

**UPPER ARKANSAS RIVER
CONSERVATION RESERVE ENHANCEMENT PROGRAM
PERFORMANCE REPORT**

BY THE

STATE OF KANSAS

October 1, 2016 – September 30, 2017



Conjunctive use of surface water and groundwater is an important feature of irrigation development in the UAR CREP project area.



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Executive Summary

The Conservation Reserve Enhancement Program (CREP) in Kansas is a federal/state partnership created for enhancing water conservation efforts along the Upper Arkansas River (UAR) corridor from Hamilton County to Rice County. The Upper Arkansas River CREP has been officially approved and operating for ten years; this annual report provides a synopsis of the implementation activities and progress to date.

CREP is an “enhanced” version of the Conservation Reserve Program (CRP) in which the Farm Service Agency (FSA) of the United States Department of Agriculture (USDA) and the state of Kansas have mutually agreed to address specialized natural resource concerns. The Natural Resources Conservation Service (NRCS) is USDA’s provider of technical services in the field to producers who are implementing FSA’s CREP contracts. The Kansas Department of Agriculture (KDA), Division of Conservation (DOC) is the primary coordinator of the program in concert with numerous other state, local and private partners including KDA’s Division of Water Resources; Kansas Water Office (KWO); Kansas Department of Wildlife, Parks and Tourism; Kansas Department of Health and Environment; Kansas Geological Survey; Kansas State University; Groundwater Management District Nos. 3 and 5; Ducks Unlimited; and the Kansas Alliance for Wetlands and Streams.

The Upper Arkansas River CREP is a voluntary, incentive-based program allowing producers to enroll eligible irrigated acres in targeted areas for 14–15 year contracts with FSA, permanently retire the associated state water rights on the enrolled acres, and establish an approved land cover (typically a native grass) on the same acreage. The producer receives an annual rental payment, plus additional cost share opportunities for specific conservation practices from FSA plus an upfront incentive payment from DOC.

Groundwater is the dominant source of water for all uses in the basin, and aquifer declines are a serious concern. Therefore, water conservation is the main management objective in the Upper Arkansas River CREP. The program also provides other resource benefits including soil conservation, water quality protection, wildlife habitat enhancement, and energy savings. The majority of irrigated acres enrolled have been on highly erodible, sandhills soils that are unsuitable for dryland farming.

One of the most significant merits of the program to date has been establishing cover on these highly erodible lands. The extremely sandy and fragile, windblown soils of the sandhills will be very difficult to re-vegetate after irrigation is no longer possible and crop production ceases due to groundwater declines. The CREP program has provided these producers a viable option, financial opportunity and incentive for starting native grass stands and other conservation covers while limited irrigation water is still available.

As of Sept. 30, 2017, a total of 112 state CREP contracts on 18,659 acres have been approved by the state of Kansas (with the addition of 317 acres this year). These contracts have resulted in the permanent retirement of 37,999 acre-feet of annual water appropriation on 135 water rights from 166 wells. The contracts represent a total of \$1,210,511 in state sign-up payments to producers over the past ten years. These payments were matched by total annual producer rental payments from FSA totaling \$2,191,213 in FY2017. The state of Kansas has again met its financial commitment to provide at least 20 percent of the federal costs of the program through a combination of direct payments, technical assistance and in-kind contributions with at least 10 percent coming from direct cash match. Since Dec. 6, 2007, a total of \$11,969,636 from state, local and private expenditures has been made in support of the project to match an estimated total of \$33,538,379 federal program costs.

Annual Progress: Due to additional offers being received and approved in FY2017, the program recorded its first CREP enrollments from Barton and Edwards counties. And this year, the per county acreage limitation was increased from 7,237.5 acres to 10,000 acres — meaning that many pending offers awaiting additional acres to become available in Kearny and Gray counties can now be processed in FY2018. In cooperation with landowners, the Kansas CREP partnership continues to investigate innovative methods for encouraging participation and establishing improved conservation covers under challenging circumstances.

Overview

The Kansas Legislature approved funding for an Upper Arkansas River Conservation Reserve Enhancement Program (UAR CREP) in 2007 and 2008. CREP is a USDA program that creates individual rules and special conditions and rates for a geographic region or watershed. The USDA and the KWO worked with USDA's FSA and NRCS to develop and launch the program. A Memorandum of Agreement (MOA), signed by Kansas Governor Kathleen Sebelius on Nov. 27, 2007, and by Acting USDA Secretary Charles Conner on Dec. 4, 2007, officially established the Kansas UAR CREP.

The UAR CREP is a voluntary program that provides incentives and cost sharing to participants who enroll their land into eligible conservation practices such as native vegetation establishment or wildlife conservation for a period of 14 to 15 years. The CREP area lies within 10 counties along the Arkansas River corridor, covering 1,571,440 acres. In the CREP area, 718,683 acres were authorized for groundwater irrigation prior to program start-up. Another approximate 10,680 acres are authorized for irrigation from surface water. Reducing irrigation demands on the stream-aquifer system will help slow the aquifer declines, mitigate the spread of saline waters into the aquifer, and help restore stream and riparian health.

The Kansas Legislature has approved the enrollment limit up to a maximum of 40,000 acres, and FSA conducted its environmental impact assessment and initial approval procedures at that level. The state sought to first enroll up to 20,000 acres under the initial MOA — 17,000 acres of irrigated land, and 3,000 dryland corners from irrigated circles based on 1) the amount of funds that were then available; and 2) an additional stipulation regarding the amount of land coming out of CRP at that time. In 2011, FSA approved an expansion of the total project size to 28,950 acres with a target goal of 25,950 irrigated acres to be enrolled under a revised MOA. Joint efforts occurring during the 2015 program year again amend the MOA between USDA and the state of Kansas. These amendments were approved to increase state incentive rates, update important water use eligibility criteria and provide mechanisms for future flexibilities in adjusting the current county cap enrollment limits.

History

The CREP project area lies within the Upper Arkansas River basin. Overall, the target area includes portions of ten counties (Hamilton, Kearny, Finney, Gray, Ford, Edwards, Pawnee, Stafford, Barton and Rice counties) and two groundwater management districts (Southwest Kansas Groundwater Management District No. 3 (GMD3) and Big Bend Groundwater Management District No. 5 (GMD5)) along the river corridor. Within the entire project area, the Arkansas River has hydrologic interactions of surface flow and groundwater. The main water sources for producers within the project area are local stream/river surface waters, and the alluvial and High Plains aquifers. The Arkansas River flows from headwaters in the Rocky Mountains, and has been diverted for more than 100 years for irrigation in Colorado and Kansas. The river and groundwater system has had several decades of well-documented flow depletions entering the state of Kansas, and groundwater declines in the aquifer are resulting in loss of base flow to the river, decline in well yields, and in some locations, degradation of groundwater quality.

The Arkansas River is a resource of state and national concern for both water quantity and water quality. The flow into Kansas is extensively controlled though releases from the John Martin Reservoir in eastern Colorado, and is managed through the Arkansas River Compact Administration. Reduced flows as the river entered Kansas, in violation of the compact, have historically resulted in stream flow depletion, groundwater declines, and economic damage. The river is also one of the most saline in the nation where it enters Kansas, a result of the extensive concentration of salts occurring from irrigation use and reuse. The declining flows and deteriorated water quality threaten the viability of this important surface water source in western Kansas. Correlated with the reduced flow and increasing salinity of the river is the degradation of riparian health and wildlife habitat. Native plant communities have declined, and there has been an extensive and aggressive infestation of tamarisk and other non-native phreatophytes.

Kansas-Colorado Arkansas River Compact

The Kansas-Colorado Arkansas River Compact (Compact) was negotiated in 1948 between Kansas and Colorado with participation by the federal government. Its stated purposes are to settle existing disputes and remove causes of future controversy between Colorado and Kansas concerning the waters of the Arkansas River, and to equitably divide and apportion between Colorado and Kansas the waters of the Arkansas River as well as the benefits arising from John Martin Reservoir.

Kansas filed an original action in the United States Supreme Court, *Kansas v. Colorado*, No. 105, in 1985 to enforce the terms of the Compact. In 1994, a Special Master appointed by the Court, Arthur J. Littleworth, recommended that the Court determine that Colorado had violated Article IV-D of the Compact by means of post-compact well pumping in Colorado. On May 15, 1995, the Supreme Court agreed. Colorado paid Kansas more than \$35.1 million in damages for Colorado's Compact violations. This money has been deposited in three funds created by statute that specify generally how and where the money will be spent. The acceptable uses of two of these funds are consistent with UAR CREP objectives, while the third is for future litigation. The Water Conservation Projects Fund, now known as the Western Water Conservation Projects Fund after transfer to GMD No. 3, must be applied to projects within a portion of the CREP area.

The Special Master's fifth and final report to the Supreme Court in January 2008, and the Supreme Court "Judgment and Decree" entered on March 9, 2009, provided that the Supreme Court would retain jurisdiction for a limited period while the states evaluated the sufficiency of the 1996 Colorado Use Rules.

As a result of that evaluation, modifications of the initial judgment and decree were jointly developed by Kansas and Colorado based on decisions by the Special Master and the United States Supreme Court. The decree contains several appendices, such as the hydrologic-institutional model and accounting procedures, which will be used to determine if Colorado is in compliance. The states submitted a modified appendix to the Supreme Court on Aug. 4, 2009, bringing an end to the retained jurisdiction.

CREP Steering Committee

The Upper Arkansas River CREP Steering Committee consists of the Kansas Water Office; the Kansas Department of Agriculture, Division of Conservation; the Kansas Department of Agriculture, Division of Water Resources (DWR); the Kansas Department of Wildlife, Parks and Tourism; the Kansas Department of Health and Environment; and the Kansas Geological Survey. These state agencies are joined by the Farm Services Agency, Natural Resources Conservation Service, Groundwater Management District Nos. 3 and 5, Ducks Unlimited and the Kansas Alliance for Wetlands and Streams.

The steering committee meets at least annually to review the progress of the CREP project and to make recommendations regarding the accomplishment of important goals and objectives. The Steering Committee met again on Sept. 27, 2017 (Attachment F). The input of the steering committee on the success of the CREP program and ways to improve it will become very beneficial as more acres enroll and the impact of the water right retirements and land conservation practices begin to become measurable.

CREP Project Implementation Summaries

The CREP program is designed to protect water quality and extend the usable life of the of the High Plains aquifer by establishing conservation practices and retiring the associated water rights on irrigated project lands in Barton, Edwards, Finney, Ford, Gray, Kearny, Pawnee, Rice and Stafford counties. Hamilton County was previously ineligible for the program because it was at a maximum level of acres that could be enrolled in a Conservation Reserve Program (CRP). FSA rules regarding the maximum allowable acres specifically pertaining to CREP program enrollment were changed in 2011. Therefore, Hamilton County is now officially eligible for the program. The Kansas Legislature approved the enrollment limit up to a maximum of 40,000 acres. However, the program cap with FSA was initiated at the 20,000 acre level to stay

within a legislative stipulation which allows only one acre of land to be enrolled in CREP for every two acres of current CRP contracts which expire annually. This project cap has since been increased to 28,950 acres.

Eligible cropland conservation practices approved by FSA to meet the goals and objectives for this CREP project are as follows:

- CP2 (Establishment of Permanent Native Grasses and Legumes) – up to 27,550 acres;
- CP4D (Permanent Wildlife Habitat, non-easement) – up to 400 acres;
- CP9 (Shallow Water Areas for Wildlife) – up to 200 acres;
- CP21 (Filter Strips) – up to 100 acres;
- CP22 (Riparian Buffer) – up to 100 acres and;
- CP23/CP23A (Wetland Restoration, flood-plain & nonflood-plain) – 200 acres.

CREP applications are typically made in the county where the land is located, and all applications are considered on a first come, first served basis. Farmers who enroll irrigated cropland in the program and permanently retire their water rights will receive rental payments for 14 to 15 years at rates between \$153 and \$193 per acre per year. Rates vary depending on the Hydrologic Unit Code (HUC) and irrigation system currently in place. Cost-share funds and financial incentives are available for seeding and well plugging on enrolled land. As a part of CRP, CREP acres are subject to normal FSA haying, grazing, burning, and other management provisions, and they can also be leased for hunting. Producers receive an upfront signing bonus from the state of either \$97 per irrigated acre (Tier 1 Soils) or \$55 per irrigated acre (Tier 2 soils). The KWO office will also provide a \$350/acre bonus payment for the CP9 practice.

The current goal of the UAR CREP is to enroll up to 28,950 acres of eligible cropland within the designated area to significantly reduce the amount of irrigation water consumptively used. Water quality will be improved through the reduction of agricultural chemicals and sediment entering waters from agricultural lands, and thereby impeding the spread of poor quality river water into the fresh alluvial and High Plains aquifers. Through permanent retirement of water rights appurtenant to the lands enrolled in CREP and the establishment of conservation covers and other resource management practices, the reduction of water consumption and non-point source contaminants will slow aquifer declines, moderate the loss of base flow, enhance associated wildlife habitat (both terrestrial and aquatic), and conserve energy.

Successfully meeting the goals and objectives of the UAR CREP involves interagency cooperation and adherence to a coordinated implementation plan. The implementation plan covers each agency's responsibility and the step-by-step process for outreach, processing applications, providing technical assistance, and monitoring success.

The UAR CREP is being implemented through continuous signup on a first come, first priority basis — until a county reaches the CREP program maximum for enrolled acres or the federal limit on CRP acreage enrolled in any one county. The application enrollment pattern in the first year demonstrated high interest in December of 2007, and in January and February of 2008, with a peak of more than 13,000 acres offered for enrollment. By March 2008, inquiries slowed, as most landowners had already made decisions on their land if a crop was to be planted during the upcoming season. A number of applications were subsequently withdrawn as some land was sold. Others were also withdrawn as crops were put in, as 2008 was a year of very high commodity prices and escalating land values. There were also a number of applications that ultimately were found to not meet the federal or state eligibility criteria during the review process. Finally, there were some inquiries that ultimately did not result in applications being filed because it initially appeared that the county cap had already been filled for Kearny and Gray counties. One state requirement is that no more than 25 percent of the CREP program acres can be in any one county, which in 2008 was a 5,000 acre cap. That cap has since been raised to 7237.5 acres per county.

At the end of the first fiscal year on Sept. 30, 2008, a total of 7,252 acres had officially been approved for enrollment in the CREP program. A total of 15,354 acre-feet of annual authorized water right allocations

associated with these acres had been voluntarily and permanently retired. By Sept. 30, 2009 (the end of the second fiscal year), an additional 1,902 acres had been approved for enrollment, bringing the project total to 9,155 acres. An additional 3,325 acre-feet of annual authorized water right allocations were also retired, bringing the project total to 18,679 acre-feet retired. At the end of the third fiscal year, 1,647 enrolled acres were added and another 2928 acre-feet of annual authorized water right allocations were also retired.

