:00 CDT)
Email: julie.cunningham@owrb.ok.gov

Signature: *Jr Kirtley*
Jr Kirtley (Aug 23, 2021 08:15 CDT)
Email: jrkirtley54@gmail.com

Signature: *Bryce Benson*
Bryce Benson (Sep 1, 2021 08:54 CDT)
Email: bryce_benson@afbisinc.com

**2019 MEETING
ATTENDANCE**

ATTENDANCE

Please turn off your cell phone

MEETING: Kansas-Oklahoma Arkansas River
Compact Commission /55th Annual Meeting
Hilton Garden Inn, Bartlesville, Oklahoma

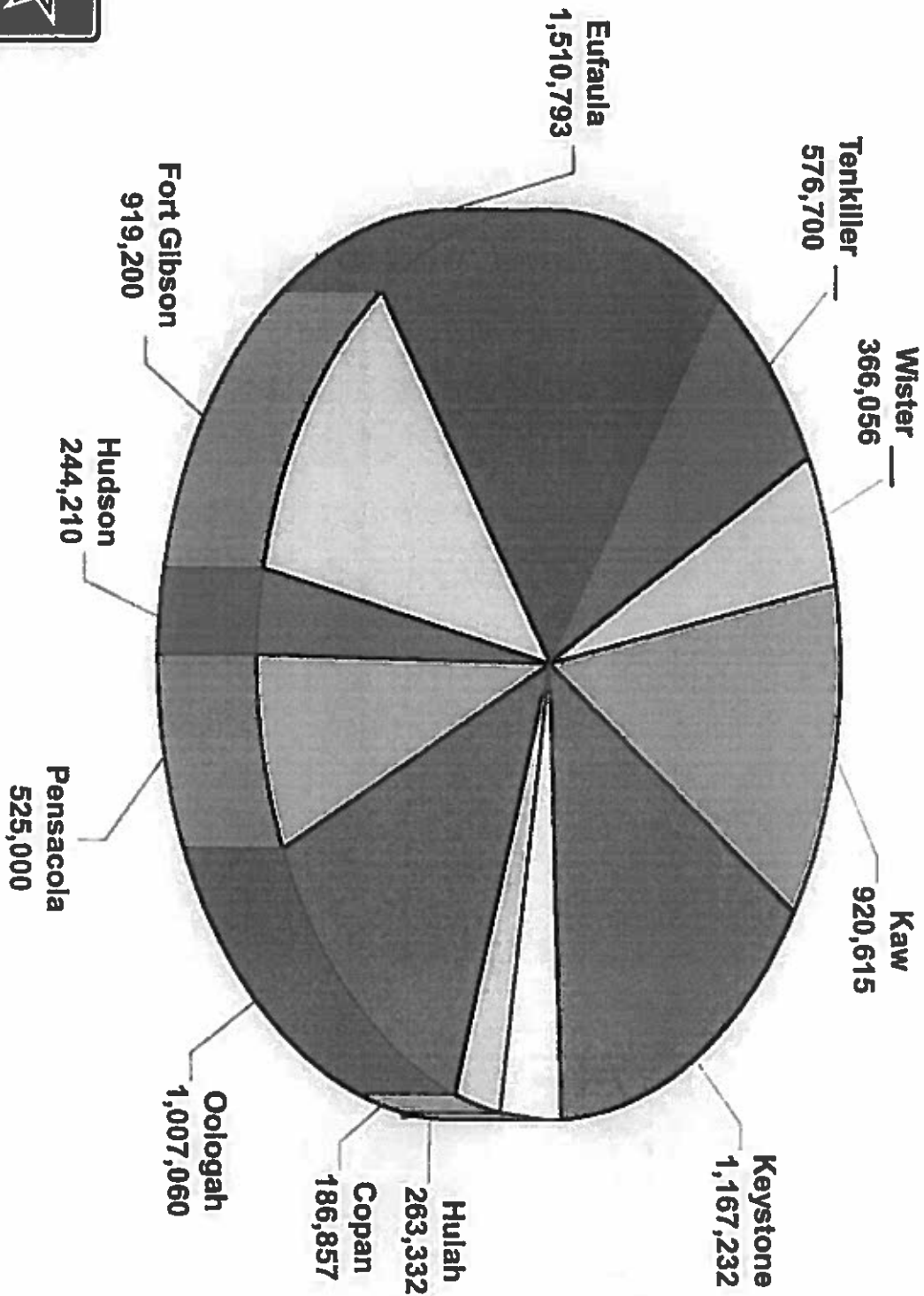
DATE: July 25, 2019

TIME: 9:30 A.M.

NAME	MAILING ADDRESS/Email/Phone	REPRESENTING
Mike Abate	mike.R.Abate@USACE.ARMY.mil	Corps of Engineers
Jonathan Allen	jonathan.allen@owrb.ok.gov	OWRB
Julie Cunningham	julie.cunningham@owrb.ok.gov	OWRB
Kent Wilkins	Kent.Wilkins@owrb.ok.gov	OWRB
Jeremy Seiger	jeremy.Seiger@as.ok.gov	ODAFF
Mary Schooley	Mary.Schooley@owrb.ok.gov	OWRB
Bill Millis	wmillis@stillwater.org	City of Stillwater
KC KRAFT	KC.KRAFT@USDA.GOV	WATER RESOURCES NRC
Chris Beightel		KANSAS
MARK KUDE	MARKUDE@GMDJ.ORG	SIU KS GMDJ
Kenneth Titus		KDA-DWR
Chuck Shively	cshively1@cox.net	Fed
Dave Blex	dblex@totalcs.com	COM
Yehana Sugay	yehana.sugay@owrb.ok.gov	C.G. RB

System Flood Storage - 11 Reservoirs

Based on Conservation Pool Elevations
Total Flood Storage = 7,687,055 ac-ft



U.S. ARMY



BUILDING STRONG®

THE FULL PIE IS 1,551,310.1 ac-ft OR 20%

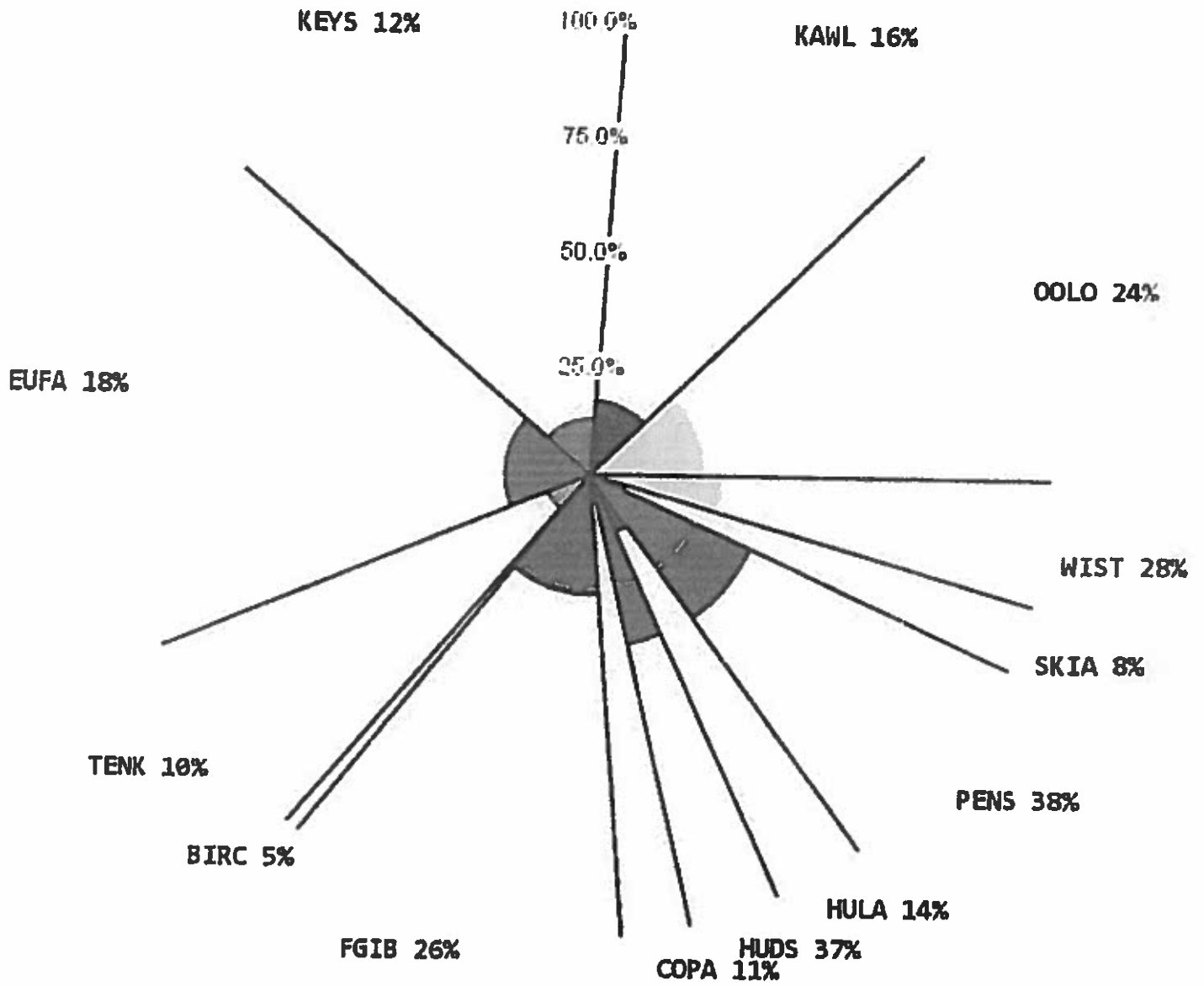


IMAGE DATE: Thu May 02 24:00:00 CDT 2019



**Report of the Kansas Commissioner
to the
KANSAS-OKLAHOMA ARKANSAS RIVER COMMISSION
Annual Meeting – Bartlesville, OK
2019 Annual Meeting
July 25, 2019**

1. New administration – While Kansas continues to be dominated by Republicans in our legislature and statewide offices, in recent decades, Kansans switch back and forth between electing Republicans and Democrats for Governor. At the end of last year, Kansas elected Democrat Laura Kelly for governor. Her administration’s emphases has been on restoring state budgets, esp. for schools and child welfare. Her administration has been supportive of on-going initiatives in water resources management. Michael Beam was appointed and confirmed as Secretary of Agriculture.

2. Legislation: Once again, this year’s legislature session was dominated by issues related to taxation and budget, including additional funding for public schools. There was no substantive water legislation this year.

3. Climate Conditions – It has been a wet year, esp. May, which for most of the state set new records as the wettest May on record. This was esp. true for eastern Kansas with significant flooding in south central and southeast Kansas. Wet conditions elsewhere in the Missouri basin, is affecting Kansas by preventing the release of record storage in the flood pools of our KS River system, which are only now being allowed to slowly drain. While in recent weeks things have begun to dry out, for the first time since 2010, none of Kansas is currently in any form of drought.

Minimum Desirable Streamflows: MDS were established to protect ecological, water quality, and domestic needs. Under MDS, when prescribed gages fall below statutorily defined values, all surface water and connected groundwater rights junior to MDS (1984) are to be regulated. Statewide 2018 was an active year for administration of MDS, with all MDS administration being curtailed in the spring of 2019.

4. Arkansas Basin Matters

Aquifer Storage and Recovery Project, City of Wichita – The City of Wichita has requested changes to the permit conditions of its ASR project to meet the City’s current objectives for the project (as a source of water for long-term drought). The changes include reducing the bottom of the “basin storage area” and allowing for a new means to accumulate credits when the aquifer is full. A formal hearing on the City’s requested changes will start on September 24.

5. Other Water management activities (for information visit <http://www.agriculture.ks.gov/dwr>)

- **On-line wateruse** Kansas requires all non-domestic water users to annually report water use. Over the past 5 years, we have developed an on-line system to report use as an alternative to

facilitate their conservation goals. But we are seeing a growing number of large corporate WCAs that are making a difference over more significant footprints. E.g. approving a 17,000 acre expansion to an existing 8,000 acre WCA. Several other significant WCAs working.

- **Quivira National Wildlife Refuge Impairment Complaint** - The U.S. Fish and Wildlife Service (Service) owns and operates the Quivira National Wildlife Refuge (Quivira), a wetland of international significance and part of the central U.S. flyway. the Service filed an impairment complaint with KDA-DWR in April of 2013. KDA-DWR published its final impairment investigation report during April 2016 finding that upstream junior groundwater pumping is regularly impairing the Service's senior water right. GMD No. 5 is developing a plan for an augmentation project as the cornerstone of the remedy of the impairment. DWR has is also requiring a 15% reduction in groundwater pumping to stabilize the declining streamflows. After 2 years, we have been unable to reach agreement in implementing cuts via a LEMA, We are working on an order to over 1600 groundwater rights instituting annual allocations based on priority with a WCA to provide multiyear flex and allocations to move around.
- **Cities of Hays and Russell / R9 Ranch Water Right Changes and Water Transfer** - The Cities of Hays and Russell purchased the approximately 7,000-acre R9 Ranch and its thirty water rights in southwestern Edwards County. As these proposed changes envision moving greater than 2,000 acre-feet more than 35 miles, it will also be subject to the states Water Transfer Act (K.S.A. 82a-1501, et seq.). I approved the change applications in March. Under Judicial review. When that is resolved, on to the Water transfer process.

OKLAHOMA COMMISSIONERS' REPORT

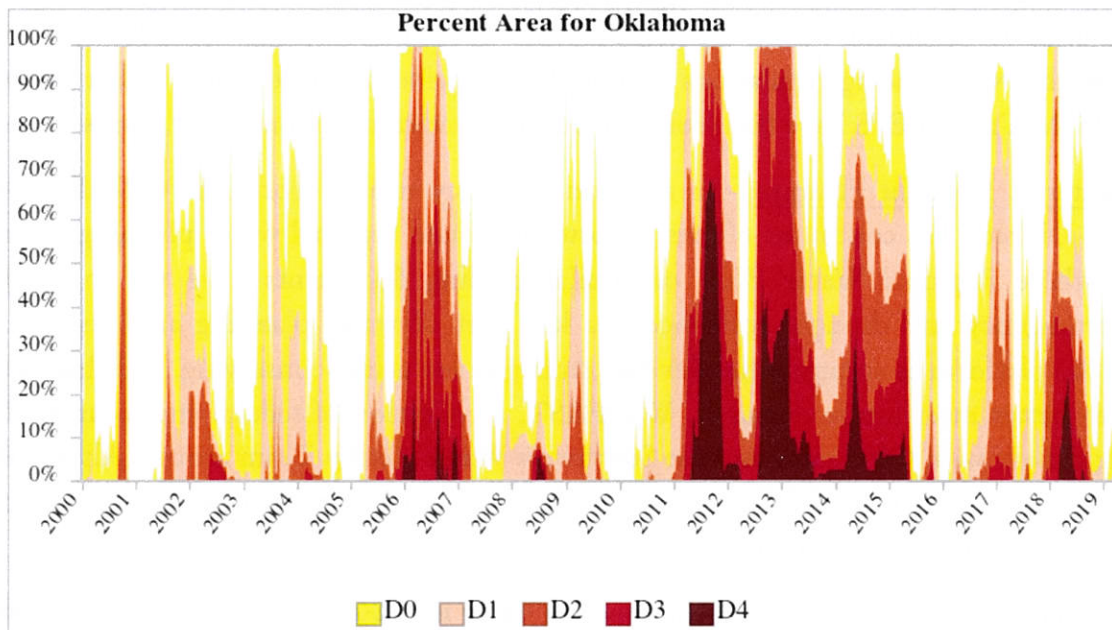
Kansas-Oklahoma Arkansas River Compact Commission

July 25, 2019



CLIMATE

The tumultuous weather of May calmed somewhat with the transition to June, the first month of climatological summer. According to preliminary data from the Oklahoma Mesonet, the statewide average rainfall total for the month was 5 inches, 0.48 inches above normal to rank as the 33rd wettest June since records began in 1895. Southeastern Oklahoma was the wettest region of the state at 7.17 inches, a surplus of 2.52 inches and the 15th wettest June for that area. The northeast was not far behind at 7.11 inches, their 21st wettest June with a surplus of 1.88 inches. The southwest experienced a deficit of 1.67 inches on average for their 44th driest June on record.



IMPLEMENTATION OF WATER FOR 2060

Since completion of the Water for 2060 Final Report in November 2015, the Oklahoma Water Resources Board (OWRB) has been working with partners on several of the recommendations found within the report. This work has included laying the necessary legislative and regulatory framework to expand the State's options for both reuse of treated waters and the use of marginal waters in the state.

Water Reuse - The OWRB and ODEQ, during 2017 and 2018, promulgated rules necessary for indirect potable reuse. In May 2018, a work group was convened to begin development of a framework for *direct* potable reuse over the coming years.

Marginal Quality Water - Use of marginal or brackish waters was authorized in 2018 by **HB 3405** to give the OWRB authority to permit water well drillers to complete their wells in the brackish zones. Such waters could be substituted in the O&G industry for hydro-fracking wells, potentially saving millions of ac-ft of fresh water over the next decade. Additionally, as demand rises and technologies bring down the cost of desalination, brackish water will transition to a more realistic option for WTP upgrades in the future. Updating the state's base of treatable water maps with more detailed information on the 3,000 and 5,000 ppm TDS zones could assist both O&G as well as local communities to find suitable water. The OWRB has proposed updated rules regarding well construction standards for these types of wells.

Supply Reliability - Part of the Water for 2060 initiative was to promote conservation of water while still growing the state's economy. Across Oklahoma, as the OWRB steadily completes its statutorily required groundwater basin studies, the resulting allowable withdrawal rate, or "Equal Proportionate Share" (EPS), calculated on a "fully developed" scenario, often goes down by 50% or more. Such results can be seen as burdensome in most basins where actual overall in-basin development is only 5% to 10%. **SB 1294**, enacted in 2018, will allow landowners to *phase-in* their EPS or continue using their default EPS until development within the basin reaches a certain percentage. SB 1294 further provides that the OWRB's well spacing regulations will apply statewide, regardless of whether the Maximum Annual Yield (MAY) and EPS have been determined for the various groundwater basins of the state.

Regional Water & Drought Planning - In addition to policy related work, the OWRB's Planning & Management Division has continued efforts to foster increased regional water planning in portions of Oklahoma where Regional Water Plans or similar guiding documents have yet to be developed. Drought contingency and drought resilience is a key part of water planning and fits well with the Water for 2060 platform as communities develop strategies for using, conserving, and sharing resources in concert to better meet future demands. WestFAST, a collection of federal environmental agencies, are working closely with Oklahoma and the Southwest Water Action Team around Altus, OK, to find ways they can assist that region. More groups such as this have formed including a recent effort to complete a Tulsa Regional Water Plan.

Produced Water Working Group - The Governor's Water for 2060 Produced Water Working Group has continued its efforts in support of the Governor's goal of reducing the amount of produced water injection through the establishment of other economically viable solutions. A full report is expected in 2019. More information including the 2017 preliminary study can be found here: www.owrb.ok.gov/pwwg.

Water for 2060 Work Group - In 2017, a new 2060 Work Group was formed, made up of state agencies, large cities, and NGO's, to take on the challenge of making water conservation and the Water For 2060 initiative into a statewide movement. While still in the very early stages, the Work Group is looking at ways to focus existing programs and efforts in the area of conservation it into a broader, more far-reaching water conservation campaign. More information on Water for 2060, including a PDF of the Final Report, can be found here: www.owrb.ok.gov/2060.

Water for 2060 Excellence Awards - The OWRB hosted the second annual Oklahoma Water for 2060 Excellence Awards Ceremony during the opening session of the 39th Annual Oklahoma Governor Water Conference in December 2018. The award recognizes individuals and entities that make exceptional contributions to the promotion and implementation of water use efficiency and conservation. The 2018 winners were the Fort Sill U.S. Army Installation Water Reuse Project, the Waurika Lake Master Conservancy District's Water Intake Channel Maintenance Dredging and Resiliency Project, and Fred Fischer of Flatland Farms. The awards will be featured again at the 2019 Governor's Water Conference in December 2019.

