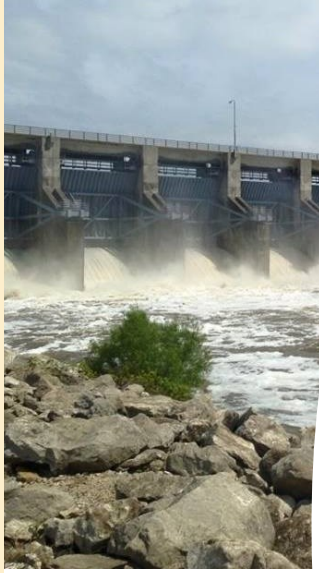

Kansas Water Authority Annual Report to the Governor and Legislature

2016

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Kansas

Water Authority

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The Kansas Water Authority (KWA) consists of 13 voting members who are appointed by the Governor or Legislative leadership. State agency directors serve as ex-officio members. KWA is statutorily within and a part of the Kansas Water Office (KWO). The KWA is responsible for advising the Governor, Legislature and Director of the KWO on water policy issues and for approving the *Kansas Water Plan*, federal contracts, administration regulations and legislation proposed by the KWO. The KWA provides the leadership to ensure that water policies and programs address the needs of all Kansans.

Kansas Water Office

Kansas Water Office, 900 SW Jackson Street, Suite 404, Topeka, KS 66612

Governor Brownback and Members of the 2016 Kansas Legislature,

On behalf of the Kansas Water Authority (KWA), I am pleased to provide our 2016 Annual Report. With a two-year budget approved by the 2015 Legislature, this year's report focuses more on people, process and 2015 accomplishments.

Last year, *A Long-Term Water Vision for the Future of Water Supply in Kansa*s was completed at the request of Governor Sam Brownback. After *The Vision* was reviewed and accepted by the KWA last January, our efforts in 2015 were focused on the development of regional water supply goals and establishment of Regional Advisory Committees to oversee the implementation of priority action items contained in *The Vision*. In August, the KWA appointed 166 dedicated volunteers to serve as our local advisors representing each of the 14 newly created planning regions. Rosters of each of the Regional Advisory Committees are contained in this Annual Report.

I'm proud to report the Water Vision Team, comprised of Kansas Water Office and Kansas Department of Agriculture staff, and the Governor's newly formed Water Resources Subcabinet, consisting of the aforementioned agencies plus the Departments of Health and Environment and Wildlife, Parks & Tourism have been successful this past year in implementing or initiating 80 percent of the Phase I Action Items contained in *The Vision*. Several of those Action Items are showcased in this Annual Report.

In order to support solutions to priority issues, the KWA prioritized funding this past year to focus on areas most critical to implementing *The Vision*. In addition, the KWA appreciates the support of the 2015 Legislature in the successful passage of legislation creating Water Conservation Areas as well as carry forward provisions for Multiyear Flex Accounts and policy requiring previous conservation efforts to be recognized in future conservation proposals. We appreciate the support of the 2015 Legislature in re-directing State Water Plan Funds to streambank stabilization projects above Tuttle Creek Reservoir. In 2016, we are requesting the Legislature's help in ensuring a key federal program is available to address our priority water resource issues. The KWA supports continued use of the Conservation Reserve Enhancement Program (CREP) in Kansas. Legislation will be introduced to authorize the continued implementation of the Arkansas River CREP and implementation of a new CREP targeted above several federal reservoirs and watersheds experiencing significant sediment and nutrient runoff. The use of this program in Kansas is critical to extending the life of the Ogallala Aquifer and reducing the sediment and nutrient impacts in our federal water supply reservoirs.

I share the same belief as Governor Brownback, in order to accomplish what we have heard from more than 15,000 stakeholders, it is time for action. This comes down to two things: first, changing how people think about and value water and second, how we extend the life of the resources we already have in our aquifers as well as in our aging reservoirs.

We want to highlight those who are working hard to make a difference with our vital resource. This past year at the Governor's Conference the first "Water Legacy Award" was presented to Wayne Bossert, former Groundwater Management District #4 Manager. The award recognized Bossert's lifetime commitment and his legacy in implementing the objectives in the *Kansas Water Plan*, to preserving water in Kansas, and his efforts to develop the Local Enhancement Management Area (LEMA) into Kansas law and the creation of the first LEMA in Sheridan County.

The Kansas Water Authority looks forward to working with you this session as we continue to address Kansas water resource priorities and implement the *Vision for the Future of Water Supply in Kansas*.

Gary Harshberger, Chair
Kansas Water Authority

Vision For The Future Of Water Supply In Kansas Implementation

After nearly 500 meetings were held across the State involving more than 15,000 Kansans, the final version of the Long-Term Vision for the Future of Water Supply in Kansas was presented in January, 2015. The Governor challenged the Vision Team to implement 75 percent of the Phase 1 action items in the first year, and we are pleased to share the goal was exceeded. As of this publication, 80 percent of the Phase 1 action items have been completed.

Regional Goal Leadership Teams & Regional Advisory Committees

Nearly 1,200 Kansans attended 26 public meetings to gather additional input into the Governor's 50 Year Water Vision. These meetings were designed to assist the Regional Goal Leadership Teams (RGLT) in establishing a draft set of goals for each of the 14 regional planning areas. Each of the 14 RGLTs was tasked with recommending three to five water supply goals for incorporation into the Vision.

Missouri Regional Goal Leadership Public Meeting-Hiawatha

Through a facilitated process, teams reviewed feedback gained during stakeholder outreach events, as well as information on local resource conditions to develop recommended goals. The final goals for the 14 regions were approved by the KWA in August, 2015.

This summer there was a transition process from the 12 basin advisory committees to the appointment of 14 new Regional Advisory Committees (RAC) established in August. With the incorporation of regional goals into the Water Vison/Kansas Water Plan, the RACs play a vital role in the regional implementation activities designed to meet those goals and ultimately achieve the Kansas Water Vision. Each RAC has identified a priority goal to begin working on, which will include the development of an action plan to be presented to the Kansas Water Authority. RACs will continue to provide local leadership in the implementation of the Vision.

Blue Ribbon Funding Task Force for Water Resource Management

One of the two immediate priority action items in the Vision was the establishment of the Blue Ribbon Task Force to develop a balanced, affordable, and sustainable method to provide financing for water resource management and protection, including alternatives that utilize public and private partnerships. As both state and federal resources become more finite, this group is more important than ever. It was a priority to engage as many stakeholder groups as possible, including the legislature, to ensure well-rounded discussions and solutions. The members of this group, listed below, will have their first meeting in early 2016.

State-Wide Organizations & Stakeholders

Randall Allen, Executive Director, KS Assoc. of Counties
John Bridson, Vice-President of Generation, Westar
Colin Hansen, Executive Director, KS Municipal Utilities
Gary Harshberger, Chairman, Kansas Water Authority
Terry Holdren, Chief Executive Officer, KS Farm Bureau
Karma Mason, Member, Kansas Chamber & KWA
Erik Sartorius, Exec. Director, League of KS Municipalities
Dennis Schwartz, Director, KS Rural Water Assoc. & KWA
Matt Teagarden, Chief Exec. Officer, KS Livestock Assoc.
Tom Tunnell, President & CEO, KS Grain & Feed Assoc.

Legislature

Senator Larry Powell
Senator Jim Denning
Senator Tom Hawk
Representative Sharon Schwartz
Representative Steven Johnson
Representative Jerry Henry

Ex-Officio

Robin Jennison, Secretary, KDWPT
Jackie McClaskey, Secretary, KDA
Susan Mosier, Secretary, KDHE
Tracy Streeter, Director, KWO

Education and Outreach

The Vision specifically identifies numerous education goals and strategies that need to be addressed. To begin work on the Phase 1 Action Items, an education and outreach coordinating team has been formed. This team and public working groups will identify water-related educational needs across the state. Then, the coordinating team and working groups will develop statewide education and outreach materials based on those needs, and implement tangible action steps to help all Kansans understand the importance of water and water issues. A multi-part educational proposal for target audiences of youth, municipalities, K-12, business entities, community leaders, media, and the general public will be developed. Working groups

will be focused on the following areas: Community Facilitation/Learning; K-12 Curriculum, and Career and Technical Education; Out-of-Classroom Youth Education (4-H, FFA, etc.); Media and Community Outreach Campaigns; and Workforce Development.