At the end of the fourth fiscal year, 247 enrolled acres were added, bringing the current project total to 11,049 acres, and an additional 532 acre-feet of annual authorized water right allocations were also retired, bringing the total to 22,139 acre-feet of annual authorized water right allocations retired. By Sept. 30, 2012, 4076 acres were added and a total of 15,126 acres had been enrolled, and 30,974 acre-feet of annual authorized water right allocations had been retired.

As of Sept. 30, 2013, a total of 15,800 acres had been enrolled, and 31,709 acre-feet of annual authorized water right allocations were retired. No additional acres were enrolled during the period Oct. 1, 2013, to Sept. 30, 2014. As of Sept. 30, 2015, an additional 1,189 acres had been enrolled, bringing the cumulative total to 16,989 acres, with 34,527 acre-feet of annual authorized water right allocations being retired. As of Sept. 30, 2016, the end of the ninth fiscal year, an additional 1,329 acres had been enrolled, bringing the cumulative total to 18,318 acres, with 37,430 acre-feet of annual authorized water right allocations being retired. During FY2017, the enrollment total increased to 18,659 acres with 37,999 acre-feet of annual authorized water right allocations being permanently retired.

Outreach

Public outreach for the UAR CREP was initiated prior to and during the preparation of the project proposal to gather information and assess public support. Many outreach meetings occurred on the UAR CREP throughout western Kansas and during the legislative session. The implementation team developed an informational brochure and poster about CREP for use during the awareness campaign. This brochure and related promotional posters were also updated and revised during the third program year, FY2010, and again in the fourth program year, FY2011, as well as in the ninth program year, FY2016 (attachment A).

A coordinated approach to outreach and support will continue through implementation of the program. Much of the initial success of the UAR CREP is a result of strong marketing of the program to interested producers. The outreach is accomplished through direct mailings, newspaper press releases, educational brochures, radio broadcasts and local informational meetings. Each of the agencies cooperating in the program is responsible for the outreach component, but the KWO, DOC, GMD#3 and GMD#5, and the local conservation districts were especially instrumental initially, as identified in Attachment A.

Technical Assistance

Technical assistance is provided to the producers enrolled in the UAR CREP by USDA's NRCS and the DOC. Over the brief life of the program, there have been a number of meetings between NRCS and the producers discussing the challenges of transitioning to a permanent cover on soils that are highly susceptible to wind erosion (the majority of the enrolled acres are in this category). These meetings and communications became even more frequent and heightened with the impacts of drought conditions. The process for implementing CREP in Kansas (KCREP_IP_02) has been modified to indicate that NRCS will meet at the CREP site with all new participants (Exhibit C).

A very productive meeting was convened between FSA, NRCS, DOC, KWO, DWR, GMD3 and GMD5 officials in Garden City on Feb. 26, 2009, to discuss the unique challenges, strategies, and techniques of establishing permanent grass covers on highly erodible soils associated with the majority of the CREP enrollment to date. Some very successful grass establishment was developed by the end of the 2010 season. NRCS staff had found a strategy involving an effective combination of cover crops, herbicides, irrigation and summer seeding times which has resulted in many circles of nearly 100 percent CRP grass

establishment after just two years. Other county offices were apprised of the methodologies so that the experience can be re-created in areas where the grass establishment has been difficult.

A second meeting was held in Dodge City at the USDA Service Center on July 7, 2011. Discussion at this meeting focused on the progress of the program including establishment of permanent vegetative cover. NRCS reviewed Kansas Conservation Reserve Program Technical Guidance Number 81, "Guidelines for Cover Crop and Grass Establishment on Sandy Sites Associated with Conservation Reserve Enhancement Program Acres." This guidance document has been updated to provide emphasis on the establishment of a cover crop, weed management, irrigation for establishment, and frequent monitoring.

NRCS staff expressed their concern with current conditions resulting from the severe drought being experienced in 2011 and the ability of participants to irrigate grass stands for establishment. The full effects of the drought on CREP stands will not be known for a few years. District conservationists had reported that some stands considered to be established in 2010 appeared to have died during 2011–2012.

NRCS conducted a field tour of selected CREP sites in Kearny County on May 22, 2012. As the drought had continued and worsened over the 2011–2012 winter, it became even more apparent that alternative strategies would be necessary to re-establish grass stands that were regressing to drastically low populations of desired prairie mixture species. After convening a technical team of soil and plant specialists, NRCS conducted sampling of sites which indicated problems or issues which might be resolved through alternative cropping or cultural practices. During the summer, KDA also conducted chemical sampling on the same sites for the purposes of determining any possible pesticide residual effects which could be contributing to plant deterioration. NRCS conducted a meeting with 30 landowners in Garden City on Nov. 13, 2012, to communicate the findings of the research effort and to convey recommendations for future planting of cover crops and grasses.

At the meeting, FSA announced its revised schedule of cost-share incentives for producers who needed to re-plant during the 2013 season. DOC, FSA and NRCS discussed compliance issues with the producers. (All parties are still in agreement that until fully normal precipitation patterns resume, no requirements will be enforced to re-cultivate fields with minimal cover that are in danger of blowing if adequate irrigation water is unavailable.) However, each CREP contract owner who is facing compliance issues because of drought related effects will still be required to be reviewed with a plan approved by the local FSA county committee.

The summer of 2014 brought a summer season of near normal rainfall to the project area, and provided moisture to annuals, weeds and grass for much needed ground cover. However, another very dry fall followed. This pattern was repeated in 2015 and 2016 with most of the project area receiving average to abundant summer precipitation, but very dry fall conditions. These stands will need to be evaluated again in future seasons to determine their post-drought status. The current conditions of the drought-stricken areas will challenge CREP participant's ability to establish the permanent cover required by the program.

NRCS has continued to conduct technical evaluations of the project sites — both at the local county office level, and with teams of experts from FSA, NRCS and DOC (May 7, 2014, and April 28, 2015). Another field tour is planned for the spring 2018 season to determine how covers are re-emerging after the winter.

Agency and Organization Cooperation

The **Kansas Water Office**, the state's planning agency for water issues, provides direction for the CREP program development. KWO contributes to public outreach through presentations at the Upper Arkansas Basin Advisory Committee (now reformed as a Regional Advisory Committee) and Kansas Water Authority meetings and to other interested stakeholders. KWO works collaboratively with DOC and each of the agencies identified below to prepare and provide USDA with annual CREP progress reports. The KWO director originally administered the Western Kansas Water Conservation Projects Fund for projects in the Upper Arkansas River corridor that provide water conservation, efficiency gains and aquifer recharge.

Legislative directives from the 2008 session transferred the fund and administrative duties to GMD No. 3. The KWO director continues to review and give approval for proposed projects recommended by the GMD No. 3 and the Arkansas River Litigation Funds Advisory Committee, with input from the DWR's Chief Engineer. The use of these funds is consistent with the purposes of CREP. KWO also provides a bonus incentive payment to landowners for enrollment of CREP shallow-water development practices.

The **Kansas Department of Agriculture, Division of Conservation** (formerly *State Conservation Commission*) coordinates with local groundwater, watershed and county conservation districts, state and federal agencies, and other conservation partners to implement programs that improve water quality, reduce soil erosion, conserve water and reduce flood potential. DOC administers the state portion of CREP. DOC also is responsible to contract with eligible participating entities for the state upfront incentive payments (SUPs); to review, and make assurances that all CREP eligibility criteria are met and correctly documented; to assure that the relevant water right is properly and permanently dismissed; and to provide appropriate recommendations regarding final approval of FSA CREP applications. The DOC also administers a similar, solely state-funded water right retirement program (Water Transition Assistance Program). DOC utilizes an existing staff position as the State CREP Coordinator for Kansas to facilitate and oversee CREP in the Upper Arkansas River basin.

The **Farm Service Agency** is the lead USDA agency for CREP. FSA provided the first public announcement of the program signups and made broad outreach to all potentially eligible persons. FSA field office staff work with landowners and producers to determine if CREP is a program that fits for their acreages and circumstances. FSA initiates the contract with interested parties; provides estimates of payments, and works with the landowner and NRCS to determine suitable conservation practices. Final approval of contracts comes from FSA county committees. FSA has no responsibility for the water right terminations, but coordinates with DOC and DWR as to the sufficiency of the voluntary dismissals.

The **Kansas Department of Agriculture, Division of Water Resources** provides verification of water rights in good standing, administration of retired water rights, issuance of term permits, water well investigations and monitoring of aquifer levels and stream flows. DWR has and will continue to provide legal partitioning of water rights to facilitate enrollments, as necessary. This agency assists the Arkansas River Compact Administration with compact compliance. The Chief Engineer of DWR also reviews proposed project applications for water conservation and efficiency in the Upper Arkansas River basin through the Western Water Conservation Projects Fund. These efforts are consistent with the CREP objectives.

The **Kansas Department of Health and Environment** monitors surface water quality in the Arkansas River and its tributaries. Activities include collection and preparation of chemical, bacteriological and radiological lab samples taken at seven sites located between Coolidge and Great Bend. Analysis is then conducted to determine chemical, microbiological and radiological content. KDHE coordinates water quality issues and meetings with Colorado and other Kansas state agencies, and partners and stakeholders.

The **Kansas Geological Survey** provides annual monitoring of aquifer levels and conducts technical studies on the fate and transport of salinity, aquifer characterization, and groundwater modeling. KGS maintains a long-term research site for investigating phreatophyte and stream-aquifer interactions in the Arkansas River valley northeast of Larned. Wells are screened in the alluvial aquifer and the underlying High Plains Aquifer. Some of the wells are instrumented with pressure transducers that record water levels on a 15-minute time interval year-round. In 2017, the KGS has also installed two index wells within Finney County, the area of GMD3, which are used in model developments pertinent to the CREP project area.

The **Kansas Department of Wildlife, Parks and Tourism** provides fish and wildlife population monitoring. KDWPT conducts wildlife and habitat surveys through several programs including stream monitoring and assessment and shorebird surveys. KDWPT conducts statewide stream surveys to document the current range and distribution of riverine species. Since 2002, KDWPT has coordinated a volunteer effort to survey shorebirds at wetlands throughout Kansas. Portions of these ongoing survey efforts as well as additional

wildlife population monitoring activities can serve as in-kind contribution towards the CREP project. KDWPT monitors visitation rates at Cheyenne Bottoms Wildlife Area, to be used in evaluation of CREP objectives.

Groundwater Management Districts monitor water levels, collect water quality samples, recommend water management actions to the chief engineer, review and advise on water conservation projects in the Upper Arkansas River valley and promote water conservation. Both GMDs have sponsored stakeholder meetings to help explain and promote the Upper Arkansas River CREP. The GMDs have also provided technical assistance to interested parties on partitioning of water rights or fields to meet both the CREP eligibility criteria and the needs of the producer.

Kansas State University has provided public outreach support to the cooperating state and local agencies involved with the UAR CREP proposal and implementation. K-State Research and Extension (KSRE) has established extension agents and outreach networks to transfer important information and results to clientele and end users of program information. K-State also has the capacity to analyze and interpret economic impacts as the CREP program is further implemented. These impacts will include both positive and negative impacts in the sub-basin communities. Positive impacts will result from changes in the environment as less water is diverted for irrigation and related stream flow and the useable life of the aquifer is extended. Negative impacts will result from decreased economic activity as irrigated land is removed from agricultural production, whether temporarily or permanently.

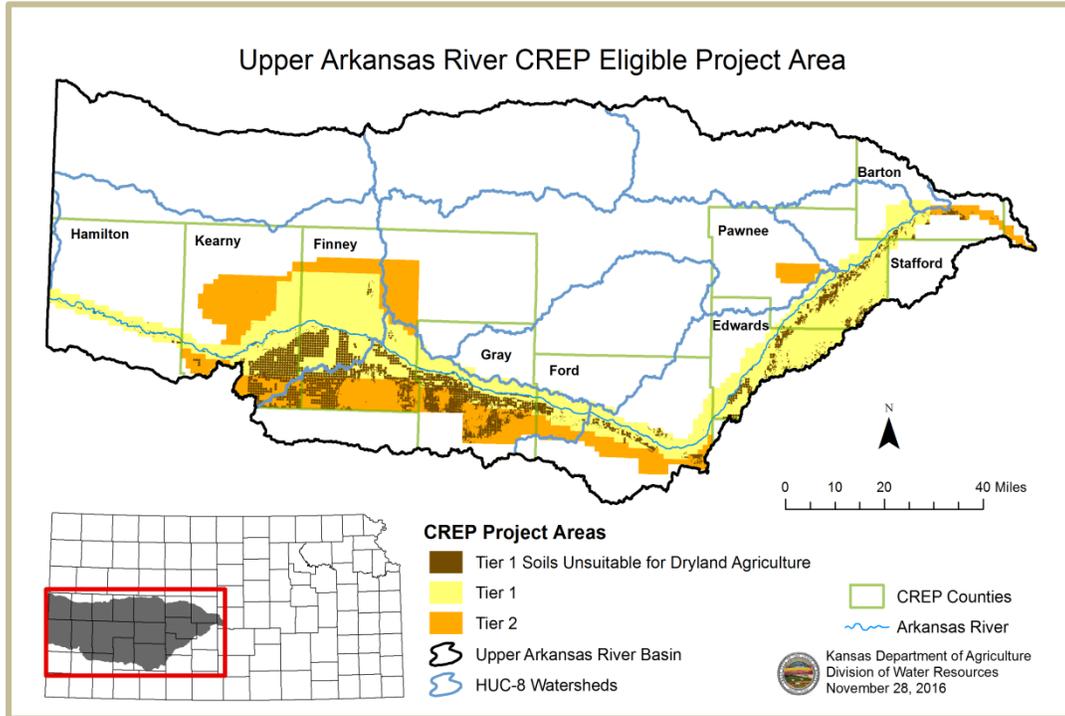
Natural Resources Conservation Service provides technical assistance on CREP contracts to create the conservation plan of operations and implement the approved practices. NRCS employees evaluate the offered acres with the applicant to determine the appropriate suite of practices to meet needs of the land and producer. Specifications for practice implementation are documented and provided to the participant on conservation practice worksheets. NRCS personnel then follow up with participants by making site visits to evaluate progress, and by making recommendations to help with management decisions. NRCS determines whether the established conservation covers meet agency specifications.