Aquifer Storage And Recovery - In 2018, the OWRB and ODEQ promulgated rules for the permitting of ASR facilities which were approved. This innovative water-management tool will offer alternate options to increase storage capacity in the state and secure reliable water supplies for decades to come.

BASIN UPDATES

Hydrologic Investigations - The OWRB is currently in various stages of several hydrologic investigations within the basin. First, the OWRB will be initiating a hydrologic investigation of the Salt Fork of Arkansas River aquifer through a contract with the United State Geological Survey (USGS). Second, the OWRB is in the final stages of review for the hydrologic investigation report on the Cimarron Alluvial aquifer, and has initiated studies on both the Vamoosa-Ada and Cimarron Alluvial aquifers. Both the Vamoosa-Ada and Cimarron studies are currently in the field work portion of the study, and both will be handled in-house and peer-reviewed by the USGS. The OWRB conducts hydrologic investigations as directed by Oklahoma Statutes to determine the amount of fresh groundwater available for appropriation.

City of Enid Kaw Lake Project - The City of Enid's Kaw Lake Alternative Water Supply Program will ensure the long-term availability of water to Enid residents, Vance Air Force Base, Woodring Regional Airport, local and outlying industry, neighboring municipalities and rural water customers. The project consists of four primary infrastructure construction projects: a micro-tunnel intake to withdraw water from Kaw Lake; 70-miles of raw water conveyance pipeline; anew 10.5 million gallons per day (MGD) water treatment plant; and distribution system improvements. The purpose of the program is to ensure sufficient water quantity to meet population projections, reduce average day demand on the regional aquifers by 35 percent, and remove 7.5 miles of cast iron pipe, which reduces pipes with lead-sealed joints. The OWRB has funded approximately \$120 million of the project through its financial assistance programs.

HYDROLOGIC INVESTIGATIONS

The OWRB conducts hydrologic investigations as directed by Oklahoma Statutes to determine the amount of fresh groundwater available for appropriation. A priority recommendation of the OCWP focused on addressing the backlog of the required Maximum Annual Yield (MAY) studies and overdue twenty-year updates of the state's groundwater basins. This work is now underway.

In the addition the Salt Fork of the Arkansas River study mentioned in “Basin Updates”, the OWRB is also conducting investigations on the Salt Fork of the Red River, Roubidoux and the Boone Washita River Reach 1 aquifers through contracts with the United States Geological Survey (USGS).

The OWRB is collaborating on the Upper Red River Basin Study, which is scheduled for completion in 2019, with the United States Bureau of Reclamation (USBR), Lugert-Altus Irrigation District (Lugert-Altus Reservoir), and Mountain Park MCD (Tom Steed Reservoir).

The OWRB continues collaborative work on the Upper Washita Basin Study, which is scheduled for completion in 2020, with the USBR, Foss Reservoir Master Conservancy District, and Fort Cobb MCD.

The OWRB completed the Rush Springs Aquifer study in 2018, along with a companion report by the USGS on the Rush Springs Aquifer groundwater flow model. The OWRB is currently conducting investigations of the Elk City Sandstone, Gerty Sand, and Blaine aquifers.

The OWRB completed dependable yield studies of three sole-source supply lakes for the communities of Hominy, Langston, and McAlester Army Ammunition Plant in 2018. The OWRB performed bathymetric studies (lake floor contours) to get an accurate volume of the lakes at any water level. CH2M engineers, funded in part by the US Army Corps of Engineers Planning Assistance to States grant, used this data and OWRB historical use reports to estimate the amount of water these communities can rely upon in the worst drought on record to plan their future projects accordingly. The OWRB will meet with these water systems in 2019 to discuss study results.

WATER RIGHTS PERMITTING

The OWRB appropriates fresh water resources as directed by Oklahoma statutes. Currently, there are 13,172 active long-term permits for more than 6.83 million acre-feet per year. The OWRB's permitting staff issued 92 groundwater permits in FY-2019 totaling 32,096.9 acre-feet, and 63 stream water permits totaling 13,634.3 acre-feet, along with 1,684 provisional temporary permits totaling 71,805.2 acre-feet. To support water rights administration, the agency conducted surface water allocation modeling and availability analyses, coordinated statewide water use reporting, and responded to public complaints.

FLOODPLAIN MANAGEMENT

The OWRB acts as the State Floodplain Board and the National Flood Insurance Program coordinating agency as directed by the Oklahoma Floodplain Management Act. The OWRB worked closely with communities throughout the state in 2019 to identify flood risks and update flood maps through FEMA's Cooperating Technical Partners program. OWRB staff conducted 20 new Community Assistance Visits (CAVs) in the past year. Of those, 16 are now closed. OWRB provided general technical assistance in more than 500 instances last year, while floodplain manager accreditation rate is being maintained at an all-time high level.

DAM SAFETY PROGRAM

In the past year, the OWRB Dam Safety staff has been working closely with several high hazard dam owners with updating and completing their EAPS. Dam owners were guided throughout the process on how to prepare the EAP considering different entities that should be involved in an emergency situations as well as available resources. OWRB also hosted a slope stability technical workshop in July 2019 that was attended by forty four engineers representing private firms, universities, local, state and federal government agencies. OWRB staff engineer also presented Oklahoma dam safety program's experience and great achievements from the workshops for Oklahoma licensed real estate agents at the ASDSO Annual conference in Seattle and also at FEMA's National Dam Safety Program Technical Seminar (NDSPTS) in Emmitsburg, Maryland.

WELL DRILLER AND PUMP INSTALLER PROGRAM

Currently there are 368 well drilling and pump contractors licensed by the OWRB. The OWRB frequently assists drillers with required well log reporting; more than 195,000 well logs are available to the public online.

In 2019, the OWRB cooperated with the Oklahoma Ground Water Association to provide continuing education training, which is required to maintain a license, to 450 industry professionals*. The OWRB continues to work with the Well Driller Advisory Council and stakeholders to develop, update, and advance water well drilling rules.

WATER QUALITY MONITORING, MAPPING AND WATER QUALITY STANDARDS

The OWRB water monitoring staff announced the release of the agency's 2018 Beneficial Use Monitoring Program (BUMP) reports providing detailed physical, chemical, and biological water data from approximately 1,300 stream, lake, and groundwater well sites across Oklahoma. Created in 1998, BUMP provides data necessary for water quality management decisions by identifying impairments to the "beneficial uses" of Oklahoma's water resources, as well as determining causes for those water quality impairments. The water data contained in the OWRB's annual BUMP report is collected from about 130 lakes and 100 stream segments at approximately 600 sites throughout Oklahoma. For additional information, visit www.owrb.ok.gov/bump.

The Groundwater Monitoring and Assessment Program, added to BUMP in 2012, consists of a network of approximately 750 wells in Oklahoma's 21 major aquifers, where the OWRB monitors both water levels and water quality. Groundwater assessment is achieved through both a baseline monitoring network and a long-term (trend) network within each of the state's 21 major aquifers. This provides information on individual aquifer characteristics as well as a more general assessment of the Oklahoma's groundwater.

Revision topics for the 2018-2019 Interim Rulemaking included changes to Oklahoma's General Provisions rules related to Water Quality Standard Variance (785:45-1-2, 785:45-5-4 and 785:5-5), Site-Specific Criteria (785:45-5-7) and Use Support Assessment Protocols (785:46-15-3 and 786:46-15-10).

Amendments will become effective in September 2019. For information, visit http://www.owrb.ok.gov/util/rules/wqs_revisions.php. Changes of note include:

- Revisions to existing water quality standard variance language (OAC 785:45-1-2 and 785:45-5). The revision was pursued so that Oklahoma’s variance language would mirror federal language and allow for potential variance activities to occur as needed in an overall water quality management program. Existing variance language before the proposed changes was extremely difficult to implement in an effective and holistic manner.
- Changes to the 765:46-15 Use Support Protocols were made to introduce additional clarity to the existing language such that individuals determining use support for a waterbody to do so effectively thus ensuring that all parties would be implementing the rules in the same and consistent manner. Some minor changes were made to the existing nutrient dichotomous key to further clarify the existing language as well as enhance the ease of use.

Work began in 2018 as part of the 2018 National Rivers and Streams Assessment Study to assess Wadeable and non-wadeable streams over a two year cycle. Sampling on numerous rivers and streams across Oklahoma will continue this year and should be completed by the end of the calendar year as it is a two year project. Data collected is used to assess environmental integrity of the waters of the nation.

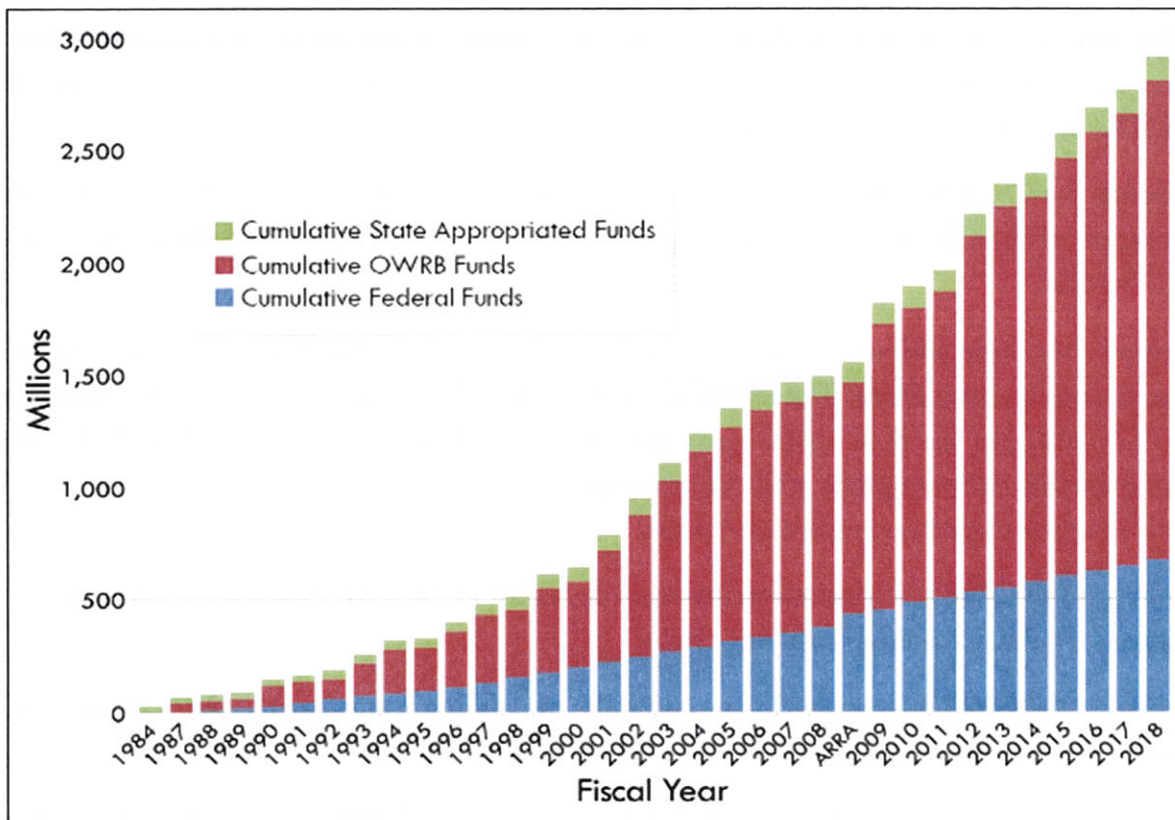
The OWRB’s groundwater monitoring team assessed Licensed Managed Feeding Operations compliance in an additional 550 wells through a continuing partnership with the Oklahoma Department of Agriculture, Food and Forestry.

Staff continues data migration into the AQUAMS database and enhancement to allow greater public access and to provide tools that streamline the in-house data assessment process. Data migration work is expected to be completed by the end of the 2019 calendar year.

WATER INFRASTRUCTURE FINANCING

The OWRB administers the State Financial Assistance Program, backed by the Statewide Water Development Revolving Fund, which awards loans and grants for the construction and improvement of public water and sewer facilities. Through five loan and grant programs, over \$4.3 billion in financing has been provided for water and sewer projects in Oklahoma with a total estimated savings of more than \$1.4 billion to Oklahoma communities. In 2018, the OWRB approved 32 loans and 15 grants totaling \$286.2 million to fund public water/wastewater infrastructure improvements with an estimated savings of \$22.4 million as compared to traditional financing.

PROGRAM	NUMBER AND AMOUNT
FAP Loans	393 for \$ 1,215,385,000
CWSRF Loans	340 for \$1,587,259,227
DWSRF Loans	209 for \$1,276,308,800
REAP Grants	693 for \$60,362,051
Emergency Grants	582 for \$34,366,720
Drought Response Grants	6 for \$418,848
Special Purpose	8 for \$2,625,000
TOTAL (as of 07/24/19)	2,231 for \$ 4,366,974,640



Cumulative investments in OWRB infrastructure financing. Since 1984, the OWRB has leveraged \$114 million in state funds and \$640 million in federal funds with \$2.15 billion in bonds to expand available financing for infrastructure projects in Oklahoma communities.

ADDITIONAL MATTERS

Jackson v. OWRB and Oklahoma City, Case No. CV-2017-32, District Court of Pushmataha County – Pursuant to the state’s tribal water rights settlement in August of 2016, the City of Oklahoma City applied to the OWRB for a stream water permit to divert water from Sardis Lake and the Kiamichi River in southeastern Oklahoma for municipal uses. After a week-long water rights hearing process, the OWRB approved Oklahoma City’s application. The appeal of OWRB’s decision to approve that application is pending before the District Court of Pushmataha County pursuant to Oklahoma’s Administrative Procedures Act.

OCWP Instream Flow Workgroup - First commissioned in 2009, the Oklahoma Comprehensive Water Plan (OCWP) Instream Flow Workgroup conducted independent technical, legal, and policy analysis and developed a process to ascertain the suitability and structure of an instream flow program for Oklahoma. Further consideration of an Instream Flow program became a priority recommendation of the 2012 OCWP Update. A public meeting was held in November 2018 in the ongoing effort to conduct an Instream Flow Pilot Study on the Illinois River basin.

In June 2019, the ISF team presented the completed IFIM Pilot Process with its recommendations to the Advisory Work Group for feedback. A final report on this Pilot Study will follow including analyses of what was learned in the workshops and the June meeting.

2019 Oklahoma Legislative Session - During the 2019 Oklahoma legislative session, a number of bills related to Oklahoma water law and water resource management programs were considered and approved. The bills that were approved include:

SB539 extends the OWRB's use of Gross Production Tax revenue through 2023 to fund the continued implementation of the Oklahoma Comprehensive Water Plan, as well as related statutorily-mandated hydrologic studies.

SB998 defines the taking and use of marginal quality water to be of beneficial use and not waste, within certain limitations and standards. The legislation allows the OWRB to permit use of marginal quality water (at least 5,000 but less than 10,000 parts per million total dissolved solids). The OWRB finalized rule amendments in 2019 to update well construction standards for these types of marginal quality water wells in order to protect fresh water zones.

HB1403 directs the OWRB to determine instream flows for certain rivers and authorizes the promulgation of rules associated with that effort.

HB2474 directs the OWRB to maintain an online list of pending water permit applications in addition to the traditional newspaper publication notice required of applicants.

HB2263 creates the Groundwater Irrigation District Act, which allows permit holders in proposed groundwater irrigation districts to seek grant funding via petition and provides rules and guidelines for such districts.

SB568 creates the Phase II Arbuckle-Simpson Hydrology Study Revolving Fund, administered by the Oklahoma Water Resources Board. Funding for the study has not been appropriated. **SB702** places a moratorium on new mining permits in the Arbuckle-Simpson Aquifer area, pending completion of the Phase II study. Similarly, **HB2471** places a moratorium on the issuance of permits by the Oklahoma Department of Environmental Quality to allow mines to discharge into certain water sources, basins, or sub-basins pending completion of the Phase II study.

SB705 provides that funding be included in Legislative findings that safe public groundwater supply is a valuable natural resource for management purposes.

**2019 TREASURER
REPORT**

KANSAS-OKLAHOMA ARKANSAS RIVER COMPACT COMMISSION
TREASURER'S REPORT
FY 2019 Expenditures and Summary
(July 1, 2018 to June 30, 2019)

July 25, 2019

The Kansas-Oklahoma Arkansas River Compact Commission continues to operate as described in the Resolution signed by the commissioners on July 27, 2011. Chris Beightel of Kansas serves as compact treasurer.

The compact commission continues to meet its financial obligations through an account established with Bank of America pursuant to Resolution 2012.1 approved by the commission in January of 2012 and opened in February of 2012. When the account was opened, an amount of \$9,920.39 was transferred from U.S. Bank.

In consideration of the increased cost for a full financial audit and of the relative simplicity of the commission's financial activity, at the 2017 annual meeting the commission decided that it would be adequate to fully audit the fund every five years and conduct financial reviews in the intervening years. The commission directed that the next full audit would be of FY2020 activity.

The review of fiscal year 2018 activity was conducted from March 21, 2019 through May 28, 2019 by the firm Cummins, Coffman & Schmitdlein, CPAs, P.A. The cost to the commission fund was \$700. The cost was \$50 more than was budgeted for this service.

The commission decided at the 2017 annual meeting to require a criminal activity insurance bond for the treasurer only when the commission fund exceeded \$50,000. The fund balance did exceed \$50,000 for approximately two months in 2019, but expenses incurred late in the fiscal year brought the balance down to approximately \$49,600. In anticipation of drawing the fund down further by expending \$10,000 on a water quality project, a bond has not been secured.

Below is a ledger of the cash transactions since July 1, 2017 followed by estimates of the FY2020 expenses and anticipated revenue.

Kansas-Oklahoma Arkansas river commission fund

<u>Check #</u>	<u>Date</u>	<u>Expense Detail</u>	<u>Amount</u>	<u>Acct. Balance</u>	<u>Note</u>
		Interest	\$3.23	\$33,910.68	FY2017 ending balance
1014	7/7/2017	Marland Mansion	(\$100.00)	\$33,810.68	2017 Ann. Mtg. Space
	8/11/2017	Kansas 2017 Assessment	\$2,900.00	\$36,710.68	
	8/11/2017	Oklahoma 2017 Assessment	\$2,900.00	\$39,610.68	
1015	2/9/2018	Cummins and Coffman	(\$650.00)	\$38,960.68	financial review
	4/20/2018	Kansas 2018 Assessment	\$2,900.00	\$41,860.68	
	6/1/2018	Strataca (Salt Museum Tour)	(\$277.11)	\$41,583.57	
	6/25/2018	Oklahoma 2018 Assessment	\$2,900.00	\$44,483.57	
		Interest	\$3.96	\$44,487.53	FY2018 ending balance
	3/20/2019	Kansas 2019 Assessment	\$2,900.00	\$47,387.53	
	3/26/2019	Oklahoma 2019 Assessment	\$2,900.00	\$50,287.53	
1016	6/12/2019	Cummins and Coffman	(\$700.00)	\$49,587.53	
		Interest	\$4.62	\$49,592.15	FY2019 ending balance

Anticipated expenditures for FY2020

Estimate

2019 Annual Meeting costs	(\$400.00)
Incidentals	(\$400.00)
Water Quality Project	(\$10,000.00)
Review of FY2019 activity	(\$750.00)
Total	<u>(\$11,550.00)</u>

Anticipated Revenue Projection for FY2020

State Assessments (FY2019)	\$5,800.00
Total	<u>\$5,800.00</u>

Balance at the end of FY2019	\$49,592.00
------------------------------	-------------

Projected Balance at the end of FY2020	<u>\$43,842.00</u>
--	--------------------

KANSAS – OKLAHOMA ARKANSAS RIVER COMMISSION

**FINANCIAL STATEMENTS
AND
INDEPENDENT ACCOUNTANT'S REVIEW REPORT**

As of and For the Years Ended June 30, 2018 and 2017

**Cummins, Coffman & Schmidlein, CPA's, P.A.
3706 S. Topeka Blvd., Suite 302
Topeka, Kansas 66609-1246**

**KANSAS – OKLAHOMA ARKANSAS RIVER COMMISSION
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Statements of Support, Revenues, and Expenses - Cash Basis.....	4
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INDEPENDENT ACCOUNTANT'S REVIEW REPORT

To the Commissioners of
Kansas – Oklahoma Arkansas River Commission

We have reviewed the accompanying financial statements of Kansas – Oklahoma Arkansas River Commission (the Organization), which comprise the statements of assets, liabilities, and net assets – cash basis as of June 30, 2018 and 2017, and the related statements of support, revenues, and expenses – cash basis for the years then ended, and the related notes to the financial statements. A review includes primarily applying analytical procedures to management's financial data and making inquiries of management. A review is substantially less in scope than an audit, the objective of which is the expression of an opinion regarding the financial statements as a whole. Accordingly, we do not express such an opinion.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles general accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Accountant's Responsibility

Our responsibility is to conduct the review engagement in accordance with Statements on Standards for Accounting and Review Services promulgated by the Accounting and Review Services Committee of the American Institute of Certified Public Accountants. Those standards require us to perform procedures to obtain limited assurance as a basis for reporting whether we are aware of any material modifications that should be made to the financial statements for them to be in accordance with accounting principles generally accepted in the United States of America. We believe that the results of our procedures provide a reasonable basis for our conclusion.