Five public meetings will be held to gather information on existing programs and to identify gaps in education and outreach efforts statewide. The Coordinating Team envisions specific steps to include:

- Gather background information on existing educational efforts, programs, and activities in Kansas
- Evaluate what information is being shared, recognize best formats of delivery, and identify realistic opportunities for new or expanded water-related educational efforts, programs and activities, as well as, the resources necessary to fulfil those opportunities
- Develop appropriate programs and activities for each target audience, including a public media campaign

Over the course of the next year, this group will have significant public input in how to best achieve the education goals of The Vision.

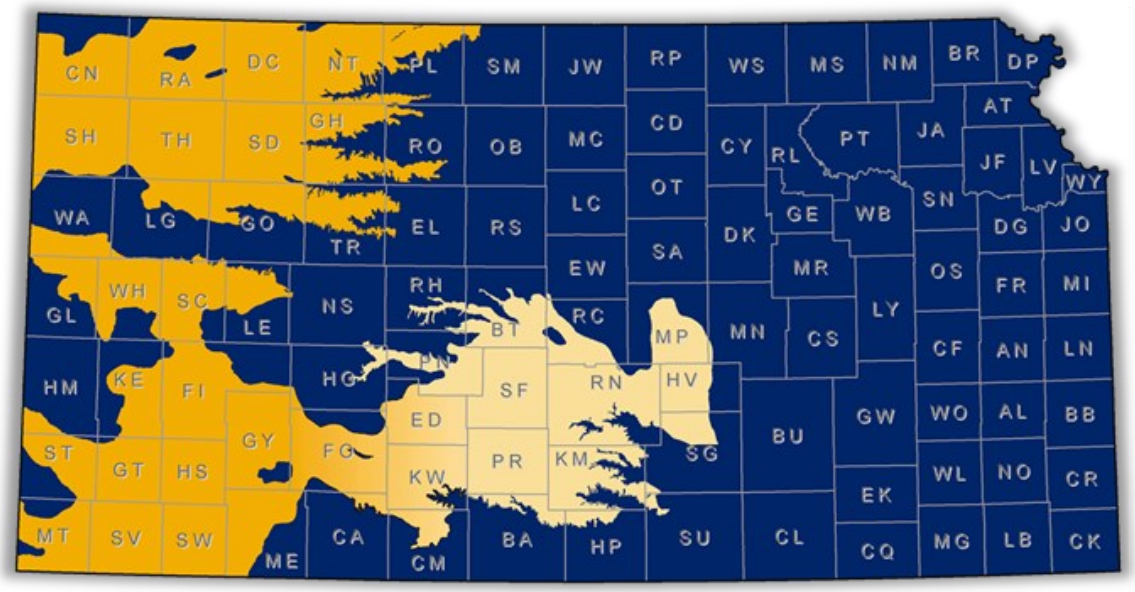
Education & Outreach to Legislators and the general public will be an important part of Vision implementation.

November 2013	Governor's Call to Action
January – July 2014	Public and Stakeholder Outreach
Summer – Fall 2014	Public Input on Draft
November 2014	Governor Called for 75% Phase I Action Items to be Completed
January 2015	Second & Final Long Term Vision for the Future of Water Supply in Kansas
Winter - Summer 2015	Regional Goal Leadership Team (RGLT) Input & Draft Goals
August 2015	KWA Adopted RGLT Goals
September – October 2015	Regional Advisory Committee Prioritization ➤Blue Ribbon Task Force Appointed ➤Communication/Education Coordination Team
January – May 2016	First Action Item Plans Submitted to KWA
May – Fall 2016	All Action Plans Presented

LEGISLATIVE –WATER CONSERVATION AREAS

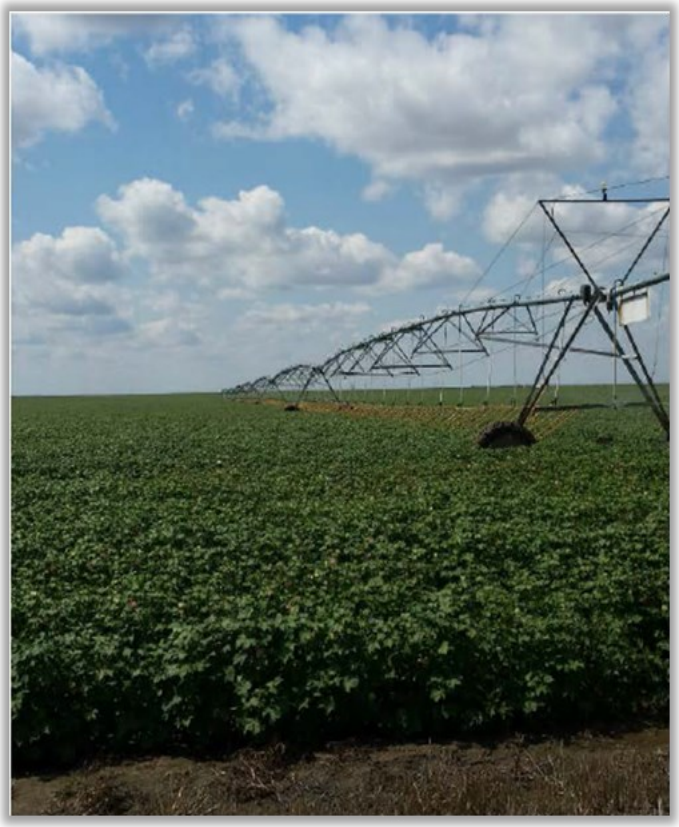
To help achieve Phase I Action items in The Vision in the Ogallala High-Plains aquifer, Governor Sam Brownback signed into law a bill allowing for Water Conservation Areas (WCAs) in April 2015. WCAs were created to help reduce barriers and increase development of locally driven conservation and management plans.

Any groundwater water right owner or group of water right owners in an area of need of conservation may form a WCA. The interested water owner/s meets with KDA to review water rights and goals for the WCA and then develop a management plan to serve as the basis of the WCA consent agreement. Water rights must be vested or certified in the same source of supply. Landowners with multiple water rights are eligible to group those rights into one WCA or multiple WCAs.



Water right owners are already taking advantage of this more flexible tool to extend their water supply. One is already in place and more than a dozen are currently being developed.

WCAs are a simple, streamlined and flexible tool that allows any water right owner or group of owners the opportunity to develop a management plan to reduce withdrawals in an effort to extend the usable life of the Ogallala-High Plains aquifer. While they are similar to a Local Enhanced Management Area (LEMA) or an Intensive Groundwater Use Control Area (IGUCA), this tool offers greater flexibility to water right owners and allows one to be formed and approved by the chief engineer in a shorter time frame. The process from the initial meeting to the implementation of a WCA can take just a few months.



There are many benefits to forming a WCA. It extends the usable lifetime of the water supply allowing for either a transition to limited irrigation or for continued beneficial use of the water for a greater length of time into the future.

They are 100 percent voluntary and participation within a WCA may also afford flexibilities that are not available to water right owners outside of a WCA or LEMA. These flexibilities can be outlined in the WCA management plan and may include creating multi-year allocations, allowing the movement of allocations between enrolled water rights, or allowing use of water for new uses.

WCAs do not make any permanent change in enrolling water rights and can be limited in duration to allow water right owners to try out the controls.

Streambank Stabilization

Since the late 1990s several state agencies have been working to reduce the amount of sediment entering our federal reservoirs. This has been accomplished by working with landowners to implement streambank protection projects. Watershed assessments have shown streambanks are a major sediment contributor to the reservoirs. It is well known erosion and sedimentation are natural occurrences in our watersheds and waterways. However, alterations to our watersheds have led to an increase in erosion and sedimentation which in turn leads to reduced reservoir storage capacity. This loss in storage capacity is a vital concern as we are relying more and more on the water in our federal reservoirs for both current and future use. In October 2013, Governor Brownback issued a call to action to his administration to develop a 50-Year Vision for the Future of Water in Kansas stating, "Water and the Kansas economy are directly linked. Water is a finite resource and without further planning and action we will no longer be able to meet our state's current needs, let alone growth."

