2024

THE KANSAS WATER AUTHORITY'S

ANNUAL REPORT

TO THE GOVERNOR AND LEGISLATURE

AD ASTRA PER ASPERA

Kansas

Water Office

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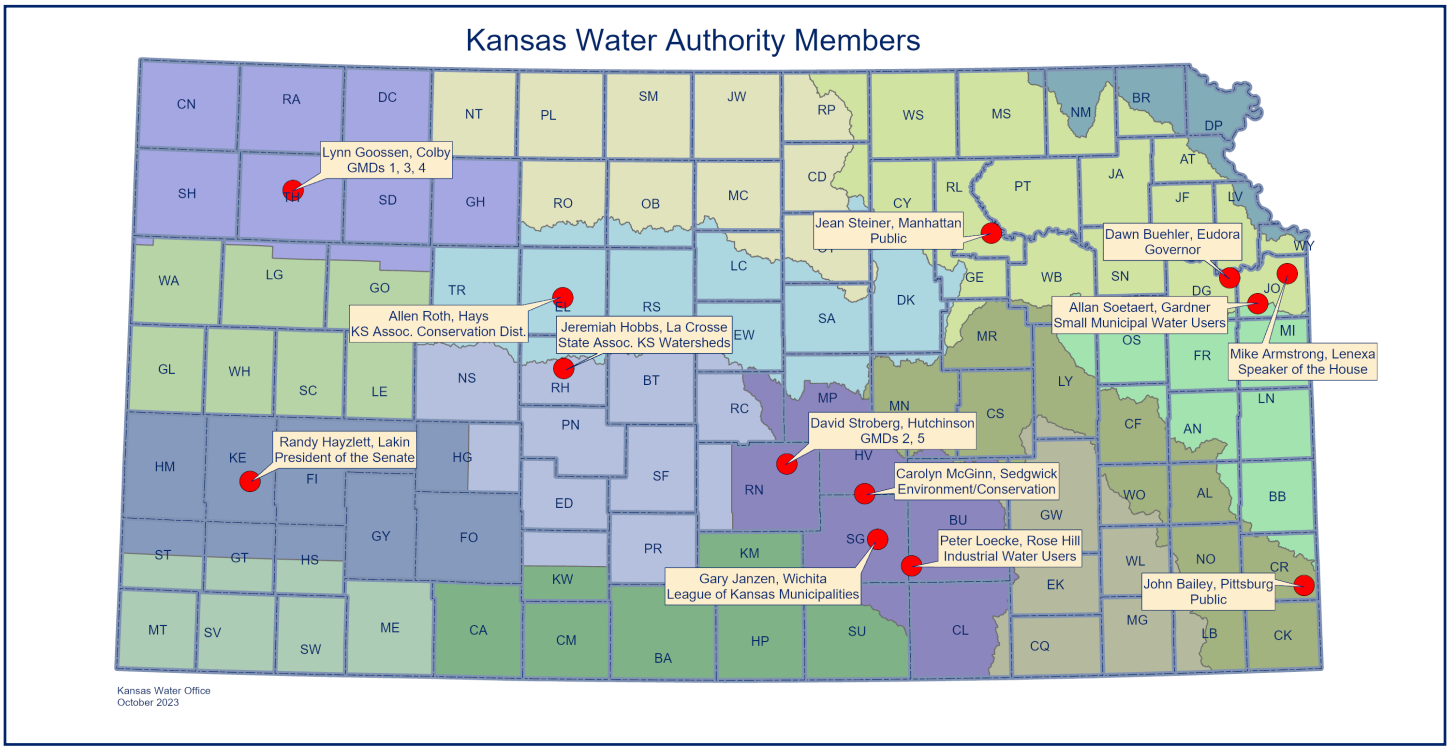
About the Kansas Water Authority

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



Voting Members:
Chair Dawn Buehler, Mike Armstrong, John Bailey, Carolyn McGinn, Randy Hayzlett, Gary Janzen, Peter Loecke, Lynn Goossen, Jean Steiner, David Stroberg, Allen Roth, Allan Soetaert, Jeremiah Hobbs

Ex Officio Members:
Earl Lewis (Division of Water Resources, KS Dept. of Agriculture), Brad Loveless (KS Dept. Wildlife & Park), Mike Beam (KS Dept. of Agriculture), Ernie Minton (Ag Experiment Station, KS State University), David Toland (KS Dept. of Commerce), Connie Owen (KS Water Office), Sara Baer (KS Biological Survey), Dwight Keen (KS Corporation Commission), Leo Henning (KS Dept. of Health & Environment), Jay Kalbas (KS Geological Survey)

Letter from the Chair

Governor Laura Kelly and Members of the 2024 Kansas Legislature

On behalf of the Kansas Water Authority (KWA), it is my pleasure to present our 2024 Annual Report to the Governor and Legislature. This report is presented to you in keeping with the responsibilities of the KWA to advise the Governor and Legislature on Kansas water policy matters and to share the priorities identified by the KWA relative to the expenditure of the State Water Plan Fund (SWPF).

The year 2023 was nothing short of historic for water in Kansas. The passage of House Bill 2279 and Senate Substitute for HB 2302 marked a bipartisan effort to make water a priority for Kansas. This historic moment marked the successful collaboration of stakeholders to help achieve this important milestone. This effort proves that good things can happen when we all work together. On behalf of the Kansas Water Authority and the Regional Advisory Committees, please accept our sincere gratitude to the Kansas Legislature and Governor Laura Kelly for making water a priority.

When we look back on 2023, the year will most notably be remembered by our fellow Kansans as the year of drought. This has created hardship for many people across the state. A conservation mindset is one of our best defenses against drought and the risks that come with it including crop failure, wildfires, and a lack of adequate drinking water. The Kansas Water Plan Fund is designed to assist by offering conservation resources to help mitigate the impacts of these extreme events. The urgency of water security should remain at the forefront of our minds as we move forward.

In keeping with the statutory duties of the Kansas Water Authority, we have composed policy recommends for inclusion in this report. This year we are highlighting funding, the Kansas Water Transfer Act, and regionalization. We encourage you to give these policy recommendations thoughtful consideration.

A secure and adequate funding source remains the key to fully implementing the Kansas Water Plan. The KWA continues to urge the Governor and Legislature to fully fund the statutory funding of $26 million for the Kansas Water Plan (in addition to the $13 million fee revenue that supports the SWPF). We know that this is not enough funding alone, as the cost to implement the Kansas Water Plan is estimated to be $69 million per year.

We face many challenges in securing a reliable and safe water supply. The Kansas Water Authority in collaboration with the Kansas Water Office, state agencies, and Regional Advisory Committees are ready to meet the challenges ahead and assist in a continued collaborative approach to find solutions.

The Kansas Water Authority looks forward to working with you during the 2024 Legislative session and continuing to highlight the needs across the state for water funding that adequately supports the implementation of the Kansas Water Plan. Coupled with a talented group of professionals at our state water related agencies, we stand ready for the challenges ahead. We are united in our goal to make water a priority for every single Kansan.

> “The urgency of water security should remain at the forefront of our minds as we move forward.”

We look forward to working with you to secure the long-term sustainability of Kansas and a healthy future for our children.

Sincerely,

Dawn Buehler, Chair
Kansas Water Authority

Executive Summary

The Kansas Water Authority is pleased to present its 2024 Annual Report to the Governor and the Legislature. The primary purpose of this report is to detail the FY 2023 accomplishments of programs and projects funded by the State Water Plan Fund. These programs and projects are generally broken into three categories, reflecting three of the Kansas Water Plan's Guiding Principles: (1) Ogallala Aquifer Initiatives, (2) Reservoir Water Supply and Sedimentation Management, and (3) Water Quality Initiatives. The Annual Report also includes the Kansas Water Authority's recommendations for state policy and a discussion of select current water issues.
This report is compiled with assistance from the Kansas Water Office, the Kansas Department of Agriculture, and the Kansas Department of Health and Environment.

Section 1: Introductory Information

- Background information on the Kansas Water Authority and Letter from the Chair of the Authority.

Section 2: Kansas Water Authority Recommendations for State Policy

- Recommendations concerning the State Water Plan Fund, regionalization, federal funding, and the Water Transfer Act.

Section 3: State Water Plan Fund Budget Information

- State Water Plan Fund revenue and expenditures for FY 2025.

Section 4: Kansas Water Plan Education and Outreach Strategy

- Activities related to increasing awareness of Kansas water resources.

Section 5: Ogallala Aquifer Initiatives

- Programs and projects targeted at addressing the depletion of the Ogallala Aquifer.

Section 6: Reservoir Water Supply and Sediment Management

- Programs and projects related to studying and reducing reservoir sedimentation.

Section 7: Water Quality Initiatives

- Programs and projects for improving surface water quality.

Section 8: Additional Water Issues

- Descriptions of select current water issues.

List of Acronyms

AIS - Aquatic Invasive Species
ASR - Aquifer Storage and Recovery
CREP - Conservation Reserve Enhancement Program
EDIF - Economic Development Initiatives Fund
DWPP - Drinking Water Protection Program
GMD - Groundwater Management District
HAB - Harmful Algal Bloom
KBS - Kansas Biological Survey
KCC - Kansas Corporation Commission
KDA - Kansas Department of Agriculture
KDHE - Kansas Department of Health and Environment
KDWP - Kansas Department of Wildlife and Parks
KGS - Kansas Geological Survey
KWA - Kansas Water Authority
KWO - Kansas Water Office
KWP - Kansas Water Plan
LEPP - Local Environmental Protection Program
RCPP - Regional Conservation Partnership Program
SGF - State General Fund
SWPF - State Water Plan Fund
TMDL - Total Maximum Daily Load
WID - Water Injection Dredging
WISE - Water Innovation Systems and Education
WRAPS - Watershed Restoration and Protection Strategy
WTAP - Water Transition Assistance Program
USACE - United States Army Corps of Engineers

