

**KWA Conference Call  
February 27, 2017**

Agenda

1. Call to Order – *Chairman Gary Harshberger*
2. Roll Call – *Ginger Harper*
3. Bureau of Reclamation Title XVI WaterSMART Grant – *Kirk Tjelmeland*
4. Kansas Water Pollution Control Revolving Fund (KWPCRF) loan – *Cara Hendricks*
5. Legislative Update – *Ginger Harper, Earl Lewis, Tracy Streeter*
  - a. SGF/EDIF Funding Request
  - b. Sub for HB 2272
6. Other Items



**MEMO**

**TO:** Kansas Water Authority  
**FROM:** Tracy Streeter, Kirk Tjelmeland  
**DATE:** 02/21/17  
**SUBJECT:** Bureau of Reclamation Title XVI WaterSMART Grant

The Kansas Water Office (KWO) is very interested in working with oil and gas producers, farmers, ranchers, and communities in the Red Hills region to create a pilot project. The project will involve the treatment of produced oil field water to a quality standard acceptable for agricultural irrigation and the watering of livestock. A collection tank for a disposal well near Hardtner, Kansas will be the site of the project. This particular collection tank is capable of providing 500 barrels of oil field water per day; however, treatment will be conducted only during daylight hours. The treatment facility will be powered by natural gas with a nearby pond reaping the benefit of the treated water. A sixty day operating permit has been secured from the Kansas Department of Health and Environment with daily evaluations of effluent for the first week and once weekly after the initial week. Funding from the grant will provide a means to operate the equipment necessary to treat the produced water and also periodic testing of the effluent. This project aligns very well with the goals of this particular Funding Opportunity Announcement (FOA) by reusing an industrial by-product for the benefit of fish and wildlife or agricultural purposes.

Electrocoagulation (EC) is an emerging technique for water remediation and was successfully used by H2O Tech in Oklahoma for treatment of produced water. Literature reviews show the EC has the capability of removing most of the water contaminants present in produced water. EC is an electrochemical method where coagulants are produced by passing a D.C. current through the produced water. Sacrificial anodes are dissolved in order to produce the coagulants. When this process is proven successful in the Red Hills region, it will certainly diversify the water supply and could provide flexibility during water shortages.

It is expected that if this project receives the grant award in May of 2017, mobilization of the equipment would start soon after the final award is made. The project is permitted for only a 60 day period so the entire project, including evaluation, is expected to be completed by the spring of 2018.



Gary Harshberger, Chair

Sam Brownback, Governor

February 27, 2017

Bureau of Reclamation, Financial Assistance Services  
Attn: Mathew Reichert  
Mail Code: 84-27852, P.O. Box 25007  
Denver, CO 80225

RE: Pilot Test Project for Produced Water near Hardtner, Kansas

Dear Mr. Reichert and Review Committee:

The Kansas Water Authority makes this resolution to enter into a contractual agreement with the Bureau of Reclamation for a Title XVI WaterSMART grant for the above referenced study, if it should be awarded. The Kansas Water Authority is the arm of the Kansas Water Office that approves entering into federal contracts.

Several entities, both private and public, would like to see produced oil field water used for something other than injecting it into the Arbuckle. There are several technologies available to treat produced oil field water, however, ~~to this point~~ as of this now, Kansas has not been a proponent of this. A short term permit has been issued by the Kansas Department of Health and Environment to allow this pilot project. The chlorides of the test well are in the 120,000 ppm and the goal is to treat this water to either irrigation or stockwater standards. This project will evaluate the feasibility of produced water treatment in Kansas with an eye towards large scale treatment facilities.

The Kansas Water Office (KWO) commits to the legal and financial obligations as outlined in the proposal. The KWO would be the lead agency to receive the federal funds for this project with H2O Tech being the primary contractor. Other contributing partners are: The Kansas Department of Health and Environment, Lotus Operating, Directional Drilling Systems, LLC, Achenbach Trust, BarBoot Ranch, and the Red Hills RAC. The project budget totals \$1,299,175. Of this amount, the non-federal share is \$1,100,000, an in-kind match with the requested federal funds being \$199,175. The Kansas Water Office will serve as project manager and will receive indirect funding totaling \$23,225.

The Kansas Water Office will work with the Bureau of Reclamation and our partners to meet pilot project objectives and established deadlines.

Sincerely,

Gary Harshberger

Chairman, Kansas Water Authority

# MEMO



DATE: February 22, 2017  
TO: Kansas Water Authority  
FROM: Cara C. Hendricks, P.E.  
RE: KWPCRF Loan Application & Agreement for  
Streambank Stabilization Projects above Tuttle Creek Lake

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Topeka, KS 66612  
Phone: (785) 296-3185  
Fax: (785) 296-0878  
www.kwo.org

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The Kansas Water Office (KWO) is eligible to submit an application and enter into a loan agreement with the Kansas Department of Health and Environment for a Kansas Water Pollution Control Revolving Fund (KWPCRF) loan in the amount of \$1,200,000. The loan funds are planned to be utilized for the construction of multiple high priority streambank stabilization sites along the Little Blue and Big Blue Rivers above Tuttle Creek Lake. This loan is similar to the two previous KWPCRF loans entered into by KWO in 2012 for the implementation of streambank stabilization projects on the Cottonwood and Smoky Hill Rivers. As with the previous loans, the new loan will provide 100% principal forgiveness, with the loan recipient responsible for the payment of any accrued interest during construction.