Landowner speaking with Legislators on streambank tour.

As part of this Vision and keeping in mind coordination and cooperation are key to the success of any process, the Kansas Department of Health and Environment (KDHE) (Watershed Management Section), the Kansas Department of Agriculture-Division of Conservation (KDA-DOC), and the KWO have refined a process utilizing the strengths and responsibilities of each agency to accomplish streambank protection work to reduce erosion and sedimentation in the watersheds and waterways above our highest priority reservoirs. One key element of this process is understanding that landowner participation is key to the success of the protection projects. In order to complete projects in the most efficient and cost effective manner, the group has adopted a "pooled funding" concept. Funds available through agency programs for streambank protection projects are targeted to priority areas and administered by this group. The Kansas Forest Service (KFS), Kansas Department of Wildlife, Parks, and Tourism (KDWPT), local conservation districts and local Watershed Restoration and Protection Strategy (WRAPS) groups are also important to the success of this process.

Funding was allocated by the 2016 legislature for State FY 2016 and State FY 2017 for $800,000 in design and construction of approximately nine streambank protection projects above Tuttle Creek Reservoir. This funding will also be used to install and maintain a riparian forest buffer adjacent to the streambank protection project. These riparian forest buffers are installed and maintained through an agreement between the KDA-DOC and the KFS. Riparian forest buffers act to intercept sediment and nutrients entering the stream and are also effective in reducing erosion by providing additional streambank protection. Pooled funding from the KDHE Watershed Management Section, the KDA-DOC, and the KWO will also be used for the design and construction of projects above both John Redmond and Perry Reservoirs. To date these projects will prevent nearly 1,000,000 tons of sediment from entering these reservoirs each year.

Neosho River Streambank Project Site 18 - Before & After Stabilization

Improving Reservoir Management

A number of regional water supply goals are linked to the concept of improvements or changes to existing reservoir operations and management. Increasing storage capacities of existing reservoirs, increasing supply, reducing reservoir sedimentation rates, evaluating new reservoir sites and even reducing projected demands through education or conservation goals all impact the interaction of surface water storage supplies, regional demands and the overall operation and management of those supplies.

The evaluation of operational changes, reservoir improvements and demand modifications generally falls within the purview of existing basin-level surface water models maintained, operated and updated by the technical staff at the KWO. These highly-specialized basin models have been used by KWO for nearly two decades in assessing the operational capability and physical adequacy at the basin level of the reservoir and surface water systems in eastern Kansas.

It is anticipated there will be different types of assessments to effectively review and address the reservoir management changes associated with the regional goals of various basins in eastern and central Kansas. Following recommendations provided at public Vision meetings, KWO contracted with the original surface water operations model authors to create a single model to cover all of central and eastern Kansas. To start the process, KWO updated climatic and hydrologic inputs for each existing individual basin model through the end of calendar year 2014. In the case of the certain planning regions, new models had to be created for goal assessment. Finally, all those individual models were passed to the contractor for inclusion in the new Multi-basin Evaluation of Kansas Reservoir Operations for Management Answers model (MEKRO-MAnswer). Application of the new model for regional goal assessment is slated to begin Spring of 2016 with the completion of the model's beta-testing.

Not only can the system effects of many regional goals be evaluated by the new model they can also be simulated singly or in combination with any or all other applicable goals within the context of various drought/climatic scenarios in the current or any future setting within the model. Surface water system impacts of increasing storage capacities of existing reservoirs can be evaluated by modifying the physical representation of storage within the reservoirs in the model. An increase in regional supply through addition of new storage sites can be assessed by creating new reservoir model nodes and tying those new sources into existing operational control in the model, including off-stream storage locations and any operational rules necessary to divert water and fill them. Minimum release schedules can be altered or changed to target flows at points along basin main stems to explore the results of making those operational adjustments by regional goal. Projected downstream demands can be shrunk based on regional goals and the results evaluated. Sediment reduction goals can be reviewed as well as the influence on the surface water systems reviewed within the temporal contexts established by those goals.

As results are produced, they can be provided to RACs for review and input on future model runs. Those results which show the most promise in terms of supporting regional goals can be shared with other implementation and evaluation agencies so reservoir system management and operational changes are implemented.

The entire process of regional concerns being addressed through goals and evaluated within the context of science in order to produce improved system level surface water management is an exciting prospect. It is also a process that is key to the successful implementation of the "reliable, long-term water supply . . . for current and future generations" identified within the *Kansas Water Vision*.

Testing water supply at John Redmond Reservoir fall 2015

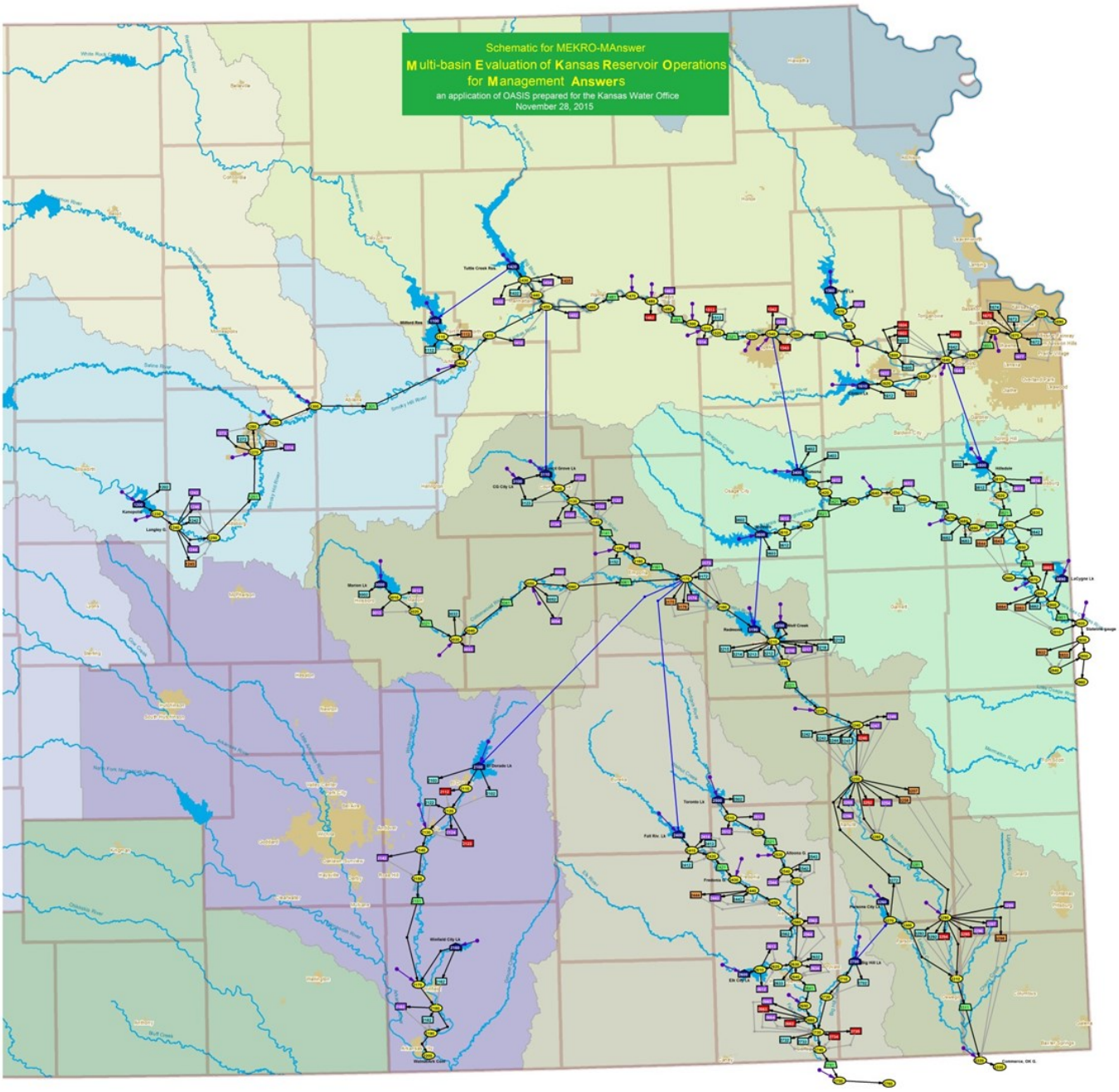
A perfect example of a project that went through this process is Kanopolis Reservoir and the change from the inefficient minimum release schedule to a downstream flow target on the Smoky Hill River. The minimum release schedule for a federal reservoir is typically set to meet instream flow requirements for wastewater discharge and fish and wildlife support. Kanopolis Lake was operated with a minimum release schedule, recommended by the Public Health Service in the late 1940s until policy changes were made in June 2012.