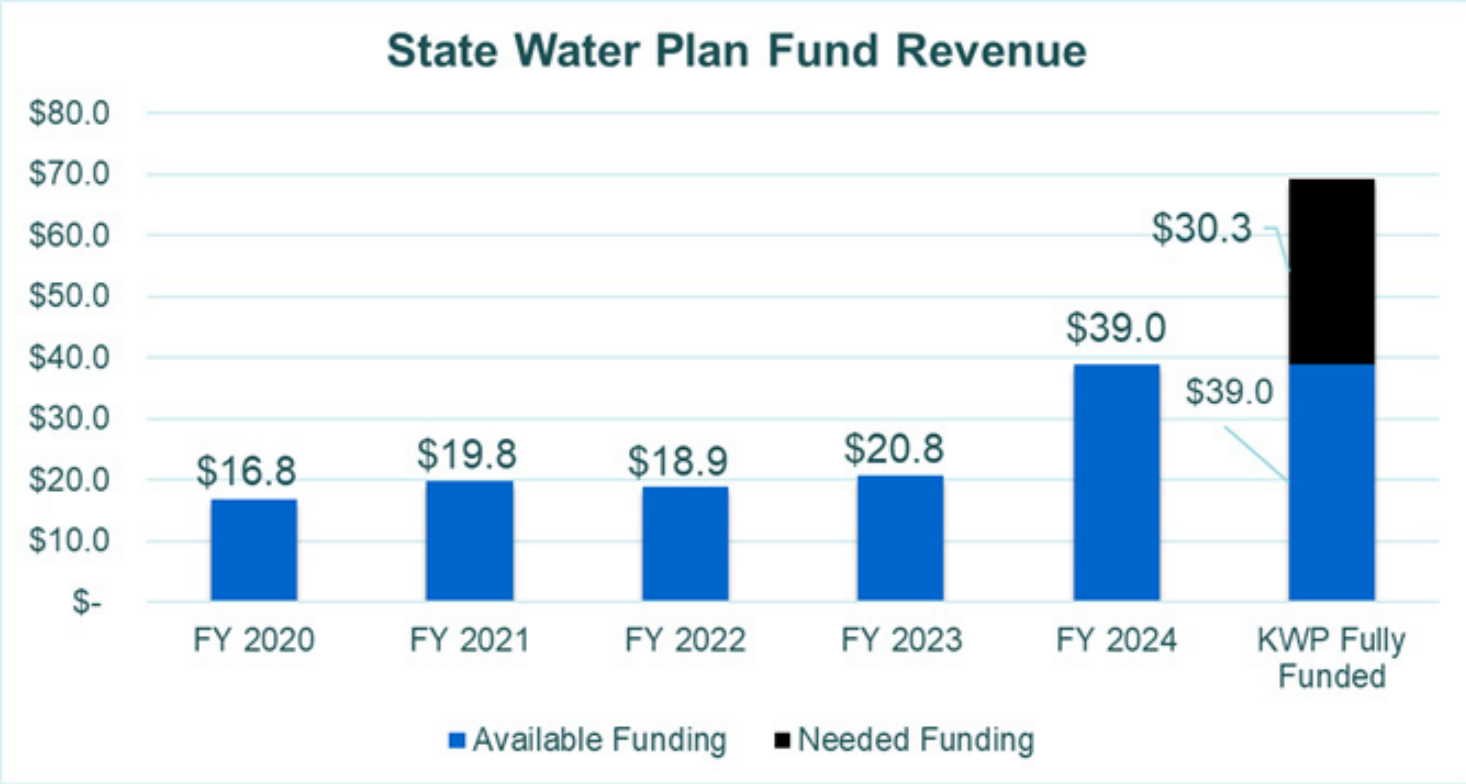
KWA Recommendations for State Policy

The Kansas Water Authority is charged with the duty to make recommendations to the Governor and the Legislature regarding the development, management and use of the water resources of the state (K.S.A. 74-2622, 74-2623). In keeping with this mandate, the Kansas Water Authority urges the Kansas Legislature and Governor to recognize and adopt the following recommendations for state policy.

State Water Plan Fund Transfers

The KWA is extremely appreciative of the additional $18.0 million appropriated to the State Water Plan Fund by Senate Sub. For HB 2302. This funding will allow for increased implementation of Kansas Water Plan programs and projects to address water quantity and quality issues across the State. However, the KWA notes that this funding is still not sufficient to meet all current program needs described in the Kansas Water Plan. State agencies estimate $69 million to fully implement the Kansas Water Plan. The KWA supports further action that would generate sufficient revenue to meet the program needs described in the Plan.

The Kansas Water Plan is still not fully funded. An additional $30 million is required to fully implement the Kansas Water Plan.



KWA Recommendations for State Policy (cont.)

Review the Kansas Water Transfer Act

The KWA recommends that the Legislature review the Kansas Water Transfer Act to determine if the Act still provides an effective and efficient water management process and consider any amendments to the Act that may be appropriate, such as adding "interbasin transfer" to the list of the matters to be considered in approving a water transfer.

Regionalization

The KWA encourages the Legislature and Governor to consider the opportunities and challenges of regionalization (shared resources) for public water infrastructure in order to benefit our Kansas citizens.

State Appropriations for Leveraging Matching Funds

The KWA encourages the Governor and the Legislature to continue to appropriate state funds which may be used to leverage additional federal, local, or private resources for priority projects. The 2023 Legislature appropriated $200 million to the Build Kansas Fund to provide state matching dollars for qualifying projects under the Bipartisan Infrastructure Law (BIL). BIL provides $55 billion to address drinking water, wastewater, water reuse, and water storage infrastructure issues. The Build Kansas Fund enables Kansas entities to apply for and achieve federal local match requirements over the next 4 years. Many of the qualifying BIL projects reflect Kansas Water Plan programs, projects, and recommendations. The Kansas Water Authority encourages continuation of the Build Kansas Fund.

The 2023 Legislature also appropriated $10.0 million for the Small Town Infrastructure Assistance Program for water and sewer infrastructure projects for water and wastewater utilities serving populations less a 1,000. These funds will assist communities to upgrade or repair their drinking and wastewater facilities and return to compliance with federal requirements. KDHE received more than $85 million in requests for funding from this program. Financing for such projects is a priority of the KWA as some Kansas communities experience high levels of uranium and nitrates in their drinking water supplies. The KWA encourages additional funding for this program both to directly assist communities with these projects and to potentially serve as cost-share for federal grants.

State Water Plan Fund Recommendations

In 1989, the SWPF (K.S.A. 82a-951) was created and is used for establishing and implementing water-related programs or projects identified in the Kansas Water Plan. Revenue for the SWPF is received from fees assessed to municipal, industrial, and agricultural water-related users and includes demand transfers (statutory) from the SGF ($6 million) and EDIF ($2 million). In 2023, the Legislature established an additional transfer of $35 million from the SGF to the SWPF for FY 2024 as shown in the table below. The KWA supports continuation of the full $8 million SGF/EDIF annual demand transfer to the SWPF and of the additional $18 million SGF transfer.

The KWA supports continuation of the full $8 million SGF/EDIF annual demand transfers and of the additional $18 million appropriation to the State Water Plan Fund.

State Water Plan Fund Revenue Estimate

SWPF Revenue Estimates	FY2023 Actuals	FY2024 Estimates	FY2025 KWA/Agency Recommendations
Beginning Balance	$ 10,674,570	$ 17,334,928	$ 2,406,696
Transfers and Adjustments			
State General Fund Transfer	$ 6,000,000	$ 6,000,000	$ 6,000,000
Economic Development Fund Transfer	$ 2,000,000	$ 2,000,000	$ 2,000,000
Release of Prior Year Encumbrance (A&R)	$ 1,344,248	$ -	$ -
Other Service Charges (MPSL)	$ 51,164	$ 50,000	$ 50,000
Other Misc Revenue	$ 1,543		
HB2302 SGF Transfer Into SWPF		$ 35,000,000	$ 35,000,000
HB2302 Transfer out - Water Technical Assistance Grant		$ (5,000,000)	$ (5,000,000)
HB2302 Transfer out - Water Project Grant		$ (12,000,000)	$ (12,000,000)
SUBTOTAL - Adjustments	**$ 9,396,954**	**$ 26,050,000**	**$ 26,050,000**
Receipts			
Clean Drinking Water Fee Fund	$ 3,134,598	$ 2,900,000	$ 2,909,000
Fertilizer Registration Fees	$ 3,417,586	$ 3,900,000	$ 4,000,027
Industrial Water Fees	$ 845,887	$ 850,000	$ 850,000
Municipal Water Fees	$ 3,253,153	$ 3,200,000	$ 3,200,000
Pesticide Registration Fees	$ 1,572,300	$ 1,525,027	$ 1,480,000
Stock Water Fees	$ 511,136	$ 500,000	$ 450,000
Pollution Fines and Penalties (KDHE)	$ 28,488	$ 70,000	$ 70,000
Sand Royalties	$ --	$ 30,000	$ 16,000
SUBTOTAL - Receipts	**$ 12,763,148**	**$ 12,975,027**	**$ 12,975,027**
Total Available	$ 32,834,673	$ 56,359,955	$ 41,431,723
Less: Expenditures	$ 15,499,744	$ 53,953,260	$ 40,571,498
Ending Balance	**$ 17,334,928**	**$ 2,406,696**	**$ 860,225**

Fee Type	Statutory Fee Amount
Clean Drinking Water Fee	$0.03 per 1,000 gallons
Fertilizer Registration Fee	$1.40 per ton
Industrial Water Fee	$0.03 per 1,000 gallons
Municipal Water Fee	$0.03 per 1,000 gallons
Pesticide Registration Fee	$100 per annual registration
Stock Water Fee	$0.03 per 1,000 gallons
Sand Royalties	$0.15 per ton