Accountant's Conclusion

Based on our review, we are not aware of any material modifications that should be made to the accompanying financial statements in order for them to be in accordance with the cash basis of accounting.



Basis of Accounting

We draw attention to Note 1 of the financial statements, which describes the basis of accounting. The financial statements are prepared in accordance with the cash basis of accounting, which is a basis of accounting other than accounting principles generally accepted in the United States of America. Our conclusion is not modified with respect to this matter.

Cummins, Coffman & Schmidlein, CPA's, P.A.

Cummins, Coffman & Schmidlein, CPA's, P.A.

Topeka, Kansas

May 15, 2019

KANSAS – OKLAHOMA ARKANSAS RIVER COMMISSION
 STATEMENTS OF ASSETS, LIABILITIES,
 AND NET ASSETS – CASH BASIS
 Years Ended

ASSETS

	<u>June 30</u>	
	<u>2018</u>	<u>2017</u>
Cash	\$ <u>44,488</u>	\$ <u>33,911</u>
Total Assets	\$ <u>44,488</u>	\$ <u>33,911</u>

LIABILITIES & NET ASSETS

	<u>June 30</u>	
	<u>2018</u>	<u>2017</u>
Net Assets, Unrestricted	\$ <u>44,488</u>	\$ <u>33,911</u>
Total Liabilities and Net Assets	\$ <u>44,488</u>	\$ <u>33,911</u>

The accompanying notes are an integral part of the financial statements.

KANSAS – OKLAHOMA ARKANSAS RIVER COMMISSION
 STATEMENTS OF SUPPORT, REVENUES,
 AND EXPENSES – CASH BASIS
 Years Ended

	<u>2018</u>	<u>June 30</u>	<u>2017</u>
<u>UNRESTRICTED NET ASSETS</u>			
<u>SUPPORT AND REVENUE</u>			
Kansas Department of Agriculture	\$ 5,800	\$	2,900
Oklahoma Water Resources Board	5,800		2,900
Interest revenue	4		3
Total support and revenue	11,604		5,803
<u>EXPENSES</u>			
Professional services	650		666
Meeting expenses	100		-
Other expenses	277		-
Total expenses	1,027		666
Change in unrestricted net assets	10,577		5,137
Unrestricted net assets, beginning of year	33,911		28,774
Unrestricted net assets, end of year	\$ 44,488	\$	33,911

The accompanying notes are an integral part of the financial statements.

KANSAS – OKLAHOMA ARKANSAS RIVER COMMISSION
NOTES TO FINANCIAL STATEMENTS
June 30, 2018 and 2017

NOTE 1 ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Organization

Kansas – Oklahoma Arkansas River Commission is an interstate administrative agency organized under the Arkansas River Basin Compact in 1965. Its primary purpose is to administer the water apportionment agreed to in the Compact.

Basis of Accounting

The Organization's policy is to prepare financial statements on the cash basis of accounting. Under that basis, the only asset recognized is cash, and no liabilities are recognized. Revenues are recognized when collected rather than when earned and expenses are recognized when paid, rather than when incurred.

Cash and Cash Equivalents

The Organization considers all investments with a maturity of three months or less to be cash equivalents. The Organization maintains its cash in bank accounts of local financial institutions. At both June 30, 2018 and 2017, the Organization's cash balance was not in excess of the insured limits.

Net Assets

The Organization's net assets and revenues are classified based on the existence or absence of imposed restrictions. Accordingly, net assets of the Organization and changes therein are classified and reported as follows:

Unrestricted net assets-net assets that are not subject to imposed stipulations.

Temporarily restricted net assets-net assets that are subject to imposed stipulations that may or will be met either by actions of the Organization and/or the passage of time.

Support and Revenues

Support and revenue are reported as increases to unrestricted net assets unless use of the related assets is limited by imposed restrictions. Expenses are reported as decreases in unrestricted net assets. Assessments are reported in the period received.

NOTE 2 SUBSEQUENT EVENTS

Subsequent events were evaluated through the date of the accountant's report, which is the date the financial statements were available to be issued. No events were found requiring disclosure in these financial statements.

KANSAS-OKLAHOMA ARKANSAS RIVER COMPACT COMMISSION
ENGINEERING COMMITTEE REPORT
July 25, 2019
Hilton Garden Inn Conference Room
Bartlesville, Oklahoma

This report covers October 1, 2017 through September 30, 2018. The report contains streamflow data, water quality data and construction of reservoir conservation storage capacities in the compact basin areas.

The 2018 water year (WY) mean flows at all Oklahoma gaging stations were lower than in WY 2017. The 2018 Caney River near Ramona, OK discharged 83% less water than last year's mean flow. The other four gages showed mean flows between 43% and 69% of what they were the previous year. Taken together, all Oklahoma gaging stations showed that WY 2018 mean flows were approximately 64% of the mean flow for the periods of record.

The 2018 WY mean flows at all of the Kansas gaging stations were lower than in WY 2017. The Verdigris River at Independence, KS showed 66% less mean flows compared to the 2017 WY. The other three gages showed mean flows between 45% and 65% of what they were the previous year. Taken together, all Kansas gaging stations showed that 2018 WY mean flows were approximately 53% of the mean flow for the periods of record.

The engineering committee reports that two new water storage structures were completed in the Kansas or Oklahoma compact areas during October 1, 2017 through September 30, 2018 that exceeded the 100-acre-foot conservation storage minimum requirement as set forth in the compact. The new storage is shown below.

Grellner

Normal storage: 172 AF
Section 36 Township 16 N Range 06 W1
Kingfisher Co. OK

Omega Lake

Normal storage: 177 AF
Section 03 Township 16 N Range 09 W1
Kingfisher Co. OK

Respectfully submitted by the engineering committee:


Chris Beightel, Member
Yohanes Sugeng, Member

Water Flow Data

Water Year 2018
Oklahoma and Kansas

Station	Description	Years of Record	Mean Flow Period of Record (cfs)	Mean Flow WY 2017 (cfs)	Mean Flow WY 2018 (cfs)
07175500	Caney River near Ramona, OK	34	1520	1912	316
07152000	Chikaskia River near Blackwell, OK	82	604	700	256
07158000	Cimarron River near Waynoka, OK	80	263	149	84
07185000	Neosho River near Commerce, OK	78	3788	4973	1502
07151000	Salt Fork Arkansas River at Tonkawa, OK	76	900	854	382
07170500	Verdigris River at Independence, KS	50	2172	2568	850
07146500	Arkansas River at Arkansas City, KS	115	1942	2373	850
07151500	Chikaskia River near Corbin, KS	67	251	280	154
07170990	Verdigris River at Coffeyville, KS	16	2665	3170	1089

Source: United States Geological Survey National Water Information System – waterdata.usgs.gov

Water Quality Data

Fall, 2017 through Fall, 2018
Stations in Kansas

Station Number	Station Description	Total Dissolved Solids (mg/L)		Hardness (mg/L)		Specific Conductance (µOhms/cm)		Water Temperature (degrees Celsius)	
		Min	Max	Min	Max	Min	Max	Min	Max
000215	Verdigris River near Coffeyville	140	330	93	240	210	610	5	31
000218	Arkansas River near Arkansas City	380	1100	160	420	640	1900	1	34
000529	Chikaskia River near Corbin	350	510	230	360	610	840	2	34

000566	Neosho River near Oswego	120	390	71	320	160	680	5	30
000214	Neosho River near Chetopa	120	380	70	310	160	660	4	30

Source: Kansas Department of Health and Environment, Stream Chemistry Monitoring Program, July 18, 2019.

Fall, 2017 through Fall, 2018
Stations in Oklahoma

Station Number	Station Description	Total Dissolved Solids (mg/L)		Hardness (mg/L)		Specific conductance (mS/cm)		Water temperature (deg C)	
		Min	Max	Min	Max	Min	Max	Min	Max
62110000010-002RS	Chikaskia River at Tonkawa	468	734	303	468	787	1231	1.03	25.8
121500020260-001AT	Verdigris River at Inola	192	326	176	226	316	564	4.84	11.95
121600010280-001AT	Neosho River at Chouteau	146	180	140	174	302	303	3.63	12.03
620930000010-001AT	Cimarron River at Mocane	2960	3530	504	645	3866	6435	7.76	29.72
621010010160-001AT	Salt Fork of the Arkansas River at Ingersoll	1650	1830	900	1204	1660	2800	4.96	32.1

**REFER TO
NEW BUSINESS**

**Kansas-Oklahoma Arkansas River Commission
Budgets for Fiscal Years (July - June) 2019, 2020 & 2021**

	Fiscal Year 2019		Fiscal Year 2020	Fiscal Year 2021
	Approved	Actual	Proposed	Proposed
Audit or Financial Review	(\$650)	(\$700)	(\$750)	(\$2,000)
Treasurer's Bond	\$0	\$0	\$0	\$0
Annual Meeting	(\$400)	\$0	(\$400)	(\$400)
Incidentals (incl. bank interest)	(\$400)	\$4	(\$400)	(\$400)
Water Quality Project	(\$10,000)	\$0	(\$10,000)	\$0
Assessments \$2,900 KS; \$2,900 OK	\$5,800	\$5,800	\$5,800	\$5,800
Total Annual	(\$5,650)	\$5,104	(\$5,750)	\$3,000
Year End Balance	\$38,840	\$49,592	\$43,842	\$46,842

Notes:

- No water quality project was approved in fiscal year 2019, so this line item was moved to the proposed fiscal year 2020 budget
- Annual meeting expenses for the 2017 and 2018 meetings were incurred and paid in fiscal year 2018
- A full audit of the commission fund for fiscal years 2016-2020 will take place in fiscal year 2021, hence the increased cost

**REPORTS OF STATE and
FEDERAL AGENCIES and
OTHERS**

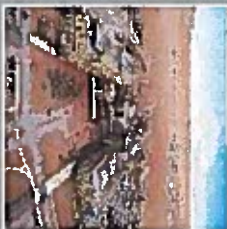
FEDERAL UPDATE: TULSA DISTRICT US ARMY CORPS OF ENGINEERS

KANSAS – OKLAHOMA ARKANSAS RIVER COMMISSION 55TH ANNUAL MEETING

Mike R. Abate, PPM
Chief Civil Works Branch, PPMID
Tulsa District Corps of Engineers
25 July 2019

"The views, opinions and findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation."

Interagency and
International
Support



MKARNS



Multipurpose
Reservoirs



Hydropower



Military



Civil Works Mission Areas



Sandus Lake

Water Supply

- 40% of USACE water supply contracts
- 27 lakes, 160 water supply customers
- 1.9 mill. on acre-feet under contract
- 0.29 million acre-feet not under contract



Denison Dam, Lake Texoma

Flood Risk Management

- 15,950,000 acre feet of flood storage
- Arkansas River Basin: \$20.1B in flood damage reductions
- Red River Basin: \$2.9B in flood damage reductions



Red River Chloride Area W

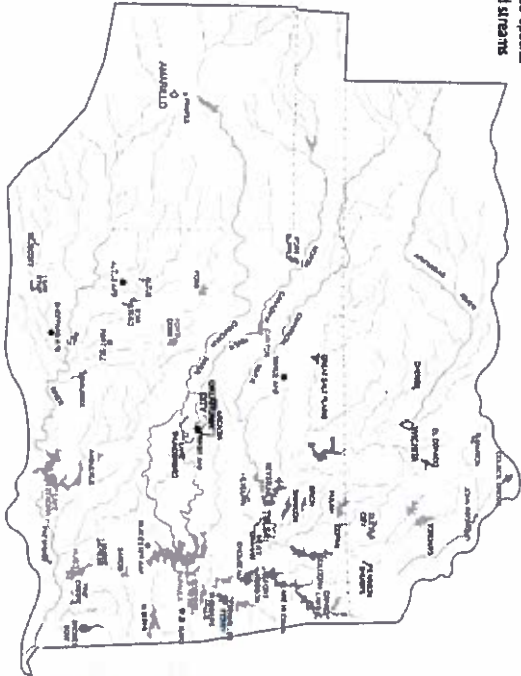
Water Quality

- Enhances municipal, industrial, irrigation usage
- Protects endangered species
- Improves degraded streams



Tribal Construction

- 20 tribes supported of 40 tribes in state
- \$1.37M in construction since 2009
- \$20M annually (best program in the last 10 years)



Least Terns Nesting on Arkansas River

Environmental Stewardship

1.15M ac of Federal Land
660k ac of wildlife/natural areas



McClellan Kerr Arkansas River Navigation System

- 3 major ports
- Economic impact of system \$98 annually
- Critical Backlog Maintenance \$212M (50% chance of failure w/ 5 yrs)



Denison Dam Turbine

Hydroelectric Power

- 8 plants with 865MW capacity
- Generates power to 6M customers
- 4 active retail projects in various stages



Planning Assistance to States and Tribes

- Section 22 of WRDA 1974
- 50/50 Cost Share
- \$7.2M Fed funds since 1999
- FY2019 \$664k of Fed funds



Haworth Bluff Beach, Oologah Lake

Recreation

- 750 recreation areas (7/3ds out granted)
- 22 million visitors
- \$171M in spend/revenue (Open P. Spend)
- 12,000 Camp sites (172 out granted)
- 69 Marinas (all out granted)
- 467 Boat Ramps (1/2 out granted)

#1 in USACE
#2 in USACE

A map of Arkansas showing the Arkansas River System and Red River System. The Arkansas River System is outlined in purple and the Red River System is outlined in red. Two text boxes provide project statistics for each system. The background is a detailed map with county boundaries and river networks.

Arkansas River System

35 projects.

- **30 Corps of Engineers Projects**
- **5 Section-7 Projects**
- **3.78 M acre-feet of Conservation Storage at Corps Lakes**
- **11.98M acre-feet of Flood Control Storage at all Lakes (Corps and Section -7)**

Red River System

15 projects.

- **7 Corps of Engineers Projects**
- **7 Section-7 Projects**
- **1 Chloride Control Project**

Tulsa District FY 2018 – FY 2020 Civil Works Budget

FY 2018 Allocations

- Investigations - \$235,000
- Construction - \$0
- O&M - \$133,223,000
 - Regular Appropriation: \$127,723,000
 - Flood Supplemental: \$5,500,000
 - Plan to obligate \$44,514,000 on non-routine maintenance (33% of budgeted funds)

FY 2019 Allocations

- Investigations - \$3,000,000 (Flood Supplemental)
- Construction - \$0
- O&M - \$102,345,400
 - Regular Appropriation: \$90,314,000
 - Work Plan: \$9,560,400
 - 1% Emergency: \$2,471,000
 - Plan to obligate \$21,015,000 on non-routine maintenance (20.5% of budgeted funds)

FY 2020 President Budget

- Investigations - \$0
- Construction - \$0
- O&M - \$93,804,400
 - Regular Appropriation: \$93,804,000
 - Plan to obligate \$3,600,000 on non-routine maintenance (3.0% of budgeted funds)

The addition of Work Plan and Flood Supplemental amounts by Congress to the fiscal year appropriation allows the Corps of Engineers to fund activities that have become more important or critical since submission of the budget request. Tulsa District received an additional \$5.5M in Flood Supplemental funding in FY 2018. In FY 2019 we received \$9.56M in the Work Plan funding.



SWT'S CIVIL WORKS HIGH PRIORITY PROJECTS



Keystone Dam Safety Modification Study



Arkansas River Corridor Feasibility



Tulsa West-Tulsa Levees Feasibility



WATER MANAGEMENT 101




US Army Corps
of Engineers *



Arkansas River System

Water Control Plan

- **The system water control plan attempts to balance the percent of storage contained in individual project flood pools.**
- **All projects above Van Buren, Arkansas share the control point there.**
- **Flows at Van Buren are restricted to (22 ft stage) 150,000 cfs or less.**



U.S. ARMY



BUILDING STRONG®

Arkansas River System

Water Control Plan

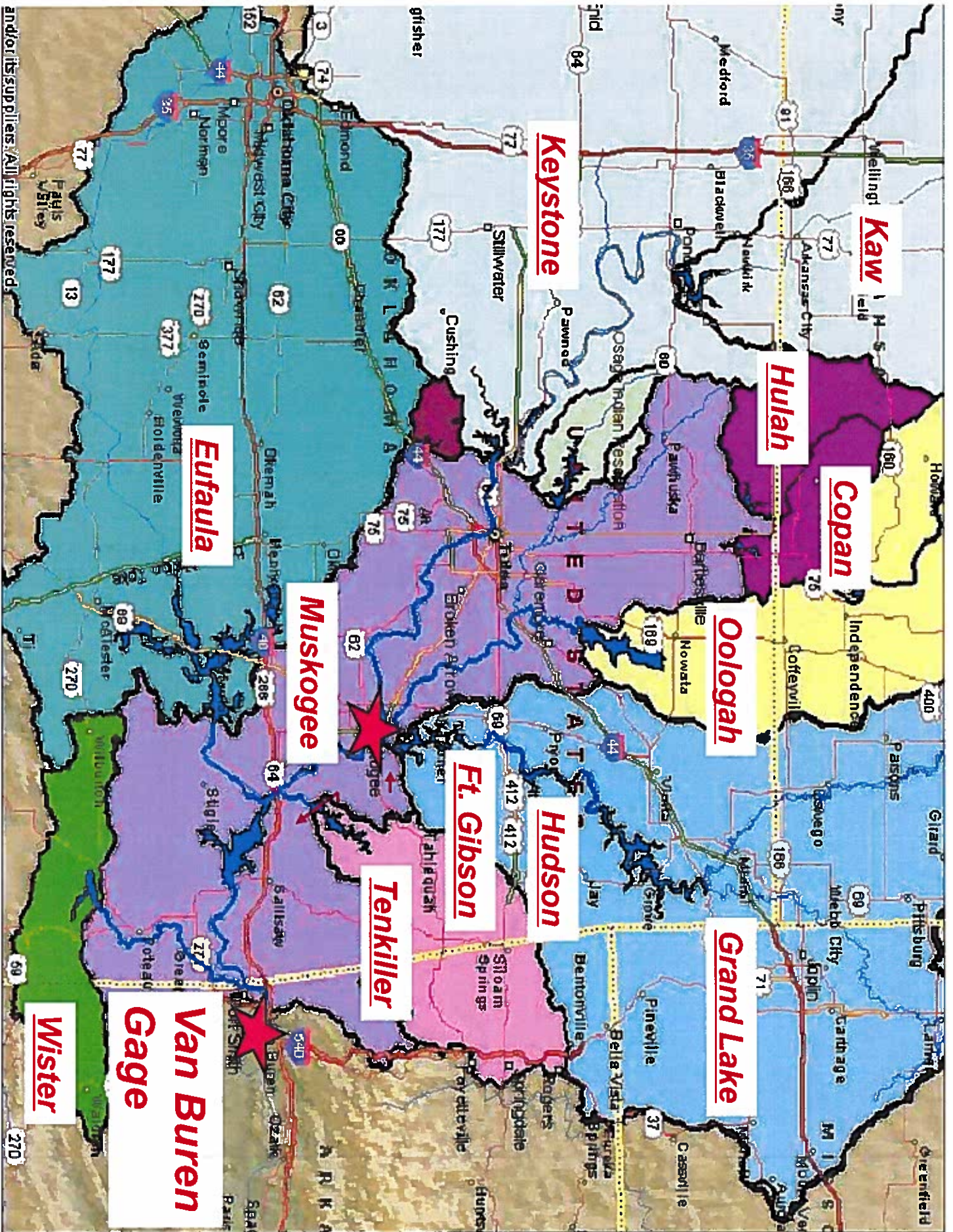
- **The system water control plan focuses on eleven principle reservoirs.**
 - **Kaw**
 - **Keystone**
 - **Hulah**
 - **Copan**
 - **Oologah**
 - **Eufaula**
 - **Grand**
 - **Hudson**
 - **Ft. Gibson**
 - **Tenkiller**
 - **Wister**
- **Upstream projects in subsystems are balanced with these eleven projects**