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*The Kansas Water Office (KWO) is requesting approval from the Kansas Water Authority to submit a loan application and to enter into a loan agreement with the Kansas Department of Health and Environment for a Kansas Water Pollution Control Revolving Fund (KWPCRF) loan in the amount of \$1,200,000 for the implementation of streambank stabilization projects above Tuttle Creek Lake.*

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# MEMO



DATE: February 24, 2017  
TO: Kansas Water Authority  
FROM: Ginger Harper, Earl Lewis, Tracy Streeter  
RE: Legislative Update

900 SW Jackson Street, Suite 404  
Topeka, KS 66612  
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Fax: (785) 296-0878  
www.kwo.org

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## **Substitute for HB2272**

The Substitute for HB2272 was introduced in the House Committee on Water and Environment. It does the following:

- Establish the Kansas Water Authority Science and Research Subcommittee (Subcommittee) composed of the following members:
  - The Dean of the College of Agriculture at Kansas State University or their designee;
  - The Director of the Kansas Geological Survey or their designee; and
  - The Director of the Kansas Biological Survey or their designee.
- The Subcommittee would carry out the following duties:
  - Recommend research priorities and necessary funding levels for research that will better determine the causes of ground water and surface water sustainability and water quality problems and alternative water sources;
  - Scientifically evaluate the effectiveness and cost effectiveness of State Water Plan-funded projects and programs; and
  - Recommend re-prioritization of State Water Plan funded projects and programs, if necessary, and recommend funding levels necessary to carry out the projects and programs.

This legislation was reported favorably out of the House Water and Environment Committee, and passed the House by voice vote on February 22, 2017.

## **SGF/EDIF Request**

The House Water & Environment Committee, Chaired by Rep. Tom Sloan, considered many different SWPF fee and revenue bills this session. Those are all listed on our legislative section of the KWO website at [www.kwo.org](http://www.kwo.org). During the course of the fee/revenue discussion, Chairman Sloan addressed the issue with House Leadership. Based on this discussion, on February 17, he asked KWO and stakeholders to produce a more detailed priority project list for potential SGF/EDIF funding. That request is attached for your review, and we will discuss this in detail during the call. The recommendation will be submitted to Chairman Sloan on Monday, February 27, after the KWA discussion.

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# MEMO



DATE: February 27, 2017  
TO: Chairman Tom Sloan  
House Committee on Water and Environment  
FROM: Tracy Streeter, Director  
RE: SGF and EDIF Restoration Projects

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www.kwo.org

In response to your February 16, 2017 request, I have coordinated with stakeholders regarding priority projects should the State General Fund and Economic Development Initiatives Fund demand transfers to the State Water Plan Fund be reinstated for FY 2018. The basis for the selected priorities comes from action the Kansas Water Authority took at their December 15, 2016 meeting. At that meeting, the KWA took action to recommend restoration of the demand transfers and that the funding be used within the following categories:

Streambank Stabilization	\$2,000,000
Water Conservation Technology Adoption	\$1,532,363
Watershed Best Management Practice Implementation	\$2,000,000
Less Water Intensive Crop Research	\$500,000
Securing Water Leaving the State Study	\$200,000
Restore SWPF Revenue Shortfall	\$1,767,637
<b>Total</b>	<b>\$8,000,000</b>

Information about each of these proposed funding priorities is attached to this memo. Additional detail was provided by the Kansas Department of Health and Environment and the Kansas Department of Agriculture. Representatives of Kansas Farm Bureau, the League of Kansas Municipalities, Southwest Kansas Groundwater Management District No. 3 and WaterOne of Johnson County were also consulted during this process.

Please let me know if you, or other members of the Committee, have further questions about this information.

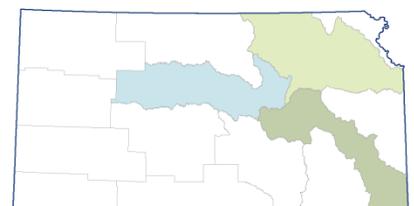
# Streambank Stabilization

## Program Objective

To reduce the amount of sediment entering our federal reservoirs by implementing streambank stabilization projects. Watershed assessments have shown that streambanks are a major sediment contributor to the reservoirs. An interagency team, including the Kansas Department of Health and Environment (KDHE) (Watershed Management Section), the Kansas Department of Agriculture (KDA) (Division of Conservation), and the Kansas Water Office (KWO), have worked to refine a process utilizing the strengths and resources of each agency to accomplish streambank protection work to reduce erosion and sedimentation in the watersheds and waterways above our highest priority reservoirs.