Kansas Alliance for Wetlands and Streams (KAWS) is a 501(c)(3) not-for-profit that collaborates with local people, conservation and community organizations, agencies and local governments to promote conservation of streams, wetlands, riparian areas, prairies, watersheds and wildlife. With an apolitical, inclusive, efficient, and science-based approach to promoting sustainability of the natural ecosystems and working lands of Kansas, KAWS is supported by a broad range of partners and advisors which make a good fit with the goals and objectives of the CREP program.

Ducks Unlimited (DU) became a new technical advisor to the steering committee in 2017. DU is a 501(c)(3) not-for-profit that collaborates with local people, conservation and community organizations, agencies and local governments to promote conservation of migratory waterfowl habitat and associated ecosystems. DU members are a diversified group of hunters, non-hunters, farmers, ranchers, landowners, conservation enthusiasts and wildlife officials organized in local regions who work through fundraising and project development efforts to make a difference by creating habitat, restoring wetlands and protecting prairies. With an apolitical, inclusive, efficient, and science-based approach to promoting sustainability of the natural ecosystems and working lands of Kansas, DU is supported by a broad range of partners and advisors which make a good fit with the goals and objectives of the CREP program.

Pheasants Forever (PF)* is a national nonprofit conservation organization dedicated to the conservation of pheasant, quail, and other wildlife. They promote cooperative endeavors through public awareness, education and land management policies and programs which are being implemented in the UAR CREP. [*In 2016, PF notified the CREP coordinator that their organization would no longer be able to support any financial commitments to the CREP project as originally envisioned, and subsequently requested to be withdrawn as an official financial partner in the project, but PF is still considered a technical advisor to the CREP Steering Committee.]

Figure 1: Map of Upper Arkansas River CREP Eligible Project Area



CREP Program Implementation Summaries

Land Conserved

As of Sept. 30, 2017, the total amount of land which has been offered and approved for enrollment into the CREP program is 18,659 acres, as detailed in the table below (also see Attachment D).

Acres Approved for Enrollment: December 20, 2007 to September 30, 2017											
CREP County	Dec 20, 2007 – Sept 30, 2008	Oct 1, 2008 – Sept 30, 2009	Oct 1, 2009 – Sept 30, 2010	Oct 1, 2010 – Sept 30, 2011	Oct 1, 2011 – Sept 30, 2012	Oct 1, 2012 – Sept 30, 2013	Oct 1, 2013 – Sept 30, 2014	Oct 1, 2014 – Sept 30, 2015	Oct 1, 2015 – Sept 30, 2016	Oct 1, 2016 – Sept 30, 2017	Total Acres Approved since Program Initiation
Barton										107.7	107.7
Edwards										127.5	127.5
Finney	129.4	574.2	76.5		1,338.6			412.7	475.9	150.5	3,157.8
Ford											
Gray	2,677.8	723.5	1318.6	247.1	1,087.4	673.9		613.8			7,296.9*
Hamilton									242.9		242.9
Kearny	4,203.8	605.0	251.9		1,520.0			162.9	610.2		7,353.8
Pawnee	241.7				130.7						372.4
Rice											
Stafford											
Total	7,252.7	1,902.7	1,647.0	247.1	4,076.7	673.9	0	1,189.4	1,329.0	385.6	18,659*

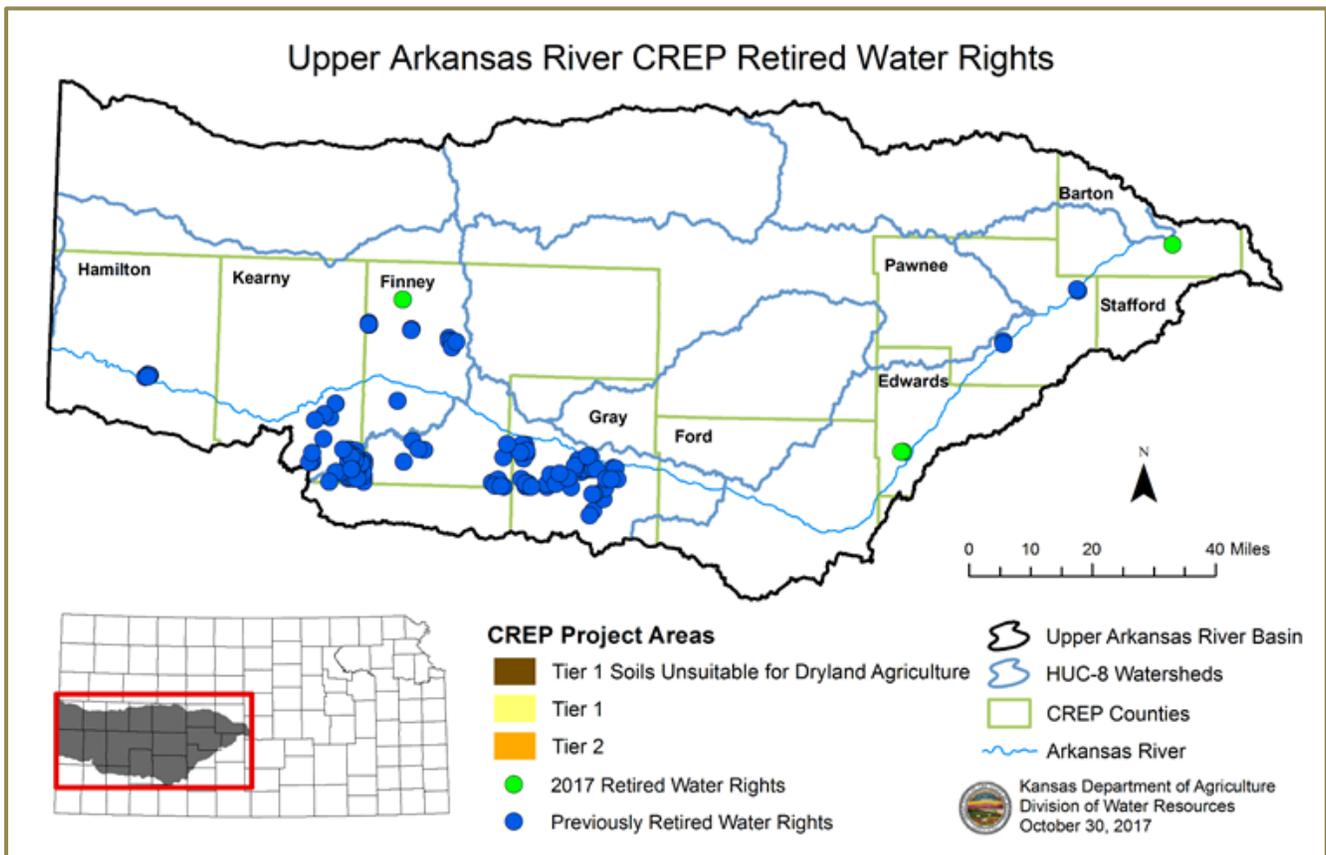
*These figures adjusted by -45.2 acres from 2016 to match & reflect FSA records

Water Conserved

The total amount of water rights that have been offered and accepted for permanent retirement under state approved contracts from the beginning of enrollment on Dec. 20, 2007, through Sept. 30, 2017, are shown in the table below. To date, a total of 37,430 acre-feet of annual authorized water right allocation has been permanently retired from irrigation through enrollment into the Upper Arkansas River CREP.

CREP Authorized Water Right Allocation Permanently Retired: 2007–2017		
CREP County	Authorized Quantity (Acre-Feet) of Annual Water Right Allocation Permanently Retired on State Contract Approved Acres	Number of Irrigation Wells Being Permanently Retired on State Contract Approved Acres
Barton	150	1
Edwards	150	1
Finney	6,078 AF	26 Wells
Ford		
Gray	15,304 AF	62 Wells
Hamilton	386	3 wells
Kearny	15,345 AF	57 Wells
Pawnee	586 AF	16 Wells
Rice		
Stafford		
Total	37,999 AF	166 Wells

Figure 2: Map of Upper Arkansas River CREP Retired Water Rights



Groundwater Monitoring Activities

Groundwater level measurements and annual water use reports are being collected for the CREP project area (average groundwater levels and locations of monitoring wells are provided in Attachment E).

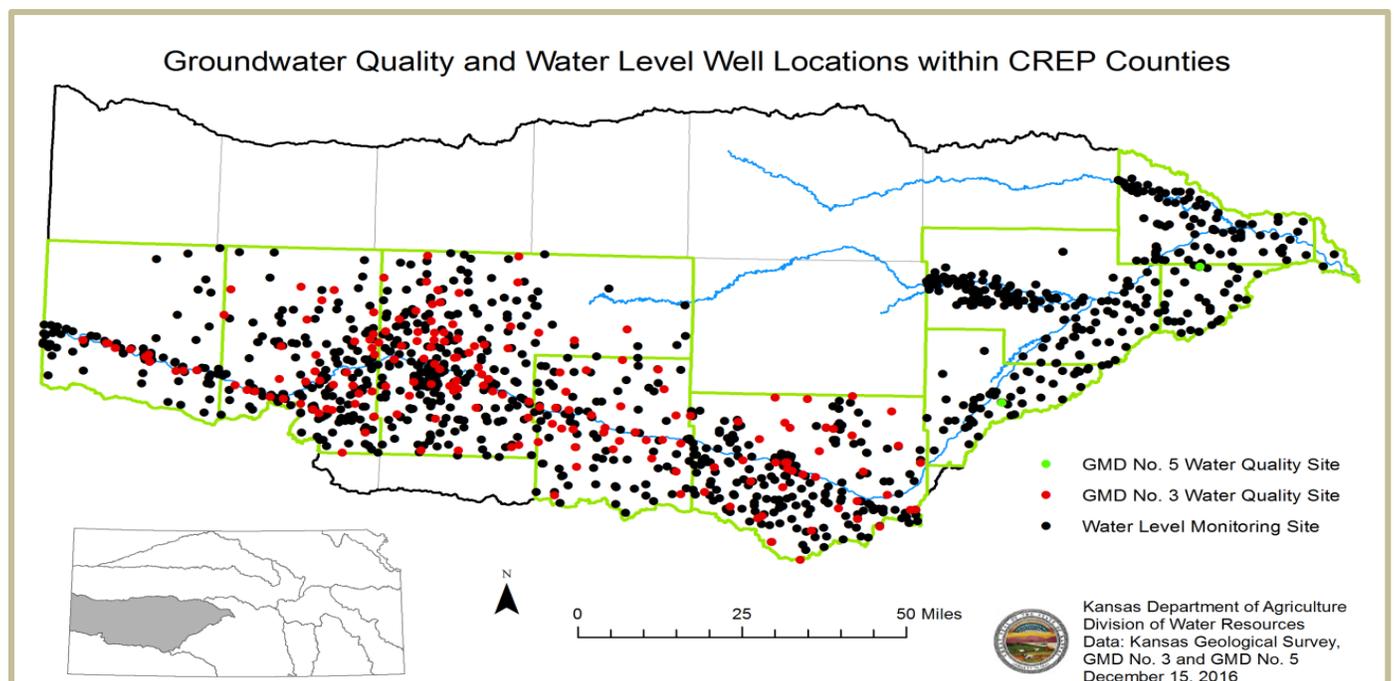
Water levels have been monitored at least annually at numerous locations in the CREP counties. Figure 3 includes the locations of historical water level measurements in the area. GMD5 obtains water level measurements from 25 wells in the CREP area. Annual measurements are collected from 14 of these wells and quarterly measurements of 11 wells are planned to continue.

Water levels within the boundaries of the CREP area, particularly in the areas where contracts are approved, will be measured over time. The KGS is also working cooperatively with DWR and GMD3 to enhance the monitoring network for the aquifer close to the retired CREP acres and water rights in Kearny, Finney and Gray counties. Improvements include providing additional annual monitoring wells and increasing the measurement frequency, equipping some key well sites with pressure transducers and temperature loggers, and designating some wells as index calibration wells.

Two index wells have been installed in the High Plains aquifer in Finney County within the CREP area — one at the Willis Water Technology Farm in south-central Finney County south of the Arkansas River, and the other in west-central Finney County at an area being considered for a possible Local Enhanced Management Area (LEMA). The index wells have pressure transducers that record water levels every hour — the hydrograph data for the records can be viewed and downloaded online on the KGS index well website at http://www.kgs.ku.edu/HighPlains/OHP/index_program/index.shtml. The record for the Willis index well started in late July 2016, and the other in the possible KE-FI LEMA started in mid-June 2017.

Plans are also in development to conduct some future comparative analysis on CREP vs. non-CREP acres/wells. Since a great deal of the enrollments in Gray and Kearny counties are in very close proximity, the establishment of such an enhanced monitoring program would result in some very specific information about the effects of substantial water right retirements in these highly localized areas.

Figure 3: Upper Arkansas River CREP Water Quality and Water Level Monitoring



Annual Irrigation Water Usage in CREP Area: 2007 - 2016

Water use reports of authorized acres actively being irrigated each year within the CREP project area have been received and verified by DWR for the 2007–2016 reporting years, as shown below (also see Attachment D).