U.S. ARMY



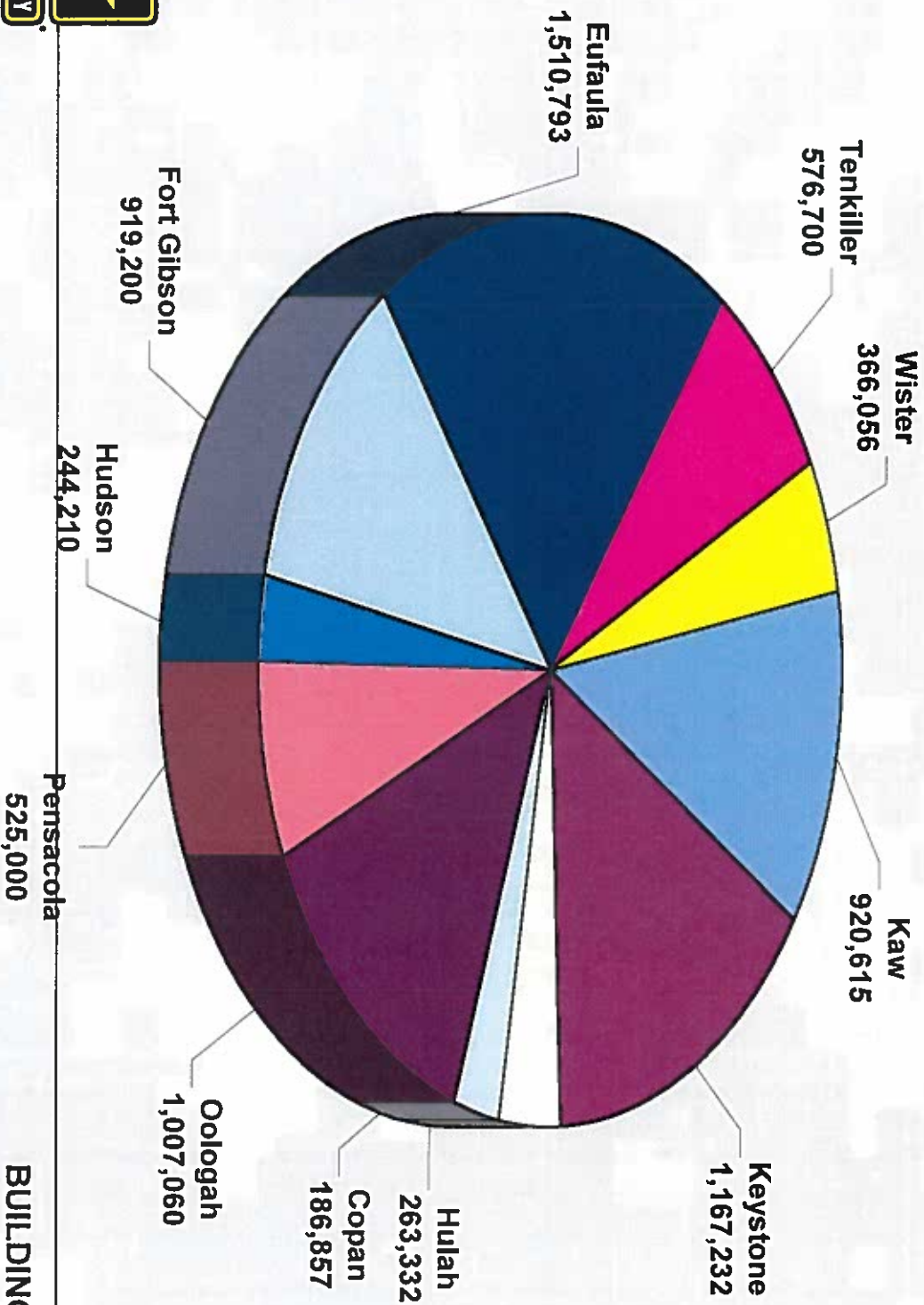
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System Flood Storage - 11 Reservoirs

Based on Conservation Pool Elevations
Total Flood Storage = 7,687,055 ac-ft



U.S. ARMY



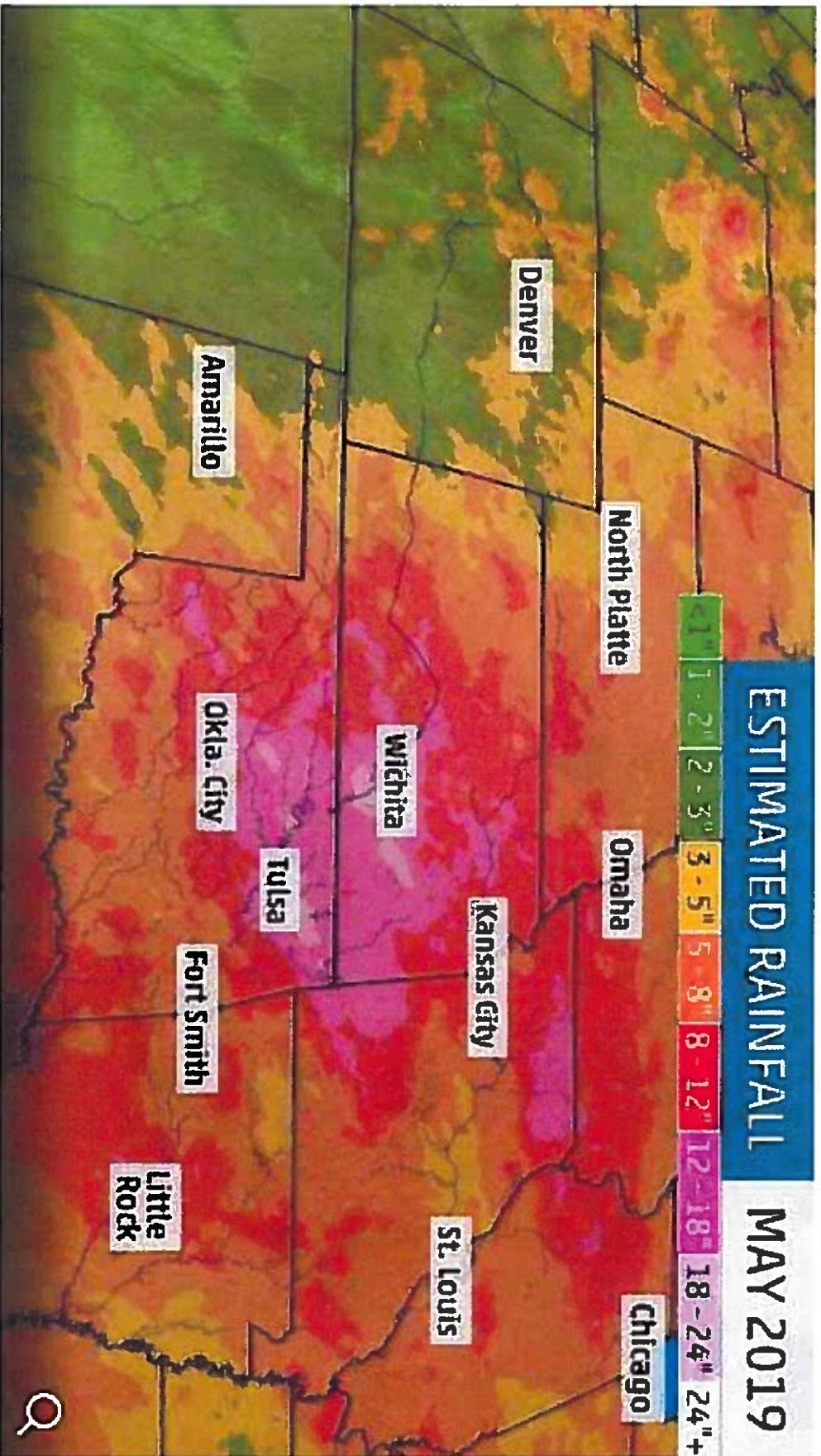
®

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2019 FLOOD



ESTIMATED RAINFALL MAY 2019 (NWS)

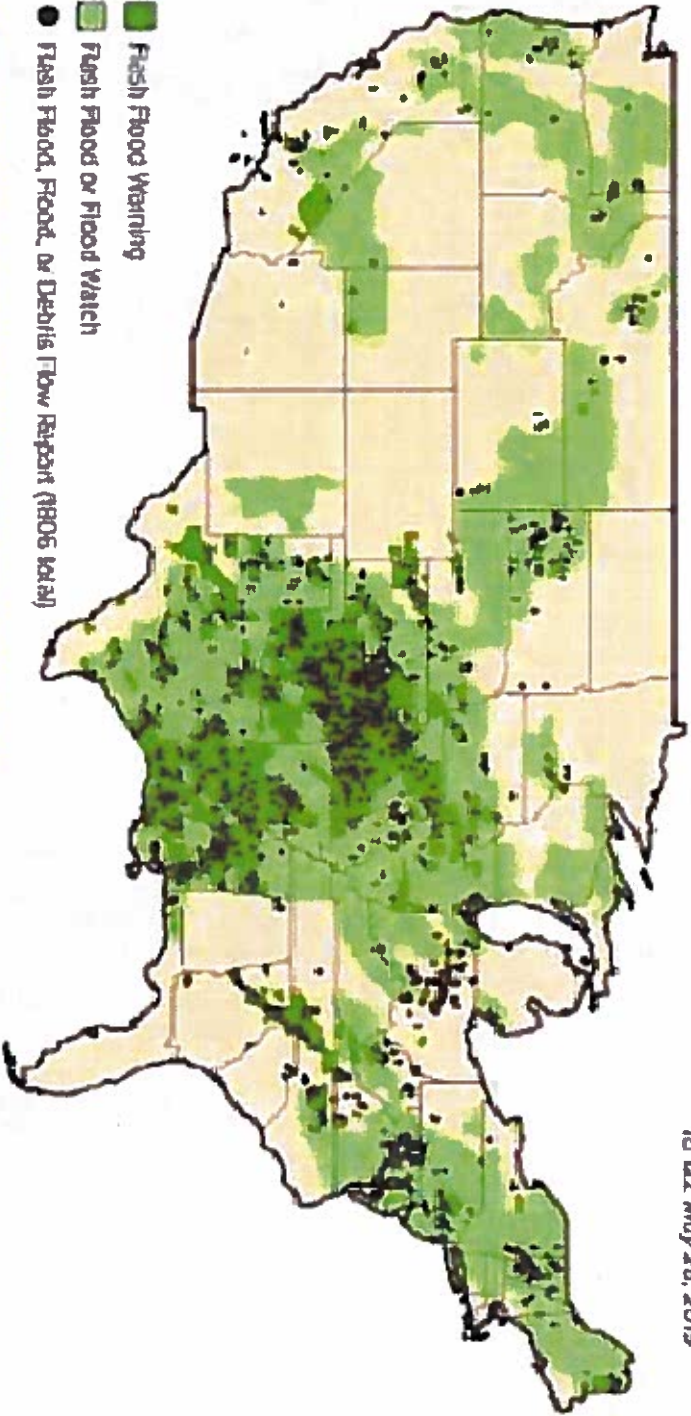


File Name



Significant Flash Flooding in April-May 2019

Map is valid from 00Z April 1
to 12Z May 28, 2019



35% of the reports were from Kansas, Missouri and Oklahoma alone. That rises to 61% when you also include TX, AR, LA, MS

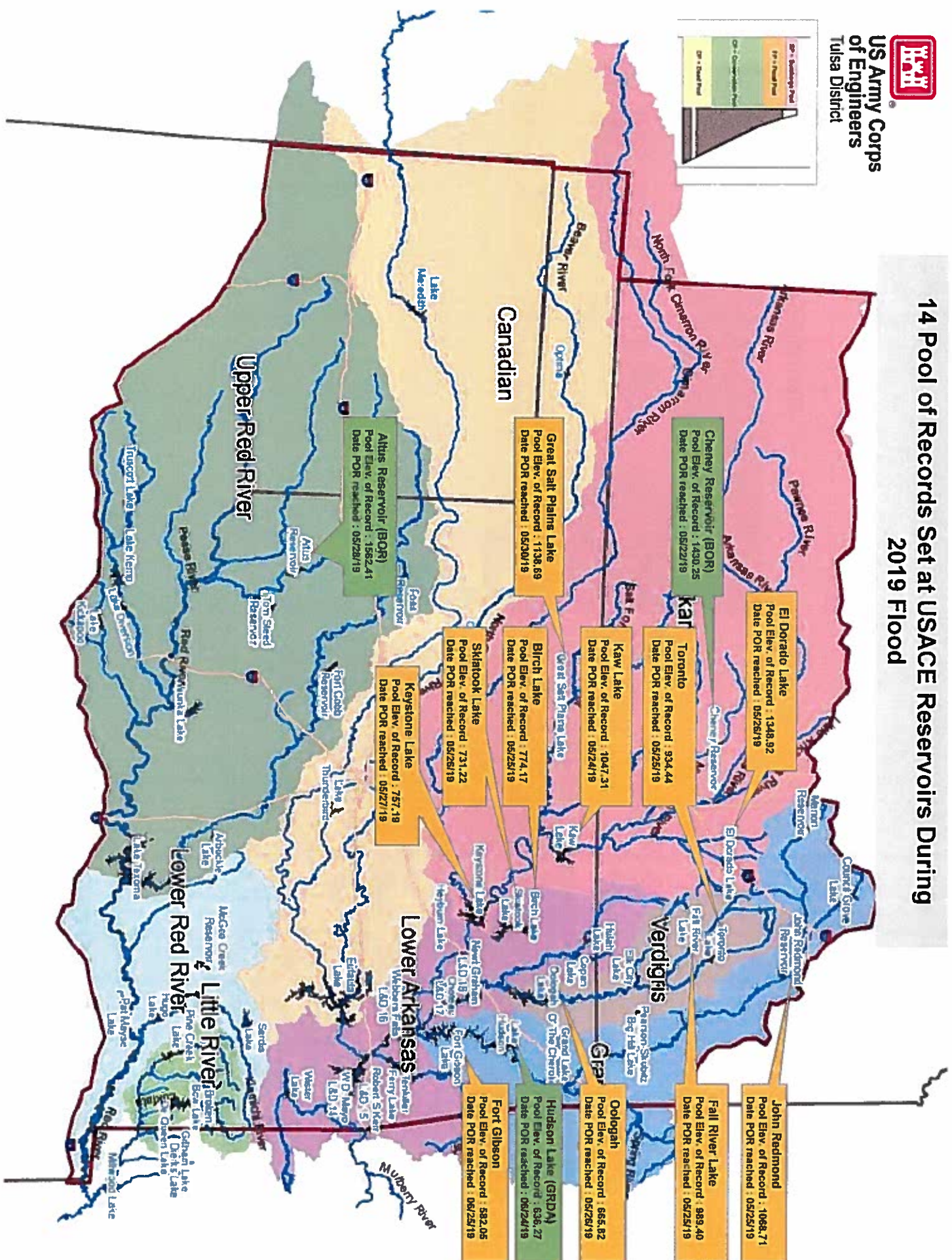
■ Flash Flood Warning

■ Flash Flood or Flood Watch

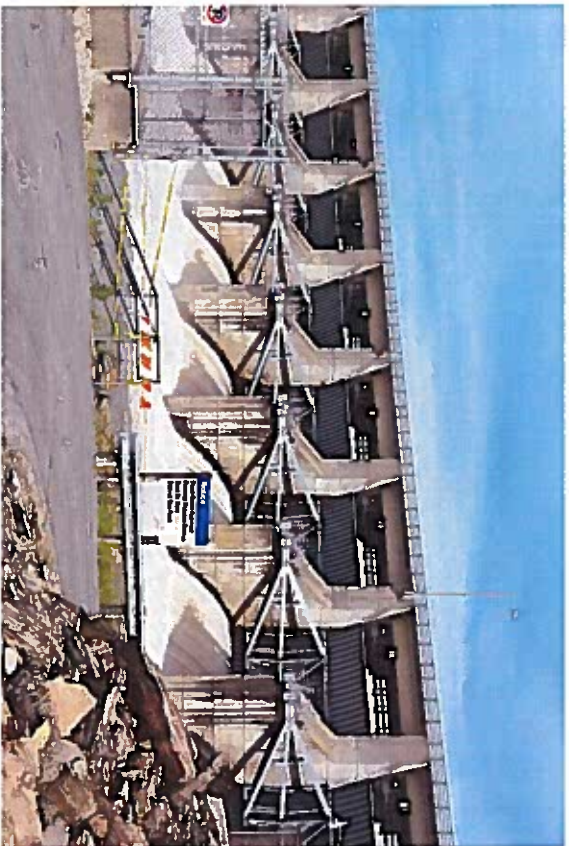
● Flash Flood, Flood, or Debris Flow Report (RRO5 101A)