After completion of hydrologic studies by the KWO and Corps, the KWO requested a modification of operations to

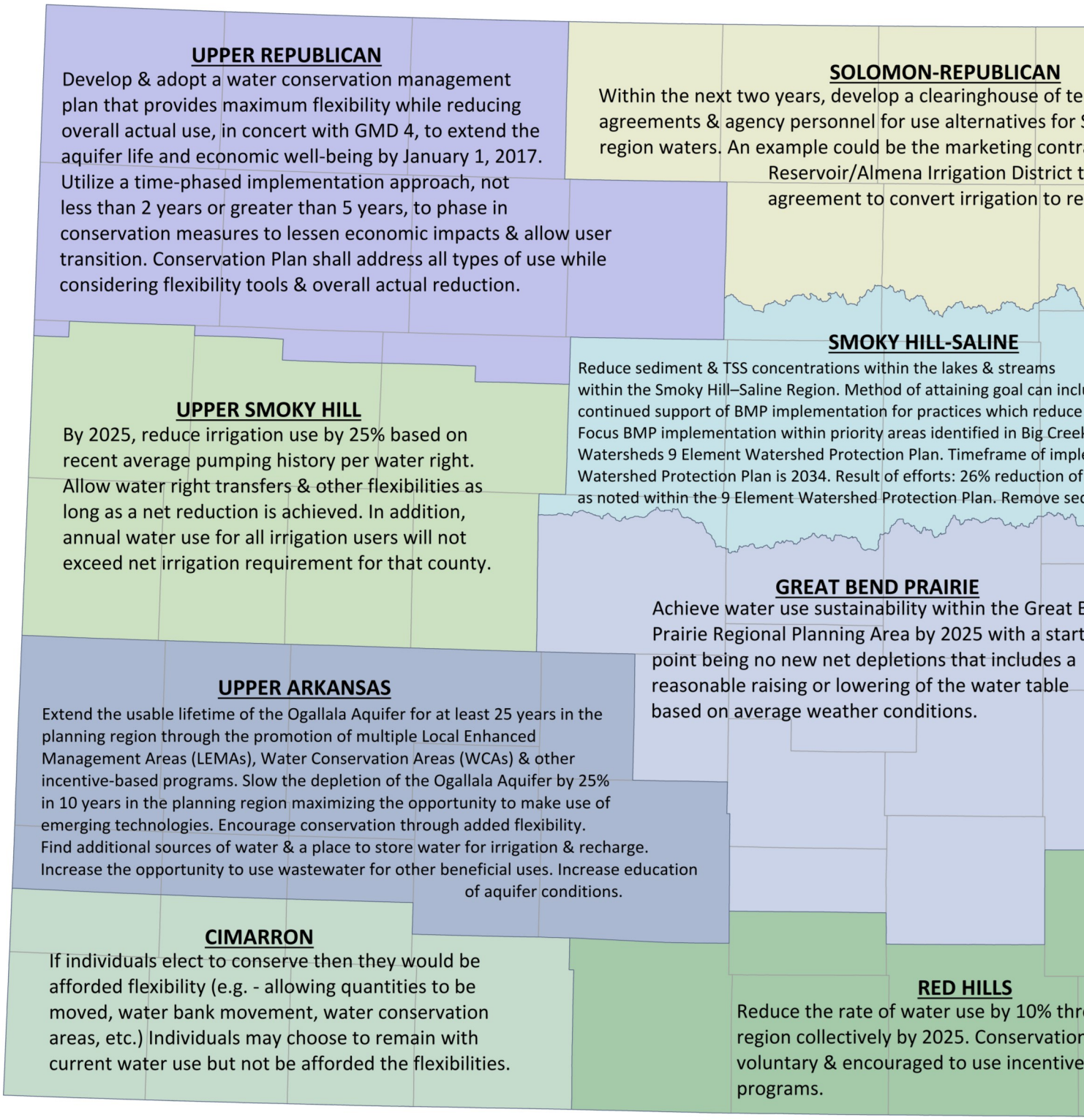
meet a 20 c.f.s. target flow at Mentor, Kansas rather than the following minimum release schedule:

Month													
Reservoir		J	F	M	A	M	J	J	A	S	O	N	D
Kanopolis Lake	cfs	10	10	15	20	30	50	50	50	50	25	15	10

The improved management of releases to meet the downstream targets have created a significant savings. As indicated above, minimum release schedules for many of the federal reservoirs in Kansas were created over more than 50 years ago, usually for dilution of a city's wastewater discharge downstream of the reservoir. While wastewater treatment requirements have increased, so have the wastewater treatment technologies. New release schedules for federal reservoirs based on either the probability of meeting a downstream target or using continuous monitoring and adjustment of releases to meet the target are more efficient to manage the reservoir's storage. Evaluation of antiquated minimum release schedules and determination of appropriate target flows are under way in all eastern Kansas basins.