## Proposed Activities

- Implementation - Continue to implement streambank stabilization projects through the interagency team responsible for project administration and management, including Technical Assistance and Construction
  - Streambank stabilization efforts will be concentrated in the following watersheds:
    - Big Blue/Little Blue Rivers above Tuttle Creek Reservoir
    - Delaware River above Perry Lake
    - Neosho/Cottonwood Rivers above John Redmond Reservoir
- Prioritization - selection of the highest priority sites using assessment information
  - Sites are ranked highest to lowest based on the following:
    - Erosion Potential – based on the estimated annual soil loss from the site in tons per year
    - Proximity to Reservoir – a review of the highest ranking sites (based on erosion potential) and their location upstream of the reservoir using a reach approach
    - Cost-benefit comparison – comparing the estimated costs for site implementation to the estimated reduction in sedimentation
  - Project site implementation depends on landowner participation and project suitability based on pre-design site visits
- Landowner Contact & Coordination – the interagency team (KDHE, KDA-DOC and KWO) coordinates with WRAPS Coordinators and other local stakeholders in the three priority watersheds for contact and outreach with the landowners of high priority sites
  - Efforts are made to address all landowner concerns and obtain landowner agreements for project implementation and buffer installation to address the highest ranking sites
  - Site implementation depends on landowner participation



## Streambank Stabilization

- Buffer Coordination – contract with the Kansas Forest Service to oversee the enrollment, planting and maintenance of adjacent crop field or pasture acres into a riparian forest buffer program
  - Landowners are invited to meet with local Conservation District staff and/or Farm Service Agency representatives to discuss options for buffer installation
- Monitoring & Assessment - KWO, KDA-DOC, the Kansas Biological Survey (KBS), and Kansas State University have continued to collaborate in order to assess and monitor completed sites
  - 24 streambank stabilization sites along the Cottonwood and Neosho rivers upstream of John Redmond Reservoir were assessed in 2016 as part of the development of a Streambank Stabilization Assessment Tool for Kansas Watersheds
  - Plans in 2017 to continue assessment efforts of sites along the Big Blue and Little Blue
  - Monitor and evaluate projects for continued effectiveness and potential enhancements to mitigation techniques
- Leverage funding - Interagency team continues to seek out and secure additional funding sources available for streambank stabilization projects
  - Kansas Water Pollution Control Revolving Fund (KWPCRF) loan in the amount of \$1.2 million made available for the implementation of approximately 10-15 sites along the Big Blue and Little Blue Rivers above Tuttle Creek Reservoir
  - Approximately \$700,000 of the John Redmond Dredging Bond funding will be utilized to implement approximately 8-10 sites along the Cottonwood River above John Redmond Reservoir in 2017 & 2018
- Coordination with the U.S. Army Corps of Engineers – A collaboration has started with the USACE to assess streambank sites within the USACE property boundary of John Redmond
  - 11 streambank sites along the Neosho river are within this boundary and typically have a higher erosion potential

### Recent Success

- Interagency team created in 2015 as a joint effort and have successfully engaged in increased coordination and evaluation of projects
- Recent and continued landowner participation in the program has indicated growth in local awareness and benefits of the program



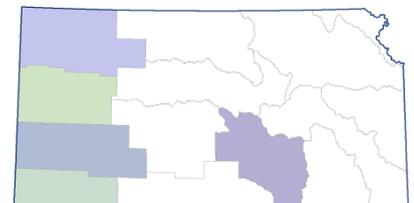
# Water Conservation Technology Adoption

## Program Objective

Several of the priority action items contained in the Governor's 50 Year Water Vision focus on the demonstration and adoption of irrigation efficiency and stockwater management technology. Access to this technology is key to successful conservation and reduction in water use. In concert with technology, we must identify dry land cropping systems and limited irrigation strategies that support the livestock industry in western Kansas, maintain a vibrant economy, and preserve both surface and ground water resources for the future.

## Proposed Activities

- Research and develop wastewater treatment technologies which provide water quality and quantity suitable for livestock consumption to promote reuse of wastewater generated by livestock facilities
- Research and develop sensors, controls, and mechanical devices that will reliably control and limit wintertime overflows from livestock water supply tanks
- Hire two assistant/associate professors (K-State Research & Extension), stationed at the Colby and Garden City Experiment Stations, with responsibilities for increasing adoption of new irrigation technologies
- Demonstrate on a field-scale irrigation and soil moisture management technology. To date, three Water Technology Farms have been deployed in southwest and southcentral Kansas with both private and public funds. These technology farms have received considerable positive attention from local irrigators and have served as excellent opportunities for research. Additional technology farms are needed in southwest, northwest, and west central Kansas
- Identify the most efficient system technologies for use by Kansas irrigators by working with irrigation system and water management technology manufacturers, Kansas State University (KSU), crop consultants, groundwater management districts (GMDs) and others
- Ensure appropriate irrigation efficiency technology and irrigation management practices are eligible under the Environmental Quality Incentives Program (EQIP) by working with USDA Natural Resource Conservation Service (NRCS). Work with NRCS to ensure eligibility criteria is appropriate in targeted areas and practices
- Ensure appropriate irrigation efficiency technology and irrigation management practices are eligible under the state's Water Resources Cost-Share Program. For emerging irrigation technologies, consider application for USDA's Conservation Innovation Grant funding to accelerate technology transfer and adoption of promising technologies
- Determine optimum plant development stages for most efficient water application opportunities by collaborating with the seed industry, KSU, crop consultants and others. Demonstrate various technologies at KSU Agricultural Experiment Stations