State Water Plan Fund Expenditure Recommendations

Agency/Program	FY2023 Actuals	FY2024 Appropriation w/carry forward, WID Supplemental and pay plan adj	FY2025 KWA Recommendations
Department of Health and Environment			
Contamination Remediation	$ 1,084,800	$ 1,184,570	$ 1,605,578
LEPP	$ -	$ 250,000	$ 650,000
Nonpoint Source Program	$ 209,692	$ 727,701	$ 430,587
TMDL Initiatives	$ 307,041	$ 544,059	$ 391,378
Drinking Water Protection Program	$ 513,396	$ 1,150,374	$ 800,000
Watershed Restoration/Protection (WRAPS)	$ 722,500	$ 1,418,384	$ 1,000,000
Harmful Algae Bloom Pilot	$ 569,354	$ 348,012	$ 150,937
Surface Water Trash Removal	$ -	$ 50,000	$ 50,000
NEW: Ark River Ditch Lining			$ 1,000,000
NEW: Aquifer Recharge Basin			$ 500,000
NEW: Ground Water Quality Monitoring Network			$ 1,060,000
NEW: WRAPS Effectiveness Monitoring			$ 200,000
SUBTOTAL- KDHE	**$ 3,406,783**	**$ 5,673,099**	**$ 7,838,480**
Department of Agriculture			
Interstate Water Issues	$ 395,833	$ 923,976	$ 527,927
Subbasin Water Resources Management	$ 632,982	$ 1,210,304	$ 673,847
Water Use Database Modernization	$ 35,871	$ 280,273	$ 250,000
Water Resources Cost Share	$ 2,122,059	$ 4,736,236	$ 5,000,000
Nonpoint Source Pollution Asst.	$ 1,486,389	$ 2,672,018	$ 1,866,598
Aid to Conservation Districts	$ 2,473,373	$ 2,502,706	$ 3,502,706
Dam Construction Rehabilitation	$ 550,000	$ 650,000	$ 3,000,000
Water Quality Buffer Initiative	$ -	$ 635,432	$ -
Riparian and Wetland Program	$ 86,910	$ 733,308	$ 154,024
Water Transition Assistance Program/CREP	$ 189,377	$ 1,344,631	$ 1,554,142
Irrigation Technology	$ 274,998	$ 683,978	$ 2,550,000
Crop and Livestock Research	$ 150,000	$ 450,000	$ 450,000
Soil Health	$ -	$ 420,944	$ 400,000
Streambank Stabilization	$ 756,436	$ 1,078,153	$ 1,500,000
SUBTOTAL- KDA	**$ 9,154,227**	**$ 18,321,958**	**$ 21,429,244**
Kansas Water Office			
Assessment and Evaluation	$ 419,105	$ 1,571,153	$ 2,231,255
MOU - Storage Operations & Maintenance	$ 503,309	$ 763,315	$ 719,824
Stream Gaging	$ 413,580	$ 458,258	$ 448,708
Conservation Assistance for Water Users	$ 302,769	$ 489,940	$ 500,000
Reservoir and Water Quality Research	$ 316,539	$ 717,185	$ 550,000
Water Quality Partnerships	$ 41,787	$ 1,447,511	$ 1,464,890
KS Water Plan Education & Outreach Strategy	$ 5,892	$ 717,018	$ 750,000
High Plains Aquifer Partnerships	$ 51,560	$ 1,124,842	$ 2,000,000
Kansas Reservoir Protection Initiative (KRPI)	$ 632,895	$ 1,557,683	$ 1,500,000
Equus Beds Chloride Plume Remediation Project	$ -	$ 100,000	$ 75,000
Flood Response Study	$ -	$ 400,000	$ -
Arbuckle Study	$ -	$ 360,000	$ 300,000
Water Injection Dredging (WID)	$ -	$ 2,000,000	$ -
HB 2302	$ -	$ 18,000,000	$ 500,000
SUBTOTAL- KWO	**$ 2,687,436**	**$ 29,706,905**	**$ 11,039,677**
Department of Wildlife & Parks			
Aquatic Nuisance Species (ANS) Program	**$ 224,457**	**$ 224,457**	**$ 224,457**
University of Kansas--Geological Survey	**$ 26,841**	**$ 26,841**	**$ 39,640**
Total State Water Plan Expenditures	**$ 15,499,744**	**$ 53,953,260**	**$ 40,571,498**

KWA Performance-Based Budgeting

Kansas Water Plan Budget Guidelines

Recognizing the purpose of the SWPF is to implement the KWP, and the adoption of performance-based budgeting by the state in recent years, the KWA adopted a set of budget guidelines in January 2020.

The KWO has worked with the other agencies to categorize the SWP-funded programs into the major water resource issues they are primarily addressing (see table below) in order to determine priorities and to evaluate measures of success.

With limited resources, the KWA continues efforts to balance the competing needs and requests for the SWPF, and to identify which programs and practices will provide the biggest return on investment. As indicated in the table below, many of the programs address multiple issues.

Category	Program Name	Agency	FY2025 KWA Total Recommendations
Groundwater Initiatives	Water Transition Assistance Program/CREP	KDA	$1,554,142
	Irrigation Technology	KDA	$2,550,000
	Crop and Livestock Research	KDA	$450,000
	High Plains Aquifer Partnerships	KWO	$2,000,000
	Kansas Geological Survey	KGS	$39,640
Groundwater Initiatives & Water Quality	Interstate Water Issues	KDA	$527,927
	Subbasin Water Resources Management	KDA	$673,847
	Water Use Database Modernization	KDA	$250,000
GW Initiatives, WQ & Res. WS & Sed	KS Water Plan Education & Outreach Strategy	KWO	$750,000
	Assessment and Evaluation	KWO	$2,231,255
	HB2302	KWO	$500,000
Water Quality	Contamination Remediation	KDHE	$1,605,578
	Nonpoint Source Program	KDHE	$430,587
	TMDL Initiatives	KDHE	$391,378
	Harmful Algae Bloom Pilot	KDHE	$150,937
	Watershed Restoration/Protection	KDHE	$1,000,000
	WRAPS Effectiveness Monitoring	KDHE	$200,000
	Drinking Water Protection Program	KDHE	$800,000
	LEPP	KDHE	$650,000
	Surface Water Trash Removal	KDHE	$50,000
	Groundwater Quality Monitoring Network	KDHE	$1,060,000
	Ark River Ditch Lining	KDHE	$1,000,000
	Aquifer Recharge Basin	KDHE	$500,000
	Nonpoint Source Pollution Asst.	KDA	$1,866,598
	Soil Health	KDA	$400,000
	Conservation Assistance for Water Users	KWO	$500,000
	Equus Beds Chloride Plume Remediation Project	KWO	$75,000
	Water Quality Partnerships	KWO	$1,464,890
	Arbuckle Study	KWO	$300,000
	Aquatic Nuisance Species Program	KDWPT	$224,457
Water Quality/Res. Water Supply & Sedimentation	Aid to Conservation Districts	KDA	$3,502,706
	Riparian and Wetland Program	KDA	$154,024
	Stream Gaging	KWO	$448,708
	Reservoir and Water Quality Research	KWO	$550,000
Reservoir Water Supply & Sedimentation	**Water Resources Cost Share**	**KDA**	**$5,000,000**
	Dam Construction Rehabilitation	**KDA**	**$3,000,000**
	Streambank Stabilization	**KDA**	**$1,500,000**
	MOU - Storage Operations & Maintenance	**KWO**	**$719,824**
	Kansas Reservoir Protection Initiative (KRPI)	**KWO**	**$1,500,000**

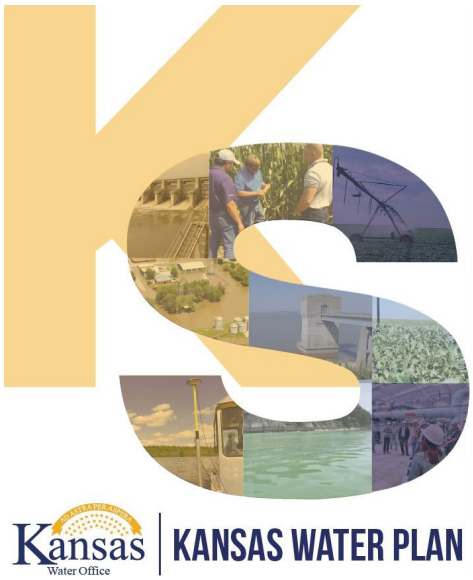
Kansas Water Plan 5-Year Update

Incorporation of Vision & Updated RAC Goals and Action Plans

The Kansas Water Office, in coordination with local, state, federal, and interstate partners, has developed the 5-year update of the Kansas Water Plan (KWP). This update of the KWP was discussed and approved by the KWA at their August 2022 meeting.

The updated KWP includes incorporation of the 'Long Term Vision for the Future of Water Supply in Kansas', as well as an appendix of the goals and action plans submitted by the 14 RACs.

The updated KWP includes strategies to address ongoing and emerging water resource issues of the state, including focused efforts on groundwater declines, decreasing reservoir water supply storage lost to sedimentation, statewide water quality issues, and increasing awareness of these water issues across the state.



Kansas Water Plan Education & Outreach Strategy - FY 2025 Request $750,000

During development of the Vision for the Future of Water Supply in Kansas as well as the more recent Kansas Water Plan, stakeholders statewide highlighted the need for increased strategic education and outreach on state water resources for all ages to help develop and promote a culture of water conservation across Kansas. More recently, this recognition to the value of water-related education and outreach and the need of resources to dedicate towards advancing efforts to increase the awareness of Kansas water resources has been a topic of discussion with members of the House Water Committee as well as Regional Advisory Committees. Education and outreach activities to be supported by these SWPF resources could include:

- Launching and maintaining a statewide water awareness marketing campaign and Kansas water resource information sharing through a centralized website;
- Partnering with the Kansas Department of Education and other water resource partners to develop and implement Kansas water specific related education resources and curriculum; and
- Establishing and hiring a statewide Water Education & Outreach Specialist position within the Kansas Water Office.

The Kansas Water Office in 2023 contracted for the upcoming year with a technical service provider, Kansas Association for Conservation & Environmental Education, after a request for proposals was announced. The service provider will provide the technical assistance necessary to inventory existing water curriculum followed by potential modification and/or development of Kansas water specific lessons and resources to support educators in connecting students to their Kansas water resources across a variety of Kansas landscapes.

[2023 Initiative Accomplishments]

Education and Outreach

45,471 adults

reached by KWO Planning and Outreach Team at events such as the WISE Tour, Governor's Water Conference and various workshops and trainings.

Youth Programs

3,142 youth

reached by KWO Planning and Outreach Team at events such as Earth Day at the Topeka Zoo, the Twin Lakes Water Festival and other community outreach events.

OGALLALA AQUIFER INITIATIVES

Water Conservation Areas/Local Enhanced Management Areas

Subbasin Water Resources Management (KDA) – FY 2025 Request -$673,847
Water Use (KDA)- FY 2025 Request - $250,000

Water Conservation Areas

WCAs are designated areas with an approved management plan developed by a water right owner or group of water right owners with approval by the chief engineer to reduce groundwater pumping while maintaining economic value via water right flexibility. WCAs provide additional flexibilities to water right owners to extend the usable lifetime of the Ogallala-High Plains Aquifer.

Flexibilities include elements such as:

- Multi-year water right allocations.
- Moving allocations between enrolled water rights.
- Allowing for new uses of water.

[2023 Initiative Accomplishments]

Water Conservation Areas

44 active WCAs with 59,421 total enrolled acres. To date the program has saved an estimated 17,109 af/yr.