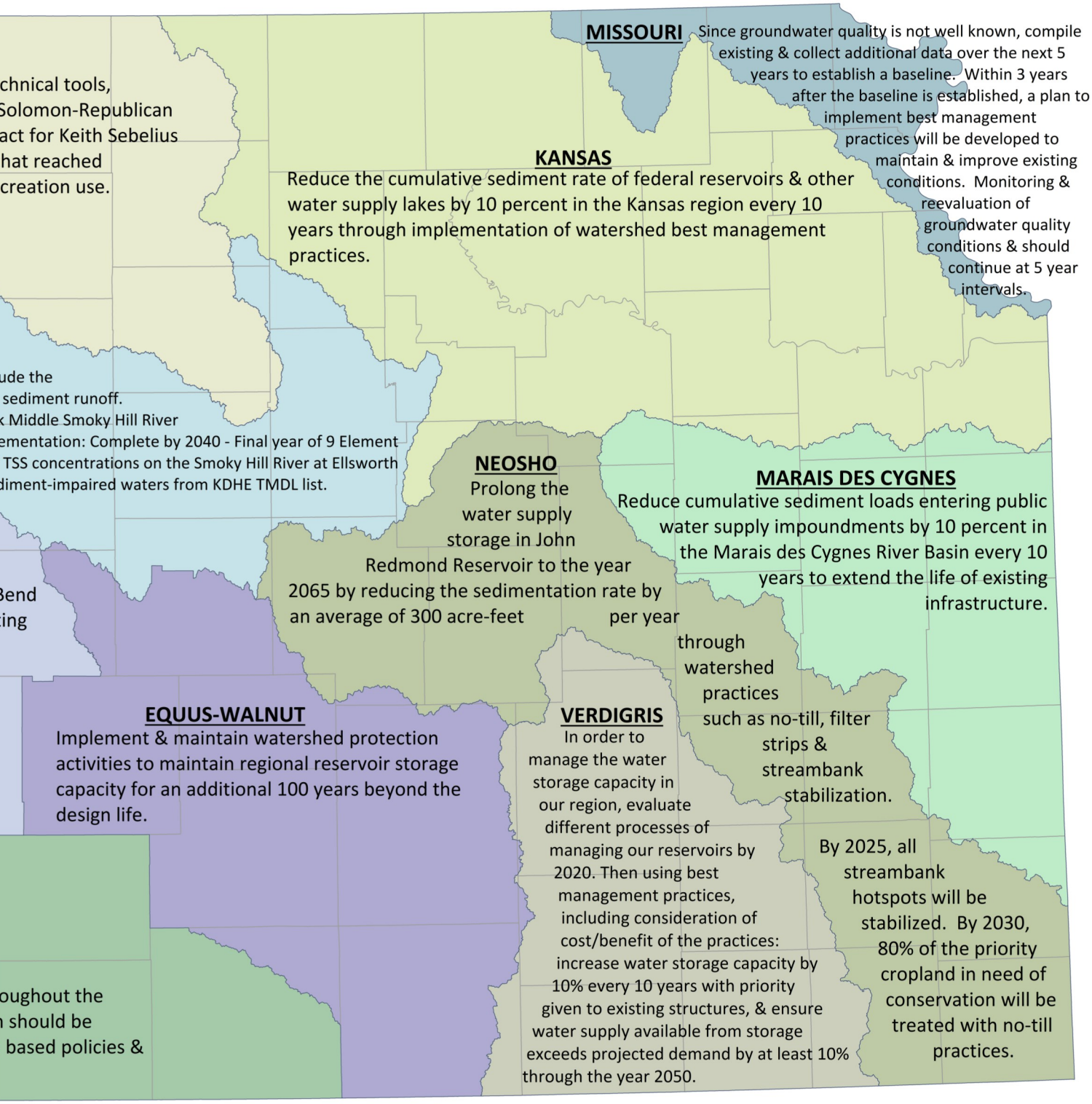


This shows the inner-connectivity of water storage for all eastern Kansas regional planning areas with federal water supply reservoirs.



Each Regional Advisory Committee has met and established the first water supply goa

IRST PRIORITY WATER SUPPLY GOALS



l they will be addressing and are in the process of creating an action plan for the goal.

JOHN REDMOND RESERVOIR DREDGING PROJECT

John Redmond Dredging Initiative

In 2015, the state of Kansas continued forward with efforts to implement a large-scale dredging project to restore water supply storage at John Redmond Reservoir – the first project of its kind in the nation. Water stored in John Redmond Reservoir is provided, through a contract with KWO, to 19 communities, six industrial users and the Wolf Creek Nuclear Operating Station.

The ability to store water in the reservoir is critical to maintain future supply. In 2006 the KWO initiated a review of surface water supply and demand in five basins in eastern Kansas. The intent of the analysis was to identify future potential surface water supply vulnerabilities along main stem river corridors in select eastern Kansas river basins. For the severe drought scenario reviewed in the initial assessment, three of the five basins showed vulnerability within the next 15 years. The Neosho basin, which includes John Redmond Reservoir, was assigned the highest priority due to the high rate of supply loss in the basin coupled with the relatively high demand projections.

Director Tracy Streeter updating Legislators on the John Redmond Dredging Project during the Kansas Geological Survey 2015 Field Tour

In March 2015, a $20 million bond was issued to cover the cost of dredging, landowner compensation for disposal sites, and streambank stabilization projects. Revenue for repayment of this bond is approximately 75 percent State Water Plan Fund and 25 percent Water Marketing Program customers.

KWO completed a Section 408 permit which is required by the Rivers and Harbors Act of 1899 and provides approval by the Secretary of the Army to alter or permanently occupy a federal public works project. The Section 408 request included a technical, environmental and real estate analysis and demonstrated the dredging project will not significantly impact the usefulness of the reservoir or the public interest. Corps final review and consideration of the Section 408 request was completed in May of 2015 with issuance of a Record of Decision (RoD) by the Corps. This RoD gave federal government clearance to conduct dredging operations on John Redmond Reservoir as well as use portions of federal government property for equipment staging, pipeline placement, and sediment disposal. This is the first and largest permit of its kind to be approved.

Coordination efforts with local landowners continued in 2015 to identify suitable property for sediment disposal. These efforts ended up being successful, with enough land being identified to allow for disposal of three million cubic yards of sediment in association with the dredging project. Signed agreements or agreements in principle are in place for all five sites which will be utilized for sediment disposal associated with the project. One of these sites is on federal government property while the other four are located on private property.

Agency coordination efforts continued in 2015 with state agency partners to ensure all necessary state-level permits were acquired for the project. These efforts included collaboration with the KDHE as well as the KDA–DWR. Work with KDHE addressed construction stormwater clearances to ensure that construction activities associated with the project do not negatively impact local water quality as well as efforts to obtain a National Pollutant Discharge Elimination System (NDPES) permit to allow for discharge of effluent water from the disposal sites to downstream water bodies. Permit discussions with DWR included acquisition of dam, floodplain fill, stream obstruction, and term water right permits.

Sufficient progress was made in 2015 to acquire necessary permits to allow for construction activities on the project to begin. Dam and floodplain fill permits were issued to KWO by DWR on November 17, allowing for a notice to proceed to be issued by KWO to Great Lakes Dredge and Dock Company to authorize the start construction activities on Confined Disposal Facility B (CDF B). The first dirt was turned on CDF B, the one sediment disposal site to be located on federal government property, on November 19; one day after the Governor's opening speech at the Governor's Conference on the Future of Water in Kansas. Other dam permits are expected to be issued to KWO by DWR by 2016 and it's anticipated construction activities will be within this same timeframe for CDF E, the largest disposal site to be used in association with the dredging project.

Initial staging of dredging equipment, John Redmond Reservoir Damsite Park (10/16/2015)

KWO will complete a draft Environmental Assessment (EA) in December 2015 to evaluate the environmental impacts of use of dredging disposal sites not included within the Final Programmatic Environmental Impact Statement (FPEIS) completed in September 2014. Once the public comment period is complete for the draft EA, all disposal sites to be utilized for disposal of 3,000,000 cubic yards of sediment will have been put through the environmental review process.

Topsoil removal and placement into stockpiles, CDF B (11/20/2015)