CREP Project Area Reported Irrigated Water Use and Irrigated Acres: 2007 - 2011										
County	2007 Reported Irrigated Acres in CREP Project Area	2007 Reported Irrigation Water Use (AF) in CREP Project Area	2008 Reported Irrigated Acres in CREP Project Area	2008 Reported Irrigation Water Use (AF) in CREP Project Area	2009 Reported Irrigated Acres in CREP Project Area	2009 Reported Irrigation Water Use (AF) in CREP Project Area	2010 Reported Irrigated Acres in CREP Project Area	2010 Reported Irrigation Water Use (AF) in CREP Project Area	2011 Reported Irrigated Acres in CREP Project Area	2011 Reported Irrigation Water Use (AF) in CREP Project Area
Barton	16,658	15,779	15,972	12,221	16,705	15,338	16,318	17,761	16,556	22,780
Edwards	36,827	31,198	36,265	38,147	36,313	35,891	37,137	39,024	37,206	49,121
Finney	209,396	254,171	206,581	282,700	202,362	243,859	200,120	276,955	200,220	330,961
Ford	43,165	45,430	41,778	50,296	41,324	44,773	42,267	47,965	44,019	61,857
Gray	85,535	99,824	83,957	105,862	83,390	93,775	81,318	97,535	77,617	114,230
Hamilton	11,384	15,869	12,658	18,376	13,316	16,220	12,585	18,250	12,617	21,205
Kearny	104,157	184,318	108,261	191,691	112,080	169,005	109,822	189,093	108,176	179,663
Pawnee	50,861	40,291	50,627	40,585	50,315	44,129	50,645	53,990	52,757	67,955
Rice	336	281	331	221	331	229	331	370	331	611
Stafford	628	600	628	551	628	695	628	788	628	970
Total	558,947	687,761	557,058	740,650	556,764	663,914	551,171	741,731	550,127	849,353

CREP Project Area Reported Irrigated Water Use and Irrigated Acres: 2012 - 2016										
County	2012 Reported Irrigated Acres in CREP Project Area	2012 Reported Irrigation Water Use (AF) in CREP Project Area	2013 Reported Irrigated Acres in CREP Project Area	2013 Reported Irrigation Water Use (AF) in CREP Project Area	2014 Reported Irrigated Acres in CREP Project Area	2014 Reported Irrigation Water Use (AF) in CREP Project Area	2015 Reported Irrigated Acres in CREP Project Area	2015 Reported Irrigation Water Use (AF) in CREP Project Area	2016 Reported Irrigated Acres in CREP Project Area	2016 Reported Irrigation Water Use (AF) in CREP Project Area
Barton	16,638	21,522	15,985	14,473	16,433	15,324	16,501	17,494	15,985	14,473
Edwards	37,188	45,581	36,469	34,930	37,231	36,967	36,974	39,481	36,469	34,930
Finney	196,864	320,129	197,956	288,393	193,295	272,586	191,902	229,675	197,956	288,393
Ford	42,182	55,682	42,863	46,780	43,533	43,284	42,094	40,211	42,863	46,780
Gray	76,689	100,898	74,954	94,532	71,897	87,467	72,339	71,587	74,954	94,532
Hamilton	13,471	21,856	14,223	19,476	14,474	18,338	13,842	15,932	14,223	19,476
Kearny	88,747	146,479	89,114	130,614	101,820	147,606	115,886	159,467	89,114	130,614
Pawnee	50,929	61,029	52,354	48,163	52,832	51,249	52,886	49,663	52,354	48,163
Rice	336	353	336	311	336	341	166	238	336	311
Stafford	625	859	622	589	628	657	628	711	622	589
Total	523,669	774,388	524,798	678,261	532,479	674,089	543,195	624,458	524,876	678,261

Summary of Non-Federal Program Expenditures

The total estimated federal costs of the program to date are \$33,538,379. The state of Kansas, with its partners of other agencies, conservation districts, groundwater management districts and private associations, has provided a cost share that meets or exceeds the required 20 percent match of federal costs. The state of Kansas agreed to pay not less than 20 percent of the program costs, as required for a CREP program, through a combination of direct payments, technical assistance and in-kind contributions. No less than 10 percent of this match is in direct match. Since Dec. 6, 2007, a total of \$11,969,636 of non-federal expenditures has been made in support of the CREP project. The state direct match now totals \$8,354,663.

State / Federal Match Summary (in dollars)											
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	TOTAL
DOC Payments	439,901	116,122	93,916	15,320	245,011	37,677	0	113,669	118,146	30,749	1,210,511
Other KS Direct	143,089	673,670	1,576,507	1,278,249	336,275	336,285	49,134	287,424	1,728,119	735,400	7,144,152
Total KS Direct	582,990	789,792	1,670,423	1,293,569	581,286	373,962	49,134	401,093	*1,846,265	766,149	8,354,663
KS Indirect	651,988	412,286	374,911	318,747	302,160	286,771	357,304	287,714	306,730	316,362	3,614,973
KS Dir & Indirect	1,234,978	1,202,078	2,045,334	1,612,316	883,446	660,733	406,438	688,807	*2,152,995	1,082,511	11,969,636
ACCUM Kansas		2,437,056	4,482,390	6,094,706	6,978,152	7,638,885	8,045,323	8,734,130	*10,887,125	11,969,636	11,969,636
ACCUM Federal				19,667,225	21,274,225	22,464,790		28,317,828	31,347,166	33,538,379	33,538,379
10% of federal											3,353,837
20% of federal											6,707,675

*Corrected from 2016

As of Sept. 30, 2017, a total of \$1,210,511 has been expended by the DOC for the State Upfront Payments (SUPs) in 112 separate state contracts to producers who have been approved and enrolled in the CREP program, as shown below. Producers will receive an average of about \$2,191,213 annually in direct payments from FSA over the 14-15 year period of the CREP contracts.

State Upfront Payments Approved by County											
COUNTY	State Upfront Payments 2008	State Upfront Payments 2009	State Upfront Payments 2010	State Upfront Payments 2011	State Upfront Payments 2012	State Upfront Payments 2013	State Upfront Payments 2014	State Upfront Payments 2015	State Upfront Payments 2016	State Upfront Payments 2017	COUNTY TOTAL
Barton										\$9,991	\$9,991
Edwards										\$9,894	\$9,894
Finney	\$8,022	\$33,756	\$2,677		\$78,251			\$34,124	\$45,299	\$10,864	\$212,993
Ford											
Gray	\$156,954	\$44,856	\$75,618	\$15,320	\$64,419	\$37,677		\$59,540			\$454,384
Hamilton									\$23,561		\$23,561
Kearny	\$260,632	\$37,510	\$15,620		\$94,241			\$20,005	\$49,286		\$477,294
Pawnee	\$14,291				\$8,103						\$22,394
Rice											
Stafford											
TOTAL	\$439,901	\$116,122	\$93,916	\$15,320	\$245,011	\$37,677	\$0	\$113,669	\$118,146	\$30,749	\$1,210,511

As of Sept. 30, 2017, a total of \$8,354,663 has been expended in the project for both cash payments and direct match. A total of \$766,149 was provided as cash payments and direct match during the 2017 fiscal year, as shown below.

Direct Match to Federal Dollars from October 1, 2016 to September 30, 2017		
Organization	Amount	Activities
KDA – Division of Conservation State Upfront Payments	\$30,749	State sign-up payments to CREP participants
State CREP Coordinator	\$50,033	Coordinate implementation of program with FSA, conservation districts, NRCS, and state agencies
KDA – Division of Conservation	\$0	Cost share on well plugging and other allowed practices
Western Water Conservation Project Funds	\$685,367	Alternate delivery route, ditch lining, Lake McKinney storage capacity and bypass
Pheasants Forever / Quail Forever	\$0	Cost share on seeding; loan of grass seeder
Kansas Water Office	\$0	Cost share on tamarisk control, or wetland bonus payments
TOTAL DIRECT	\$766,149	Cash Payments and Direct Match

As of Sept. 30, 2017, a total of \$3,614,973 has been expended in the project for technical assistance and in-kind services as indirect match. A total of \$362,316 was provided as indirect match during the 2017 fiscal year, as shown below:

Services by Organizations from October 1, 2016 to September 30, 2017		
Organization	Actual	Activities
Technical Assistance		
Western Water Conservation Projects Fund Management	\$0	Preferred interstate, grant applications, general TA water rights, laws and issues
KDA – Div. of Water Resources & Information Technology	\$5,194	CREP database maintenance, water right reviews, divisions and retirements for applications
Kansas Geological Survey	\$44,000	Water level monitoring, database management, phreatophyte investigations, TA, water right communication, modeling, river water quality and practical saturated thickness work
Kansas Department of Wildlife, Parks and Tourism	\$16,190	Wildlife and fish population investigations in CREP counties
Kansas Conservation Districts	-	No activity to report
State & Local In-Kind		
KDA – Div. of Conservation	\$270	Reports, outreach & CREP field inspections
Western Water Conservation Projects Fund	\$38,938	Alternative delivery system, storage capacity, and efficiency improvements (ARLFSC time)
Big Bend Groundwater Management District No. 5	\$118,500	Water level measurements, meter compliance, water banking, CREP assistance and clerical pay

Southwest Kansas Groundwater Management District No. 3	\$119,581	Water management, stakeholder assistance in CREP area, program promotion
Kansas Department of Health and Environment	\$14,706	Arkansas River coordination with Colorado, sampling of Arkansas River water quality
Kansas Water Office	\$1,651	Weather modification and phreatophyte CREP activities
Ducks Unlimited	\$2,291	Ark River CREP Landowner / Field Review Visits
KS Alliance Wetlands & Streams	\$995	2017 SW Kansas Playa Workshop
TOTAL INDIRECT	\$362,316	Technical Assistance / In-Kind Services

Progress on CREP Objectives (12 objectives)

1. Enroll a maximum of 28,950 acres into CREP in the project priority area (25,950 irrigated acres, 3,000 from dryland pivot corners as part of whole field enrollment), with a goal of up to 18,600 acres put into native grass.

As of Sept. 30, 2017, a total of 18,659 acres have been offered, accepted and enrolled into the CREP program. Of the total number of acres currently offered, only 2.6 percent (487 acres) was farmed dryland. Offers which are predominately "Tier 2 soils" comprise 8.9 percent (1679 acres) of the total approvals to date. Essentially 100% of the 18,659 total acres have been placed into the native grass practices of CP2 or CP4d. This objective is 64 percent complete.

2. Reduce the application of groundwater for irrigation in the targeted area by 45,125 acre-feet, annually, with the enrollment of 25,950 irrigated acres.

As of Sept. 30, 2017, a total of 37,999 acre-feet of authorized water rights for irrigation have been permanently retired from the enrollment of 18,172 irrigated acres. This rate is averaging just over 2 acre-feet per acre, a rate higher than estimated in the CREP objective, particularly because the majority of the enrollment in the project area has been in the western counties where water appropriation allowances are the highest in the state, and some irrigated acreage is authorized on land which is not being enrolled at the irrigated rate due to FSA restrictions. This objective is 84 percent complete.

3. By 2020, increase the frequency of meeting minimum desirable stream flows in the Arkansas River at the USGS gaging stations at Great Bend and Kinsley from 71 percent and 52 percent, respectively, as measured in 1996–2004.

No assessment of this objective has been made as of Sept. 30, 2017. Measurement of the impact of enrollment of acres into the Upper Arkansas River CREP on minimum desirable stream flow will begin after water rights have been terminated and sufficient time has elapsed to have an effect on the system. Most of the acres enrolled have just recently terminated the water rights, or are still allowed temporary limited irrigation to establish vegetation on soils susceptible to wind erosion. Following is a summary of the anticipated methodology for this objective.

There are three components to stream flow: frequency, magnitude and duration. Each of these components will be reviewed at the Great Bend and Kinsley MDS gage. The daily flow from 1960 to 2004 will be summarized into annual data. The summarization parameters include:

1. *The percent of time the MDS was not met (frequency of excursion).*
2. *The volume of flow less than MDS as calculated by the difference between MDS and reported flow (magnitude of excursion).*
3. *The maximum length in consecutive days that MDS was not met (duration of excursion).*

The frequency, magnitude and duration for which MDS was not met will be compared for the pre-CREP years (1960–2006) to the post-CREP years (2007–2017). A nonparametric test, the Wilcoxon rank-sum, will be used to determine if a statistically discernible difference existed between the pre- and post-CREP period.

The same comparison will be made using the pre- and post-CREP period and the average annual Palmer Drought Severity Index (PDSI) for the region in which the MDS gage was located. This will create an index for the antecedent moisture conditions that will be a primary factor in determining each period's flow condition. One would expect that in those regions where the PDSI had become significantly greater (wetter), one should see a concomitant improvement in the magnitude, frequency or duration of the MDS condition.

Finally, the trend for the annual summarizations of the three components of flow will be assessed. This assessment will be used to determine whether there is a discernible trend in the annual frequency, magnitude or duration of minimum desirable stream flows through time (1960–2006).

4. Reduce stream flow transit losses due to inefficiencies in the delivery of the water by improving the channel and canal delivery system.

Improvements to the stream flow delivery system are underway. Construction is complete on the cleaning and reshaping of the canal used by the South Side Ditch Company to enhance delivery of water to its members and to more efficiently deliver water to the downstream Farmers Ditch Company during a drought. A significant number of water check control structures on this system are under construction that will greatly improve water management and system delivery efficiency of water to irrigated fields using buried pipelines instead of leaky ditch lateral structures (which are difficult to maintain). It is estimated that water delivery to the Farmers Ditch Company via the refurbished canal has at least 15 percent less stream flow transit loss than delivery via the river channel. Also, significant upgrades and enhancements were initiated on the Amazon Canal intake structure and flume across Sand Creek near the Lakin Golf Course during 2015 and concluding in 2016. This site was featured in a 2016 Kansas Natural Resources legislative tour of southwest Kansas hosted by the KGS that summer. Additional improvements are underway or being planned for river routing model study to improve river management and Stateline river flow delivery efficiency to the South Side, Farmers and Garden City Ditch systems that will be implemented as part of the Western Water Conservation Projects Fund expenditures.

5. By 2020, reduce the rate of groundwater declines in the alluvial aquifer and the hydraulically connected High Plains aquifer in the CREP area from those measured during the winter months for the pre-CREP five-year period (2003–2007) and pre-CREP ten-year period (1998–2007).

No assessment of this objective has been made as of Sept. 30, 2017. The impact of enrollment of acres into the Upper Arkansas River CREP on groundwater conditions will be made in 2020 and after all water rights have been terminated. At the present time, limited irrigation is still provided on many of the enrolled acres to help establish vegetation, where the soils are highly susceptible to wind erosion. Following is a summary of the anticipated methodology for this objective (which is currently being reviewed to determine a more realistic methodology of analytical representation).

Water levels have been monitored at least annually at numerous locations in the CREP counties. The map below includes the locations of historical water level measurements in the area. GMD5 obtains water level measurements from 25 wells in the CREP area. Annual measurements are collected from 14 of these wells and quarterly measurements of 11 wells are planned to continue. Data collected from each of these measurements will be used to assess the progress towards meeting this objective.

Water levels within the CREP area, particularly in the areas where contracts are approved, will be measured over time. Depending on levels of change, monitored changes could also be compared with predicted changes with computer modeled scenarios. The steering committee is cooperating to create an enhanced monitoring network for the aquifer close to the retired CREP acres and water rights. Possible improvements mentioned include providing additional annual monitoring wells and increasing the measurement frequency, equipping some key well sites with pressure transducers and temperature loggers, and designating some wells as index calibration wells. Additional plans to analyze the impact on CREP water right retirements: 1) additional water level measurements need to be taken from new monitoring wells on established CREP fields, and 2) additional monitoring should be established in undisturbed areas adjacent to the CREP enrollments (upstream, downstream and control spots) in order to analyze the relative effects of what is happening with the water right dismissals and water use reductions in the broad context of the High Plains or Ogallala Aquifer.