Local Enhanced Management Areas

24% reductions by the SD-6 LEMA from historical water use. There are currently four approved LEMAs in the state of Kansas with varying water use reduction goals.

Local Enhanced Management Areas

A LEMA is a tool that allows Groundwater Management Districts to propose water conservation goals and control measures, with the approval by the chief engineer. Sheridan County 6 (SD 6), was the first approved LEMA in Kansas. After proposing a water conservation goal of 20%, LEMA participants almost doubled it, reducing withdrawals by 37% during its first five-year period.

Groundwater Management District (GMD) No. 4 has since developed another LEMA, which regulates nearly their entire district.

The success of GMD No. 4's execution of LEMAs has motivated other GMDs to look towards implementing them into their regions as well.

In 2021, GMD No. 1 implemented its Wichita County LEMA. In 2022, the district initiated the LEMA process to cover the remaining counties, which was approved by the Chief Engineer in 2022. Both GMD No. 1 LEMAs intend to cut water use by 10%-15% from recent levels.

KDA Irrigation Technology - FY 2025 Request $2,550,000

As groundwater declines continue to impact aquifer conditions and surrounding hydrology, producers are becoming more interested in implementing innovative tools to improve irrigation water management.

This funding is used to improve irrigation efficiency and reduce water use by providing cost-share assistance to landowners for irrigation technology.

The Irrigation Technology program is currently focused on all Kansas Groundwater Management Districts. The program works in conjunction with the Kansas Groundwater Management Districts to increase effectiveness and leverage additional resources to improve technology utilization across high water level decline areas in the High Plains Aquifer.

[2023 Initiative Accomplishments]

Water Technology Initiative Reach

16 total counties provided irrigation technology applications in FY 2023.

Irrigation Technology

18K+ acres were improved with the FY 2023 funding through irrigation management to date (twice the amount of FY 2022).

KWO High Plains Aquifer Partnerships - FY 2025 Request $850,000

Water technology efforts have grown into a new comprehensive Water Innovation Systems and Education (WISE) initiative, providing public/private partnership support that focuses on fostering the implementation of field practices, technology and management strategies for industrial, agricultural, and municipal water applications with the goals of measurable and scalable ground water conservation, improved water quality, and overall soil and ecological health. The initiative is an expansion of KWO's Water Technology/PACE Farm programs and includes support towards the development of a state-wide Master Irrigator and innovation farm cost-share program.

The High Plains Aquifer Partnerships funding line provides additional state resources to leverage federal, local, and private resources from across western Kansas with a priority on conserving and extending the Ogallala-High Plains Aquifer. Potential uses of this funding include water reclamation and reuse projects as well as other activities which look to conserve water resources within the High Plains Aquifer region of Kansas.

KDA Water Transition Assistance Program/Conservation Reserve Enhancement Program FY 2025 Request $1,554,142

The purpose of the Water Transition Assistance Program (WTAP) is to reduce Historic Consumptive Water Use (HCWU) in targeted areas by permanently retiring irrigation water rights with incentive-based cost-share. Priority areas are targeted and approved by KDA-DOC with recommendations from GMDs in applicable areas.

WTAP differs from the Conservation Reserve Enhancement Program (CREP) in that:

- The funding mechanism is solely state-driven.
- Partial water rights can be retired.
- Dryland farming is allowed.

As a result of the 2022 enrollment, DOC accepted a bid of $74,726 to voluntarily dismiss one irrigation water right authorizing 297 acre-feet per year on 148 acres from 2 wells. An additional sponsorship of $30,000 forwarded through Playa Lakes Joint Venture significantly contributed to the final execution and success of this mutual agreement. As a result, a total of 151.3 acre-feet of HCWU has now been permanently retired from the City of Tribune and City of Leoti municipal well fields in the Greeley and Wichita counties target area in 2021 and 2022.

CREP is a federal and state partnership where 80% of the costs are paid by USDA. Incentives include annual federal rental payment and a state sign-up incentive, and additional cost-share funding for implementation. Enrollment is now officially open in the Rattlesnake Creek sub-basin.

The CREP project is designed to permanently retire water rights in the Upper Arkansas River Basin and the Rattlesnake Creek Sub-basin, a 13-county project area in western and south-central Kansas, while also providing other related benefits such as soil conservation, water quality protection, energy savings, and wildlife habitat enhancement. A landowner is compensated for agreeing to enroll in continuous CREP, permanently retire related irrigation water rights and plant a permanent cover (e.g. prairie grass or wildlife habitat mixture) on the contracted land. So far, 216 irrigation wells and 172 water rights have now been voluntarily dismissed in the Ark River project area through enrollment of 23,866 acres with 48,325 acre-feet of annual water appropriations retired.

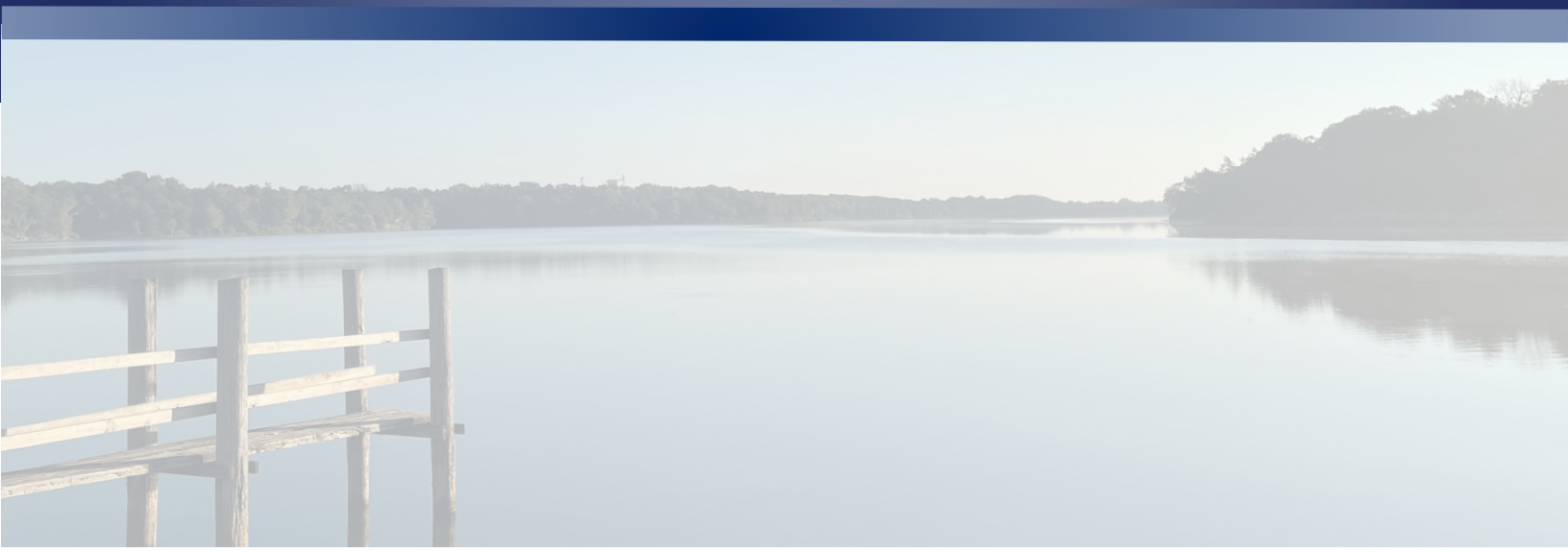
Index Well Network & Modeling

Funded through KWO Assessment and Evaluation Program

The KWO and KGS have a continued partnership to develop, monitor, and expand the High Plains Index Well Network. The overall objective of the index well program is to better understand groundwater conditions on regional and local scales. Index wells are used to calibrate annual water level measurements to aid in aquifer evaluation and management. The network currently consists of 36 index wells, 30 with real-time access and 6 that are updated quarterly. KWO's Assessment and Evaluation program continues to provide funding for these efforts, utilized in conjunction with funds from participating GMDs to contract with KGS for groundwater model updates and enhancements.

The KGS completed models for GMD No. 2 and GMD No. 4 in 2020 and 2021, respectively, and is currently working on a model for GMD No. 3.

RESERVOIR WATER SUPPLY & SEDIMENT MANAGEMENT

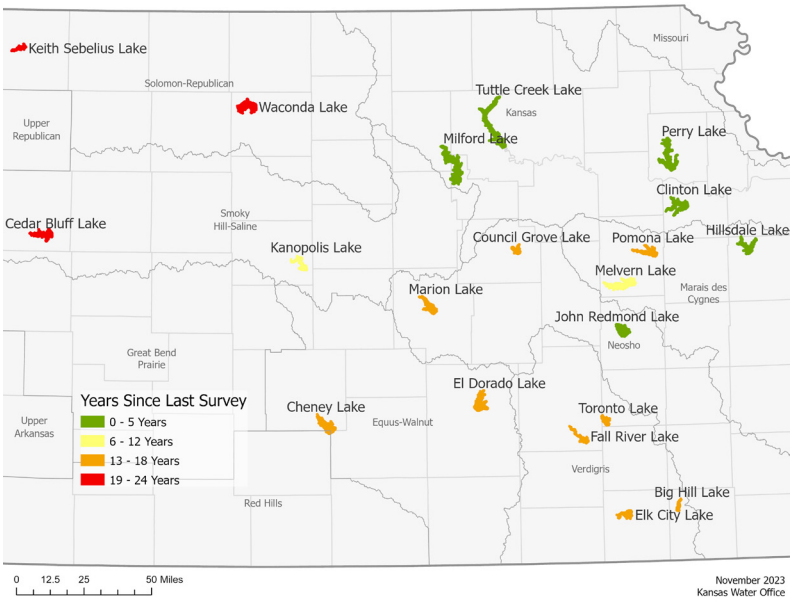


KWO Bathymetric Survey Program
Funded through KWO Reservoir and Water Quality Research Program

Kansas reservoirs are being filled with sediment, some at a faster rate than others, reducing the amount of water available for water supply, flood control, and recreational benefits to the citizens and industries of the state. The KWO is working to increase data collection and future reservoir volume estimates, while looking into new initiatives to extend the usable lifetimes of our reservoirs.

In 2019, the KWO launched the Bathymetry and Storage Evaluation (BaSE) program to increase the frequency of bathymetric data collection for Kansas water supply reservoirs/lakes. These underwater surveys estimate water depth and topography to determine how much sediment has accumulated on the bottom of the reservoir. The most recent surveys are compared to past surveys to establish an annual rate of siltation.