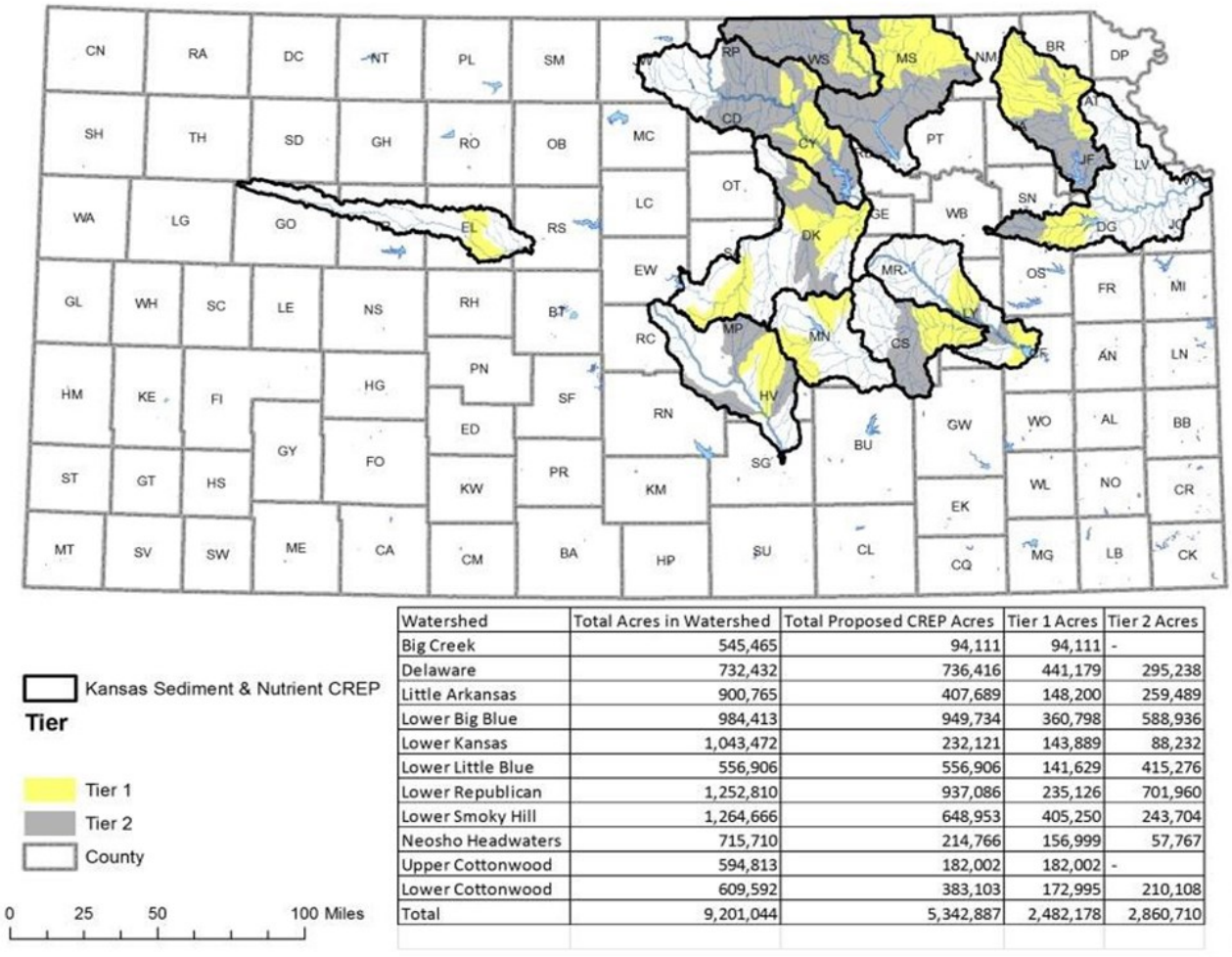
Sediment/Nutrient Reduction Program

Conservation Reserve Enhancement Program (CREP)
The Conservation Reserve Enhancement Program (CREP) is a voluntary, federal-state natural resources conservation program that addresses state and nationally significant, agricultural-related environmental concerns. Through CREP, program participants receive financial incentives from USDA's Commodity Credit Corporation (CCC), the state, as well as other partners to voluntarily enroll in the Conservation Reserve Program (CRP) in 14 to 15 year contracts.

Proposal:
Enroll up to or more than 10,000 acres into conservation practices such as filter strips, riparian buffers, grassed waterways and wetland restoration in the Big Creek, Delaware, Little Arkansas, Lower Big Blue, Lower Kansas, Lower Little Blue, Lower Republican, Lower Smoky Hill, Neosho Headwaters, Upper Cottonwood and Lower Cottonwood watersheds. Provide eligible producers who enroll in a voluntary 15-year contract rental payments, cost share and additional incentives.

Benefits:
The Kansas Sediment and Nutrient Reduction CREP will improve the quality of the project area waterways that serve as drinking water sources for area residents. This program will also support implementation of the Kansas Nutrient Reduction Framework developed by KDHE, thus demonstrating Kansas' commitment to addressing nutrient-related water quality issues. Practices implemented will reduce sedimentation and thereby slow the rate of storage loss in downstream reservoirs. The program will enhance the effectiveness of other programs and activities in the watersheds that focus on reducing nutrients and sedimentation. In addition, the project will improve wildlife habitat. The buffers, filter strips and other practices installed under the Kansas Sediment and Nutrient Reduction CREP will enable farmers to protect water quality while maintaining the productivity of their farms.

Project Area:



Watershed	Total Acres in Watershed	Total Proposed CREP Acres	Tier 1 Acres	Tier 2 Acres
Big Creek	545,465	94,111	94,111	-
Delaware	732,432	736,416	441,179	295,238
Little Arkansas	900,765	407,689	148,200	259,489
Lower Big Blue	984,413	949,734	360,798	588,936
Lower Kansas	1,043,472	232,121	143,889	88,232
Lower Little Blue	556,906	556,906	141,629	415,276
Lower Republican	1,252,810	937,086	235,126	701,960
Lower Smoky Hill	1,264,666	648,953	405,250	243,704
Neosho Headwaters	715,710	214,766	156,999	57,767
Upper Cottonwood	594,813	182,002	182,002	-
Lower Cottonwood	609,592	383,103	172,995	210,108
Total	9,201,044	5,342,887	2,482,178	2,860,710

Goals:
The primary goals of the Kansas Sediment and Nutrient Reduction CREP include:

- Secure, restore and protect water supply storage and water quality through the installation of practices that reduce sedimentation and nutrient runoff
- Reduce sediment loading by up to or more than 58,000 tons and phosphorous loading by up to or more than 92,000 pounds
- Improve wildlife habitat

Eligibility Requirements:
Enrollment in the Kansas Sediment and Nutrient Reduction CREP will be on a continual basis. To participate in the Kansas Sediment and Nutrient Reduction CREP, landowners must meet the following eligibility requirements:

- Land must be located in the CREP project area
- Cropland must have been planted to crop for four of six past years and be physically and legally capable of being cropped. Marginal pastureland may also be enrolled provided it is suitable for use as a riparian buffer
- Land must have sites where filter strips, grassed waterways, riparian buffers or the other eligible practices are deemed needed
- Lands with an existing CRP contract or an approved offer with a contract pending are not eligible for CREP until the contract expires

Practices:
Potential practices in the Kansas Sediment and Nutrient Reduction CREP include:

CP8A - Grassed Waterways
CP21 - Filter Strips
CP22 - Riparian Buffer
CP23 and CP23a - Wetland Restoration
CP33 - Habitat Buffers for Upland Birds

Incentives:

- Participants in the Kansas Sediment and Nutrient Reduction CREP may be eligible for four types of payments: base annual soil rental rate payments, bonus incentive payments, cost-share assistance, and maintenance
- Annual rental payments will be based on the soil rental rate
- Additional incentive payments, cost-share and technical assistance may be made available through state and other non-federal payments
- Incentives will be provided based on priority tiers with the higher incentives provided to practices implemented in high priority HUC 12 watersheds (Tier 1) as identified in approved watershed plans

Cost:
For enrollment of 10,000 acres, the estimated total financial obligation will be $21.6 million with $17.3 million contributed by the CCC. Approximately $4.3 million would be provided by the state of Kansas and other non- federal partners through direct payments and in kind services.

Example of grassed waterway potential CREP practice.

High Plains Computer Model

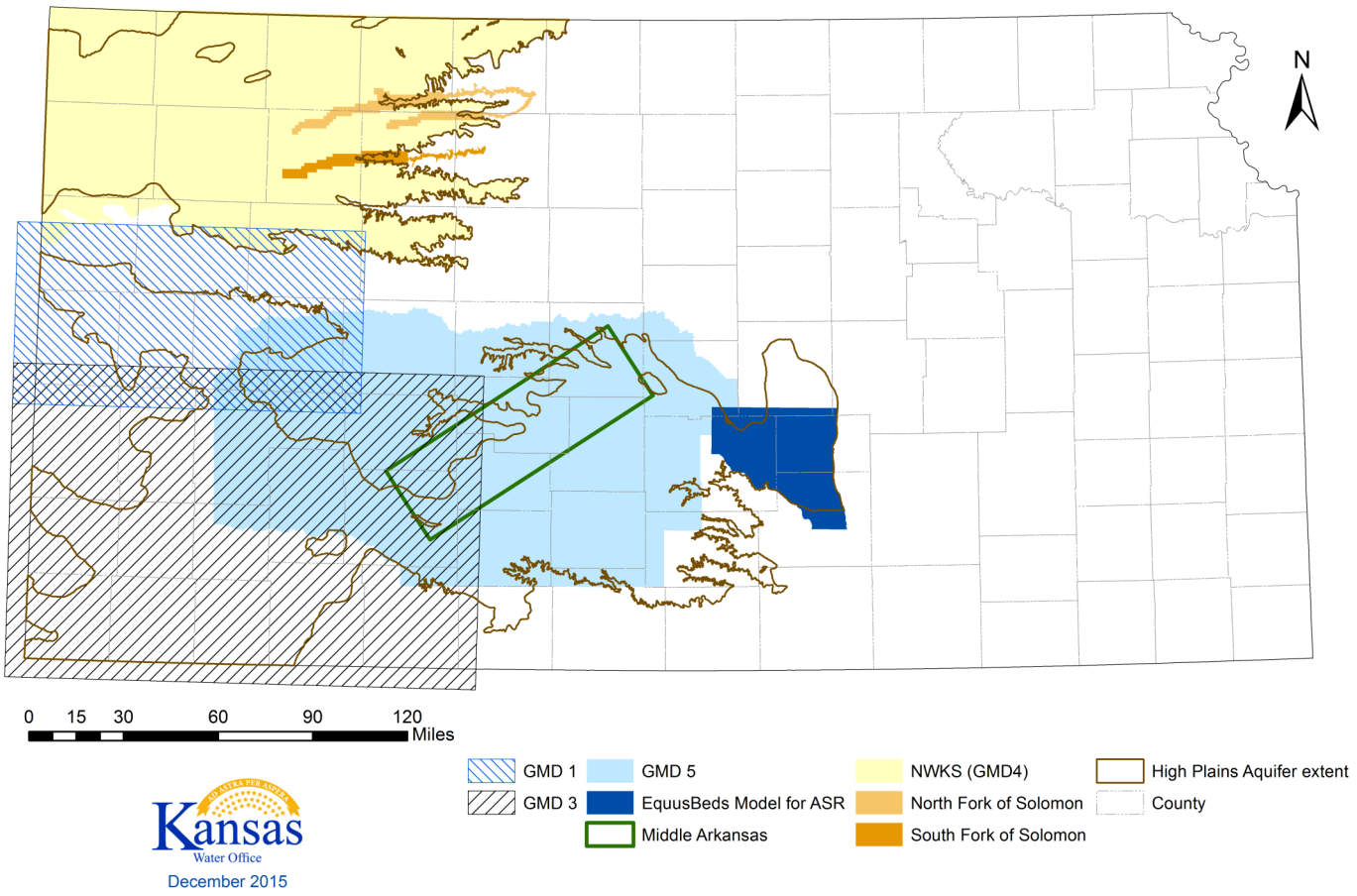
Computer groundwater models allow water managers and the public to evaluate different management scenarios and how they will affect future water levels. Models have been used for a number of years on projects ranging from helping to settle the Republican River dispute to determining how much difference the Sheridan 6 Local Enhanced Management Area would make. Kansas has a wealth of water data that makes computer modeling more accurate and a viable management tool.