Assessment of the impact of the CREP project on water use and water levels will include the recent approach taken by the KGS regarding water reduction in the Sheridan-6 LEMA in Northwest Kansas Groundwater Management District No. 4. Methods include the water-balance approach recently published by the KGS, which is based on average annual water-level change versus annual water use, and also the correlation between annual water use and radar precipitation for the area of the LEMA before and after its implementation. The use of precipitation data for the CREP project area is important because it allows discernment of water-level and water use changes that are related to climate from those that are related to water conservation.

6. By 2020, reduce the outward migration of river salinity within the High Plains aquifer from the currently projected extent based on 1990s groundwater conditions in the Arkansas River valley.

As of Sept. 30, 2017, 18,172 irrigated acres have been offered, approved and enrolled into the CREP program. Some of the offered acres are close to the river, and most are south of the river. An assessment of this objective will be made in the future, once more acres are enrolled, and when most of the wells are permanently turned off. A number of the wells are still in use for limited irrigation to help establish permanent vegetative cover. While no formal assessment of this objective is made at this time, the state's comprehensive stream water quality monitoring network, and past and future data from the groundwater quality networks of GMD3 and GMD5 as described below, will be used to determine progress in meeting this objective.

Instream water quality and groundwater quality have been recorded historically through monitoring programs at the state and local level. KDHE has a long-standing network of monitoring stations along the Arkansas River from Coolidge to Great Bend. These stations are the foundation for the TMDL work in the Upper Arkansas Basin. Three years (2004–2006) of intensive bacteria sampling have been conducted with over 12 sessions of sampling 5 times within 30 days at these stations on the Arkansas River, in accord with K.S.A. 82a-2001, et seq. KDHE has been developing additional TMDLs in the Upper Arkansas Basin since 2011 for the next round of TMDLs on the Arkansas River.

The existing stations will be used to assess future post-TMDL conditions, over the 15 years of CREP rental periods. It is not expected that CREP will have an impact on the overall TDS (Total Dissolved Solids) levels in the river, however improvement is expected in the reduction of the advance of TDS or sulfate into the fresh water aquifers laterally from the river.

Annual groundwater sampling was temporarily suspended by GMD3 in 2011–2014 for the 183 monitoring sites in the CREP counties this report period. They were replaced by 40 additional groundwater samples collected for analysis of uranium in the CREP area by the KGS, including the regular suite of analysis. This work was done by KGS as an enhancement to a cooperative river flow sampling project funded by an EPA grant; it evaluates the deposition of uranium in Arkansas River flows. This work should broaden the water quality evaluations of CREP benefits and future management progress.

Further east, groundwater quality monitoring in the area by GMD5 has been conducted for specific projects from 12 wells. This information can provide a basis for comparison in the future.

This data will provide water quality information prior to CREP, and the continuing monitoring program will enable data analysis for documenting impacts of the program. This monitoring, along with the groundwater monitoring for other state initiatives, provides a baseline for post-CREP comparison. Stream and groundwater samples will be analyzed to determine mineral content at a frequency appropriate to determine representative water quality at least on an annual basis. At a minimum, sulfate, selenium and total dissolved solids will be quantified. Groundwater samples will be obtained for analysis and result comparison from wells with an analysis history. Wells with previous data will be monitored from both the alluvial and High Plains aquifers.

7. By 2020, reduce the bacterial, nutrient and pesticide levels in the Arkansas River in Edwards and Pawnee counties from the 1990–2000 levels.

Bacterial impairments under the new state definition are in the middle reaches of the basin. Intense sampling for bacteria after 2016, concentrating on the Kinsley area, was conducted. Additional data will be available through the monitoring network as described in Objective #6. However, an assessment of this objective will not be made at this time.

As of Sept. 30, 2017, 372 acres have been enrolled into the CREP program in Pawnee County. 127 acres were enrolled in Edwards County in 2017.

8. Increase aquifer recharge and wildlife habitat by enrolling 400 acres of playa lakes and soils, and other suitable locations for shallow water development.

As of Sept. 30, 2017, no acres have been formally offered for the CP9 Shallow Water Areas practice. Approximately 8 acres of playa soils occur on acres offered into the CREP program.

9. Reduce agricultural use of highly erodible soils with a goal of enrolling 7,000 acres that are unsuitable for dryland farming.

As of Sept. 30, 2017, approximately 17,586 acres of soils unsuitable for dryland farming have been enrolled in the CREP program. More than 100 percent of this objective has been met.

Acres Enrolled as of September 30, 2016	
Tier 1	1,309
Tier 1 Unsuitable Soils	15,671
Tier 2	1,679
Total Acres Enrolled	18,318

10. Reduce the amount of soil lost to erosion by approximately 80,000 tons per year on all enrolled acres.

Soil erosion in the Upper Arkansas River Basin occurs primarily due to wind erosion. Water erosion is also a factor in soil erosion in the basin, but to a lesser extent. In comparison, wind erosion can reach 4 tons/acre whereas water erosion would total 0.3 ton/acre on the same soil types with the same cropping patterns and management practices. Factors that affect wind erosion include residue cover, field width, crop rotation intensity, and tillage operations (USDA 2006).

With 18,659 acres enrolled in the CREP program as of Sept. 30, 2017, the amount of soil lost to erosion will be reduced by about 74,636 tons per year. Approximately 93 percent of this objective has been met. In order to help establish vegetative cover, limited irrigation for up to two full calendar years will be a condition on the water right termination for offers with highly erodible soils of factor I-34 or greater. Prior to final contract approval, a conservation plan of operation will be prepared, and limited irrigation may be recommended.

Soil Erosion	
4 tons/acre/year	18,659 acres
Total soil erosion reduction	74,636 tons per year

11. Protect the ecological and recreational viability of the Cheyenne Bottoms with improved Arkansas River stream flow, as measured by an increase in the average, annual bird count at the Bottoms in 2015–2023 as recorded from 1996–2004, and with increased human visitation rates in 2015–2023 as recorded from 1996–2004.

No assessment of this objective has been made as of Sept. 30, 2017. The impact of enrollment of acres into the Upper Arkansas River CREP on the ecological and recreational viability of Cheyenne Bottoms will not be discernible until water rights have been terminated and wells turned off. Many application acres just recently had the associated water rights terminated, or have limited irrigation to establish permanent vegetative cover. Monitoring of the average annual bird count and human visitation rates will continue.

12. Reduce energy consumption from an average of 59,850 kW-hr to less than 5,000 kW-hr per pivot for the first two years on pivots enrolled in the CREP. In subsequent years, energy consumption will be reduced to zero, as the pivots eligible for limited irrigation will be removed from the enrolled parcel. Total energy savings for the term of the CREP contracts will approach 8 million kW-hr.

K-State Research and Extension staff provided a rough estimate of energy consumption for a 125-acre center pivot in counties along the Upper Arkansas River. An average energy consumption of 59,850 kW-hr per pivot per year was derived from their estimates. In the first two years of the program, offers made for acres that occur in soils unsuitable for dryland agriculture will have the opportunity to irrigate minimally to ensure establishment of grass cover. Therefore, a small amount of energy consumption will still be experienced in the first years of the program.

With 17,855 irrigated acres enrolled in CREP as of Sept. 30, 2017, more than 7 million kW-hr of energy savings may be achieved each year. More than 100% of this objective has been met.

Energy Savings	
Irrigated Acres Enrolled as of September 30, 2016	18,172 acres
Approximate Number of Center Pivots Retired	145 pivots
Average Energy Consumption per Pivot	59,850 kW
Total Energy Savings per Year (kW)	8,678,250 kW

ATTACHMENT A UPPER ARKANSAS RIVER CREP BROCHURE & POSTER

WATER AND SOIL CONSERVATION IN THE UPPER ARKANSAS RIVER CORRIDOR

The Conservation Reserve Enhancement Program affords potential benefits for both farmers, land and water resources in 10 counties along the Upper Arkansas River. Landowners who enroll in CREP will receive up to 15 years of rental payments, a state sign-up bonus, as well as state and federal dollars to put irrigated acres into a conservation planting. The water rights associated with the enrolled land will be permanently retired. Enrollment is on a first-come, first served basis - individual county caps apply. Enrollment availability is only assured through June 2016, at this time.

What is CREP?

CREP is a targeted, enhanced Conservation Reserve Program (CRP), a federal program administered by USDA's Farm Service Agency (FSA). CRP was designed to prevent soil erosion, but also has provided water quality and wildlife habitat benefits. CREP allows the focus to be on a state resource concern; in this case, water conservation.

What are the water and soil benefits?

Reducing irrigation demands on the stream-aquifer system will reduce aquifer declines. It will also reduce the spread of saline river water into the aquifer and help restore stream and riparian health. Most acres enrolled have highly erodible, sandy soils. Multi-year transition with limited irrigation allows establishment of cover vegetation.

This program provides cash payments for land transition, while irrigation is still possible. Irrigation is permitted to establish a suitable land cover.

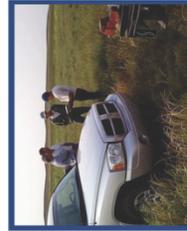
Among the approved practices eligible for cost share money are native grass seeding, wildlife habitat establishment, shallow water area construction, wetland restoration and filter strip and riparian buffer installation.

Are there targeted areas?

The program places priority on acreage where the retirement of the land and attendant water rights would have the greatest water conservation benefit and protect highly erodible soils.

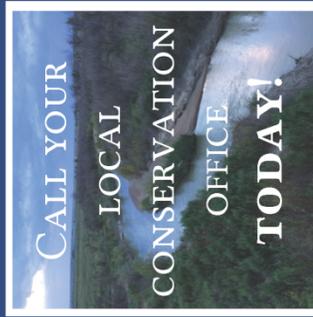
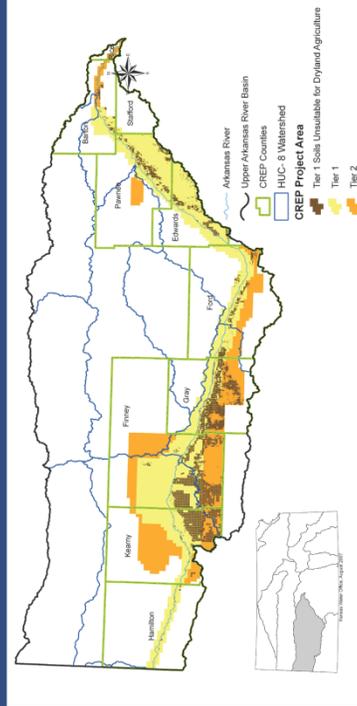
Are there wildlife benefits?

The conservation practices to be implemented open a host of opportunities for wildlife and landowner revenue related to hunting, recreation and other forms of agritourism.



Landowner visits with FSA, NRCS and KDA officials about CREP grass covers.

NEW IN 2016 INCREASED FEDERAL RENTAL PAYMENTS AND STATE INCENTIVES



8-Digit HUC	DAFP Approved Irrigated Rental Rates (\$/AC)
11030001 - Pivot	160
11030001 - Gravity	153
11030003 - Pivot	161
11030003 - Gravity	154
11030004 - Pivot	183
11030004 - Gravity	176
11030005 - Pivot	166
11030005 - Gravity	159
11030006 - Pivot	161
11030006 - Gravity	154
11030008 - Pivot	193
11030008 - Gravity	186

ELIGIBILITY CRITERIA
Federal and state eligibility criteria must be met to enroll your land in CREP. The partial list of the criteria will help to screen your eligibility in advance. Your local FSA office has a database to screen your application on these criteria.

1. At least one-half acre foot of water per acre was applied four out of six years (2008-2013).
2. At least 50 percent of the maximum annual quantity authorized to be diverted under the water right has been used in any three years within the most recent five years preceding offer submission for which DWR reports are available.
3. At least 51 percent of the offered land must be located within the CREP boundary.

BENEFITS TO FARMERS

- Federal annual irrigated rental and maintenance payments for 14 to 15 years.
- Rental payment on dryland cropland (i.e. center pivot corners) that's part of a whole field enrollment. State upfront payment of either \$97 or \$55 per irrigated acre.
- Up to 50 percent cost share on seeding.
- Well plugging cost share of \$1,000 per well.
- Bonus payment of \$350 per acre for shallow water area development in Kearny or Finney counties.
- Land can be leased for hunting.



A pheasant calls this CREP area his home

As you decide whether CREP enrollment fits your business plan, you'll be working with the USDA Farm Service Agency (FSA), Natural Resources Conservation Service (NRCS) and the Kansas Department of Agriculture (KDA).

1. First stop is your local FSA office. FSA personnel will use a CREP database to determine whether at least half of the irrigated land offered for enrollment lies within the CREP boundaries and if minimum water use criterion have been met. They also will be able to provide eligible producers with a preliminary estimate of rental and upfront payments.

2. Any questions on water rights will be referred to the KDA Division of Water Resources or Groundwater Management District No. 3 or 5. Producers whose land is accepted into the voluntary program are expected to permanently retire the associated water right(s).

3. KDA will make the state's upfront payments and practice cost-share payments on approved CREP contracts.

ARKANSAS RIVER CREP PARTNERS

Working partners include FSA, KDA, NRCS Southwest Kansas GMD No. 3, Big Bend GMD No. 5, Pheasants Forever, KGS, KDHE, KWO and Kansas Alliance for Wetlands and Streams



CONTACT

Steve Frost, CREP Coordinator, KDA
(785) 564-6622, Steve.Frost@kda.ks.gov

Carla Wikoff, USDA-FSA
(785) 539-3531, Carla.Wikoff@ks.usda.gov

APPLICANTS WATER RIGHT QUESTIONS:

DWR, Garden City (620) 276-2901
DWR, Stafford (620) 234-5311
GMD No. 3, Garden City (620) 275-7147
GMD No. 5, Stafford (620) 234-5352

FARM SERVICE AGENCIES (FSA)

Barton (620) 792-5329
Edwards (620) 659-3142
Finney (620) 275-0211
Ford (620) 227-3731
Gray (620) 855-3515
Hamilton (620) 384-6955
Kearny (620) 355-7911
Pawnee (620) 285-2821
Stafford (620) 549-3321
Rice (620) 257-5184

UPPER ARKANSAS RIVER CREP

CONSERVATION RESERVE
ENHANCEMENT PROGRAM

WATER AND SOIL
CONSERVATION IN THE UPPER
ARKANSAS RIVER CORRIDOR



SIGN UP TODAY
At Your Local USDA Farm
Service Agency Office



UPPER ARKANSAS RIVER CREP

CONSERVATION RESERVE ENHANCEMENT PROGRAM

Water and Soil Conservation in the Upper Arkansas River Corridor

What's in it for you?