14 Pool of Records Set at USACE Reservoirs During 2019 Flood



RELEASES FROM KANSAS PROJECTS



JOHN REDMOND



ELK CITY



RELEASES FROM KAW




US Army Corps
of Engineers



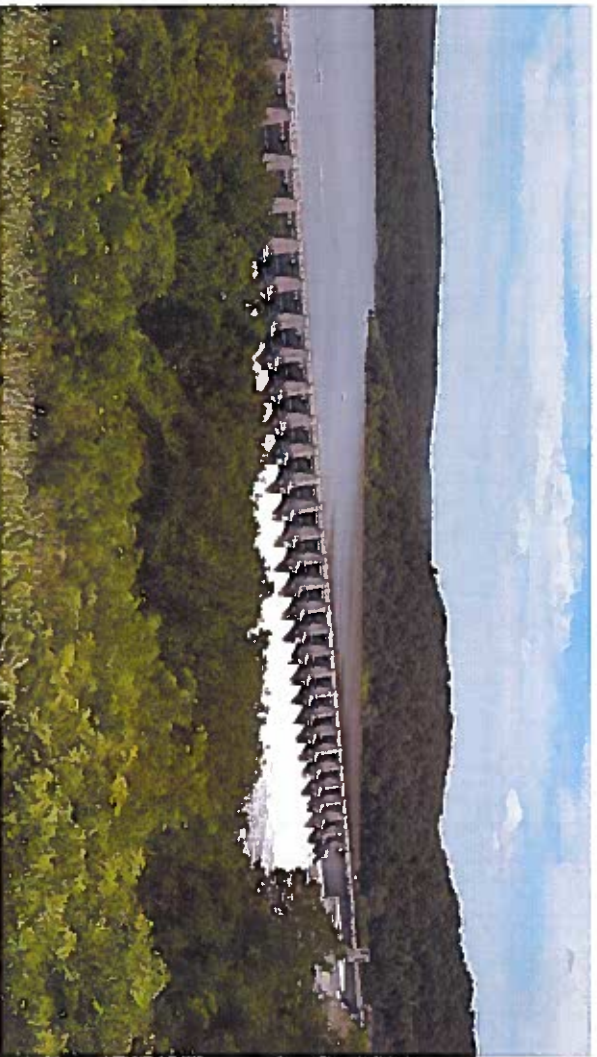
RELEASES FROM KEYSTONE



RELEASES FROM OOLOGAH



RELEASES FROM FORT GIBSON



US Army Corps
of Engineers *



RELEASES FROM EUFAULA



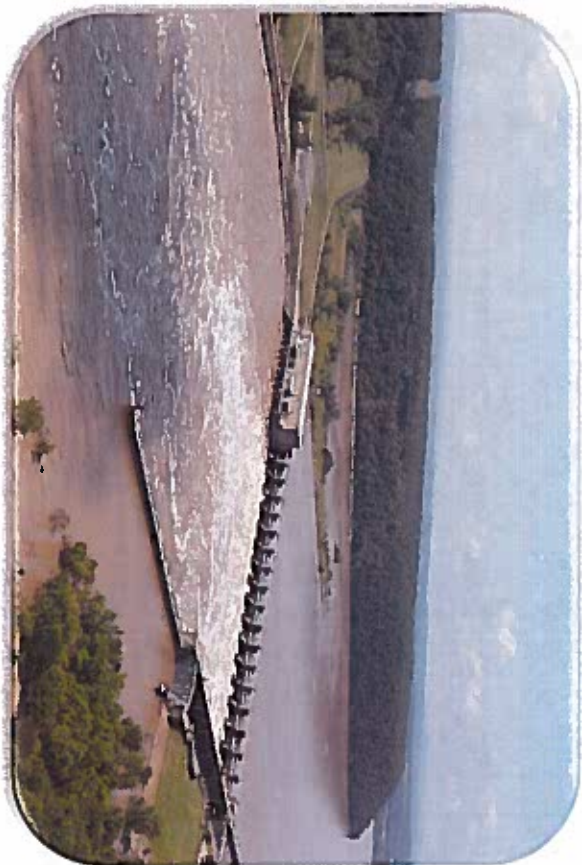
NAVIGATION PROJECTS



BARGES STRIKING WEBBERS FALLS



W.D. MAYO LOCK & DAM



R.S. KERR LOCK & DAM

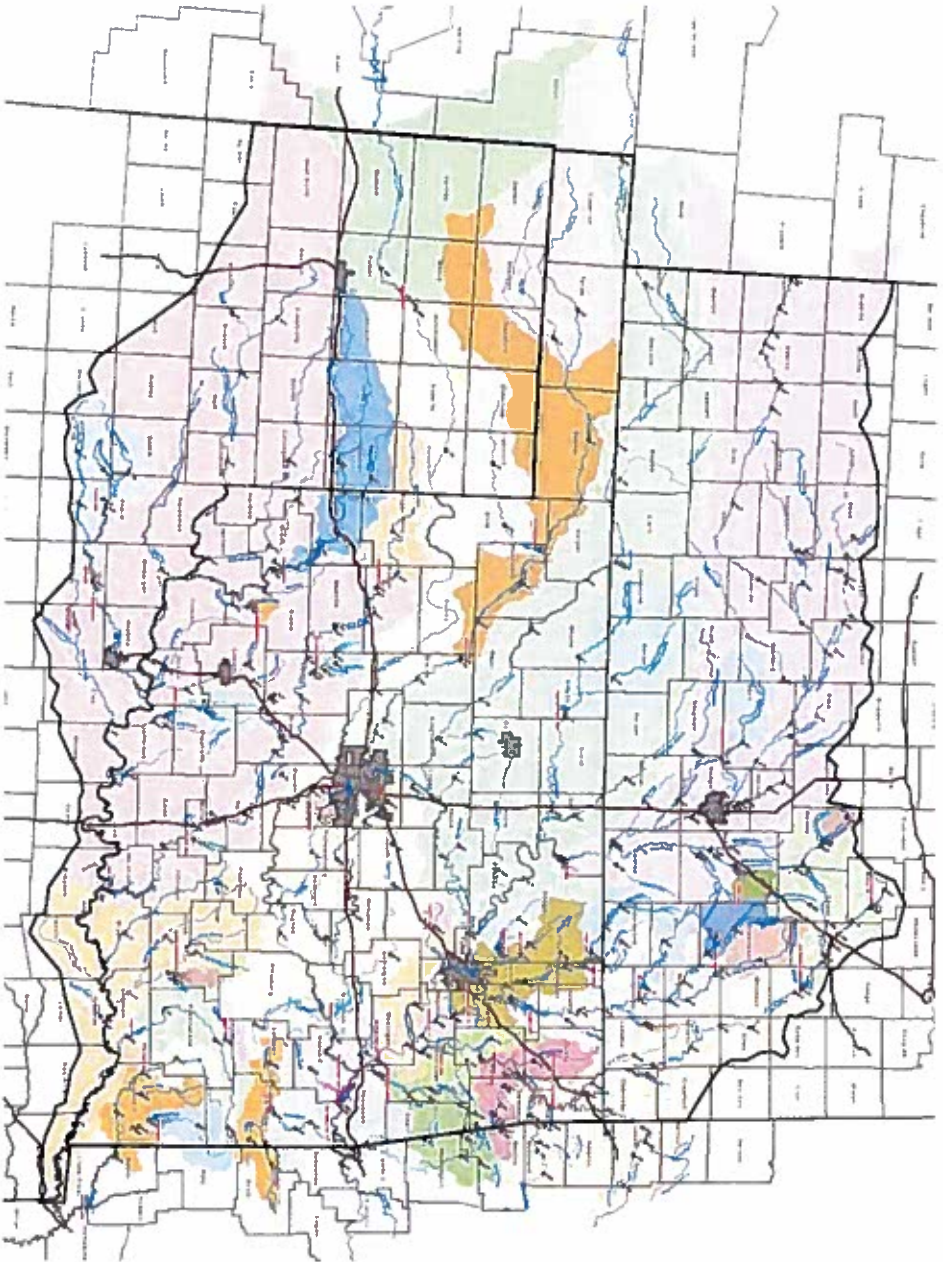


US Army Corps
of Engineers *



U.S. ARMY

Questions?



US Army Corps
of Engineers



RECLAMATION

Managing Water in the West

Summary of Current and Recently Completed Activities

Planning, Construction Assistance, and Grant Programs
Oklahoma-Texas Area Office

Mission Statements

The mission of the *Department of the Interior* is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the *Bureau of Reclamation* is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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Introduction

The Bureau of Reclamation (Reclamation) is an agency within the Department of the Interior with a primary mission designated to manage, develop, and protect water and related resources in an environmentally and economically sound manner within the 17 western states. The Oklahoma-Texas Area Office (OTAO) is responsible for administering 11 reservoir projects and associated water distribution systems in southern Kansas, Oklahoma, and Texas. The combined water delivery is more than 680,000 acre-feet (ac-ft) of Municipal and Industrial (M&I) water annually to approximately three million water users, providing additional fish and wildlife, recreation, and flood control benefits. The OTAO supports two Irrigation Districts, one in Oklahoma and one in Texas.

Reclamation works in conjunction with other Federal and state agencies, Indian Tribes, and local entities in performing these responsibilities. Significant areas of activity include providing oversight of operations and maintenance of existing facilities and water resources planning along with construction assistance.

The purpose of this activity report is to provide a summary of current and recently completed activities under the Planning, Construction Assistance, and Grant Programs.

Native American Affairs Program

The Native American Affairs Program, which is a formal program funded through the Native American Affairs line item in Reclamation's budget, is small but integral part of the overall Native American Program. The Native American and International Affairs Office in the Commissioner's Office serve as the central coordination point for the Native American Affairs Program and lead for policy guidance for Native American issues in Reclamation.

Two new projects were recently awarded in FY 18 totaling \$375,869 in Federal funding:

- **Chickasaw Nation**
Water Supply for the City of Tishomingo
- **Choctaw Nation**
Improvements for Failing Water/Wastewater Treatment Plants in Choctaw Territory

Four projects were awarded in FY 17 totaling \$277,900 in Federal funding:

- **Cherokee Nation**
Hydraulic and Water Loss Assessment of Cherokee Rural Water District #2
- **Chickasaw Nation**
Davis to Sulphur Pipeline Feasibility Study

- **Kickapoo Tribe of Oklahoma**
Establishing Reference Conditions for the Northern Cross Timbers EcoRegion Using Macroinvertebrate Assemblages
- **Miami Tribe of Oklahoma**
Water Assessment of Tribal Land

Two projects were awarded in FY 16 totaling \$55,000 in Federal funding:

- **Muscogee Creek Nation**
Groundwater Study
- **Cherokee Nation**
Cherokee Rural Water District #8 Hydraulic and Water Loss Assessment

Three projects were initiated in FY 15 totaling \$180,000 in Federal funding:

- **Cherokee Nation**
Hydraulic and Water Loss Study of Adair County Rural Water District #1
- **Cherokee Nation**
Viability Assessment for Regionalization of Rural Water Systems in Western Cherokee County, OK
- **Peoria Tribe of Indians of Oklahoma**
Potential for Utilization of Contaminated Portions of the Boone Aquifer

Water Conservation Field Services (WCFS) Program

One new project was awarded in FY 17 totaling \$100,000 in Federal funding:

- **Central Oklahoma Master Conservancy District (COMCD)**
Evaluate the Effectiveness of Floating Wetland/Breakwater Unit Designs to Reduce the Energy of Wave Action before Contacting the Lake's Shoreline

Two projects were initiated in FY 16 totaling \$432,504 in Federal funding:

- **City of Norman, OK**
Test-Pilot Hexavalent Chromium (Cr6) Removal Technologies to Address Cr6 Groundwater Occurrence and Potentially Reduce Stress on Lake Thunderbird (COMCD) Water Supply and Improve Drought Resiliency
- **City of Garden City, KS**
Installation of a Subsurface Drip Irrigation System at Clint Lightner Field
Subsurface Irrigation to Demonstration Effluent Reuse

Two projects were initiated in FY 17 totaling \$115,433 in Federal Funding

- **City of Wichita Falls, TX**
Implement Water and Energy Conservation Measures for the Operations, Management, and Use of Water within the District

- **Texas Water Development Board**
Development of Methodologies to Evaluate the Environmental, Financial and Social Benefits of Water Reuse Projects (Triple Bottom Line)

WaterSMART Program

Reclamation's WaterSMART (Sustain and Manage America's Resources for Tomorrow) Program aims to leverage Federal (up to 50 percent cost-share) and non-Federal funds to improve water management, increase energy efficiency in water delivery, facilitate water marketing projects, protect threatened and endangered species, and carry out activities to address potential climate-related impacts on water resources. Eligible entities include irrigation and water districts, river authorities, tribes, states and other entities with water or power delivery authority.

Basin Study Program

This program addresses water needs on a basin-wide scale through development of future supply/demand projections that include state-of-the-art data on climate variability; an analysis of how infrastructure and operations will perform in the face of changing realities; and development of mitigation strategies and management solutions. Studies are cost-shared on a 50/50 basis with willing state, tribal, and local partners and generally take two years to complete. Reclamation's share of study costs are used to support work done by Reclamation or its contractors.

Upper Washita Basin Study

A Basin Study on the Upper Washita Basin in Oklahoma was awarded \$350,000 in FY 12 Federal funds to partner with the Oklahoma Water Resources Board (OWRB) and Fort Cobb and Foss Reservoir Master Conservancy Districts to identify sustainable solutions to infrastructure issues and existing and projected imbalances between water supply and demand. To date, including both Federal and non-Federal cost-share contributions from partners, the total cost is \$3,002,562 and is expected to be completed by December 31, 2020.

OWRB is in the process of completing the Washita River Alluvium groundwater model and the Rush Springs Aquifer groundwater model has been completed. Also, the calibration for the Surface Water Allocation Model (SWAM) is complete. Completion of these models is critical toward being able to evaluate the reliability of existing infrastructure and options under current and future climate conditions, as well as evaluating adaptation and mitigation strategies. A legal review of adaptation strategies is currently in progress. The Fort Cobb Reservoir Master Conservancy District has been working closely with Reclamation to develop conveyance alternatives to address aging infrastructure issues. Designs and cost estimates are under development.

Upper Red River Basin Study

A Basin Study on the Upper Red River Basin in Oklahoma was awarded \$640,000 in FY 14 Federal funds to partner with the OWRB, Lugert-Altus Irrigation District, and Mountain Park Master Conservancy District to identify sustainable solutions to infrastructure issues and existing and projected imbalances between water supply and demand. The study will evaluate infrastructure and permitting options complimented by a legal review of adaptation strategies that will help ensure long-term reliability of water supplies during critical drought periods. To date, including both Federal and non-Federal cost-share contributions from partners, the total cost is approximately \$2,317,316. The study is expected to be completed by January 31, 2020.

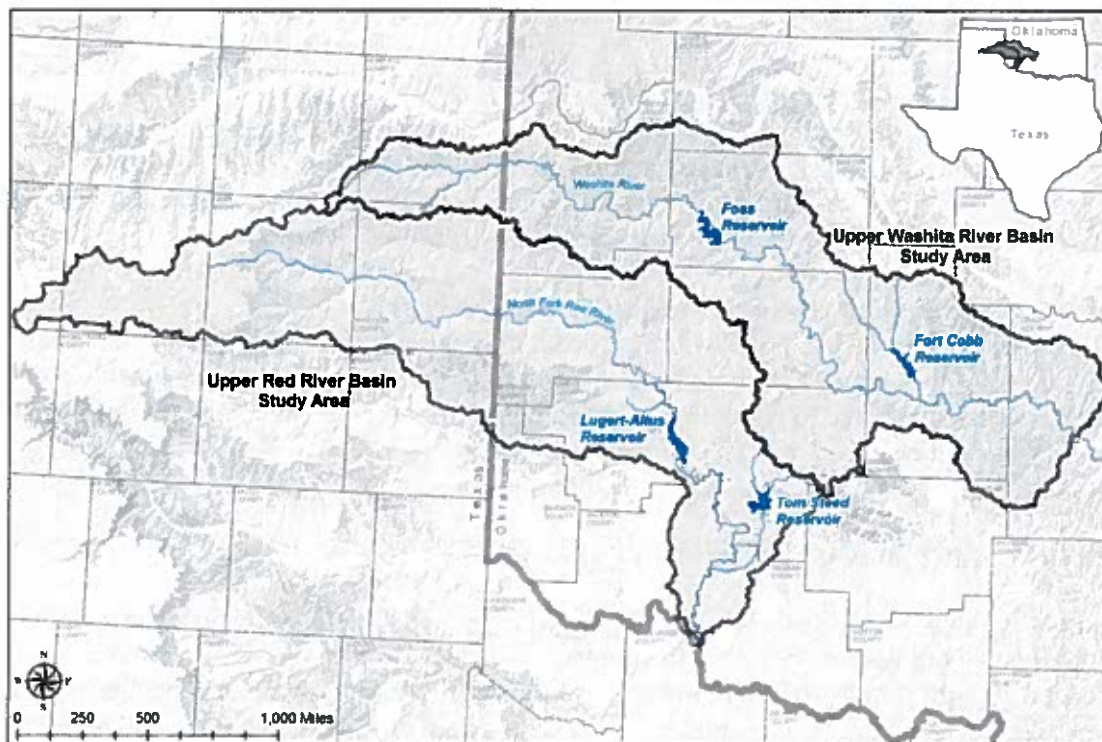


Figure 1: Upper Washita and Upper Red River Basin Study area map.

Water and Energy Efficiency Grants

This program seeks to conserve and use water more efficiently, increase the use of renewable energy, improve energy efficiency, benefit endangered and threatened species, facilitate water markets, carry out activities to address climate-related impacts on water or prevent any water-related crisis or conflict. Since 2010, Reclamation has awarded about \$14.2 million to 39 projects in Texas and Oklahoma with a cumulative project cost of \$51,234,389 million. The estimated total amount of water saved or better managed is about 32,314 acre-feet per year. The following four WEEG projects totaled over \$5.77 million in FY 19:

City of Durant, OK

The City of Durant, OK was awarded \$1,500,000 in FY 19 to replace 5,999 manual read meters with smart meters and associated advanced metering infrastructure network software. The project is expected to result in water savings of 1,003 acre-feet annually that is currently lost to leaks.

Bayview Irrigation District No. 11, TX

The Bayview Irrigation District #11 was awarded \$300,000 in FY 19 to convert 2,550 feet of the Main Canal, a concrete-lined open canal, to a 48-inch polyvinyl chloride pipeline. The project is expected to result in water savings of 120 acre-feet annually that is currently being lost to seepage and evaporation.

Cameron County Irrigation District #2 (CCID2), TX

CCID2 was awarded a total of \$175,841 in FY 19 comprised of conversion of open an unlined open canal in a segment of Lateral 8 to a buried 36-inch polyvinyl chloride pipeline to pipelines and slip gate upgrades. Water savings of 3,440 ac-ft per year and energy savings of 55,950 kilowatt hours per year is expected.

Harlingen Irrigation District Cameron County No. 1, TX

Harlingen Irrigation Dist. No. 2 was awarded \$300,000 in FY19 comprised of converting 6,750 feet of the concrete Wyrick Canal to a 48-inch pressurized polyvinyl chloride pipe. The project is expected to result in water savings of 112 acre-feet annually, currently lost to seepage and evaporation.

Small-Scale Water Efficiency Grants

Since 2017, six Small-Scale Water Efficiency Projects (SWEP) have been awarded in Oklahoma totaling over \$943,200 in cumulative project costs and in FY 18, for the second straight year, SWEP funding opportunities for small improvements that have been identified through previous planning efforts were awarded. Eligible projects include installation of flow measurement or automation in a specific part of a water delivery system, lining of a section of canal to address seepage, small rebate programs that result in reduced residential water use, or other similar projects that are limited in scope.

City of Durant, OK

The City of Durant in Oklahoma was awarded \$75,000 in FY 18 for a project to purchase and install 300 Smart Meters that will serve subdivisions and an apartment complex, assisting in reducing significant water loss currently experienced within the distribution system.

Thomas Public Works Authority, OK

Thomas Public Works Authority in Oklahoma was awarded \$75,000 in FY 18 for a project to purchase and install 12 Smart Meters at important city-owned locations. The new meters will allow TPWA to effectively monitor water loss and identify areas of concern.

City of Tishomingo, OK

The City of Tishomingo in Oklahoma was awarded \$75,000 in FY 18 for a project to purchase and install 27 Automatic Meter Reading (AMR) water meters and the associated software throughout the distribution system in order to address the significant water loss, promote water conservation and inform future water planning.

Water Marketing

This program provides assistance to states, tribes, and local governments to conduct planning activities to develop water marketing strategies that establish or expand water markets or water marketing activities between willing participants, in compliance with state and Federal laws. Reclamation awarded \$1.3 million to seven projects in FY 18 and one of those projects was in Oklahoma.

In FY 18, the Chickasaw Nation was awarded \$149,288 to establish a water bank framework for the Arbuckle-Simpson Aquifer (AS) that will allow for voluntary, market-based transfers of groundwater pumping rights across the region. The Arbuckle-Simpson Aquifer covers approximately 500 square miles and is the principal source of water for more than 100,000 people, supplies water for mining and irrigation, and is the source for nearly 100 known springs that are culturally important. In response to Oklahoma's groundwater regulatory changes, this water marketing strategy will allow landowners in the ASA to deposit water rights, while allowing permitted groundwater users to withdraw those water rights.

Cooperative Watershed Management Program

This program contributes to the WaterSMART strategy by providing funds to watershed groups to encourage diverse stakeholders to form local solutions to address their water management needs. Reclamation is promoting the sustainable use of water resources and improving the ecological resilience of rivers and streams using collaborative conservation efforts. Funding is provided for: 1) Development of Watershed Groups (Phase I) and 2) Implementation of Watershed Management Projects (Phase II). Two CWMPs have been awarded since 2016.