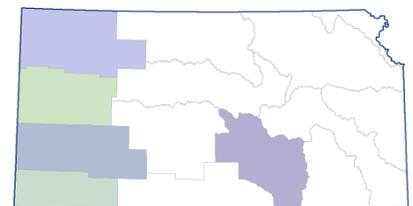
## Water Conservation Technology Adoption

- Target available funding to Water Conservation Areas (WCAs) and LEMAs (Local Enhanced Management Areas)
  - \$177,429 for three environmental scientists based in western Kansas dedicated to assisting in the development of Water Conservation Areas, assisting water users in efficiently managing their water resources, and executing the Governor’s Water Vision
  - \$69,000 for an engineer in the Division of Water Resources dedicated to protecting Kansas water users and the state’s share of critical water resources in interstate water compacts

### **Recent Success**

- Three Water Technology Farms have been created recently in response to public input and identified in the Kansas Water Vision. They are demonstration farms that allow the installation and testing of the latest irrigation technologies on a whole field scale

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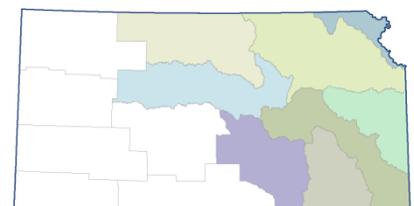
# Watershed BMP Implementation

## Program Objective

To protect water supply sources and improve water quality across Kansas that provides water to municipal and industrial customers through implementation of watershed best management practices (BMPs) within priority watersheds. BMPs are individual or a combination of practices that are determined to be the most effective and practicable (including technological, economic, and institutional considerations) means of controlling point and non-point sources of pollution at levels compatible with resource and economic goals. BMPs which can be utilized to reduce sediment and nutrient runoff in watersheds above water supply sources in Kansas include but are not limited to terraces, grassed waterways, and buffer strips. Surface water supply is being diminished over time due to reservoir sedimentation and water quality is being impacted by excessive sediment and nutrient as well as other water quality pollutant runoff (potentially exacerbating conditions which promote growth of harmful algae blooms), taste and odor issues with drinking water, and impacts to recreation and aquatic habitat in Kansas. Nutrient loading also contributes to water quality issues present in other downstream waters of importance.

## Proposed Activities

- Implement nutrient and sediment reducing BMPs within the Lower Republican (Milford), Lower Big Blue (Tuttle Creek), Little Arkansas (City of Wichita ASR), and Neosho Headwaters (Council Grove and John Redmond) watersheds
  - Watersheds targeted for implementation of specific efficient BMPs have been identified and prioritized within each Kansas Department of Health and Environment (KDHE) Watershed Restoration and Protection Strategy (WRAPS) 9 element plan to address siltation/sedimentation. Therefore any dollars provided for BMPs can be immediately directed to those priorities to insure resources are providing greatest benefit to the state
  - Watersheds targeted for implementation of specific efficient BMPs have been identified and prioritized within each KDHE - WRAPS 9 element plan to reduce watershed nutrient loading as well as identified by KDHE as one of the 16 HUC 8 watersheds to focus point and nonpoint source management strategies to decrease monitored water nutrient levels. Therefore any dollars provided for BMPs can be immediately directed to those priorities to insure resources are providing greatest benefit to the state
- Identify additional entities/organizations which can be utilized to help reach stakeholder groups to help with promotion of BMP implementation
- Funds utilized for BMP implementation will also be leveraged with a Natural Resource Conservation Service (NRCS) Regional Conservation Partnership Program (RCPP) proposal to reduce nutrient loading contributing to harmful algal blooms within Milford Lake as well as a