Seven groundwater models in areas of the High Plains aquifer have been completed over the years in Kansas using varying degrees of complexity and evolving hydrologic details to create the best representation of resource conditions possible at the time each was developed. Techniques and accuracy have improved with each model, leaving room to improve previous models with improved data and calibration accuracy. A model maintenance program will keep these investments up to date, adding additional information and new techniques to provide a continuing tool for water management.

The latest model, completed in 2015, is a tool to aid Western Kansas Groundwater Management District No. 1 (GMD1) which overlays portions of five counties in west-central Kansas. Most of GMD1 now has less than 40 feet of saturated thickness of the Ogallala portion of the High Plains aquifer to meet the area's water needs now and into the future, although a few limited areas do have more. The model can provide projections of water table changes based on current consumption and precipitation. The projection for water availability based on no change in usage from 2013 levels indicates available water will be reduced by one-third by 2030 and by another one-third by 2080. Additional scenarios can now be run to evaluate other conservation options.

The next modeling project is to expand the model of a portion of the Equus Beds aquifer in south central Kansas to cover the entire aquifer, enabling testing runs of drought and management scenarios. The maintenance program will continue to improve and in turn update other models.

High Plains Aquifer Groundwater Models



Kansas Water Office

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On February 24, 2015, in the case of Kansas v. Nebraska No. 126 Original, the Supreme Court of the United States ruled in favor of Kansas in the dispute over the states' rights to the waters of the Republican River Basin. The Court awarded damages to Kansas totaling $5.5 million. As a result, the 2015 Legislature introduced Senate Bill 112 Section 178, which designated where all moneys recovered by the state of Kansas would be deposited. Of the $5.5 million, $2 million was received by the Attorney General for the interstate water litigation fund. The remaining $3.5 million was credited to the Republican River Water Conservation Projects-Nebraska Moneys Fund for water improvement projects in the Republican River Basin.

K.S.A. 82a-1801 through 82a-1805 lists the types of projects that may be funded by the moneys, which include:

- Efficiency improvements to canals or laterals managed and paid for by an irrigation district
- Water use efficiency upgrades
- Implementation of water conservation of irrigation and other types of water uses
- Implementation of water management plans or actions by water right holders
- Water measurement devices and monitoring equipment and upgrades
- Artificial recharge, funding the water transition assistance program, purchase of water rights and cost share for state or federal conservation programs that save water
- Maintenance of the channel and the tributaries of the Republican River
- Reservoir maintenance or purchase, lease, construction, or other acquisition of existing or new storage space in reservoirs
- Purchase, lease, or other acquisition of a water right
- Expenses incurred to construct and operate off-stream storage

Officials from the KDA and the KWO met with Kansas Bostwick Irrigation District (KBID) in November 2015 to discuss potential projects that could be completed using the moneys in the conservation fund. Possible projects presented include: automating the channel system and the delivery of water using remote management systems to maintain consistent flow rates; adding an impermeable layer to the edges of the trenches to reduce seepage losses; and converting the open lateral canals to buried pipe systems to eliminate any seepage and evaporation. While the first two options are good possibilities, they do not solve the larger problem of evaporation and operation spills.

KBID Tour November 2015.

The final option of buried pipe systems would remove any opportunities for operational spills, eliminate the costs of labor and associated equipment, as well as eliminate the need for subsurface tile drainage and the need to maintain it. KBID's assessment of a conversion project from open lateral canals to buried pipe includes three canals in their third section, an area they have not yet been able to afford on their own. The total miles of potential pipe for these three canals would eliminate 8.74 miles of open canals. KBID owns much of the equipment needed for the conversion project, such as a wheel trencher with a laser level, excavators, bull dozers, wheel loaders and dump trucks.

According to KBID, eliminating evaporation, seepage and operational spills by switching to buried pipes in these three canals would create an estimated total water savings of about 2,600 acre-feet of water a year. Over the next 20 years, this system will save an estimated 52,000 acre-feet, bringing Lovewell Reservoir from empty to conservation level twice. Additional projects within KBID are being evaluated now.

An existing committee, the Lower Republican River Stakeholder Advisory Committee, produced a report in January 2010 to guide any future improvements to the water management, efficiency and conservation in the Lower Republican River basin. This committee, along with KWO and KDA, will meet in January 2016 to discuss this KBID project, as well as any other recommendations for improvements in the basin.

Kansas Bostwick Irrigation District Tour - November 2015

STATE WATER PLAN FUND REVENUE ESTIMATE

State Water Plan Resource Estimate	FY 2015 Actuals	FY 2016 W/Carry Forward	FY 2017 Appropriated
Beginning Balance	$ 3,699,732	$ 3,123,158	$ 20,436
Adjustments			
Release of Prior Year Encumbrance	$ 130,058	$	$
Recovery of Prior Year Expenditure	$	$	$
Other Service Charges	$ -	$	$
Transfer to Kansas Corporation Commission	$ (400,000)	$	$
Subtotal--Adjustments	**$ (269,942)**	**$ -**	**$ -**
Revenues		-	-
State General Fund Transfer	$ -	$ -	$
Economic Development Fund Transfer	$ 800,000	$	$
Municipal Water Fees	$ 3,075,258	$ 3,276,255	$ 3,309,018
Clean Drinking Water Fee Fund	$ 2,789,450	$ 3,100,716	$ 3,131,723
Industrial Water Fees	$ 1,066,382	$ 1,200,934	$ 1,212,943
Stock Water Fees	$ 412,114	$ 421,704	$ 425,921
Pesticide Registration Fees	$ 1,275,667	$ 1,230,000	$ 1,230,000
Fertilizer Registration Fees	$ 3,389,702	$ 3,525,200	$ 3,525,200
Pollution Fines and Penalties	$ 156,623	$ 250,000	$ 250,000
Sand Royalties	$ 67,402	$ 99,000	$ 99,000
Total Receipts	**$ 13,032,598**	**$ 13,103,809**	**$ 13,183,805**
Total Available	$ 16,462,388	$ 16,226,967	$ 13,204,241
Less: Expenditures	$ 13,339,230	$ 16,206,531	$ 13,116,535
Ending Balance	**$ 3,123,158**	**$ 20,436**	**$ 87,706**