In FY 18, Grand River Dam Authority (GRDA) was awarded \$100,000 to develop a stakeholder group and restore the Lake O' the Cherokees Sub-Watershed.

FY 16, Chickasaw Nation was awarded \$53,921 to establish the Lake of the Arbuckles Watershed Association that created a restoration plan to evaluate BMPs to improve water quality upstream of Arbuckle Lake.

Title XVI - Water Reclamation & Reuse Program

Title XVI of P.L. 102-575, as amended (Title XVI), provides authority for Reclamation's water recycling and reuse program, titled "Title XVI." Through the Title XVI program, Reclamation identifies and investigates opportunities to reclaim and reuse wastewaters and naturally impaired ground and surface water in the 17 Western States and Hawaii. Title XVI includes funding for the planning, design, and construction of water recycling and reuse projects, on a project specific basis, in partnership with local governmental entities. In FY 17, Reclamation announced three separate categories of funding opportunities including Authorized Project, Feasibility Studies and Research Studies. In previous years Reclamation has had sufficient funding for two categories: up to \$150,000 for relatively small studies and up to \$450,000 for larger, regional scale studies. To date, approximately \$2.5 million has been awarded to 17 studies within the Oklahoma-Texas Area Office (OTAO).

In FY 17, six entities from all three states (Kansas, Oklahoma and Texas) within OTAO were awarded federal grants totaling over \$786,000 to conduct both feasibility and research studies.

Oklahoma Water Resources Board

The Oklahoma Water Resources Board was awarded a \$150,000 grant in FY 17 for a feasibility study of potential impacts of select alternative produced water management and reuse scenarios. This study responds to both of Oklahoma Governor Mary Fallin's recent mandates to the OWRB to search for ways to use produced water as a benefit to the state as part of the Water for 2060 Initiative and to find solutions that deep-well injection volumes and thereby reduce the threat of seismicity within the state.

City of Ada, OK

The City of Ada, Oklahoma was awarded a \$136,193 grant in FY 17 for a feasibility study within the "Assessment of the Potential for Recycled Water Development to Offset Potable Water Demands with Non-Potable Supply and Reducing Negative Water Quality Impacts in the Receiving Streams within Tribal Territory" Phase II Reuse Study. This study will provide the City with the means to continue down the path of a sustainable water supply future.

City of Bartlesville, OK

The City of Bartlesville, Oklahoma was awarded a \$150,000 grant in FY 17 for a feasibility study to augment Bartlesville water supply with drought-resilient reclaimed water. This feasibility study will determine the environmental, technical and cost viabilities of reclaiming wastewater effluent by relocating the existing Caney River effluent discharge approximately 5 to 7 miles upstream, which places the effluent

City of Garden City, KS

The City of Garden City, Kansas was awarded a \$65,369 grant in FY 17 for a feasibility study to gather information regarding the current state of the fragile water supply and

long-term supply outlook with eminent reuse opportunities. The scope of the study will provide the City with information to develop or enhance several policies including enhancing the most cost effective method to reuse the maximum quantity of water with the lowest cost impact and maximum benefit for long-term water availability.

North Alamo Water Supply Corp. (NAWSC), TX

North Alamo Water Supply Corporation in Texas was awarded a \$90,000 grant in FY 17 for a feasibility study of energy-effluent alternatives for brackish groundwater desalination. This study will build on work recently completed by Reclamation, the Lower Rio Grande Regional Water Planning Group (region M), the Texas Water Development Board and the Rio Grande Regional Water Authority.

Kansas Water Office

The Kansas Water Office (KWO) was awarded a \$199,175 grant in FY 17 for a research study to pilot test produced water near Hardtner, Kansas. The project will involve the treatment of produced oil field water to a quality standard acceptable for agricultural irrigation and the watering of livestock.

Projects awarded in FY 15:

City of Lubbock, Texas – Potable Water Reuse Implementation Feasibility Study

The City of Lubbock, Texas was awarded a \$150,000 grant for a feasibility study of Potable Water Reuse. The following potable reuse options to be evaluated in this study will focus on the three main categories of potable reuse identified in their 2013 Strategic Water Supply Plan:

1. Indirect potable reuse (IPR) – surface water augmentation;
2. Indirect potable reuse (IPR) – groundwater augmentation; and
3. Direct potable reuse (DPR).

City of Hudson Oaks, Texas – Feasibility of Water Reclamation and Reuse in Hudson Oaks

City of Hudson Oaks, Texas was awarded \$147,600 to exam the feasibility of three potential alternatives for water reclamation and reuse, including: 1) Constructing a wastewater treatment plant in the City of Hudson Oaks to treat and reuse local effluent; 2) Collecting and utilizing stormwater runoff for reuse and distribution in the community, as well as for an added environmental habitat and recreation amenity; and 3) Pumping treated wastewater from the City of Weatherford Wastewater Treatment Plant to Hudson Oaks for reuse.

City of McAllen, Texas – Water Reuse Study

The City of McAllen, Texas was awarded \$150,000 to perform a comprehensive feasibility evaluation of brackish and wastewater to develop a strategic plan that provides the best and highest use of the available water sources for McAllen Public Utility. The study will build on previous efforts and will consider indirect potable reuse via surface water and groundwater augmentation, direct potable reuse, and use of brackish groundwater. As appropriate, this study would coordinate with regional water supply studies and initiatives.

Drought Response Program

Reclamation's Drought Response Program aims to provide competitive grants for drought contingency planning, as well as mitigation actions that build long-term drought resiliency. This program focuses on leveraging Reclamation funds to avoid drought-related crises in the short term, while laying a foundation for climate resiliency in the long term. Over the last three fiscal cycles, over \$3.1 million in funding was provided to support four drought contingency plans and eight drought resiliency projects in Oklahoma and Texas.

Drought Resiliency

Projects awarded in FY 18:

Mountain Park Master Conservancy District was awarded \$300,000 in FY 18 to build a well field and tie in directly to existing infrastructure to pipe directly to a water treatment plant. This project will increase the amount of water available to District customers during all-to-frequent episodes in southwest Oklahoma. This supplemental and redundant supply, acquired through proposed development of alluvial groundwater immediately below Mountain Park dam, will be relied upon during drought, thus slowing inevitable lake level declines and augmenting yield.

Projects awarded in FY 16:

Altus City Reservoir East Basin Improvements for Drought Preparedness

The City of Altus in Oklahoma was awarded \$300,000 in FY 17 to redirect available raw water from Tom Steed Reservoir, a Reclamation project and the City's principal source of supply, to Altus City Reservoir, a largely unused municipal supply originally constructed in 1940. This two-year project also includes the installation of sluice gates and weirs and renovation of the original pump station, built almost 80 years ago but currently unused.

Little Elm Improvements for Drought Preparedness

The Town of Little Elm, Texas was awarded \$200,000 in FY 16 to construct a 100,000-gallon water reuse storage tank adjacent to their wastewater treatment plant. This two-year project will provide a consistent supply of treated wastewater available for irrigation and other uses during times of drought, saving the imported potable water supply for culinary purposes. This project is also supported by the city's drought plan, which specifically identifies the expanded reuse of treated effluent as a drought mitigation action.

Projects awarded in FY 15:

City of Duncan, Clear Creek Lake Improvements Project

The City of Duncan, Oklahoma was awarded \$300,000 to install 1,520 linear feet of pipeline to allow the City to access up to 1,596 acre-feet per year from Clear Creek Lake

to prevent water shortages during drought. The City will also upgrade the existing pump station with pumps having variable frequency drives and a Supervisory Control and Data Acquisition System. The City, which provides treated water to approximately 30,000 people, experienced severe drought conditions in 2015 and is in one of 12 basins identified in the Oklahoma Comprehensive Water Plan as having the most significant water challenges over the next 50 years. The City has reduced water consumption by 40% from 2011 to 2014 through mandatory and voluntary conservation measures. This project is supported by the City's drought plan and was identified by the City Council as a top priority to build resiliency to future droughts.

Waurika Lake Master Conservancy District, Waurika Lake Water Intake Channel Improvement Project

The Waurika Lake Master Conservancy District in southwestern Oklahoma was awarded \$300,000 to install an extension intake pipe to the lowest point in Waurika Lake and add a floating intake to access water at more points, including the lake's lowest elevations. It will also improve its intake gates to reduce entry of debris and protect fish. The lower intake will enable the District to access an additional 25,000 acre-feet during drought conditions. The District provides water to 6 cities and 250,000 people in an area that had been in drought for 5 years prior to 2015.

Southmost Regional Water Authority, Well Field Monitoring Project

Southmost Regional Water Authority, a consortium of six water conservation and reclamation entities in Brownsville, Texas, was awarded \$300,000 to develop a monitoring and management program for brackish groundwater wells that are part of a desalination treatment facility which provides a reliable supply of water for approximately 50,000 people, decreasing dependence on the Rio Grande River. This project will: (1) implement a system for monitoring water levels and water quality in the local aquifer; (2) develop a groundwater flow model to forecast responses and changes in the aquifer; and (3) upgrade the pump in one well within the existing brackish wellfield. This project will build drought resiliency by increasing the reliability of water production during stress periods, monitoring aquifer health, and increasing production capacity in an area that is drought-prone and where brackish groundwater provides an important alternative to fluctuating surface water supplies. This project is supported by the Lower Rio Grande Basin Study that identified brackish groundwater desalination as the best option for meeting long-term water needs and deficits exacerbated by climate change.

Texas Water Development Board, Early Warning Drought Tool

The Texas Water Development Board was awarded \$144,763 to modify their existing drought prediction tool to provide more accurate probabilistic forecasts of average May-July rainfall, reservoir levels, and reservoir storage, by county, for the State of Texas. Water user groups in Texas are required to have a strategy for reducing Final Draft water use when water sources reach certain drought response trigger levels. By providing early warning of drought probability, early response measures may be taken to mitigate the impacts of drought and to reduce the need for more severe use restrictions. The forecasts will be updated on a bi-weekly basis and made accessible to water managers across the state through the Water Data for Texas website. Texas has recently come out of a four-year drought, which is described as the second worst on record.

Drought Contingency Plans

Projects awarded in FY 16:

Gulf Coast Water Authority Drought Contingency Plan Update

The Gulf Coast Water Authority was awarded \$148,250 in FY 16 to prepare a Drought Contingency Plan.

Projects awarded in FY 15:

Chickasaw and Choctaw Nations, Regional Drought Contingency Plan for the Arbuckle Simpson Aquifer Region

The Choctaw and Chickasaw Nations were awarded \$187,081 to prepare a Regional Drought Contingency Plan for their homeland in south-central Oklahoma. The Arbuckle Simpson Aquifer covers approximately 500 miles and is the principal source of water for more than 100,000 people, supplies water for mining and irrigation, and is the source for nearly 100 known springs that are culturally important and generate approximately \$100 million in tourism revenues per year. The area experienced an exceptional drought from 2010 until the spring 2015, causing significant economic hardship and requiring emergency actions, such as hauling water and drilling emergency wells. A wide range of regional stakeholders, representing numerous sectors supported the drought planning process that wrapped up in the fall of 2017 with the completion of the Plan that the plan identified mitigation and response actions to be implemented at the local and regional levels.

Foss Reservoir Master Conservancy District, Drought Contingency Plan

The Foss Reservoir Master Conservancy District was awarded \$200,000, to develop and implement a drought contingency plan for west-central Oklahoma that focuses on the water supply needs of communities that rely upon the Foss Reservoir Master Conservancy District, a Bureau of Reclamation project. Reclamation's Foss and Fort Cobb Reservoirs provide 90-percent of the surface water supplies for the region, including municipal water to 40,000 people and two power generation facilities. The Drought Contingency Plan that was completed in the fall of 2017 built on the existing Upper Washita Basin Study and evaluated several additional sources of water supply not evaluated in the Basin Study to address drought. The area recently came out of experiencing a five-year extended drought, with Foss Reservoir being declared "effectively out of water". Recent climate studies predict future droughts will be longer-lasting and more severe.

McLennan County, McLennan County Drought Contingency and Water Supply Resiliency Plan

McLennan County, Texas was awarded \$75,000 to prepare a regional drought contingency plan that addressed drought impacts to the Trinity Aquifer, including intensified arsenic contamination in the aquifer and problems created by zebra mussels in certain surface waters. The County partnered with the McLennan County Water Resources Group (Group) to conduct the plan. The Group included cities, water supply corporations, the Brazos River Authority, a groundwater conservation district, and local

citizen and business interests. The Trinity Aquifer is the primary source of water for many of the towns and cities in the planning area, and also provides water for industrial, agricultural, manufacturing, and mining operations. Recent drought conditions resulted in historically low water levels in the aquifer. As a result, pumping costs increased, water supplies declined, and the demand on surface sources expanded. The drought plan incorporated a “conjunctive use” approach to improve the efficient use of both groundwater and surface water sources.

Research and Development Program

Reclamation's R&D Program provides technical and financial assistance to internal and external research projects that help Reclamation accomplish its mission of developing water supplies in a sustainable manner.

Science and Technology Program

Internal research is funded under Reclamation's Science and Technology (S&T) Program. Through S&T, Reclamation can investigate new and innovative solutions on important issues where there may be a unique or unknown risk and for which capital investment may not occur otherwise. Recent research priorities have focused on addressing challenges associated with climate change, invasive zebra/quagga mussels, and advanced water treatment. Over the last seven years, the R&D program has awarded \$50 million to more than 800 research projects. To date, about nearly \$1 million has been awarded to research activities in Texas and Oklahoma. Active projects are listed below:

Cost Modeling of Membrane Desalination Process (Foss Reservoir)

This project will focus on improving Reclamation's Water Treatment Estimation Routine (WaTER) so that it can be used to better understand the costs associated with implementing water treatment technologies and to be able to quantify the cost/benefit of R&D advancements in the field of water treatment. Partnering with Texas A&M and the OTA0 on a recent DWPR project that evaluated the fouling control and water quality improvements of an electrocoagulation (EC) and microfiltration (MF) process compared to MF alone as pre-treatment to Nanofiltration (NF) on brackish surface will further enhance this project.

Investigating Biochar as a Water Treatment Filtration Media for Adsorption and Biological Reduction of Dissolved Metals and Fluoride

As climate change and drought continue to negatively impact freshwater availability and quality in the western US, impaired water sources are becoming more attractive to supplement existing freshwater supplies. However, these water sources can be expensive to treat, highlighting the need for more economical forms of treatment. Biochar is gaining attention as a less expensive and more sustainable alternative to granular activated carbon (GAC) for use as an adsorbent and biological filtration (biofilter) media. This project will focus on three case studies in the Mid-Pacific and Great Plains Regions and the use of biochar for the treatment of waters within these Regions contaminated by selenium, metals, and fluoride. Partners include Reclamation Regional Offices. Please use the following link for additional information: <https://www.usbr.gov/research/projects/detail.cfm?id=1785>

Research Opportunities to Treat Impaired Water Sources Associated with Reclamation Projects: A Case Study in the Great Plains Region

By using a survey-based approach to gather information on water quantity and quality challenges associated with Reclamation projects, can we better inform future investments under programs such as the Title XVI and Research & Development that address core, mission-related needs involving treatment of impaired water sources? This activity has been identified as a high-priority need by the Regional Director for the Great Plains Region. Please use the following link for additional information:

<https://www.usbr.gov/research/projects/detail.cfm?id=1715>

Beneficial Reuse and Waste Minimization of Hexavalent Chrome Ion Exchange Brine

Hexavalent chromium occurrence in potable water sources is of concern to water utilities due to undetermined human carcinogenicity and toxicological effect. EPA is currently reviewing health assessments to determine if new federal standards need to be set for chromium. Minimizing the brine waste generated by ion exchange processes for beneficial purposes through membrane filtration with and without additional chemical addition allows for simpler regeneration processes and decreased operator expertise requirements. The research question to be answered is: Can a system that is simple to operate and inherently contains multiple barriers to chrome release be used to address chromium contamination in potable water sources? Please use the following link for additional information: <https://www.usbr.gov/research/projects/detail.cfm?id=9085>

Refining Interpretation Techniques for Determining Brackish Aquifer Water Quality

This project will define specific research areas required to support geophysical log interpretation for water quality in brackish aquifers. The project will build on the state of practice and methods outlined in the previous scoping level effort by delineating the confounding factors identified by that work and presenting research topics to resolve those factors. This work will be a collaborative effort supported and enhanced by key stakeholders identified in the scoping level effort, including the USGS, Texas Water Development Board, Brackish Water Work Group, and other state and federal agencies. The report produced by this project is intended to supplement the Reclamation S&T Advanced Water Treatment Roadmap and to aid stakeholders in securing funding for and directing future research efforts. Please use the following link for additional information: <https://www.usbr.gov/research/projects/detail.cfm?id=2924>

Development of Methodologies to Evaluate the Environmental, Financial and Social Benefits of Water Reuse Projects

The TWDB's Texas Water Reuse Research Agenda (2011) identified "triple bottom line" analyses as a top priority research area for Texas. Both water providers and rate payers alike often question whether reuse is worth the financial investment relative to other strategies. In fact, many water reuse projects in Texas have been halted due to a lack of funding or inability to justify the required capital expenditures. Reclamation is coordinating with TWDB and other state and local water suppliers to evaluate the state-of-the-science of TBL analyses, and to develop a clear, well-defined economic and financial evaluation approach that can be used by entities to evaluate the merits of water

reuse projects. Please use the following link for additional information:
<http://www.usbr.gov/research/projects/detail.cfm?id=4180>.

Concentrate Management Toolbox and Selected Case Studies

Concentrate management is an important component driving the cost and feasibility of desalination. The understanding necessary to optimize inland desalination facilities and associated concentrate management solutions is still being improved through detailed assessments, especially as technology advances and provides more flexibility in treatment. A wide variety of concentrate management methodologies exist, and many water purveyors are overwhelmed when considering which technology is the best for their situation. This Concentrate Management Toolbox will inventory existing technologies and identify practical and economical strategies to optimize concentrate management based on various feed water quality parameters, so water planners can more rapidly assess concentrate management options. Reclamation is partnering with the North Texas Municipal Water District in Texas and the Eastern Municipal Water District in California to then apply the Toolbox to a set of site-specific saline source waters and recommend an optimal array of concentrate management technologies. Please use the following link for additional information:
<http://www.usbr.gov/research/projects/detail.cfm?id=5239>.

Desalination and Water Purification Research

External research is funded under Reclamation's Desalination and Water Purification Research Program (DWPR). DWPR was established to facilitate partnerships with academia, private industry, and local communities to develop more cost-effective, technologically efficient means by which to desalinate water. Over the past five fiscal cycles (FY 15-19), eight new research projects totaling nearly \$800,000 dollars were funded within the Oklahoma-Texas Area Office jurisdiction.

Solar Thermal Distillation Technology Development for Desalination and Produced Water Treatment Applications

Oklahoma State University's primary objective of this research is to develop a cost-effective high-energy solar thermal distillation technology for desalination and produced water treatment applications. This novel solar energy powered thermal distillation system is intended to reduce energy consumption, potentially lower the cost of desalination, as well as reduce the environmental impacts by reducing the volume of produced disposal.

Forensic investigation of reverse osmosis membranes in potable reuse applications: fouling characterization and implications for cost and performance

Texas A&M Engineering Experiment Station will focus on characterizing the surfaces of virgin, fouled, and cleaned membranes by state-of-the-art microscopy and spectroscopy techniques to determine major foulants and its mechanisms. The information obtained can be used to quantify fouling impacts on life-cycle costs filling an important knowledge gap for long-term planning in wastewater treatment.

Pilot Testing a Fixed-Bed Biological Treatment System for Efficient Hexavalent Chromium Removal

Carollo Engineers, Inc. in partnership with City of Norman to pilot tested a fixed-bed biological treatment system for efficient hexavalent chromium removal. A potential also exists for this method to be cost-effective in removing arsenic and other metals.