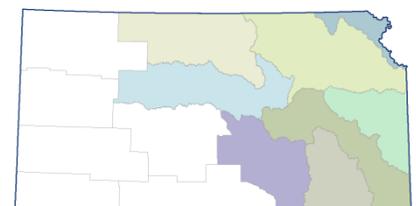
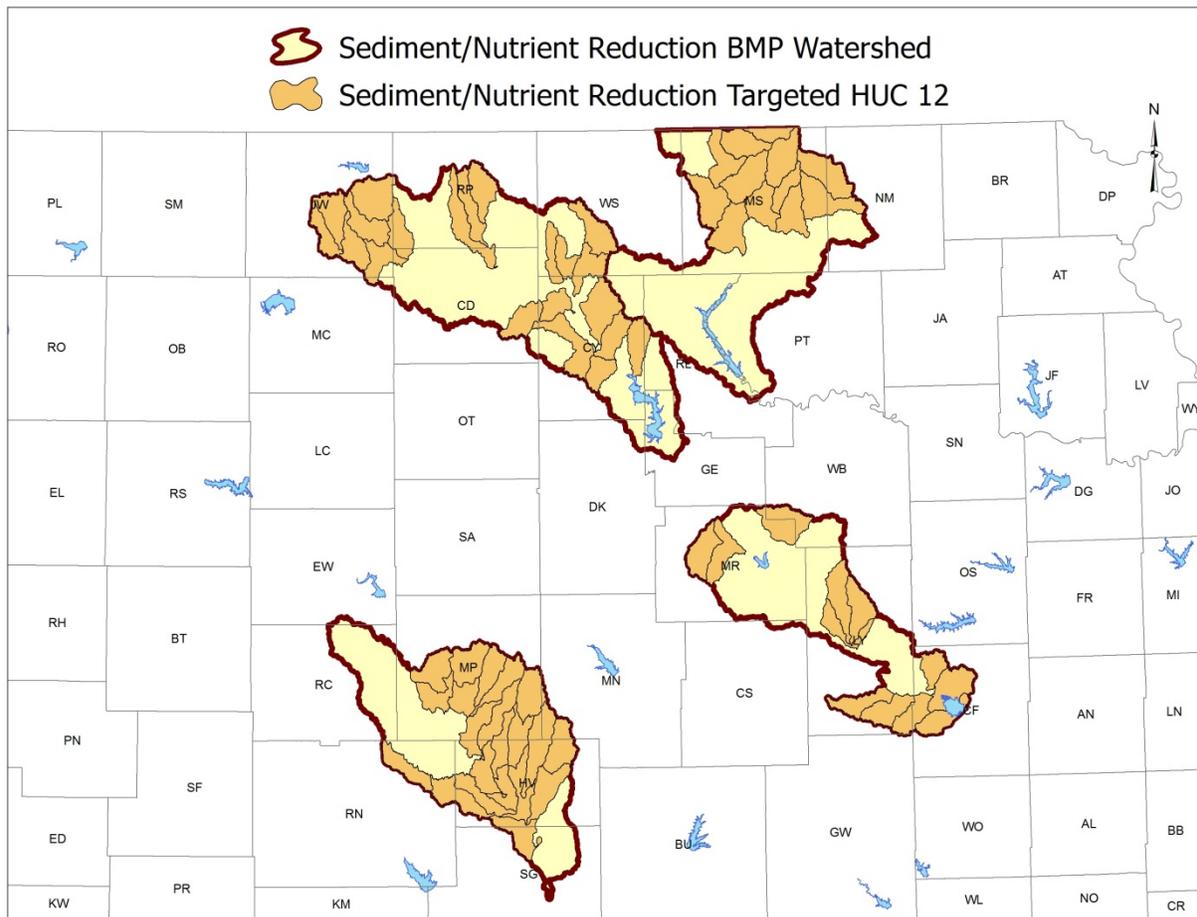
# Watershed BMP Implementation

water quality buffer partnership with the United States Department of Agriculture (USDA) Farm Service Agency (FSA) to increase implementation of BMPs such as buffer and filter strips

## Recent Success

- TMDL Initiative between DOC and KDHE to focus BMP implementation funding in select watersheds identified in WRAPS watershed plans
- 11 water bodies removed from the Kansas 303(d) list of impaired waters
- Nationally-ranked load reductions from BMPs implemented with Natural Resource Conservation Service (NRCS), DOC, & WRAPS/EPA 319 funding sources

## Geographic Scope



# Less Water Intensive Crop Research

## Program Objective

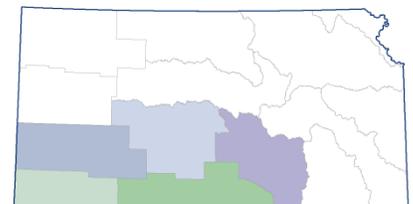
To increase adoption of less water intensive crop varieties in Kansas and support integrated programmatic efforts focused on sorghum and wheat as a part of rotational cropping systems well-suited to dry land and limited irrigation production in the soils and climate of western Kansas.

## Proposed Activities

- For 2017, research water use impacts of cover crop use on proposed Lane and Scott County Water Technology Farms
- Form a collaborative stakeholder team to set sorghum research priorities and develop research and funding strategy and present strategy to potential funding partners, including the Kansas Legislature
- Encourage state universities to expand engagement in development of teaching, research and extension programs related to less water intensive crop varieties
- Improve adoptability of feed wheat, along with other alternate crops, through marketing, commodity segregation, research and education
- Develop a strategy that supports research on the role of less water intensive forage and grasses such as triticale
- Provide needed research and education that leads to increased adoption of cover crops
- Evaluate profitability, prices and water use of alternative crops
- Support additional pesticide product and seed variety development that improves opportunities for cotton growth in Kansas
- Develop recommendations based on research related to corn and cotton rotation

## Recent Success

- Economic analysis of the Sheridan 6 LEMA indicates irrigated sorghum and wheat acres replacing irrigated corn used less water with minimal impacts to cash flow
- KSU monitoring at water technology farms providing valuable information on cropping options and water use



# Securing Watering Leaving the State

## **Program Objective**

During the 2016 Legislative Session, Senate Substitute for HB 2059 proposed amendments to the Kansas Water Appropriations Act process pertaining to water right applications proposing to transfer waters exiting the state. The original bill passed the Senate and died in conference committee. The Kansas Water Authority opposed the bill and offered to conduct a policy review of the proposal and report back to the Legislature with its' findings and offer any recommendations for legislation.