The BaSE program will allow KWO to work towards completing bathymetric surveys on a five-year rotation on multiple reservoirs, to gain a better understanding of reservoir conditions and sedimentation rates impacting future water supply planning.

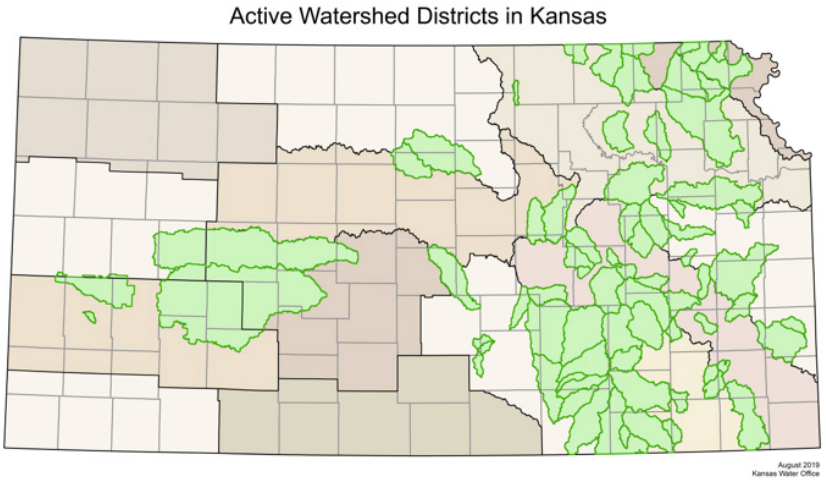


[2023 Initiative Accomplishments]

KWO Bathymetric Survey Program

4 surveys were completed in 2023 at John Redmond, Xenia, Critzer Dam, and Cedar Valley Lake. Drought conditions limited the number of lakes that could be surveyed.

KDA Dam Construction and Rehabilitation
FY 2025 Request $3,000,000



This program provides financial assistance to owners of regulated dams including organized watershed districts, drainage districts, other recognized organizations, and private owners. Dam construction and rehabilitation in Kansas is driven by both increasing demands for flood control and overall aging of the state's dam inventory. A February 2023 report from the Association of Dam Safety Officials estimates that the cost to rehabilitate the high hazard potential dams in Kansas will total $650 million. In past years, there have been few requests for construction of new structures due to restrictive federal mitigation requirements causing increasing costs. For FY 2024, KDA-DOC has so far received cost-share applications amounting to $711,933 for rehabilitation of 6 existing flood control dams and to start construction on two new dams.

KWO Water Injection Dredging

Sediment filling valuable reservoir storage is a significant problem throughout Kansas. Recent estimates from the KWO indicate that approximately 50% of Tuttle Creek Lake's original conservation pool storage capacity has been lost due to sedimentation. In response to this issue, the KWO has been working with the U.S. Army Corps of Engineers (USACE) Kansas City District and the USACE Engineer Research and Development Center (ERDC) to pursue a Water Injection Dredging (WID) demonstration at Tuttle Creek Lake. The project is a collaborative effort, with the State having appropriated a total of $2 million for the demonstration and USACE receiving a total of $4.1 million in federal funding.

The proposed demonstration project includes the following major components:

1. Contractor agreement for the operation of necessary WID equipment and vessel(s)
2. Demonstration of the WID prototype at Tuttle Creek Lake at different elevations and flow discharges
3. Monitoring and evaluation of both the operational and environmental results

The demonstration will evaluate if injecting water into the reservoir bed to resuspend sediment and allowing it to be discharged downstream through the low-level outlet, using WID, is a viable means of sustaining long-term use and water storage at Tuttle Creek Lake and other reservoirs. Current efforts are focused on contracting for operation of the WID equipment and vessel, project coordination and outreach, environmental compliance evaluations, and development of monitoring and implementation plans. The project is planned to be a multi-phase demonstration, occurring in spring, summer, and fall, with an anticipated start date of late 2024 or early 2025.

KDA Streambank Stabilization
FY 2025 Request $1,500,000

Streambank stabilization continues to be a key component in the reduction of sediment entering our water supply reservoirs. The KDHE, KDA-DOC and KWO coordinate efforts, resources and pooled funding to accomplish streambank protection aimed at reducing erosion in priority watersheds.

Streambank Stabilization efforts continue to be concentrated in three priority Kansas watersheds above Federal reservoirs:

- Tuttle Creek Lake
- Perry Lake
- John Redmond Reservoir

[2023 Initiative Accomplishments]

Streambank Stabilization

7 sites under construction or completed this year. These sites were contributing a total 44,318 tons of sediment per year prior to stabilization.

KWO Kansas Reservoir Protection Initiative
FY 2025 Request $1,500,000

Water storage is being diminished over time due to reservoir sedimentation. Water quality is also being impacted in both streams and reservoirs by nutrient runoff, potentially resulting in harmful algal blooms, taste and odor issues with drinking water, and impacts to recreation in Kansas.

To help address these concerns, watershed conservation practice implementation within priority watersheds above key reservoirs protects water supply storage and improves water quality through the reduction of sediment and nutrient runoff.

For the initial five years of the Kansas Reservoir Protection Initiative program, these funds provided financial assistance to landowners in the Fall River, Kanopolis, John Redmond and Tuttle Creek watersheds for sediment-reducing practices. Last year, three additional watersheds were added to this program including Perry, Hillsdale, and Pomona. This requested level of funding would provide the opportunity to support continued initiative efforts in all seven watersheds.

Read more:

[2023 Initiative Accomplishments]

Kansas Reservoir Protection Initiative

37,453 tons of sediment was estimated to have been reduced from KRPI funded practices.

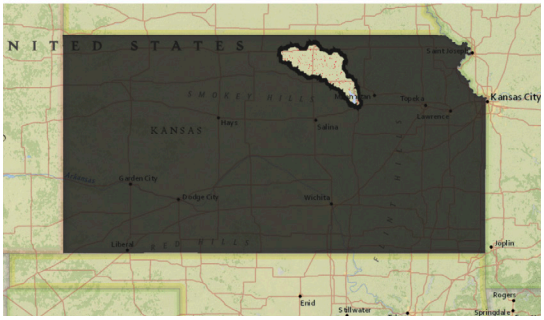
Common types of practices to reduce sediment and nutrient runoff include:

- **cover crops**
- **grassed waterways**
- **buffer strips**

WATER QUALITY INITIATIVES

KWO Water Quality Partnerships
FY 2025 Request $1,464,890

Current and future Milford Lake Watershed RCPP efforts have demonstrated the benefit of having SWPF resources available for leveraging with federal, local, and private resources to address water quality issues of regional or statewide priority. This SWPF budget line provides increased state funding for leveraging opportunities which support overall efforts to improve our state's water quality. These leveraging opportunities provide the potential for additional watershed conservation practice implementation benefiting surface and groundwater quality as well as development and enhancement of partnerships to facilitate enhanced conservation practice implementation with a goal of improving Kansas water quality.



Through the Milford Lake RCPP, technical and financial assistance are available to agricultural producers to improve nutrient management, benefiting watershed health.

A portion of the Water Quality Partnerships funding will provide future partnership contribution support for a renewed 5-year term of the Milford Lake Watershed Regional Conservation Partnership Program (RCPP) Project. The Milford Lake Watershed RCPP is a collaborative effort to improve water quality in Milford Lake and the upstream watershed, helping to implemented best management practices which decrease watershed nutrient runoff, thus decreasing the introduction of nutrient loading, which helps prevent the formation of Harmful Algal Blooms in Milford Lake. Throughout the duration of the project term, nearly $4.5 million in federal technical financial assistance was obligated towards the project, along with over $3 million in additional cash and in-kind partner resources to improve water quality conditions in the watershed.

KDHE Contamination Remediation - FY 2025 Request $1,605,578

The Orphan Sites Program (OSP) in KDHE's Bureau of Environmental Remediation uses money from the SWPF for the assessment and remediation of contaminated sites where the responsible party is unknown or unable to undertake the necessary cleanup action. The purpose of this program is to protect human health while protecting the environment from the effects of hazardous chemicals or pollutants to soil, sediment, groundwater, surface water, or other natural resources of the state. Sites which pose the most serious threat to the public and the environment are remediated. There are currently 134 orphaned sites in the program.

KDA State Aid to Conservation Districts - FY 2025 Request $3,502,706

A Conservation District is the primary local unit of government responsible for conservation of soil, water and related natural resources within the county boundary. Kansas Conservation Districts are political subdivisions of state government charged with this vital role.

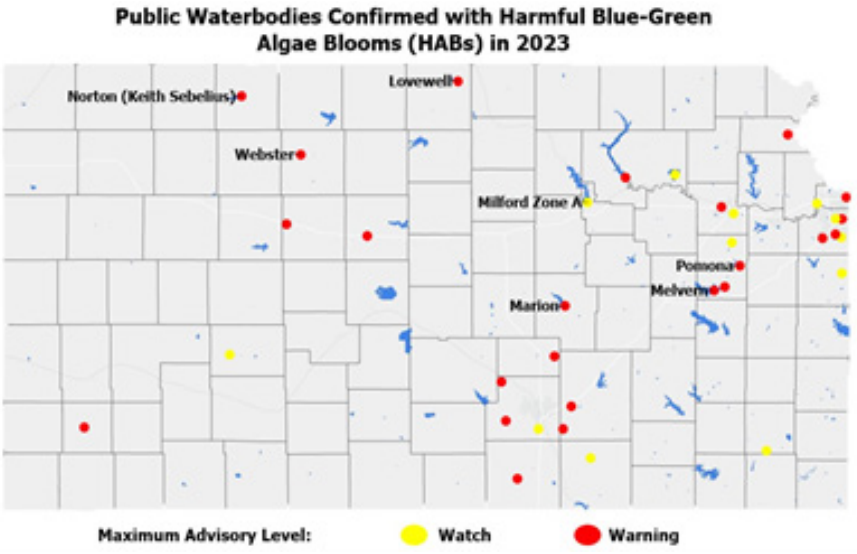
The State Aid to Conservation Districts program provides funds that the KDA-DOC requests through the State Water Plan Fund budgeting process, for conservation district activities implementing local, state and federal programs identified in the Kansas State Water Plan. KDA-DOC requests up to $25,000 per district of SWP funds to match the amount of funding provided each district by the county in which the district is located. (K.S.A. 2-1907c.)