Farmer's Benefits

- Upfront signing payment of up to \$97 per irrigated acre
- 50% cost share on seeding
- FSA irrigated rental payments are between \$153-\$193 for 14-15 years
- Renewed landowner revenue from hunting, recreation and agritourism
- Assured income with annual cash payments

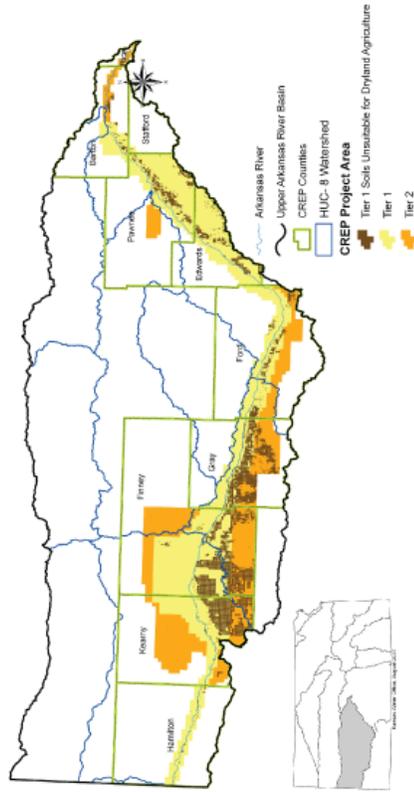
Regional Benefits

- Reduce aquifer declines
- Protect land from soil erosion with irrigated transition to a conservation cover
- Reduce the spread of saline water
- Restore stream and riparian health

Want more information?

Contact

Steve Frost, CREP Coordinator
 Kansas Department of Agriculture
 Steve.Frost@kda.ks.gov



SIGN UP AT YOUR LOCAL USDA FARM SERVICE AGENCY OFFICE!



Attachment B
Upper Arkansas River Conservation Reserve Enhancement Program Outreach

December 2007 – December 2008 Outreach for the Conservation Reserve Enhancement Program Events (Brochure distribution and conversation)

- Stakeholder Meeting – Garden City, GMD3, December 2007
- Conservation District Meetings in the 10 counties in CREP area – Jan. 11 - Feb. 28, 2008
- GMD5 Meeting – Stafford, February 7, 2008
- No-till on the Plains – Salina, January 2008
- 3i Show – Great Bend, May 2008
- Upper Arkansas Basin Advisory Committee Public Meeting – Jetmore, May 21, 2008
- Upper Arkansas Basin Advisory Committee Public Meeting – Garden City, July 16, 2008
- KSU Agronomy Day – August 2008
- Kansas Agribusiness Expo – November 2008
- CREP Producer Outreach Information Meeting – Larned, December 12, 2008; Garden City, December 17, 2008; Dodge City, December 18, 2008

December 2008 – December 2009 Outreach for the Conservation Reserve Enhancement Program

- Garden City Farm Show – January 2009
- NRCS All Personnel Meeting – Hays, February 11, 2009
- NRCS All Personnel Meeting – Scott City, February 12, 2009
- Collaborative Technical Issues Meeting – Garden City (FSA, NRCS, SCC, KWO, GMDs), February 26, 2009
- Middle Ark WRAPS Meeting – Dodge City (KSU, GMD3), March 3, 2009
- Middle Ark WRAPS Meeting – Larned (KSU, GMD5), March 5, 2009
- Upper Ark WRAPS Meeting – Garden City (KSU, GMD3), March 10, 2009
- Water and the Future of Kansas Conference – Topeka (SCC, KWO Presentation), March 12, 2009
- 3i Show – Great Bend, May 2009
- Kansas Legislative Field Tour – Lakin (SCC, KWO Presentation), June 4, 2009
- Stakeholder Meeting – Garden City, GMD3, October, 2009
- Public Information / Education Meeting – St. John (w/ GMD5) October 29, 2009

December 2009 - December 2010 Outreach for the Conservation Reserve Enhancement Program

- 3i Show – Garden City May 2010
- GMD3 CREP promotion – Ongoing

December 2010 – September 2011 Outreach for the Conservation Reserve Enhancement Program

- FSA National Press Release – August 23, 2011
- KDA & KWO Kansas Press Release – August 23, 2011
- 3i Show – Great Bend May 2011
- GMD3 CREP promotion – Ongoing
- Second technical meeting preparing for 2011 MOA updates - Dodge City, July 7, 2011 at USDA Service Center (DOC, NRCS, FSA, DWR, GMD3, and GMD5 participating)
- September, 2011 – DOC sent a directed mailing to 1235 landowners who appeared to have eligible water rights in the project area

October 2011 – September 2012 Outreach for the Conservation Reserve Enhancement Program

- 3i Show – Great Bend May 2012
- May 22, 2012 – NRCS CREP Drought Impacts Field Tour in Kearny County
- August 2012 – KDA field chemical sampling project in Gray, Finney and Kearny counties
- November 13, 2012 – NRCS CREP Drought Impacts Landowner Meeting in Garden City
- GMD3 CREP promotion – Ongoing

October 2012 – September 2013 Outreach for the Conservation Reserve Enhancement Program

- November 11, 2012 – CREP Producer Meeting in Garden City
- February 6, 2013 – Presentation to Kansas Water Congress Annual Meeting in Topeka
- August 1, 2013 – Presentation to Kansas Water Congress Summer Meeting in Garden City

October 2015 – September 2016 Outreach for the Conservation Reserve Enhancement Program

- Program training meeting for FSA, NRCS, DWR and GMD personnel – Dodge City, January 2016
- March, 2016 – DOC sent a directed mailing to 1,103 landowners who appeared to have eligible water rights in the project area

Brochures / Posters

- Updated CREP promotional poster to be distributed at CREP informational meetings in December to FSA offices and Conservation Districts
- Updated CREP promotional brochure for distribution by State Conservation Commission at stakeholder meetings in August
- Updated CREP promotional brochure used at 2011 K-State Agronomy Day
- Updated CREP promotional brochure used at 2011 Kansas Agribusiness Expo
- Updated CREP Promotional brochure and posters used in 2016 refreshed program rollout

Articles

- **Establishment of Upper Arkansas River CREP**, (December 2007, Governor Sebelius and KWO press release)
- [**Upper Arkansas River CREP Attracts More Than 12,000 Acres in Seven Days**](#) (January 2008 KWO HydroGram)
- [**CREP Conservation Practices Include Aquifer Recharge**](#) (January 2008 KWO HydroGram)
- [**Conservation Reserve Enhancement Program Benefits Water Resources & Farmers**](#) (September 2008 KWO HydroGram)
- **Response to Hutchinson Daily News editorial by SCC executive director on behalf of KDA, KDWP, and the KWO** (November 2008)
- [**Congressional funding measure keeps CRP rolls open**](#) (January 2008 HPJ news release)
- Pratt newspaper article on KDWP conducting a wildlife impact survey starting last spring per an article, as part of the CREP effort.

Internet

- **Access to various resources and reports on the Upper Arkansas CREP program are continuously updated and made available on the DOC's website at:**

www.agriculture.ks.gov/CREP

ATTACHMENT C
PROCESS FOR IMPLEMENTING UPPER ARKANSAS RIVER CREP IN KANSAS

FSA Kansas Exhibit 44 (Par. 171, 401)
 2-CRP (Rev. 5), KS Amend. 6
 March 9, 2016

STEP	ACTION	RESULT
<p>1. Initial Application with FSA</p>	<p>a. Producer visits local FSA office and provides a recent water use report with water use permit number for offered acreage. FSA enters water right number in CREP database to determine general eligibility. Water rights are by legal description. The website is: https://connect.kda.ks.gov (No WWW in front) (Each County will be provided a password)</p> <p>b. If a water right is ineligible, process would stop.</p> <p>c. If producer's water right meets basic eligibility as determined by CREP database, producer identifies physical location of acres and CREP practice (identify on an aerial photo). If, necessary consult with CREP coordinator to determine water rights acreage. FSA uses CRP-GIS tool, and determines total # acres and soil rate within CREP boundary and within HUCs.</p> <p>FSA estimates payment rate through CREP calculator. FSA reviews with producer total incentive package on another tab (includes state upfront payments, cost share, SIPs, PIPs if apply, etc.).</p> <p>NOTE: FSA follows normal continuous enrollment processing found in 2-CRP, Part 7, Section 3.</p> <p>Producer initiates process by signing CRP-2C and CRP-1 and processes the offer according to 2-CRP. NOTE: Applicant signs CRP-2C and CRP-1 based on application acres. The forms will be finalized based on actual contracted acres after water right review.</p> <p>d. FSA informs producer of process and works in conjunction with NRCS to determine appropriate practice. Producer is provided a packet with the process and practices. Producer is provided a sheet listing guidelines for cover crop establishment on sandy sites associated with CREP acres. If producer has questions on a water right issue, he/she is directed to a) DWR or GMD on water right termination issues; b) KDA-DOC for state upfront payments and Shareholder Agreement; and c) KWO for wetland bonus payment. NOTE: No water right is terminated without an approved, signed CREP contract.</p>	<p>a. FSA enters water right number into database and a register number is automatically assigned. This state developed database indicates eligibility based on water right information and location.</p> <p>b. If ineligible on CREP database, process stops here. Producer can contact DWR, GMD, or DOC to review water use history.</p> <p>c. Save an electronic copy of estimated total CREP payments and provide a copy to the producer. After acreage has been determined by measurement service scan and email an encrypted copy of the CRP-1, CRP-2C, aerial photo and summary of payment to the State Coordinator using password: KSCREP4State.</p> <p>d. Producer is responsible for getting additional signatures if needed, make a copy for personal record. The State Coordinator will complete any additional needed forms and provide to the producer.</p>

STEP	ACTION	RESULT
2. FSA	<p>a. Determination of basic Federal CREP Eligibility (FSA County Office) Example: ownership, person, land, practice, cropping history, CRP acreage cap. Ensure all eligibility requirements are met as provided in paragraph 181 in 2-CRP handbook.</p> <p>b. If eligible, FSA recommends conservation practices for application acres, and FSA provides NRCS a copy of CRP-2C.</p> <p>c. If ineligible based on Federal criteria, FSA notifies producer and copies State CREP coordinator. Explain appeals process to applicant.</p>	<p>a. FSA enters supplemental information related to practices and acres offered are entered into the CREP database.</p> <p>b. If eligible, process moves forward with NRCS and State CREP coordinator.</p> <p>c. If ineligible on federal criteria, producer can review with FSA.</p>
3. KDA-DOC	<p>a. State CREP Coordinator receives CRP-2C and map from FSA, and reviews for state eligibility, including county cap of 25% of total CREP acres. If not eligible, inform producer of finding and explain review process. State CREP coordinator determines predominant tier of irrigated acres in application, in consultation with FSA office.</p> <p>b. Review water right termination form for manageable unit and eligibility. 1) Identify if water right needs to be divided or if application acres have overlapping water rights. If yes, go to Step 3B. 2) Identify if application acres have both a ground water right and ditch water irrigation. If yes, go to Step 3C. 3) Identify if application acres unsuitable for dryland farming; if yes, notify owner he/she has option of requesting limited irrigation condition on water right termination to establish vegetative cover.</p> <p>c. After steps 3B & 3C are complete, if needed, and application meets state eligibility, sign water right termination form and forward it to KDA-DOC and copy FSA County Office with current status of application and file completion.</p> <p>d. Enter necessary information on application for SUP.</p> <p>e. Check GIS coverage for Tamarisk on application acres; note it on a file with applicant's name and HUC 8.</p> <p>f. Forward to KWO contract sheet for wetland bonus on CP-9, if applicable, with update on application status.</p> <p>g. Notify producer if application meets state eligibility and if all forms are in order. Provide information on State cost share for well plugging and tamarisk control and see if interested in participation.</p>	<p>a. If applicant doesn't meet state eligibility, explain applicant can meet with KDA-DOC to review application.</p> <p>Predominant tier will determine SUP rate.</p> <p>b. Owner may consider limited irrigation option if soils predominantly unsuitable for dryland farming, and discuss it with FSA as part of CPO, and request it from DWR, if desired.</p> <p>c. If needed, CREP coordinator notifies producer to meet with DWR on water right changes, or to get signatures on shareholder agreement and return to KDA-DOC (see 3B and 3C). Copy DWR on the referral.</p> <p>d. Inform FSA office and producer on preliminary status of state eligibility and file completion.</p> <p>e. SUP is to be shared with participants in same arrangement as on CRP contract.</p> <p>f. Notify KDA-DOC tamarisk control program manager.</p> <p>g. Wetland bonus is to be shared with participants in same arrangement as on CRP contract.</p>