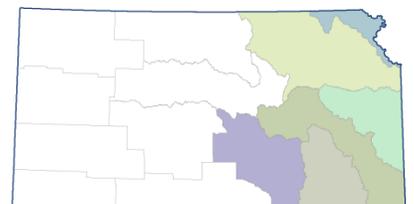
## **Proposed Activities**

A study team comprised of John Peck, University of Kansas School of Law, David Pope, former Chief Engineer of the Division of Water Resources, Burke Griggs, Professor of Law, Washburn University and Leland Rolfs, former lead attorney for the Division of Water Resources were requested to develop the study proposal. The major tenants of the proposal include:

- 2016 S. Sub. for HB 2059, which sought to amend certain procedures for the appropriation of surface water that would otherwise leave the State of Kansas
- The effect of large-scale transfers of interstate water supplies on Kansas's relations with the water rights and interests of Native American Tribes within the Missouri River Basin and also in Oklahoma
- The legal and policy implications of large-scale transfers of interstate water supplies as they relate to the pursuit of effective and optimal methods of securing Kansas's ability to harvest Missouri River Basin flood flows

## **Recent Success**

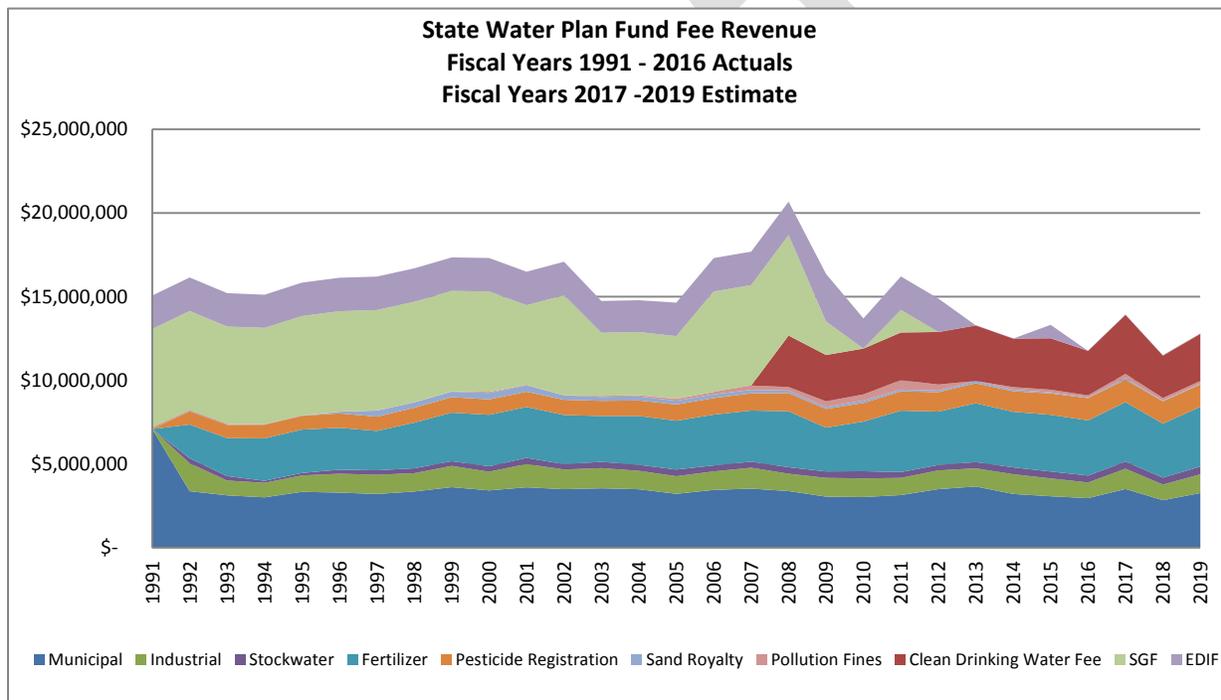
The Kansas Water Authority accepted the proposal from the study team and has included \$200,000 in its' FY 2018 recommendations to the Governor and Legislature. The source of funding is recommended as part of the restoration of the State General Fund and Economic Development Initiatives Fund demand transfers to the State Water Plan Fund.



## State Water Plan Fund Restore Cuts due to Revenue Shortfall

In FY 2016, fee revenue totals came in below estimates due to wetter conditions across the State of Kansas. The agencies that receive funds from the SWPF and the Kansas Water Authority Budget Committee decided to continue the level funding in FY2017, however, reducing funding in FY2018 and FY2019 to correct the reduced revenue estimates. Projections of cash flow indicate that we will not experience a fund balance issue in FY 2017, but would in future years without reduction of expenditures to match revenues.