Program funding is utilized by conservation districts to assist landowners in implementing the KSWP, including best management practices that improve natural resources, as well as to provide information and education reaching all ages through field days, workshops, and school visits.

Obtained data and analysis would provide guidance on appropriate actions needed to protect this valuable resource and its economic benefit to Kansans, and to address any associated seismicity and water quality risks.

KDHE Harmful Algal Bloom Pilot Project - FY 2025 Request $150,937

In 2023, 36 waterbodies/zones within the state of Kansas had Harmful Algal Bloom (HAB) advisories. HABs can produce potent toxins that can cause human and animal illness or even death. The HAB mitigation pilot project investigates and demonstrates in-lake treatment options to reduce the frequency and duration of these blooms. The objective is to assess the effectiveness of such treatment options at minimizing the impact of HABs in Kansas public lakes.



Most of the $150,000 appropriation is for investigation of algae blooms and evaluation of certain prevention and treatment options, such as nutrient control and peroxide algaecide application. Selection of strategies corresponds to the variety of lakes in the state, with initial emphasis on Marion Reservoir and Milford Gathering Pond as model systems. Those reservoirs have proven to be challenging to manage because of scale considerations. Smaller public lakes in Kansas are now being investigated for efficacy in treatment, particularly before the summer bloom season.

Some of the activities this year included:

- Maintaining in-lake sensors, and sampling for modeling nutrient dynamics that foster algal bloom development, in Milford Lake and Marion Reservoir.
- Increasingly using satellite imagery to detect the emergence of blooms before they are reported by the public or lake managers and to corroborate on-site observations of blooms.
- Evaluating preseason treatments of granular peroxide to destroy or limit algal cells residing in the sediments and prevent or minimize blooms in the summer.
- Manipulated Milford Lake storage pools over the winter before spring runoff and passed summer inflows through the reservoir, thereby lowering the duration and magnitude of severity of algal blooms.

[2023 Initiative Accomplishments]

Harmful Algal Bloom Pilot Project

Big Eleven Lake in Kansas City had two short week long blooms in the summer of 2023 after preseason treatment, compared to 19 and 28 consecutive weeks of bloom in 2019 and 2021, respectively.

The goal is to evaluate effective mitigation practices, recognizing that the Kansas federal reservoirs are logistically too large for treatment. Therefore, emphasis has shifted to treatment of smaller public lakes, with applications of algaecide in the spring before blooms develop.

KDA Soil Health - FY 2025 Request $400,000

Soil Health funding provides resources to the KDA-DOC for soil health-related initiatives across Kansas. FY 2024 accomplishments include sponsorship of the “Soil Health U” and “No-Till on the Plains” conferences that feature innovative farmers, ranchers, and researchers educating others on the benefits of soil health and regenerative agricultural practices. Sponsorships included attendance scholarships for conservation district representatives and Kansas landowners and operators. These funds have also been used as leverage in partnership with the NFWF/ADM Midwest Cover Crop Initiative that in turn accounted for 100,000 acres of cover crops being planted in Kansas. Thirteen local conservation districts were provided grants for workshops that gave farmers and ranchers an on-the-ground look at soil health practices. On farm demonstrations were conducted with ten landowners implementing cutting edge soil health practices on their own farms, providing opportunities to test new technologies. Funds were also utilized to incentivize thirty-nine Kansas landowners and operators to plant cover crops on their farms.

KDHE Drinking Water Protection Program - FY 2025 Request $800,000

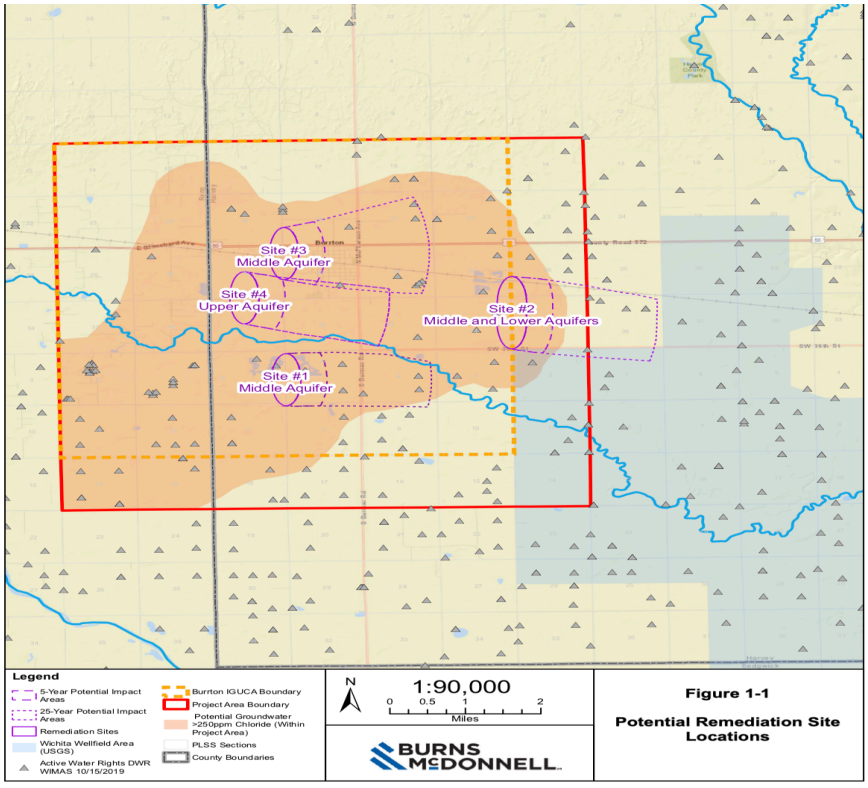
The Drinking Water Protection Program (DWPP) has two components.

- Ensure all Kansas communities have a clean, healthy, affordable drinking water source by planning and implementing strategies to prevent and mitigate contamination.
- Analyze the impacts of naturally occurring minerals on water used for human consumption from private water wells in some Kansas regions.

There are currently nine communities actively participating in the DWPP program. The investigation needs of each Public Water Supply (PWS) vary depending on current monitoring capability and assessment needs. KDHE contracts with technical service providers to investigate the source water area. The average cost of an investigation ranges from $20,000 to $120,000. Investigation results will determine strategies and plans unique to the PWS needs. The average cost of completing a study ranges from $100,000 to $150,000 with the program. DWPP is working with communities to address nitrates in the public drinking water wells. The cities of Andale, Dighton, Kanopolis, Palmer, Isabel and Sylvia are currently in various stages of study and implementation. The DWPP continues to assess regional impacts of naturally occurring minerals, in both Northwest and Southwest Kansas mineralization studies.

KWO Equus Beds Chloride Plume Remediation Project FY 2025 Request $75,000

Groundwater in the Burrton area of western Harvey County continues to be impacted by elevated chloride concentrations, primarily caused by historic oil field operations in the region dating back to the 1930s. The plume of high chloride groundwater is expanding and migrating southeast in the Equus Beds Aquifer, threatening to impact a larger area of the aquifer which is used for municipal, industrial and agricultural water supplies.



Additional monitoring wells were installed by the Kansas Corporation Commission in 2023 which will be maintained by Equus Beds Groundwater Management District No. 2 (GMD2). These additional wells will provide improved groundwater quality monitoring data across the Equus Beds and help further characterize the spatial extent of the chloride plume along with other areas of lower quality groundwater within the region.

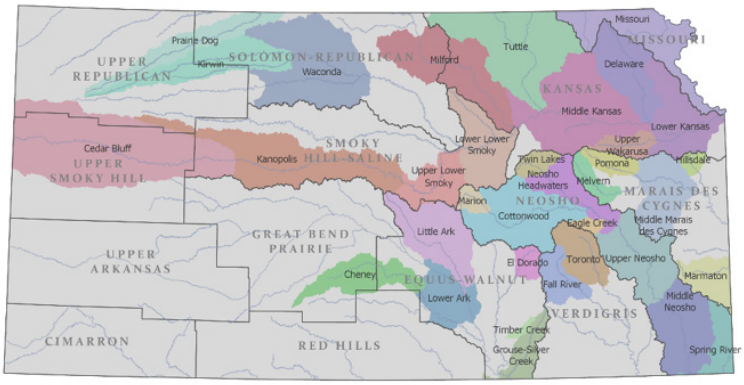
This groundwater quality monitoring network and associated data, along with updated information from the previously completed feasibility study report from 2020, will help guide further coordination between GMD2, the City of Wichita, state agencies and other partners in an effort to identify a preferred remediation project alternative. Additional information on this preferred alternative is anticipated in the first part of 2024.

KDHE Watershed Restoration and Protection Strategy (WRAPS)
FY 2025 Request $1,000,000

The WRAPS Program contributes to the Kansas Nutrient Program Management Plan through the implementation of a voluntary targeted watershed-based program funded by the Clean Water Act 319 and SWP.

This program seeks citizen and stakeholder input and participation in identifying watershed protection issues and restoration needs, establishing watershed protection and restoration goals, developing 9-Element Watershed Plans to achieve established goals, and implementing fully developed plans.

Regional Planning Areas and WRAPS Project Areas



May 2019
Kansas Water Office

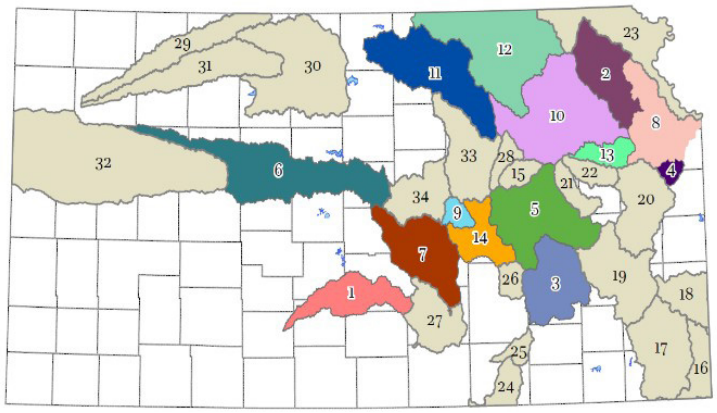
The WRAPS Program targets Best Management Practices for watershed restoration activities in impaired watersheds designated as high priority for implementation through Total Maximum Daily Loads to benefit watershed health.