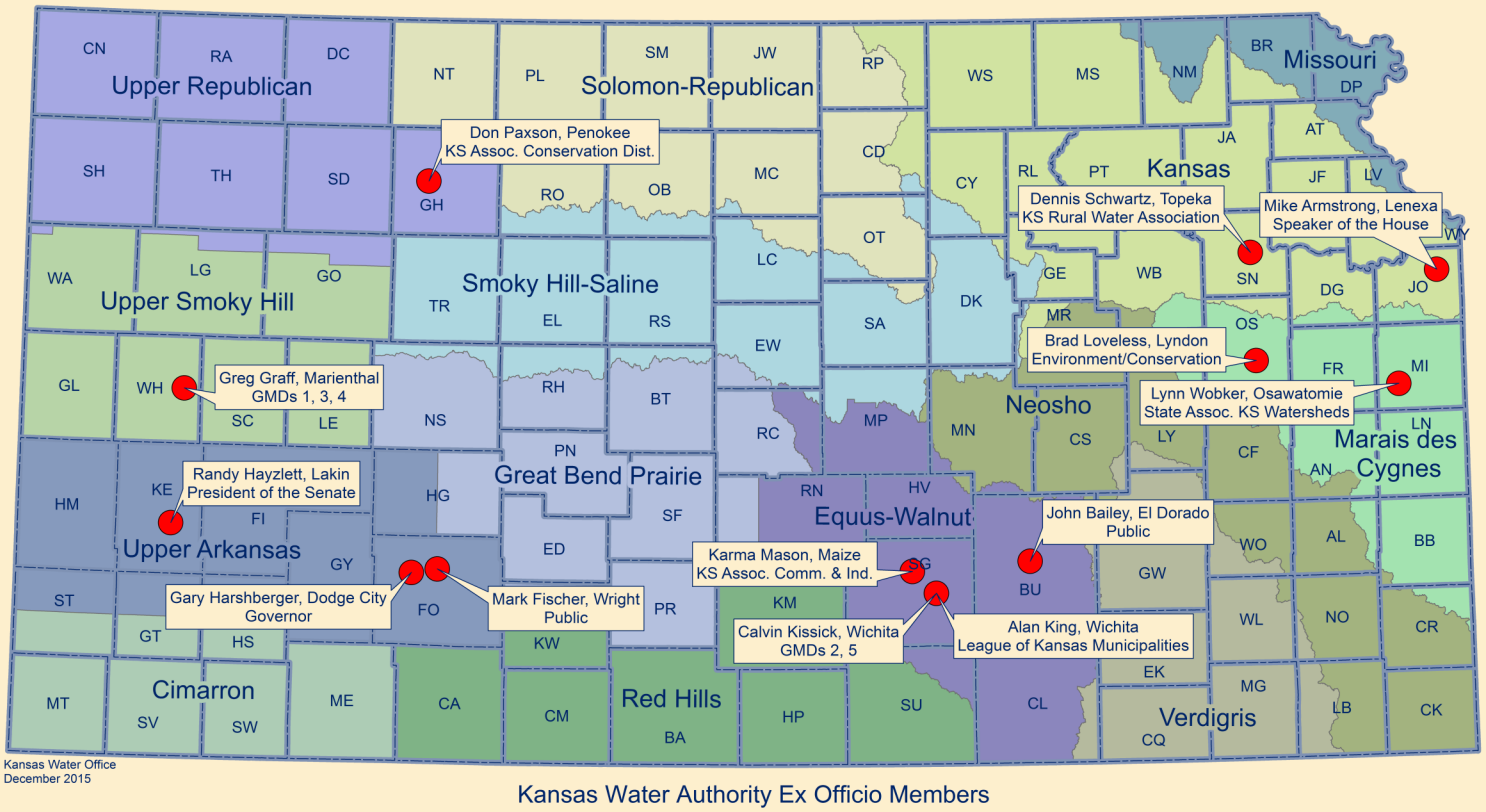
Additional Funding Requests

The Kansas Water Authority recommends restoration of the statutorily required SGF and EDIF demand transfers in FY 2017. The proceeds of that restoration are recommended with the following FY 2017 appropriations to implement projects to support the *Long-Term Vision for the Future of Water Supply in Kansas*. These are in priority order of funding for the KWA.

Streambank Stabilization #1	$1,200,000
Irrigation Technology & Crop Variety Advancement #1	$800,000
Sediment & Nutrient CREP #1	$1,300,000
LEMA Support	$100,000
Irrigation Technology & Crop Variety Advancement #2	$700,000
WRAPs	$650,000
Index Wells	$200,000
Streambank Stabilization #2	$800,000
Sediment and Nutrient CREP #2	$700,000
Watershed Dams and Mitigation	$1,000,000
Education/Outreach	$100,000
Economic Work	$50,000

Agency/Program	FY 2015 Actuals	FY 2016 Appropriated	FY 2017 Appropriated
Department of Health & Environment			
Contamination Remediation	$ 689,877	$ 687,217	$ 689,931
TMDL Initiatives	$ 212,783	$ 338,898	$ 276,904
Nonpoint Source Program	$ 295,480	$ 300,022	$ 300,373
Watershed Restoration & Protection Strategy	$ 555,884	$ 555,884	$ 555,884
Total - Department of Health & Environment	**$ 1,754,024**	**$ 1,882,021**	**$ 1,823,092**
University of Kansas - Geological Survey	**$ 26,841**	**$ 26,841**	**$ 26,841**
Department of Agriculture			
Interstate Water Issues	$ 439,392	$ 541,179	$ 438,753
Subbasin Water Resources Management	$ 352,797	$ 1,279,836	$ 613,195
Water Use	$ 30,019	$ 139,943	$ 53,355`
Water Resources Cost Share	$ 2,182,818	$ 2,105,228	$ 1,948,289
Nonpoint Source Pollution Asst.	$ 1,914,283	$ 2,172,004	$ 1,858,350
Aid to Conservation Districts	$ 2,087,382	$ 2,101,348	$ 2,092,637
Watershed Dam Construction	$ 540,214	$ 619,464	$ 576,434
Water Quality Buffer Initiative	$ 231,956	$ 308,528	$ 249,792
Riparian & Wetland Program	$ 145,020	$ 161,270	$ 152,651
Water Supply Restoration Program	$ 258,156	$ 258,156	$ 258,156
Water Transition Assistance Program/CREP	$ 285,492	$ 715,066	$ -
Streambank Stabilization	$ 749,784	216	$ -
Wheat Genetics Research	$ 50,000	-	$ -
Total - Department of Agriculture	**$ 9,267,314**	**$ 10,402,238**	**$ 8,241,612**
Kansas Water Office			
Assessment & Evaluation	$ 453,863	$ 659,243	$ 510,725
GIS Data Base Development	$ 112,306	$ 112,306	$ 112,306
MOU-Storage Operations & Maintenance	$ 311,081	$ 289,889	$ 289,889
Stream Gaging	$ 462,473	$ 431,282	$ 431,282
Technical Assistance to Water Users	$ 370,721	$ 514,258	$ 364,238
Weather Modification	$ -	$ -	$ -
Wichita Aquifer Recharge Project	$ 449,225	$ -	$ -
Suspended Sediment Monitoring	$ -	$ -	$ -
Neosho River Basin Issues	$ -	$ -	$ -
John Redmond Reservoir Bonds	$ 131,382	$ 1,488,453	$ 916,550
Streambank Stabilization	$ -	$ 400,000	$ 400,000
Total - Kansas Water Office	**$ 2,291,051**	**$ 3,895,431**	**$ 3,024,990**
Total State Water Plan Expenditures	**$ 13,339,230**	**$ 16,206,531**	**$ 13,116,535**

Kansas Water Authority Members



Kansas Water Office
December 2015

Kansas Water Authority Ex Officio Members

David Barfield
Division of Water Resources
KS Dept. of Agriculture

John Floros
Ag Experiment Station
KS State University

Susan Metzger, Acting Director
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KS Dept. of Agriculture

Rex Buchanan
KS Geological Survey

Robin Jennison
KS Dept. of Wildlife, Parks & Tourism

Antonio Soave
KS Dept. of Commerce

Edward Martinko
KS Biological Survey

John Mitchell
KS Dept. of Health & Environment

Jackie McClaskey
KS Dept. of Agriculture

Tracy Streeter
KS Water Office

Shari Feist Albrecht
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Kansas Water Office

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Kansas Water Authority