The FY2018 and FY2019 revenue estimates are based on historical revenue data of 20 years which will allow for improved accuracy of forecasting. In addition, the new revenue model will correct the anomalies that were seen during the drought, instead of the past approach of using only the last five years and calculating an annual 1% growth. The table below represents the State Water Plan Fund actual fees and estimated fees.



### Proposed Restoration of Revenue Shortfall - \$1,767,637

**Kansas Department of Health and Environment - \$205,000**

**Kansas Department of Agriculture - \$1,171,355**

**Kansas Water Office – \$391,282**

The Kansas Department of Health and Environment supports the Kansas Water Authorities request to restore the SWPF Revenue Shortfall for SFY 18. The shortfall is \$1,767,637 and below are specific projects identified by KDHE to be implement should funding be restored. Projects are listed in order of priority:

1. \$60,000 for “TMDL Initiative” - KDHE would utilize the additional funds to focus on Milford Lake HABs and likely contract out to increase spatial resolution and temporal frequency of phosphorus, nitrogen and chlorophyll sampling in the upper zone of Milford Lake to attempt to geographically isolate the contributing areas that may support the cyanobloom in the lake toward late summer and autumn when loadings from the Republican River watershed have diminished with low flows. This would help direct tactical treatment approaches to these “hot spots” and cut off the nutrient supply fueling the bloom.

2. \$60,000 for “Nonpoint Source Program” - KDHE would contract the funds to the Cottonwood WRAPS Project above John Redmond Reservoir for targeted water quality BMP implementation. Funded cropland and livestock BMPs would result in the following load reductions above John Redmond:

- i. 10,909 lbs. of Nitrogen
- ii. 3,158 lbs. of Phosphorus
- iii. 3,429 tons of Sediment

3. \$86,910 for “Contamination Remediation” – The Orphan Sites Program in the BER uses State Water Plan (SWP) funding for the assessment, monitoring and remediation of contaminated sites where the responsible party is unknown or unable to undertake the necessary cleanup action. There are currently 94 orphaned sites in the program. The purpose of this program is to:

- Prevent human exposure to hazardous chemicals or pollutants
- Reduce effects of the hazardous chemicals or pollutants to soil, sediment, groundwater, surface water, or other natural resources of the state
- Protect aquatic life in streams and rivers
- Cleanup contaminated sites and return the impacted media to its original condition
- Return the natural resources to its most beneficial purpose

KDHE’s BER Contamination Remediation budget has been earmarked for a reduction of \$86,910 in FY2018. The funding BER receives from the state water plan is crucial for the Orphan Site Program to fulfill its mission. A specific example of an orphan site is provided below to demonstrate the need for continued or enhanced support for the program.

Example of a Specific Funding Priority:

Gilmore-Tatge Site, Clay Center – The Gilmore-Tatge site entered the Orphan Sites Program due to a bankruptcy by a former manufacturer located in Clay Center. Previous assessment and remediation efforts have reduced significant amounts of contaminants, but tetrachloroethylene (PCE) contamination remains above the EPA maximum contaminant level for drinking water at the source area to

downgradient Public Water Well (PWW) #2. The City of Clay Center needs the well returned to service and has requested PWW #2 be returned to active status.

The Orphan Sites Program estimates the costs to assess and remediate the highly impacted source area(s) to be approximately \$250,000. Addressing the source area will reduce the groundwater contamination to a point where the city may be able to begin using PWW #2 again. If the source area cleanup does not reduce the contamination in the groundwater within a timeframe that is required by the city for the use of the PWW #2, BER would be required to install a wellhead treatment system that would cost an estimated \$500,000. The annual operation and maintenance of the wellhead treatment system is estimated to be an additional \$50,000 per year.

The example above is only 1 of the 94 sites in the Orphan Site Program. The 94 sites are in various stages of assessment, remediation and monitoring. The need for sustained or enhanced funding is critical for the program to be successful. BER requests the \$86,910 will be returned to the Contamination Remediation portion of the state water plan funding.

1320 Research Park Drive  
Manhattan, Kansas 66502  
(785) 564-6700



900 SW Jackson, Room 456  
Topeka, Kansas 66612  
(785) 296-3556

Jackie McClaskey, Secretary

Governor Sam Brownback

The Kansas Department of Agriculture supports the collaboratively developed priority projects and research as described in the Kansas Water Authority recommendations.

Streambank Stabilization	\$2,000,000
Irrigation and Stockwater Technology Adoption	\$1,532,363
Watershed Best Management Practice Implementation	\$2,000,000
Less Water Intensive Crop Research	\$500,000
Securing Water Leaving the State Study	\$200,000
Restore SWPF Revenue Shortfall	\$1,767,637
<b>Total</b>	<b>\$8,000,000</b>

With respect to the State Water Plan Fund (SWPF) revenue shortfall, KDA's two highest priority items to fund are:

- \$177,429 for three environmental scientists based in western Kansas dedicated to assisting in the development of Water Conservation Areas, assisting water users in efficiently managing their water resources, and executing the Governor's Water Vision.
- \$69,000 for an engineer in the Division of Water Resources (DWR) dedicated to protecting Kansas water users and the state's share of critical water resources in interstate water compacts. This position would be stationed in Garden City to increase our effectiveness in monitoring and enforcing the Colorado-Kansas Arkansas River Compact – specifically by physically inspecting irrigation, municipal, and industrial water use operations in Colorado and ensuring that those operations are in conformance to the compact.