KDHE 9-Element Watershed Plans identify and outline priority areas for BMP implementation as well as needed pollutant load reduction amounts to improve water quality and remove waterbodies from KDHE's 303(d) List of Impaired Waters. Current 9-Element Plans collectively serve and protect 45% of the state's total land surface (24,576,154 acres). This includes most watersheds draining into large federal reservoirs.

The Kansas Reservoir Protection Initiative priority areas for reservoirs applies the priority areas identified in the 9-Element Watershed Plans completed for WRAPS. The SWP funds are leveraged 4-to-1 with CWA 319 funding to improve water quality in Kansas.

KDHE WRAPS Effectiveness Monitoring
FY 2025 Request $200,000

Reductions in sediment and nutrient loading from the Watershed Restoration and Protection Strategy (WRAPS) program's practices are modeled estimates for sediment, phosphorous and nitrogen and reported annually. To determine if these estimates are correct, water quality monitoring is necessary to confirm and inform future implementation. These impaired watersheds, 303(d) listed, many having a Total Maximum Daily Load (TMDL) could potentially be delisted if significant improvement can be proven with an intensive regimented sampling protocol over a 2- year period. This is the true measure of the whether water quality programs, policies and practices are having an impact on the health of Kansas surface waters. A 5-year monitoring effort to provide metrics for water quality improvements.



Learn more about WRAPS:

Sampling and analysis will be performed by college and university teams within their respective locations. Data will support the next 5-year update of the Non-Point Source Management Plan in 2029. These data help to continue to make the case for continued and enhanced EPA Section 319 funding to address non-point source pollution which is currently leverage 4 to 1 with SWPF allotted for the WRAPS programs.

KDA Non-Point Source Pollution Assistance FY 2025 Request $1,866,598

This program is administered through the KDA-DOC and provides financial assistance to landowners for the establishment of conservation practices. The primary goals are (1) water quality protection and restoration in watersheds with TDMLs, (2) information and education for adults and youth, and (3) other water quality issues.

Similar to the Water Resources Cost Share program, funds are appropriated to county conservation districts for program implementation. The local conservation district determines landowner limits, project limits and top resource concerns. 2023 program accomplishments include:

- Erosion and Sediment Control practices now offered in the Non-Point Source Program
- Irrigation Water Management practices now offered in the Non-Point Source Program
- All eligible practices and components offered in all 105 Kansas Counties
- Practice payment rates are now consistent from county to county across the state
- 13k plus acres protected by implemented non-point source program projects
- 6k plus acres of cover crops planted

Some of the practices implemented through the Non-Point Source Pollution Assistance Program include:

- **Abandoned-well plugging**
- **Ponds**
- **Pasture and rangeland planting**
- **Cover Crop**
- **Cross fencing**
- **Livestock waste management**
- **Nutrient management grid sampling with variable rate fertilizer application**

KDA Water Resources Cost Share Program - FY 2025 Request $5,000,000

The Water Resources Cost-Share program provides financial assistance to landowners for the establishment of conservation practices in the form of cost-share contracts. Goals of the program are to prevent soil erosion and reduce sedimentation, nutrient and pesticide runoff, and fecal coliform bacteria in targeted public water supply reservoirs and to increase irrigation efficiency through irrigation technology initiatives. Funds are appropriated to county conservation districts for program implementation. The local conservation district determines landowner limits, project limits and top resource concerns.

Some of the most common Water Resources Program cost-share practices are terraces and waterways, ponds, pasture and rangeland planting, filter strips, cross fencing, water wells and pumping plants. Irrigation technology practices such as automated soil moisture probes, mobile drip irrigation systems and remote monitoring systems are offered through county conservation districts and through special initiatives implemented by DOC during the fiscal year.

Changes and highlights of the Water Resources Cost-Share Program in FY 2023 include:

- Nutrient Management practices now offered in the Water Resources Cost-Share Program
- Soil Health practice now offered in the Water Resources Cost-Share Program
- All eligible practices and components offered in all 105 Kansas Counties
- Practice payment rates are now consistent from county to county across the state
- 55k plus acres protected by implemented water resource program projects
- 14k plus tons of sediment reduced by implemented water resource program projects

KWO Arbuckle Study - FY 2025 Request $300,000

At the request of Governor Kelly, an Arbuckle Study Group, representing a variety of state agencies and stakeholders, was formed and began meeting in 2020 with a goal of addressing fundamental data needs to characterize the Arbuckle's disposal and storage capabilities for continued long-term safe use. In January 2021, the Kansas Geological Survey (KGS) was contracted to begin a study of Class II wells at which static fluid level, density, and bottom-hole pressure data could be acquired. Methodologies developed and implemented at these locations were to be evaluated to determine the accuracy and functionality of various measurement techniques for future routine acquisition of time-lapse data across a broader Arbuckle monitoring network.

In early 2022, the KGS completed a "Report on Feasibility Study of Regional Arbuckle Properties in South Central Kansas; Now and Planning for the Future" which proposed to evaluate methodologies and develop a testing protocol for accurately and functionally acquiring Arbuckle fluid data on a routine basis across spatially optimized network of Arbuckle monitoring wells. In spring 2023, the KGS completed and shared with the Arbuckle Study Group an "Interim Report on Feasibility Study of Regional Arbuckle Properties in South Central Kansas; Now and Planning for the Future" which included analysis of supplemental testing the KGS commissioned in a Class I well in October 2020 that provided insights into the optimal design of Arbuckle fluid data acquisition procedures. Additionally, the report included data acquired at two Kansas Corporation Commission (KCC) wells in 2022, updated static fluid level maps and analysis, compilation of annual disposal volumes for Class I and II wells, and discussion of potential placement of future monitoring wells.

The KGS is currently finalizing a "Final Report on Feasibility Study of Regional Arbuckle Properties in South Central Kansas: Now and Planning for the Future" which will be published as a KGS open-file report. Though difficulty identifying suitable sampling wells and obtaining consent for accessing privately owned wells slowed progress in accomplishing key milestones, the KGS was ultimately able to collect measurements in three Class II wells under the supervision of the KCC in Barber, McPherson, and Sedgwick counties and two Class II wells in McPherson and Marion Counties that will be included in the report. Additionally, the report will have further discussion of KGS well testing and development of protocols for future data acquisition from a network of Arbuckle wells, updated static fluid level and disposal volume analysis, and discussion of potential placement of future monitoring wells and expansion of the monitoring well network.

The KWO is continuing to work with the KGS to pursue identification of, and access to, wells that would be suitable for data collection and that could lay the groundwork for the development of an expanded monitoring network capable of answering some of the basic questions in areas of high priority. Considerations for development of the network also include determining if any abandoned wells could be reworked and outfitted to provide reliable data or, if needed, contracting drilling of new monitoring wells for long-term surveillance in critical locations. Obtained data and analysis will provide guidance on appropriate actions needed to protect this valuable resource and its economic benefit to Kansans, and to address any associated seismicity and water quality risks.

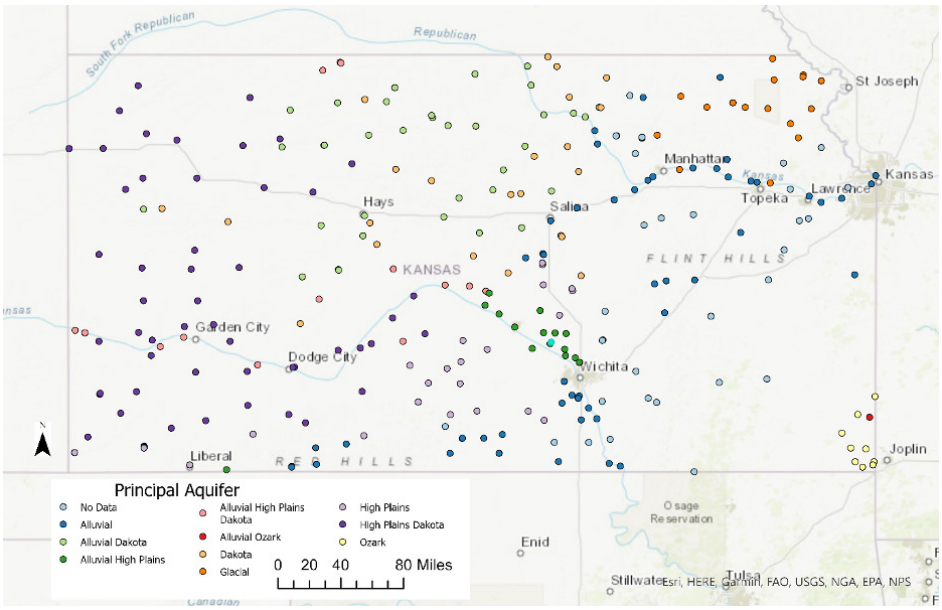
KWO Produced Water Pilot Project

The Kansas Water Office previously secured a Bureau of Reclamation WaterSMART grant to help fund a project to address produced oil field water. This produced water is a by-product of oil production having a high chloride content along with other dissolved minerals and oil which is currently being injected into the Arbuckle formation. In partnership with Fisk/Neptune, the University of Kansas (KU) and the Kansas Water Office, equipment is being developed to treat produced water. The project site located in Barber County near Hardtner has a deep disposal well with chloride levels often measuring over 120,000 ppm.

The most recent sample collected at the site had chlorides at 125,000 ppm and Boron at 17 ppm. These values need to be reduced to 250 ppm and 4 ppm, respectively, to meet stock water/irrigation requirements. Current requirements for human consumption limits are 250 mg/L for chloride and 2 mg/L for Boron. Manufacturing delays have resulted in a request for an extension from the Bureau with anticipated delivery of equipment in late spring of 2024. There will be a 60-day period during which the equipment will be operated and evaluated, after which KU will issue a final report. The report will also evaluate the potential to repurpose residuals such as chlorides to off-set the need to mine this material.

KDHE Ground Water Quality Monitoring Network
FY 2025 Request $744,108

Rising occurrences of nitrate contamination of ground water, uranium incursion in the Arkansas River alluvium and underlying High Plains Aquifer, and saltwater intrusion in the Equus Beds and Big Bend Prairie aquifers have been underappreciated because of the cessation of the state's ground water quality monitoring network since 2002.