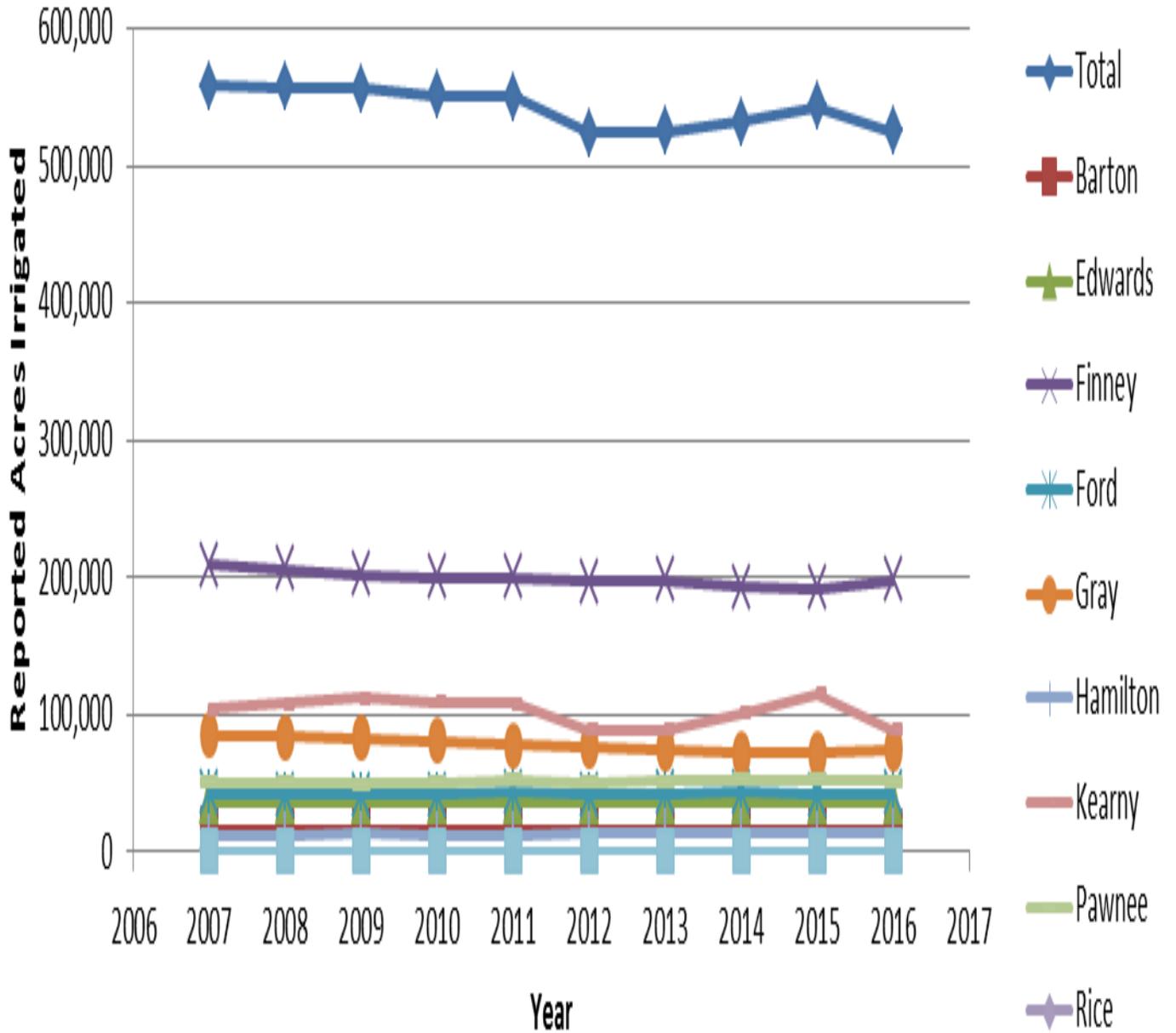
STEP	ACTION	RESULT
3B. KDA-DWR and KDA-DOC	<p><u>If needed:</u></p> <ul style="list-style-type: none"> a. Applicant meets with DWR or GMD to request necessary changes on water right. DWR or GMD flag change forms as a CREP Application. b. DWR completes process to adjust water right or place of use, so that a water right can be retired on CREP application acres. c. State CREP coordinator re-evaluates application based on split water right or adjusted application acres to confirm eligibility and maximum acres. 	<ul style="list-style-type: none"> a. Water right may need to be legally split or eligible place of use adjusted, so that a manageable unit is available for CREP enrollment. b. DWR copies CREP coordinator on changed water right information. c. KDA-DOC notifies producer and FSA County Office of re-evaluated application, maximum acres and file completeness.
3C. KDA-DOC	<p><u>If needed:</u></p> <ul style="list-style-type: none"> a. CREP Coordinator receives a signed copy of CREP Shareholder Agreement (KCREP_SA_03). Application acres with both a ditch surface irrigation and a ground water right, must file this form to not deliver ditch company surface water on specific tract(s) while enrolled in a CREP contract. b. When CREP Coordinator receives a fully signed form, update CREP database, and notify FSA County office and DWR. 	<ul style="list-style-type: none"> a. Applicant gets Irrigation Association or Ditch Company's signature, and returns signed shareholder agreement to CREP Coordinator. b. Enrolled acres cannot be irrigated by surface water during the life of the CREP contract. The associated ground water right must be terminated.
4. KDA-DWR	<p>Receives owner and KDA-DOC signed water right termination form.</p> <p>NOTE: The termination of the water right is conditional upon final approval of CREP contract. The CRP-1 is not approved by the COC at this point.</p>	<ul style="list-style-type: none"> a. Water right termination form will be held by DWR, and cannot be processed without a copy of producer and FSA signed CRP-1 contract.
5. NRCS	<p>NRCS makes a site visit to determine suitability of practice, needs and feasibility.</p>	<p>NRCS notify FSA County Office of practice suitability. Use CRP-2C form.</p>
6. FSA and NRCS	<ul style="list-style-type: none"> a. When KDA-DOC indicates application file is complete, FSA makes an appointment with applicant to finalize application at county office. b. FSA completes CRP-2C and CRP-1 for irrigated & dryland acres. c. NRCS develops CPO, and fills out CPA-52. CED completes & signs CPA-52. Identify if soil and climate conditions make this site at risk for wind erosion during seeding and special cover crop considerations should be included. 	<ul style="list-style-type: none"> a. Finalize application and adjust final contracted acreage at the county office. If necessary, enter the effective date and actual contracted acreage and practice totals to the CREP database.
7. FSA with producer	<ul style="list-style-type: none"> a. County FSA meets with producer to complete application materials. 	

STEP	ACTION	RESULT
FSA with producer Cont.	<ul style="list-style-type: none"> b. Producer signs CPO. c. Notify CREP Coordinator Producer has signed CRP-1 and CPO. 	
8. FSA KDA-DWR KDA-DOC	<ul style="list-style-type: none"> a. FSA County office confirms by electronic receipt and verification of CREP database, that water termination agreement has been signed by producer and evaluated by DWR. b. COC approves CRP-1 and CPO. c. FSA send a copy of CRP-1 and map to State CREP Coordinator, and notifies NRCS. 	<ul style="list-style-type: none"> a. FSA notifies producer. DOC updates CREP database. b. FSA County office updates CREP database with COC approval date.
9. KDA-DWR KDA-DOC FSA	<ul style="list-style-type: none"> a. DWR receives the copy of signed CRP-1 and issues the water right termination order by the Chief Engineer. DWR sends order to owner, with a reminder owner is responsible for filing a copy with County Registrar of Deeds. DWR provides a copy to State CREP coordinator. b. KDA-DOC notifies FSA county office of agreement completion, and updates CREP database. 	<ul style="list-style-type: none"> a. As applicable, FSA approves and pays SIP and State CREP Coordinator approves and pays SUP based on CRP contract shares.
10. NRCS or producer FSA KDA-DOC KWO	<ul style="list-style-type: none"> a. As required by procedure, either NRCS conducts an on-site review of practice installation and certifies installation on form FSA-848 or producer self certifies completion of practice on form FSA-848. b. CREP coordinator notifies KWO of CP-9 practice installation, where eligible for wetland bonus payment, and updates CREP database. 	<ul style="list-style-type: none"> a. As applicable, FSA issues PIP and cost share payments. b. KWO pays wetland bonus on CP-9, to participants as share on CRP contract.

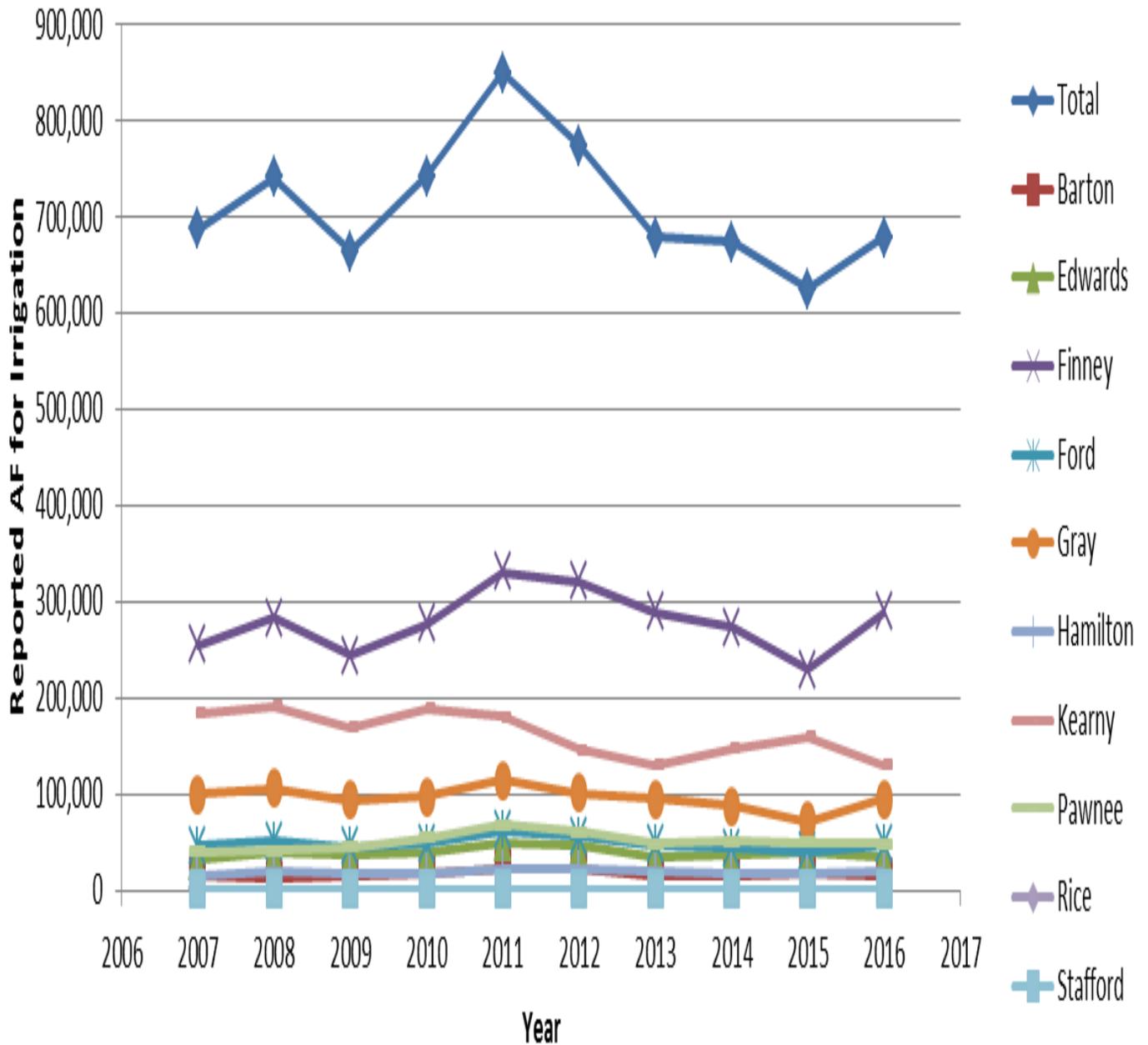
ATTACHMENT D

CREP Project Area Reported Irrigated Acres and Irrigated Water Use: 2007 – 2016

CREP Project Area Reported Irrigated Acres



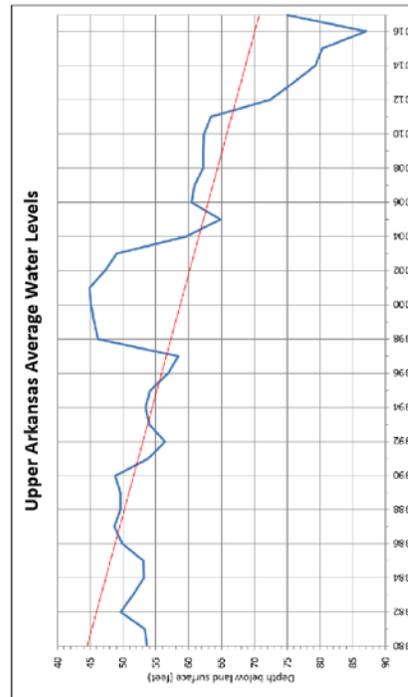
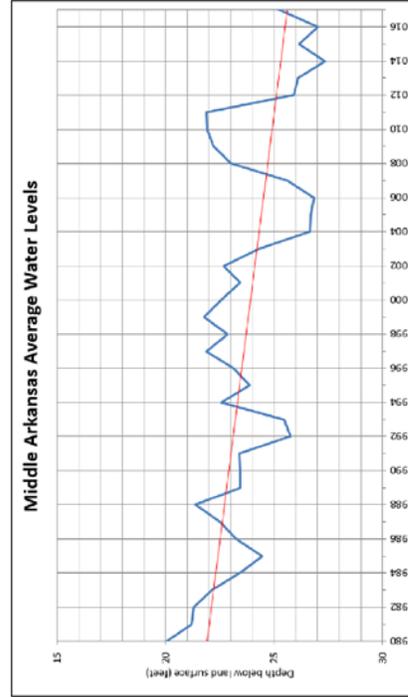
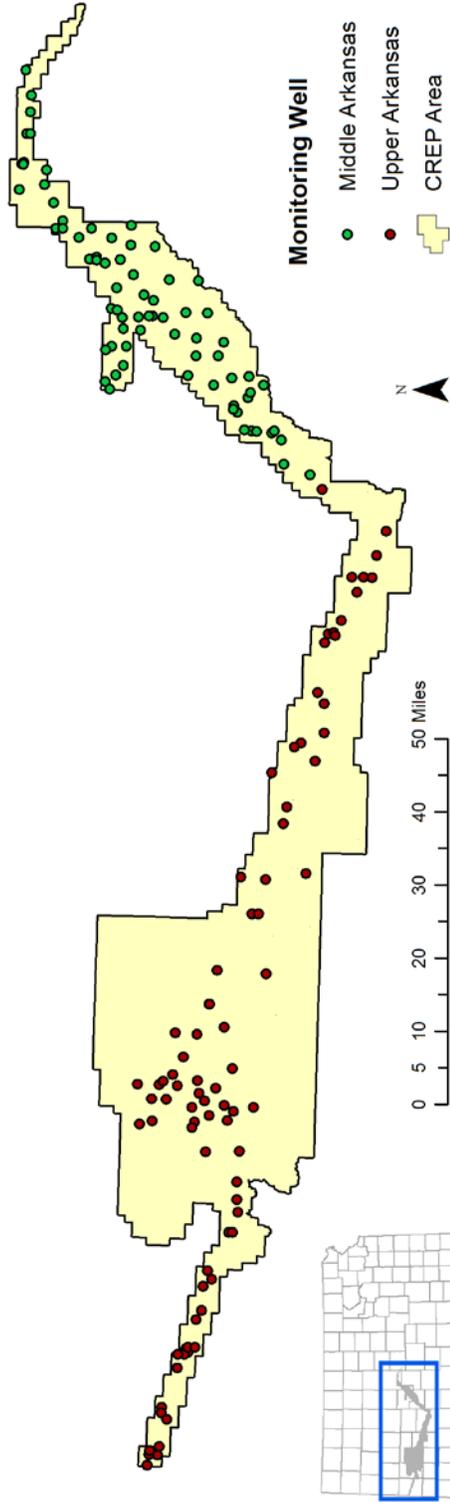
CREP Project Area Reported Acre-Feet for Irrigation Use