In addition to these two highest priority items, following are the priority projects, data collection and research needs in the agency. If funding were available through the restoration of the SWPF shortfall, the agency would accomplish the following.

- \$80,000 to enhance the DWR's subbasin water resources management group to increase effectiveness in using Geographic Information System (GIS) and groundwater models to develop decision support products such as maps of the estimated usable life of the aquifer, water use density at various regional scales (county, township, etc.), and modeled results of proposed management strategies such as; what would happen to water levels in a county if water pumping were reduced by a certain percentage.
- \$80,000 to enhance the Water Rights Information System Mobile (WRISM) application. This application began development in 2015 and utilizes ruggedized tablet computers to collect water right inspection information in the field including photos and GPS location of diversion works and meters, electronic forms for collecting data, and database connectivity to compile and review collected data. Since development began, the agency has upgraded computer operating system

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Jackie McClaskey, Secretary

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software and has begun a database migration. Upgrades are needed to the WRISM application to comply with the new information technology (IT) environment.

- \$60,000 to increase the agency's capacity for real-time water level and pumping rate data collection. The agency uses sensors, data loggers, and telemetry to investigate, monitor and administer sites where well-to-well interaction and rapid, significant water level changes are a concern. The data collected with this equipment helps decision makers understand how the aquifer reacts to pumping. The current equipment is over 10 year old and is nearing the end of its service life.
- \$380,000 to fully leverage the current local county contributions of more than \$3 million to county conservation districts to effectively deliver state cost-share programs to local landowners. Conservation districts address a variety of local environmental concerns such as erosion and sediment control, water quality, and habitat management. They also serve as a local source of information and education to landowners, schools and the general public about soil and water conservation.
- \$307,618 for the rehabilitation of watershed dams to extend the service life of the dam and meet applicable safety and performance standards. This represents a portion of the unmet need for rehabilitation projects such as sediment removal, structure upgrades, and replacement of deteriorated components.
- \$17,308 to partner with Kansas Forest Service on forest buffer establishment and maintenance in coordination with streambank stabilization projects. Since 2016, KDA has partnered with the Kansas Forest Service to house a watershed forester within the Division of Conservation to maximize communication and coordination.

The Kansas Water Authority recommended restoration of the State General Fund and Economic Development Initiatives Fund demand transfers in FY2018. The proceeds of that restoration included a \$391,282 restoration of revenue shortfalls to be appropriated to the Kansas Water Office. The following projects have been identified to support the Long-Term Vision for the Future of Water Supply in Kansas.

### Proposed Activities

#### Assessment and Evaluation - \$250,000

- Sediment Research and Analysis - Expanding on the yearly monitoring of one reservoir site to include two – three sites per year, in addition use tools for sediment monitoring gages, bathymetric surveys, and sediment coring, to monitor sediment entering water supply reservoirs and to evaluate the benefits of sedimentation reduction practices. In cooperation with USGS, US Army Corps of Engineers, Water Supply Users, and Kansas Biological Survey.
- High Plains Aquifer Monitoring & Modeling -The two main components of this program are the expansion of the High Plains Index Well Network and the maintenance of stream-aquifer models. The expansion of the High Plains index well and economic research within the conservation areas and LEMAs will provide valuable information to Kansas Water Users and Managers. Involves selecting sites for new index wells with input from Groundwater Management Districts (GMDs), Kansas Geological Survey (KGS), Kansas Department of Agriculture-Division of Water Resources (KDA-DWR), and the Kansas Water Office (KWO).
- Kansas River Monitoring & Modeling - The two main components of this program are the development and expansion of the Kansas River Alluvial Index Well Network and the development and maintenance of the Kansas River Stream Aquifer Model. The objective of the program is to improve the understanding of the alluvial aquifer to allow for better system decisions, and to be able to examine the effects of future development and management on groundwater and river water levels in the Kansas River system.
- Water Technology Farm Research and Economic Analysis – Research and Economic Analysis in support of the implementation of Irrigation Technology Farms. Identify the most efficient system technologies for use by Kansas irrigators by working with irrigation system and water management technology manufacturers, Kansas State University (KSU), crop consultants, groundwater management districts (GMDs) and others

#### GIS Database Development - \$60,000

- LiDAR deriving highly accurate elevation data, using an optical remote sensing technology. Improved elevation data is needed to strengthen the state's preparedness for flood events, to protect the health and safety of Kansans, and to mitigate damages from flooding.

#### Streamgaging - \$81,282

- Restoration of nine Streamgages on streams and rivers that monitor conditions during a variety of flow conditions. Streamgaging has a vital role in reservoir operating decisions made by the KWO and the U.S. Army Corps of Engineers to most efficiently schedule reservoir release.