Advanced Pretreatment for Nanofiltration of Brackish Surface Water: Fouling Control and Water Quality Improvements

Texas A&M University in partnership with Foss Reservoir Master Conservancy District performed a research/laboratory study evaluating the use of electrocoagulation as an advanced pretreatment method for nanofiltration of brackish surface water for fouling control and water quality improvements. This technology may help the District reduce high TDS levels at Foss Reservoir.

Fouling-Resistant, Self-Decontaminating Membranes for Effective Desalination of Oily Saline Wastewater

The University of Kansas Center for Research will be conducting the research.

Thermoplasmonic Membrane Desalination

The University of Tulsa will be conducting the research.

Development of Inorganic Membrane Systems for Treatment of Produced Water

Oklahoma State University will be conducting the research.

Emerging Ion Concentration Polarization for Brackish Desalination

Texas Tech University will be conducting the research.

Summary of Programs and Funding Opportunities

All Reclamation program Funding Opportunity Announcements (FOAs) for Grants or Cooperative Agreements to utilize Reclamation funding are posted on the Grants.gov website: <http://www.grants.gov/>

The following is a list of specific weblinks for each of the Reclamation programs mentioned above:

Native American Affairs Program: <http://www.usbr.gov/native/>

Water Conservation Field Services Program: <http://www.usbr.gov/waterconservation/>

WaterSMART Program:

Drought Response Program: <http://www.usbr.gov/drought/>

Water and Energy Efficiency Grants: <http://www.usbr.gov/watersmart/weeg/>

Small-Scale Water Efficiency Grants:
<https://www.usbr.gov/watersmart/swep/index.html>

Cooperative Watershed Management Program:
<https://www.usbr.gov/watersmart/cwmp/index.html>

Water Marketing Strategy Grants:
<https://www.usbr.gov/watersmart/watermarketing/index.html>

Title XVI: <http://www.usbr.gov/watersmart/title/index.html>

Basin Studies: <http://www.usbr.gov/watersmart/bsp/>

Research and Development:

Science and Technology Program: <https://www.usbr.gov/research/st/index.html>

Desalination and Water Purification Research Program:
<https://www.usbr.gov/research/dwpr/>

Water Prize Challenges: <http://www.usbr.gov/research/challenges/>

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RECLAMATION
Managing Water in the West

LEGAL COMMITTEE REPORT
Kansas-Oklahoma Arkansas River Commission

At the annual meeting of the Kansas-Oklahoma Arkansas River Commission (hereinafter "the Commission") held October 15, 2014 in Marion, Kansas, the Legal Committee was assigned to research what, if any, legal restrictions might apply to the Commission's disposition of \$10,000.00 in surplus funds. The Committee finds as follows:

I. Disbursements of Commission Funds Are Not Regulated by State Law. By the express terms of the Compact, disbursements of funds authorized and made by the Commission "are not subject to the audit and accounting procedures of the states." *Arkansas River Basin Compact Kansas-Oklahoma, 1965* ("Compact"), at Art. X, ¶ E. Furthermore, the creation of the Commission and its authorization to receive and disburse funds are derived directly from the Compact. The interpretation and construction of interstate compacts sanctioned by Congress under Article I, Section 10, Clause 3 of the United States Constitution is a matter of federal law. *Deleware River Joint Toll bridge Com'n v. Colburn*, 310 U.S. 419, 60 S.Ct 1039 (1940); *Petty v. Tennessee-Missouri Bridge Com'n*, 359 U.S. 275, 279, 79 S.Ct. 785, 788 (1959).

Notwithstanding the clear legal authority asserting that state law does not apply, the Committee performed a review of relevant state statutes in Kansas and Oklahoma. A review of Kansas statutes and regulations has not turned up any particular restrictions that would limit the Commission's ability to conduct research on stream flows, water quality, or conservation storage under the terms of the Compact. Similarly, existing constitutional and statutory restrictions on the use of public monies under Oklahoma law, such as Oklahoma's constitutional prohibition of using public monies for a religious purpose, are unlikely to affect any disbursement approved by the Commission related to the aims of the Compact.

II. Federal Acquisition Regulations Do Not Apply. While the Commission is an "agency" created by the Compact, and is governed by federal law, the Commission does not appear to qualify as a "federal agency" or an "executive agency" subject to the federal purchasing, contracting, acquisition, and audit requirements that apply to most other federal governmental bodies. The Federal Acquisition Regulation ("FAR"), found in Title 48 of the Code of Federal Regulations, contains the principal set of rules that regulate the purchase of goods and services by most federal agencies. The FAR, according to the statement of scope contained therein, is intended to apply to "all executive agencies." 48 CFR 1.101. "Executive agency" is defined as any executive department, military department, independent establishment, or wholly owned government corporation. 48 CFR 2.101. The Commission does not appear to fall under the applicable statutory definitions for those terms found in 5 U.S.C. §§ 101-105.

The FAR also defines "federal agency" to mean any executive agency or independent establishment in the legislative or judicial branch of the federal government, excepting the Senate, House of Representatives, and the Architect of the Capitol. 48 CFR 2.101. The Commission likewise does not appear to fall within the statutory definitions for those terms. Therefore, it appears that the Commission is not subject to the FAR, and as such, need not comply with the formal rules for acquisition, contracting, or audits which apply to most other federal governmental bodies.

III. Federal and State Oversight on Fiscal Matters. The Commission's financial dealings are, however, subject to a certain amount of oversight. The Compact expressly requires the Commission to prepare budgets for each coming fiscal year, and to submit the same to the Governors of Kansas and Oklahoma and to the President of the United States. Compact, at Art.

XII. Similarly, the Compact requires an annual accounting of all funds received and expended by the Commission to be submitted to both Governors and to the President. *Id.* The Compact expressly requires the Commission to make any records or information within its possession available to the Governor or state agency of each state, or to any authorized representative of the United States. *Id.* The oversight afforded to state and federal officers, however, appears to be for informational purposes only, and does not impose any restrictions on the use of funds by the Commission beyond those stated in the Compact itself.

IV. Purposes of the Compact. Article XI of the Compact authorizes and requires the Commission power to perform certain acts and functions. Among those enumerated powers and duties are (1) the establishment and maintenance of stream gauges, (2) the collection, analysis, and reporting of scientific data, and (3) the holding of hearings and the taking of testimony. Commission expenditures which do not involve general administration costs of the Commission should fall within one of these three general directives.

Other relevant considerations include the ability of the states to terminate the Compact under Article XII, and the states' ability to reduce their annual payments into the Commission Fund under Article X. The possibility of either termination of the Compact or reduction of appropriated funds, however remote, makes it inadvisable for the Commission to incur any financial or tort liability beyond their one-time disbursement of funds. For the same reason, the Commission should avoid becoming obligated to any contract or program which requires an annual or otherwise repeating contribution of money extending beyond the current fiscal year.

Finally, while not explicitly addressed in the Compact, the Commission should endeavor to avoid ethical or conflict-of-interest dilemmas which might result from expenditures which improperly benefit one or more members of the Commission personally. Therefore, any project or expenditure considered and recommended by the Engineering Committee must not result in a financial benefit to one of the Commissioners or Committee Members personally.

V. Conclusion and Recommendations. Given the foregoing observations, the Legal Committee recommends that the contemplated project or disbursement should meet the following criteria:

1. It should be equally beneficial to the interests of the states of Kansas and Oklahoma;
2. It should promote one of the following three functions of the Commission:
 - a. The installation or maintenance of stream flow gauges;
 - b. The collection, analysis, or reporting of scientific data as to stream flows, water quality, conservation storage, or other compact-related information; or,
 - c. The taking of testimony and holding of Commission hearings.
3. It should not incur financial or tort liability on the part of the Commission exceeding the budgeted amount of \$10,000.00;
4. It should not require an annual or financial contribution extending beyond the fiscal year; and,
5. It should not provide a financial benefit to one of the Commissioners or Committee members personally.

LEGAL COMMITTEE, KANSAS-OKLAHOMA ARKANSAS RIVER COMMISSION


Jonathan Allen, Assistant General Counsel
Oklahoma Water Resources Board


Robert Large, Chief Legal Counsel
Kansas Department of Agriculture



Kansas-Oklahoma Arkansas River Commission

RESOLUTION PERTAINING TO AMENDING THE RULES AND REGULATIONS AND MODE OF PROCEDURE FOR THE KANSAS-OKLAHOMA ARKANSAS RIVER COMPACT COMMISSION TO MODIFY THE REQUIREMENT OF THE TREASURER'S FIDELITY BOND

RESOLUTION NO. 2019-1

WHEREAS, the Kansas-Oklahoma Arkansas River Commission ("Commission") is authorized under Article XI of the Kansas-Oklahoma Arkansas River Compact ("Compact") to adopt rules and regulations governing its operations; and,

WHEREAS the Commission has adopted a set of Rules and Regulations and Mode of Procedure for the Commission, and has amended and updated said Rules and Regulations from time to time; and

WHEREAS, Article II, Section 4 of the Rules and Regulations and Mode of Procedure for the Kansas-Oklahoma Arkansas River Commission states that "The Treasurer shall furnish a fidelity bond in an amount satisfactory to the Commission;" and,

WHEREAS, the Kansas-Oklahoma Arkansas River Commission had previously set the amount of such fidelity bond at \$50,000.00; and,

WHEREAS, during the 2019 Annual Meeting of the Commission, the Treasurer reported that the company which had previously issued the Treasurer's fidelity bond informed him that the company would no longer issue bonds in the amount of \$50,000.00; and,

WHEREAS, during the 2019 Annual Meeting of the Commission, the Treasurer reported that he had been unable to find another company to issue a fidelity bond in the amount of \$50,000.00; and,

WHEREAS, the Commissioners, after requesting and receiving advice from its Legal Committee, determined during the 2019 Annual Meeting of the Commission that the language of Commission's Rules and Regulations and Mode of Procedure should be changed in order to eliminate the need for the Treasurer's bond when the Commission Fund was less than an amount for which a fidelity bond could be reasonable obtained;

NOW, THEREFORE BE IT RESOLVED, that Section 4 of Article II of the Rules and Regulations and Mode of Procedure of the Commission be amended to read as follows:

4. The Treasurer shall receive, hold and disburse all funds of the Commission which come into his hands. In the event that the Kansas-Oklahoma Arkansas River Commission Fund exceeds Ninety-five Thousand (\$95,000.00) Dollars, the Treasurer shall furnish a fidelity bond in an amount satisfactory to the Commission. The Treasurer shall not be required to furnish a fidelity bond when the Fund does not exceed Ninety-five Thousand (\$95,000.00) Dollars. The cost of such bond shall be paid by the Commission.

BE IT FURTHER RESOLVED that in the event that a fidelity bond is required under the newly amended Section 4 of Article II of the Rules and Regulations and Mode of Procedure for the Commission, the Treasurer shall be required to furnish a fidelity bond in the amount of or exceeding **Ninety-Five Thousand (\$95,000.00) Dollars.**

ATTESTATIONS:

OKLAHOMA COMMISSIONERS:


Commissioner Julie Cunningham


Commissioner J. Ross Kirtley


Commissioner Bryce Benson

KANSAS COMMISSIONERS:


Commissioner David Barfield


Commissioner Doug Blex


Commissioner M. Bruce Falk

FEDERAL COMMISSIONERS:


Federal Commissioner Earnie Gilder


Alternate Commissioner Chuck Shively

**KANSAS-OKLAHOMA
ARKANSAS RIVER
COMPACT**

**Kansas-Oklahoma Arkansas River Compact
1966**

K.S.A. 82a-528. Arkansas river basin compact. The legislature hereby ratifies the compact, designated as the "Arkansas river compact," between the states of Oklahoma and Kansas signed in the city of Wichita, state of Kansas, on the thirty-first day of March, 1965, by Geo. R. Benz and Frank Raab as representatives for the state of Oklahoma, Robert L. Smith and Warden L. Noe as representatives for the state of Kansas, and Trigg Twichell as representative of the United States of America, which said compact is as follows:

ARKANSAS RIVER BASIN COMPACT, KANSAS-OKLAHOMA

The state of Kansas and the state of Oklahoma, acting through their duly authorized compact representatives, Robert L. Smith and Warden L. Noe, for the state of Kansas, and Geo. R. Benz and Frank Raab, for the state of Oklahoma, after negotiations participated in by Trigg Twichell, appointed by the president as the representative of the United States of America, and in accordance with the consent to such negotiations granted by an act of congress of the United States of America, approved August 11, 1955 (public law 340, 84th congress, 1st session), have agreed as follows respecting the waters of the Arkansas river and its tributaries:

Article I

The major purposes of this compact are:

- A. To promote interstate comity between the states of Kansas and Oklahoma;
- B. To divide and apportion equitably between the states of Kansas and Oklahoma the waters of the Arkansas river basin and to promote the orderly development thereof;
- C. To provide an agency for administering the water apportionment agreed to herein;
- D. To encourage the maintenance of an active pollution-abatement program in each of the two states and to seek the further reduction of both natural and man-made pollution in the waters of the Arkansas river basin.

Article II

As used in this compact:

- A. The term "state" shall mean either state signatory hereto and shall be construed to include any person or persons, entity or agency of either state who, by reason of official responsibility or by designation of the governor of that state, is acting as an official representative of that state;

- B. The term "Kansas-Oklahoma Arkansas river commission" or the term "commission" means the agency created by this compact for the administration thereof;
- C. The term "Arkansas river" means that portion of the Arkansas river from a point immediately below the confluence of the Arkansas and Little Arkansas rivers in the vicinity of Wichita, Kansas, to a point immediately below the confluence of the Arkansas river with the Grand-Neosho river near Muskogee, Oklahoma;
- D. The term "Arkansas river basin" means all of the drainage basin of the Arkansas river as delimited above, including all tributaries which empty into it between the upstream and downstream limits;
- E. The term "waters of the Arkansas river and its tributaries" means the waters originating in the Arkansas river basin;
- F. The term "conservation storage capacity" means that portion of the active storage capacity of reservoirs, including multipurpose reservoirs, with a conservation storage capacity in excess of 100 acre-feet, available for the storage of water for subsequent use, but it excludes any portion of the storage capacity allocated to flood and sediment control and inactive storage capacity allocated to other uses;
- G. The term "new conservation storage capacity" means conservation storage capacity for which construction is initiated after July 1, 1963, and storage capacity not presently allocated for conservation storage which is converted to conservation storage capacity after July 1, 1963, in excess of the quantities of declared conservation storage capacity as set forth in the storage table attached to and made a part of the minutes of the twenty-fourth meeting of the compact committee dated September 1, 1964, and as filed and identified to this compact in the offices of the secretaries of state of the respective states;
- H. The term "pollution" means contamination or other alterations of the physical, chemical, biological or radiological properties of water or the discharge of any liquid, gaseous, or solid substances into any waters which creates or is likely to result in a nuisance, or which renders or is likely to render the waters into which it is discharged harmful, detrimental or injurious to public health, safety, or welfare or which is harmful, detrimental or injurious to beneficial uses of the water.

Article III

The physical and other conditions peculiar to the Arkansas river basin constitute the basis for this compact, and neither of the states hereby, nor the congress of the United States by its consent hereto, concedes that this compact establishes any general principle with respect to any other interstate stream.

Article IV

A. For the purpose of apportionment of water between the two states, the Arkansas river basin is hereby divided into major topographic subbasins as follows: (1) The Grand-Neosho river subbasin; (2) the Verdigris river subbasin; (3) the Salt Fork river subbasin; (4) the Cimarron river subbasin; and (5) the mainstem Arkansas river subbasin which shall consist of the Arkansas river basin, excepting the Grand Neosho river, Verdigris river, Salt Fork river, and Cimarron river subbasins.

B. The two states recognize that portions of other states not signatory to this compact lie within the drainage area of the Arkansas river basin as herein defined. The water apportionments provided for in this compact are not intended to affect nor do they affect the rights of such other states in and to the use of the waters of the basin.

Article V

The state of Kansas shall have free and unrestricted use of the waters of the Arkansas river basin within Kansas subject to the provisions of this compact and to the limitations set forth below:

A. New conservation storage capacity in the Grand-Neosho river subbasin within the state of Kansas shall not exceed 650,000 acre-feet plus an additional capacity equal to the new conservation storage in said drainage basin in Oklahoma excepting storage on Spavinaw creek;

B. New conservation storage capacity in the Verdigris river subbasin within the state of Kansas shall not exceed 300,000 acre-feet plus an additional capacity equal to the new conservation storage in said drainage basin in Oklahoma, excepting navigation capacity allocated in Oologah reservoir;

C. New conservation storage capacity in the mainstem Arkansas river subbasin within the state of Kansas shall not exceed 600,000 acre-feet plus an additional capacity equal to the new conservation storage in said drainage basin in Oklahoma;

D. New conservation storage capacity in the Salt Fork river subbasin within the state of Kansas shall not exceed 300,000 acre-feet plus an additional capacity equal to the new conservation storage in said drainage basin in Oklahoma;

E. New conservation storage capacity in the Cimarron river subbasin within the state of Kansas shall not exceed 5,000 acre-feet, provided that new conservation storage capacity in excess of that amount may be constructed if specific project plans have first been submitted to and have received the approval of the commission.

Article VI

The state of Oklahoma shall have free and unrestricted use of the waters of the Arkansas river basin within Oklahoma subject to the provisions of this compact and to the limitations set forth below:

New conservation storage capacity in the Cimarron river subbasin within the state of Oklahoma shall not exceed 5,000 acre-feet provided that new conservation storage capacity in excess of that amount may be constructed if specific project plans have first been submitted to and have received the approval of the commission.

Article VII

- A. The commission shall determine the conditions under which one state may construct and operate for its needs new conservation storage capacity in the other state. The construction or utilization of new conservation storage capacity by one state in the other state shall entitle the state whose storage potential is reduced by such construction to construct an equal amount of new conservation storage in a subbasin agreeable to the commission.
- B. New conservation storage capacity constructed by the United States or any of its agencies, instrumentalities or wards, or by a state, political subdivision thereof, or any person or persons shall be charged against the state in which the use is made.
- C. Each state has the unrestricted right to replace within the same subbasin, any conservation storage capacity made unusable by any cause.
- D. In the event reallocation of storage capacity in the Arkansas river basin in Oklahoma should result in the reduction of that state's new conservation storage capacity, such reallocation shall not reduce the total new conservation storage capacities available to Kansas under Article V; provided that a subsequent reinstatement of such storage capacity shall not be charged as an increase in Oklahoma's new conservation storage capacity.

Article VIII

- A. In the event of importation of water to a major subbasin of the Arkansas river basin from another river basin, or from another major subbasin within the same state, the state making the importation shall have exclusive use of such imported waters.
- B. In the event of exportation of water from a major subbasin for use in another major subbasin or for use outside the Arkansas river basin within the same state, the limitations of Article V and VI on new conservation capacity shall apply against the subbasin from which the exportation is made in the amount of the storage capacity actually used for that purpose within the exporting subbasin or, in the event of direct diversion of water without storage, on the basis of five acre-feet of conservation storage capacity for each acre-foot of water on the average so diverted annually.

C. Any reservoir storage capacity which is required for the control and utilization of imported waters shall not be accounted as new conservation storage.

D. Should a transbasin diversion of waters of the Arkansas river basin be made in one state for the use and benefit of the other state or both states, the commission shall determine a proper accounting of new conservation storage capacities in each state in accordance with the above principles and with the project uses to be made in that state.

Article IX

The states of Kansas and Oklahoma mutually agree to:

A. The principle of individual state effort to abate man-made pollution within each state's respective borders, and the continuing support of both states in an active pollution-abatement program;

B. The cooperation of the appropriate state agencies in Kansas and Oklahoma to investigate and abate sources of alleged interstate pollution within the Arkansas river basin whenever such matters are called to their attention by the commission;

C. Enter into joint programs for the identification and control of sources of natural pollution within the Arkansas river basin which the commission finds are of interstate significance;

D. The principle that neither state may require the other to provide water for the purpose of water-quality control as a substitute for adequate waste treatment;

E. Utilize the provisions of the federal water pollution control act in the resolution of any pollution problems which cannot be resolved within the provisions of this compact.