Attachment E Monitoring Wells and Average Groundwater Levels

Monitoring Wells and Average Groundwater Levels

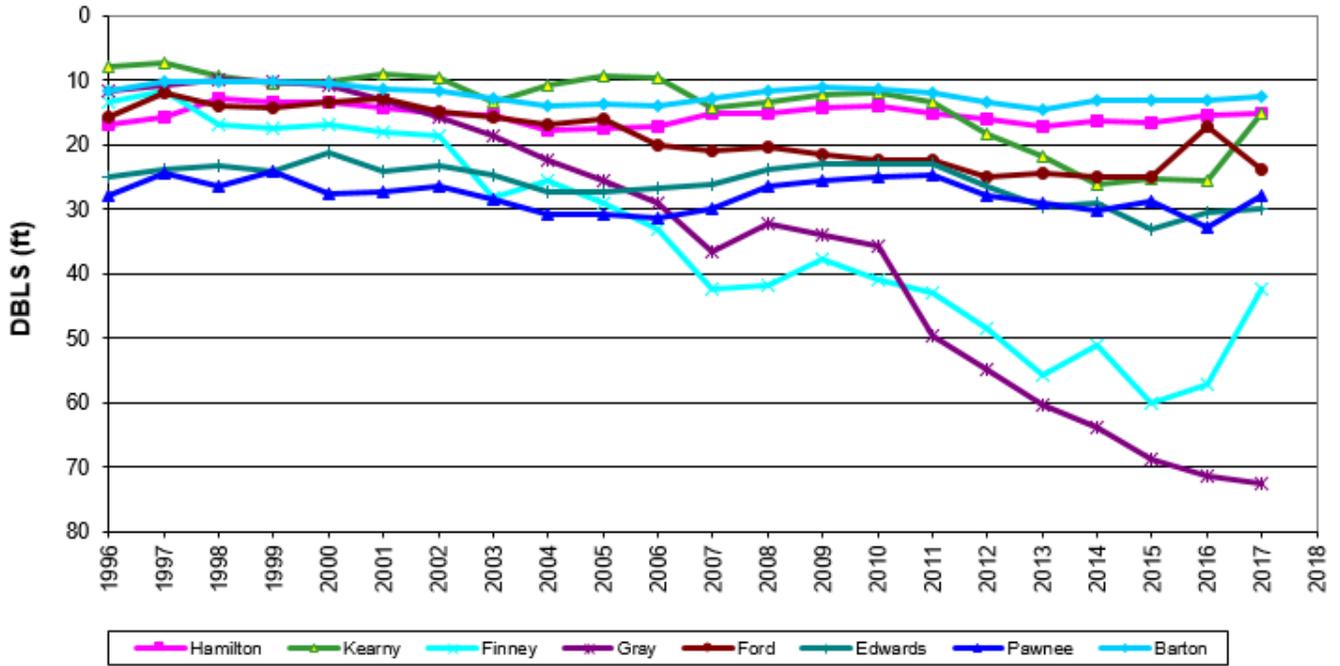
Upper and Middle Arkansas CREP Area 1980-2017



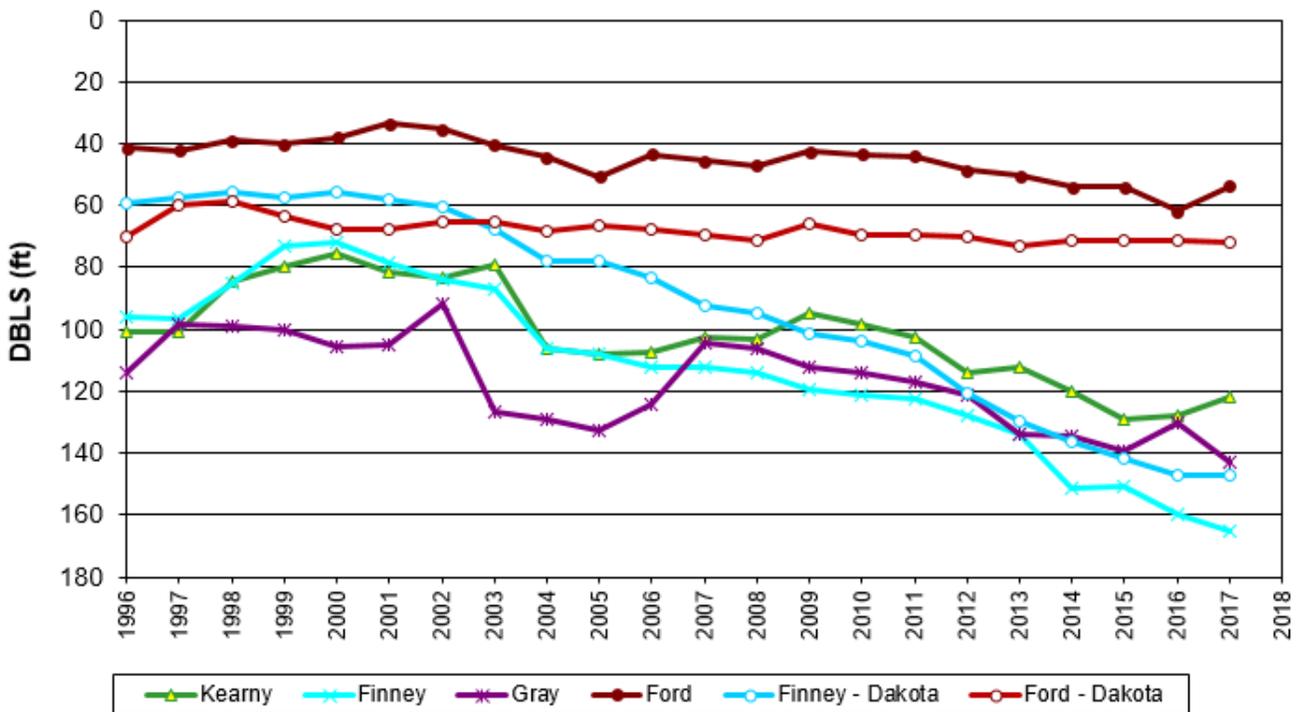
Kansas Department of Agriculture
Division of Water Resources
November 20, 2017



CREP Alluvial Water Levels



CREP Ogallala/Dakota Water Levels



**Attachment F
Steering Committee Minutes**

**CREP Steering Committee Meeting
Wednesday, September 27, 2017
10:00 AM
KDA Conference Room 322**

Attendees:

Rod Winkler (FSA); Andy Burr (NRCS); Ginger Pugh (DWR); Steve Frost (DOC). **Joining by phone:** Diane Coe (KWO); Don Whittemore (KGS); Mark Rude, Jason Norquest, Chris Law and Trevor Ahring (GMD#3); Orrin Feril (GMD#5); Joe Kramer (KAWS); Mark Goudy (FSA).

Proceedings:

Steve started the meeting with introductions and providing tentative updated enrollment numbers for the CREP program during the current federal fiscal year – October 1, 2016 to September 30, 2017:

County	Total Acres
BT	107.7
ED	127.5
FO, RI, SF	0.0
FI	3,157.8
GY	7,296.9
HM	242.9
KE	7,353.8
PN	372.4
Program Total to Date	18,659

- * 18,659 acres will be approved for enrollment
- * 317 additional acres were added in FY2017
- * 166 wells retired on 18,172 irrigated acres from 135 water rights
- * 37,999 acre-feet of annual water appropriation rights have been permanently retired
- * 112 state contracts approved for a total of \$1,210,511 in sign-up cost-share incentives
- * 99% are CP2 practice code (native grasses) – and 91% are Tier 1 / Unsuitable soils

Due to additional offers being received and approved in FY2017, the program recorded its first CREP enrollments from Barton and Edwards counties.

Program Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	TOTAL
Acres Enrolled	7,252	1,903	1,647	247	4,077	674	0	1,189	1,329	385	18,659

Steve reported on current efforts to raise the individual county caps from 7,327.5 acres top 10,000 acres - meaning that many pending offers awaiting additional acres to become available in Kearny and Gray counties can now be processed in FY2018. This new allowance will likely cause the enrollment to jump by at least 5,525 acres in the next year, which would bring the total acres approved to about 24,000 total acres. In cooperation with landowners, the Kansas CREP partnership continues to investigate innovative methods for encouraging participation and establishing improved conservation covers under challenging circumstances.

Agency Reports / Special Comments from the Agencies:

FSA – From the state office perspective, Rod Winkler discussed the beneficial effects which the CREP program is having in the western counties where water levels are decreasing substantially and how CREP will support “economic impact of the inevitable”. He stated that the general trend of rental rates in CRP is down significantly, but not in CREP programs (although these could also be taken under review). Currently, Congress has limited enrollment in all CRP programs to 24 Million acres, but the Upper Ark CREP project is protected up to the previously authorized level of 28,950 acres. The passage of a new Farm Bill in 2017 or 2018 could provide many new variations for future CRP enrollments. A question was asked about determinations of payment rates for offers which have been pending for a couple of years – Rod stated that the payment rates and water use eligibility would have to be analyzed in two ways (both before and after the rate increase), and then accordingly which incentive payment should be applied consistent with the applicable period of the water use records. FSA County Executive Director, Mark Goudy from Kearny County, reported on the trial grazing management waiver which is being conducted on some CREP fields. He said that the grass and other native vegetation is responding well to the “hoof action” - he is still very optimistic about the progress and results so far, indicating that the livestock grazing was having a beneficial impact on the sandy soils with hard pans as far as retaining moisture and allowing better seed germination and root growth.

NRCS – Andy Burr provided a brief report from NRCS which included ongoing activities to determine improved plant varieties / mixtures and seeding techniques for the problem sandy soils in the southwestern counties. Steve asked about the possibility of NRCS conducting some type of an analysis of overall field conditions / compliance based on the use of a sampling strategy. This idea will be discussed further with other NRCS officials. Rod Winkler questioned whether the present CREP effort could theoretically become more of a working grasslands project, with fencing and stockwatering facilities being provided through the EQIP program.

DWR – Ginger Pugh provided a progress update on DWR related CREP activities, noting especially that two new Water Conservation Areas have been approved for landowner groups within the CREP project area – these two efforts share mutual objectives and are very compatible for the entire water conservation initiative. She discussed the recent IT updates to the CREP website, which have been very successful. Ginger also mentioned that 2016 water use reports are now available for determining next year’s enrollment eligibilities, and she again offered her assistance to any team members needing help with water rights and data needs.

KGS – Don Whitemore talked about the CREP project economic evaluation report presented to the Kansas Legislature during the 2017 session. He noted that the analysis only includes information about crop loss from enrolled acres, but not the economic value of the water being conserved – which is a very important economic factor. Don also observed that water level gradients are being reduced because of the project, which also reduces treatment costs for industries and municipalities. In agency news - KGS is discontinuing the Kinsley river gage and replacing it with a site at Larned, and multiple studies are being conducted in the Local Enhanced Management Area of Northwest Kansas which can be interpolated to the CREP project area. KGS is also continuing their water quality work with GMD#3 on the surface water flows of the Ark River.

KWO – Diane Coe reported on the KWO’s newly formed Regional Advisory Committees and recent meetings of the Upper Arkansas RAC. Diane noted that support is being expressed by that RAC group for additional water conservation cost-share opportunities, and that the committee has also provided a recommendation for KDA and DOC to allow the enrollment acreage cap expansions for Kearny and Gray counties.

GMD5 – Orrin Feril stated that his groundwater management district is dealing with many big issues, and that it is in favor of promoting a CREP project expansion into the Rattlesnake Creek area, or adopting a CREP project specifically for the Ark River and Rattlesnake Creek areas. He reported that the directors of the district are also considering a LEMA for the Rattlesnake and Ark River basins which could compliment other voluntary, incentive based opportunities. In response to both KWO and GMD#5, Steve agreed to provide a report on the CREP and WTAP programs at the next Big Bend Prairie RAC meeting. Orrin updated progress on the GMD#5 index well program and how it relates to KGS activities of the hydrologic modeling effort there.

KAWS / DU – Joe Kramer reported on the second Playa Lake Symposium which is being conducted in Colby on January 9–10, 2018. Playa Lake Joint Ventures, KAWS and Ducks Unlimited are the main partnering organizations – KDA’s DOC will again provide another \$10,000 sponsorship toward the education information effort. Research has shown playas to be important sites and sources of recharge for the High Plains Aquifer, and the goals of the symposium are aligned well with the CREP project. Steve mentioned the CP9 (shallow water development area) conservation practice which is an approved part of the FSA CRP practices for the Upper Arkansas CREP - more education and information to promote this practice needs to be incorporated in future public outreach efforts. DU now has a full time biologist stationed in Garden City – Abram Lollar, who is available and assisting in the effort. KAWS is trying to make the playa lake project fit into the UAR CREP whenever and however it can.

GMD3 – Mark Rude discussed the comments from Don Whittemore about the need to quantify the “future value of conserved water”. Mark also noted the development of more KWO “Water Technology Farms”, two of which are now in the CREP project area. Mark also updated the committee on the possible prospects of a LEMA formation in the Kearny and Finny counties area, which could also work in concert with the desire of landowners to enroll land and water rights into CREP.

Data Needs for Monitoring Results:

It was again noted that many of the monitoring activities which are incorporated in the CREP MOA are difficult for the agencies to significantly undertake at this time – or to determine any significant changes in results or impacts due to the CREP project because of the broad expanse of the water wells and related water use occurring in the overall aquifer area, both inside and near CREP fields. Even though enrollment is still increasing at this time, almost the entirety of the enrollment has been located in areas of the “Tier 1 / Unsuitable” soils classification in heavy water use areas some distance from the river valley. We have not yet seen enough statistically significant regional water use curtailment attributable solely to CREP to monitor, and the recent drought continued to exacerbate this situation.

Enhancing Enrollment during 2017 – 2018:

Steve stated that with the possibility of more promotional meetings in GMD5, the GMDS may undertake some type of public contact on their own with the updated water right eligibility lists. Kansas is still looking for more ways to increase interest and enrollment in the CREP project. FSA, DOC, KWO and the GMDs will work to re-market and promote the program noting the higher rental / incentive rates and highlight successes of the grass establishment strategies.

Identification of Other Issues:

In regard to the annual report, Steve asked that all the team entities submit their costs and narratives of activities by early November. The next annual report is based on the federal fiscal year of October 1, 2016 to September 30, 2017. Committee members were also asked to update the “Progress on CREP Objectives” section for the next report, particularly highlighting the narratives and contributions of each of their agencies.

Items to be addressed again in the upcoming project year include potentially expanding the overall CRP project size, and evaluating results of the Kearny County grazing study and possible FSA project-wide approval for problem areas. The committee should begin addressing post-contract issues such as needs, special EQIP contracts, and involving academics and the research community on what has been learned from the project so far.

Conclusion:

The steering committee members were sincerely thanked for their time and efforts in fulfilling the mission of the CREP program. The meeting was concluded at 12:09 PM.