Article X

A. There is hereby created an interstate administrative agency to be known as the "Kansas-Oklahoma Arkansas river commission." The commission shall be composed of three commissioners representing each of the states of Kansas and Oklahoma who shall be appointed by the governors of the respective states and, if designated by the president, one commissioner representing the United States. The president is hereby requested to designate a commissioner and an alternate representing the United States. The federal commissioner, if one be designated, shall be the presiding officer of the commission, but shall not have the right to vote in any of the deliberations of the commission.

B. One Kansas commissioner shall be the state official who now or hereafter shall be responsible for administering water law in the state; the other two commissioners shall reside in the Arkansas river basin in Kansas and shall be appointed to four-year staggered terms.

C. One Oklahoma commissioner shall be the state official who now or hereafter shall be responsible for administering water law in the state; the other two commissioners shall reside in the Arkansas river basin in Oklahoma and shall be appointed to four-year staggered terms.

D. A majority of the commissioners of each state and the commissioner or his alternate representing the United States, if so designated, must be present to constitute a quorum. In taking any commission action, each signatory state shall have a single vote representing the majority opinion of the commissioners of that state.

E. The salaries and personal expenses of each commissioner shall be paid by the government which he represents. All other expenses which are incurred by the commission incident to the administration of this compact shall be borne equally by the two states and shall be paid by the commission out of the "Kansas-Oklahoma Arkansas river commission fund." Such fund shall be initiated and maintained by equal payments of each state into the fund. Disbursements shall be made from said fund in such manner as may be authorized by the commission. Such fund shall not be subject to the audit and accounting procedures of the states; however, all receipts and disbursements of funds handled by the commission shall be audited by a qualified independent public accountant at regular intervals, and the report of such audit shall be included in and become a part of the annual report of the commission.

Article XI

A. The commission shall have the power to:

- (1) Employ such engineering, legal, clerical and other personnel as in its judgment may be necessary for the performance of its functions under the compact;
- (2) Enter into contracts with appropriate state or federal agencies for the collection, correlation, and presentation of factual data, for the maintenance of records, and for the preparation of reports;
- (3) Establish and maintain an office for the conduct of its affairs;
- (4) Adopt rules and regulations governing its operations;
- (5) Cooperate with federal agencies in developing principles, consistent with the provisions of this compact and with federal policy, for the storage and release of water from all-federal capacities of federal reservoirs, both existing and future within the Arkansas river basin, for the purpose of assuring their operation in the best interests of the states and the United States;
- (6) Permit either state, with the consent of the proper operating agency, to impound water, for such periods of time deemed necessary or desirable by the commission, in available reservoir storage capacity which is not designated as conservation or new conservation storage capacity for subsequent release and use for any purpose approved by the commission;

(7) Hold hearings and take testimony and receive evidence at such times and places as it deems necessary;

(8) Secure from the head of any department or agency of the federal or state government such information, suggestions, estimates and statistics as it may need or believe to be useful for carrying out its functions and as may be available to or procurable by the department or agency to which the request is addressed;

(9) Print or otherwise reproduce and distribute all of its proceedings and reports.

B. The commission shall:

(1) Cause to be established, maintained and operated such stream, reservoir, or other gaging stations as may be necessary for the proper administration of the compact;

(2) Collect, analyze and report on data as to stream flows, water quality, conservation storage, and such other information as is necessary for the proper administration of the compact;

(3) Perform all other functions required of it by the compact and do all things necessary, proper or convenient in the performance of its duties thereunder;

(4) Prepare and submit an annual report to the governor of each signatory state and to the president of the United States covering the activities of the commission for the preceding fiscal year, together with an accounting of all funds received and expended by it in the conduct of its work;

(5) Prepare and submit to the governor of each of the states of Kansas and Oklahoma an annual budget covering the anticipated expenses of the commission for the following fiscal year;

(6) Make available to the governor or any state agency of either state or to any authorized representatives of the United States, upon request, any information within its possession.

Article XII

A. Recognizing the present limited uses of the available water supplies of the Arkansas river basin in the two states and the uncertainties of their ultimate water needs, the states of Kansas and Oklahoma deem it imprudent and inadvisable to attempt at this time to make final allocations of the new conservation storage capacity which may ultimately be required in either state, and, by the limitations on storage capacity imposed herein, have not attempted to do so. Accordingly, after the expiration of 25 years following the effective date of this compact, the commission may review any provisions of the compact for the purpose of amending or supplementing the same, and shall meet for the consideration of such review on the request of the commissioners of either state: *Provided*, That the provisions hereof shall remain in full force and effect until changed or amended by unanimous action of the states acting through their

commissioners and until such changes are ratified by the legislatures of the respective states and consented to by the congress in the same manner as this compact is required to be ratified to become effective.

B. This compact may be terminated at any time by the appropriate action of the legislatures of both signatory states.

C. In the event of amendment or termination of the compact, all rights established under the compact shall continue unimpaired.

Article XIII

Nothing in this compact shall be deemed:

A. To impair or affect the powers, rights or obligations of the United States, or those claiming under its authority, in, over and to the waters of the Arkansas river basin;

B. To interfere with or impair the right or power of either signatory state to regulate within its boundaries the appropriation, use and control of waters within that state not inconsistent with its obligations under this compact.

Article XIV

If any part or application of this compact should be declared invalid by a court of competent jurisdiction, all other provisions and applications of this compact shall remain in full force and effect.

Article XV

This compact shall become binding and obligatory when it shall have been ratified by the legislatures of each state and consented to by the congress of the United States, and when the congressional act consenting to this compact includes the consent of congress to name and join the United States as a party in any litigation in the United States supreme court, if the United States is an indispensable party, and if the litigation arises out of this compact or its application, and if a signatory state is a party thereto. Notice of ratification by the legislature of each state shall be given by the governor of that state to the governor of the other state and to the president of the United States and the president is hereby requested to give notice to the governor of each state of consent by the congress of the United States.

In Witness Whereof, The authorized representatives have executed three counterparts hereof each of which shall be and constitute an original, one of which shall be deposited in the archives of the department of state of the United States, and one of which shall be forwarded to the governor of each state.

Done at the City of Wichita, state of Kansas, this 31st day of March, A.D. 1965.

Approved:
Robert L. Smith,
Warden L. Noe,
Compact Representatives for the state of Kansas.
Geo. R. Benz,
Frank Raab,
Compact Representatives for the state of Oklahoma.
Twigg Twitchell,
Representative of the United States. (History: L. 1966, ch. 16, § 1 (Special Session); June 10.

APPENDIX H

RULES AND REGULATIONS AND MODE OF PROCEDURE FOR THE KANSAS-OKLAHOMA ARKANSAS RIVER COMMISSION (As Amended to July 26, 2017)

ARTICLE I

THE COMMISSION

1. The Commission shall be that Commission referred to in Article X of the Arkansas River Basin Compact, Kansas-Oklahoma.
2. The credentials of each Commissioner shall be filed with the Chairman of the Commission.
3. Each Commissioner shall advise in writing the office of the Commission as to his address to which all official notices and other communications of the Commission shall be sent to him and shall further promptly advise in writing the office of the Commission as to any changes of such address.

ARTICLE II

OFFICERS

1. The Officers of the Commission shall be:

 Chairman
 Secretary
 Treasurer
2. The Commissioner, or in his absence his Alternate, representing the United States shall be the Chairman of the Commission. The Chairman shall preside at the meetings of the Commission. His duties shall be such as are usually imposed upon such officer and such as may be assigned to him by these rules or by the Commission from time to time provided, however, that the Commissioner representing the United States shall not have the right to vote.
3. The Secretary need not but may be a Member of the Commission. The Secretary shall be selected by the Commission. He shall serve for such term and receive such salary and perform such duties as the Commission may direct. In the case of vacancy in the Office

of the Secretary, the Commission shall proceed as expeditiously as possible to select a new Secretary.

4. The Treasurer shall receive, hold and disburse all funds of the Commission which come into his hands. In the event that the Kansas-Oklahoma Arkansas River Commission Fund exceeds Fifty Thousand (\$50,000.00) Dollars, the Treasurer shall furnish a fidelity bond in an amount satisfactory to the Commission. The Treasurer shall not be required to furnish a fidelity bond when the Fund does not exceed Fifty Thousand (\$50,000.00) Dollars. The cost of such bond shall be paid by the Commission.
5. The offices of the Secretary and Treasurer may be held by the same person.

ARTICLE III

PRINCIPAL OFFICE

1. The principal office of the Commission shall be the office of the Secretary.
2. The principal office shall be open for business at such hours and on such days as the Commission from time to time directs.
3. All books and records of the Commission shall be kept in the principal office of the Commission. All records of the Commission shall be open to inspection by the public during the hours the principal office is open for business.

ARTICLE IV

MEETINGS

1. The annual meeting of the Commission shall be held on the fourth Wednesday of July each year, provided, the Commission may, by unanimous agreement of all Commissioners, select and designate an alternate date for holding the annual meeting.
2. Special meetings of the Commission may be called by the Chairman at any time. Upon written request of a majority of the Commissioners of either of the signatory states setting forth the matters to be considered at such special meetings, it shall be the duty of the Chairman to call a special meeting.
3. Notice of all special meetings of the Commission shall be sent by the Secretary, to all members of the Commission by ordinary mail at least ten days in advance of each meeting and such notice shall state the purpose thereof.

4. All meetings of the commission shall be held at such place as shall be agreed upon by the Commission.
5. Minutes of the Commission shall be preserved in a suitable manner. Minutes until approved shall not be official and such unofficial minutes shall be furnished only to members of the Commission, its employees and committees.
6. A majority of the Commissioners of each state and the Commissioner of his alternate representing the United States, if so designated, must be present to constitute a quorum. For purposes of a quorum and participation in meetings, any person properly acting on behalf of the State official responsible for administering water law in the State of Kansas shall be considered a Kansas Commissioner, and any person properly acting on behalf of the State official responsible for administering water law in the State of Oklahoma shall be considered an Oklahoma Commissioner. Credentials showing that such persons are properly acting on behalf of the State officials shall be filed with the Chairman of the Commission prior to each meeting in which such persons attend.
7. Each signatory state shall have a single vote representing the majority opinion of the Commissioners of the State, in any deliberations of the Commission. The Commissioner representing the United States shall not have the right to vote.
8. A majority of the Commissioners present of each signatory state must concur in any action taken by the Commission.
9. At each meeting of the Commission, the order of business, unless agreed otherwise, shall be as follows:
 - Call to Order
 - Introductions and Announcements
 - Readings of the Minutes of the Last Meeting
 - Correction and Approval of Minutes of the Last Meeting
 - Report of Chairman
 - Report of Secretary
 - Report of Treasurer
 - Report of Committees
 - Unfinished Business
 - New Business
 - Adjournment
10. All meetings of the Commission, except executive sessions, shall be open to the public. Executive sessions shall be open only to Members of the Commission and such advisories as may be designated by each member and employee as permitted by the

Commission provided, however, that the Commission may call witnesses when in such session.

11. Any meeting of the Commission may be recessed from time to time from the place set for the meeting to another place at the sole discretion of the Chairman.
12. Special meetings may be conducted by long-distance telephone conference call or other electronic means. Unless a different location is designated in the notice of the meeting, the public may attend such meeting at the offices of either of the Commissioners who are the State officials responsible for administering water law in the States. Any such long-distance telephone conference call or other electronic communication shall be recorded and made available for public inspection in accordance with the laws of the respective state.

ARTICLE V

COMMITTEES

1. There shall be the following standing committees:
 - Engineering Committee
 - Legal Committee
 - Budget Committee
2. The committees shall have the following duties:
 - a. The Engineering Committee shall advise the Commission on all engineering matters that may be referred to it.
 - b. The Legal Committee shall advise the Commission on all legal matters that may be referred to it.
 - c. The Budget Committee shall prepare the annual budget and advise the Commission on all fiscal matters that may be referred to it.
3. Members of standing committees shall be appointed by the Commission. The number of members of each committee shall be determined from time to time by the Commission. Each state shall nominate the member or members representing that state to serve on each committee.
4. The Chairman shall be Ex-Officio Member of all committees and may appoint additional Ex-Officio Members to committees.

5. The Chairman of each committee shall be designated by the Commission.
6. The Commission may from time to time create special committees, composed of such members and others, and assign such tasks as the Commission may determine.
7. Formal committee reports shall be made in writing and filed with the Commission.

ARTICLE VI

RULES AND REGULATIONS

1. So far as is consistent with the Kansas-Oklahoma Arkansas River Compact, the Commission may adopt additional rules and regulations.
2. Rules and regulations of the Commission may be compiled and copies may be prepared for distribution to the public under such terms and conditions as the Commission may prescribe.
3. Amendments to the rules and regulations and mode for procedure of the Commission may be made at any meeting of the Commission.

ARTICLE VII

FISCAL

1. All funds of the Commission shall be deposited in a depository, or depositories, designated by the Commission under the name of the Kansas Oklahoma Arkansas River Commission Fund. Such funds shall be initiated and maintained by equal payment of each State into the fund.
2. Disbursements of funds in the hands of the Treasurer shall be made by check signed by him upon voucher approved by the Budget Committee Chairman. The Budget Committee Chairman may authorize expenditures above the budget not to exceed \$200.
3. At the annual meeting each year the Commission shall adopt and transmit to the Governors of the two States, the budget covering an estimate of its expenses for the following fiscal year.
4. The payment of expenses of the Commission and of its employees shall not be subject to the audit and accounting procedure of the States.
5. All receipts and disbursements of the Commission shall be audited every fifth (5th) year by a qualified independent public accountant, to be selected by the Commission. In years

where no audit is conducted, a review of the Commission's finances shall be conducted by a qualified independent public accountant, to be selected by the Commission. The report of the audit or the report of the review, whichever is conducted, shall be included and become part of the annual report of the Commission.

6. An up-to-date inventory of all the property of the Commission shall be kept at the principal office of the Commission.
7. The fiscal year of the Commission shall begin July 1 of each year and end June 30 of the next succeeding year.

ARTICLE VIII

ANNUAL REPORT

1. The Commission shall make and transmit annually on or before the last day of September to the Governors of the signatory states of the Kansas Oklahoma Arkansas River Compact and to the President of the United States, a report covering the activities of the Commission for the preceding fiscal year.
2. The annual report shall include among other things, the following:
 - a. The estimated budget
 - b. Report of annual audit of the Kansas-Oklahoma Arkansas River Commission Fund
 - c. All Hydrologic data which the Commission deems pertinent
 - d. Statements as to cooperative studies of water supplies made during the preceding year
 - e. All findings of facts made by the Commission during the preceding year
 - f. Such other pertinent matters as the Commission may require

ARTICLE IX

MISCELLANEOUS

1. The Commission shall on request make available to the Governor of each of the signatory states any information within the Commission's possession at any time.

2. All contracts or other instruments in writing to be signed for and on behalf of the Commission, except matters relating to the receipt or disbursement of funds, shall be signed by the Chairman when authorized by the Commission.
3. The Commission shall have the power to employ such engineering, legal, clerical and other personnel as in its judgment may be necessary for the performance of its functions under the compact.

ARTICLE X

HEARINGS

1. The Commission may hold hearings, and take testimony and receive evidence at such times and places that it deems necessary. Such hearings may be held to determine violations of the Kansas-Oklahoma Arkansas River Compact or to collect, analyze and report on data as to stream flows, water quality, conservation storage, and such other information as is necessary for the proper administration of the compact. Such hearings may also be conducted for the purpose of securing information, suggestions, estimates and statistics as the Commission may need or believe to be useful for carrying out its functions and as may be available to or procurable from witnesses before the hearing.
2. All interested parties shall be afforded an opportunity for hearing after reasonable notice. Such notice shall include:
 - a. A statement of the time, place, and nature of the hearing
 - b. A statement of the legal authority and jurisdiction under which the hearing is to be held
 - c. A reference to a particular matter and any statute and/or rules involved
 - d. A short and plain statement of the matters asserted

If the Commission or any other interested party is unable to state the matters in detail at the time the notice is served, the initial notice may be limited to a statement of the issues. Thereafter, upon application a more definite and detailed statement shall be furnished.

3. Opportunity shall be afforded to all interested parties to respond and present evidence and argument on all issues involved in a hearing by the Commission.
4. The record in a proceeding shall include:

- a. All pleadings, motions and intermediate rulings
 - b. Evidence received or considered
 - c. The statement of matters officially noticed
 - d. Questions and offers of proof, objections, and rulings thereon
 - e. Proposed findings and exceptions thereto
 - f. Any decision, opinion or report by the officer presiding at the hearing
 - g. All staff memoranda or data submitted to the Commission in connection with their consideration of the matters before such hearing
5. Findings of facts shall be based exclusively on the evidence and on the matters officially noticed by the Commission.
 6. In the case of a hearing on a violation of the Kansas-Oklahoma Arkansas River Compact, oral proceedings or any part thereof shall be transcribed on request of any party charged with such violation and the cost of transcription shall be paid by the requesting party.

ARTICLE XI

PROCEDURES BEFORE COMMISSION

1. The Commission may admit and give probative effect to evidence which possesses probative value commonly accepted by reasonably prudent men in the conduct of their affairs. It shall give effect to the rules of privileged communications recognized by law.

No greater exclusionary effect shall be given any such rule or privilege than would be obtained in an action in court. The Commission may exclude incompetent, irrelevant, immaterial and unduly repetitious evidence. Objections to evidentiary offers may be made and shall be noted in the record. Subject to these requirements, when a hearing will be expedited and the interest of the parties will not be prejudiced substantially, any part of the evidence may be received in written form.
2. Documentary evidence may be received in the form of copies or excerpts, if the original is not readily available. Upon request, the parties shall be given an opportunity to compare the copy with the original.
3. A party may conduct cross-examination required for a full and true disclosure of the facts.

4. Notice may be taken of judicially recognizable facts. In addition, notice may be taken of generally recognized technical or scientific facts within the Commission's specialized knowledge. Parties shall be notified either before or during the hearing, or by reference in preliminary reports or otherwise, of the material noticed, including any staff memoranda or data, and they shall be afforded an opportunity to contest the material so noticed. The Commission's experienced, technical competence and specialized knowledge may be utilized in the evaluation of the evidence.
5. Apparent violations to the Compact shall be handled as follows:
 - a. If there is an apparent violation to the Compact, it should be made known to the Commission.
 - b. Apparent violators submit an explanation for said violation to the Commission within 30 days of receipt of written notification of said violation from the Commission
 - c. That the Commission refer the apparent violation to the Engineering and Legal Committees for investigation
 - d. After due investigation has been made, the Engineering and Legal Committees refer the matter to the Commission with recommendations concerning the action to be taken
6. Any party shall at all times have the right to counsel, provided that such counsel must be duly licensed to practice law in one of the States of the United States.

ARTICLE XII

FINDINGS

1. When the Commission finds that a violation of the Compact has occurred in a hearing held by the Commission itself, it shall transmit its findings to the appropriate state agencies in Kansas and/or Oklahoma to investigate and abate sources of the alleged violations.
2. In the case of a hearing held to collect, analyze and report on data as to stream flows, water quality, conservation storage, and such other information as is necessary for the proper administration of the Compact, and the gathering of information, suggestions, estimates and statistics as it may need or believe to be useful for carrying out its functions and as may be available to or procurable from witnesses, the information together with the Commission's final determination shall be forwarded to the proper agency of each

state charged with enforcement of pollution control and water supervision, and a copy shall also be maintained in the permanent office of the Commission. Said final determination shall include suggestions to the various states as to action to be taken by them to aid in the enforcement of this Compact.

ARTICLE XIII

PUBLICITY

1. Prior to the close of each meeting, the Chairman shall draft a press release as directed by the Commission and submit it to the Commission for approval. All approved releases may be made available to the press by any member of the Commission.
2. All other press releases, if there be any, shall be released by and through the Chairman.