A new initiative was funded by the FY 2024 appropriation from Senate Substitute for HB 2302 to initiate a new network to monitor the ground water resources of the state. The initial outlay of $1,006,000 is directed by KDHE to the Kansas Geological Survey to acquire the necessary equipment and staff to establish the new network. Ongoing appropriations are anticipated to maintain staff, logistical and analytic support of the network in the coming years. This new FY 2025 SWPF budget request by KDHE will be used by KGS to begin Phase 1 of the network development, including the first round of sampling up to 150 wells throughout the state for nitrate, chloride, arsenic, selenium, uranium and ammonia. Compilation of available data, focused on data from GMD#2, will be completed and a data portal for management and access will be developed. The anticipated FY 2025 budget will comprise expenditures for staff, web platform design, lab analytics and consumable supplies and field travel.

KDHE Surface Water Trash Removal – FY 2025 Request $50,000

This requested funding will provide resources for Topeka and Lawrence to evaluate trash capture features at stormwater outfalls discharging to the Kansas River. Additionally, the funding will be used to support for community events raising awareness and educating citizens on the consequences of lax trash control leading to trash impairments in Kansas streams. Trash is the most publicly apparent impairment to Kansas streams. Environmental advocates and non-governmental organizations (NGOs) have sponsored several stream clean-ups over the years and will be supported on future voluntary efforts along the Kansas River. Additionally, much trash is delivered to rivers through runoff from urban areas. Practices installed and managed by local public works departments with state assistance should reduce those loadings. This request continues a pilot effort funded by the original State Water Plan Fund and an additional appropriation through Senate Substitute for HB 2302 to assess the effectiveness of these approaches in improving river aesthetics and quality.

KDHE Local Environmental Protection Program (LEPP)
FY 2025 Request $650,000

SWPF support for LEPP provides funding and technical assistance to enable local authorities to develop water protection plans that complemented other water quality efforts being implemented by state and federal agencies. At the core of each plan is the adoption and enforcement of county environmental codes with an emphasis on onsite wastewater systems and private water wells. The LEPP works to ensure Kansas communities have access to support to ensure the proper and safe treatment of contaminated water for both human health and environmental health.

KDHE Total Maximum Daily Load Program - FY 2025 Request $391,378

The Clean Water Act requires states to identify all water bodies where state water quality standards are not being met. Every two years, a list of impaired waters is submitted to the EPA for approval, utilizing water quality data associated with the KDHE targeted stream, biological and lake monitoring networks.

The waters listed in the Section 303(d) list require a TMDL. The TMDL sets a limit for the maximum amount of a contaminant that a water body can receive and still meet standards. TMDLs are developed consistent with Kansas' TMDL Prioritization Framework, which focuses on stream phosphorus and nitrate impairments since 2012. A variety of local, state, and federal programs utilize the 303(d) list and TMDLs to establish watershed restoration, protection, and funding priorities to address contributing pollutant sources, particularly sediment, nutrients, and pathogens.

A few updates from this past year include:

- Initiated modeling at KU of the Hillsdale Lake watershed to evaluate impacts of southern Johnson County growth.
- Completed development of a multi-metric index to relate the presence of particular species of macroinvertebrates found in streams to the condition of those streams and the stressors that are impacting the aquatic community.
- Completed trend assessment of the water quality on the middle and lower Kansas River over the past fifty years.
- Established a conductivity sensor on the lower Smoky Hill River to inform downstream public water supply utilities along the Kansas River of anticipated high loadings of chloride and bromide in their water supply.

[2023 Initiative Accomplishments]

TMDL Initiatives

Seven pollutants out of nine were found to have decreased over time under low flow conditions on the Kansas River since the 1970s. Levels of sediment, bacteria, nitrogen, chloride and total dissolved solids have declined over the past 40-50 years. Five of those pollutants also showed declines at average flows. Declines may be attributed to improved treatment of wastewater and conservation practices in the Kansas River watershed.

KDWP Aquatic Invasive Species Program - FY 2025 Request $224,457

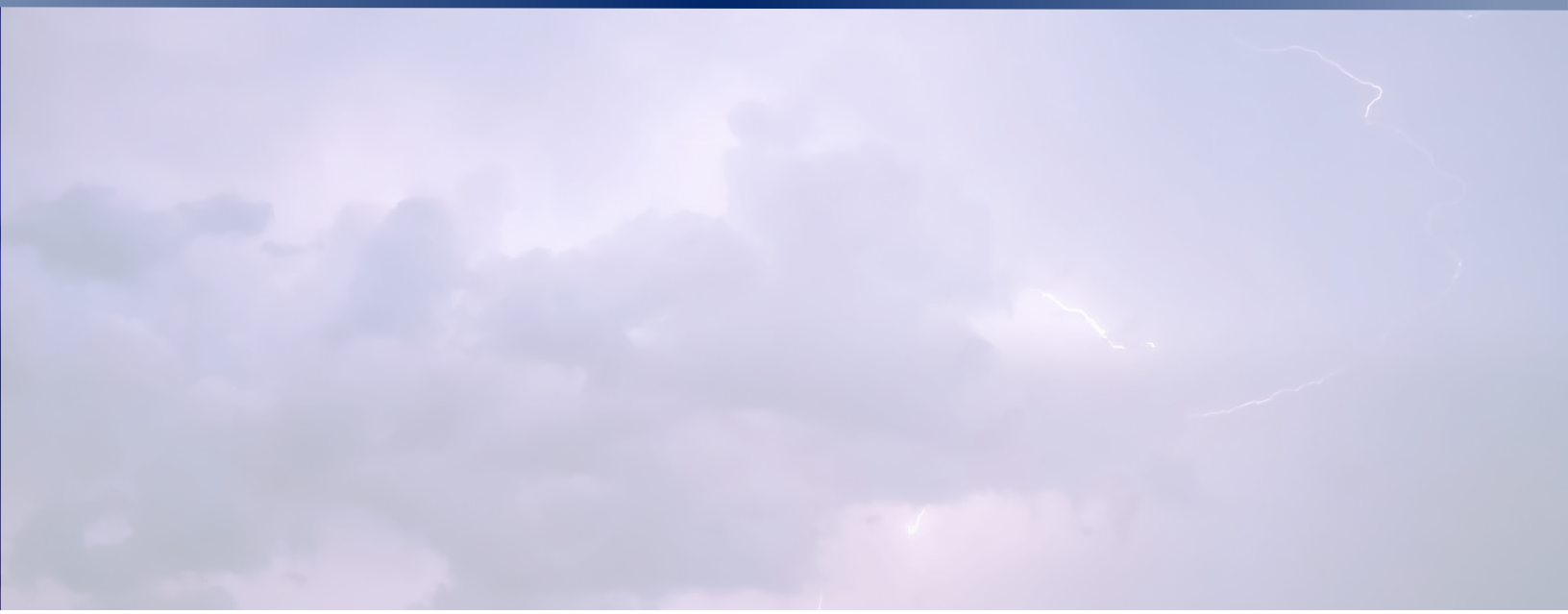
Aquatic Invasive Species (AIS) are non-native species whose introduction does or is likely to cause economic or environmental harm or harm to human health. AIS can diminish food supplies and degrade habitat for native species (which is the primary cause for the listing of 49% of threatened and endangered species), foul intakes and water supply infrastructure, decrease quality of municipal water sources, damage power generating facilities, reduce numbers and variety of desirable wildlife, reduce recreational activities such as fishing and boating, lower property values, and increase the risk of flooding due to impacts to water control infrastructure.

In 2005, the Kansas AIS Management Plan was completed and tasked the Kansas Department of Wildlife and Parks with leading AIS management efforts in Kansas. The goals of the Kansas AIS Management Plan are:

- To prevent new introductions of AIS to Kansas
- To prevent dispersal of established populations of AIS into uninfested waters in Kansas
- To eradicate or control to minimize the adverse ecological, economic, social, and public health effects of AIS in an environmentally sound manner
- To educate all aquatic users of AIS risks and how to reduce the harmful impacts
- To support research on AIS in Kansas, and develop systems to disseminate information

SWP funds for FY 2023 were used to purchase five CD3 brand mobile boat cleaning stations. These cleaning stations provide tools and information for lake users to clean their boats and other aquatic equipment prior to or after recreating at a waterbody, preventing both introduction and dispersal of AIS. Additionally, the boat cleaning stations create an eye-catching opportunity to provide AIS education to all lake users. As the units are mounted on trailers and easily relocated, the units were deployed at multiple waterbodies in 2023.

ADDITIONAL WATER ISSUES



KWO Water Marketing Program Capital Development and Storage Maintenance Plan Update

Water Supply Storage in United States Army Corps of Engineers' Reservoirs

The Kansas Water Office (KWO) administers the State's Water Marketing, Water Assurance, and Water Supply Access programs which utilize federal reservoirs to help meet water supply needs. The State of Kansas has purchased water supply storage space in fourteen United States Army Corps of Engineers (USACE) reservoirs. Water users, primarily municipal and industrial, must participate in one of the three programs to access water stored in these reservoirs. The state's capital investment costs for the contracted storage were financed by the USACE and the three public water supply programs are reimbursing the state for the costs incurred, including annual operations and maintenance (O&M).

Water Assurance Program

The members of an Assurance District are entirely responsible for their proportionate share of the capital investment costs and O&M costs. Members are municipal and industrial water right holders downstream from reservoirs where the District has purchased storage. The District also reimburses the state for costs associated with administration and enforcement (A&E) related to the management of reservoir storage. Membership is mandatory.

The Water Supply Access Program

The members of an Access District are entirely responsible for their proportionate share of the capital investment costs and O&M costs. The members are municipal and irrigation water right holders downstream from reservoirs where the District has purchased storage. The District also reimburses the state for costs associated with A&E related to the management of reservoir storage. Membership is voluntary.

Water Marketing Program

The Water Marketing Program is a wholesale raw water utility. Revenue is generated from the sale of water to municipal and industrial customers, typically through 40-year water purchase contracts. The water is sold at a cost per 1,000 gallons and the rate ($) is set annually by the Kansas Water Authority (KWA). Program expenses also include capital investment costs, O&M, and A&E costs to reimburse the state. In addition to these baseline expenses, the Water Marketing Program and the KWA have identified costs associated with reservoir sustainability efforts as an imperative program need. The annual rate for water sales include a component to generate revenue to be dedicated for reservoir protection and restoration. The KWO is working with the USACE to formally establish a sediment management program to develop sediment management plans for all water supply reservoirs. The intent is to leverage federal funds for research and development of innovative technologies and implement projects to maintain reservoir storage. The conservation storage water supply fund will be utilized to support annual expenses of the sediment management program and build a balance sufficient to implement projects that will further reservoir sustainability efforts. In 2023, water sales generated over $2 million for investment in reservoir protection and restoration.

[2023 Initiative Accomplishments]

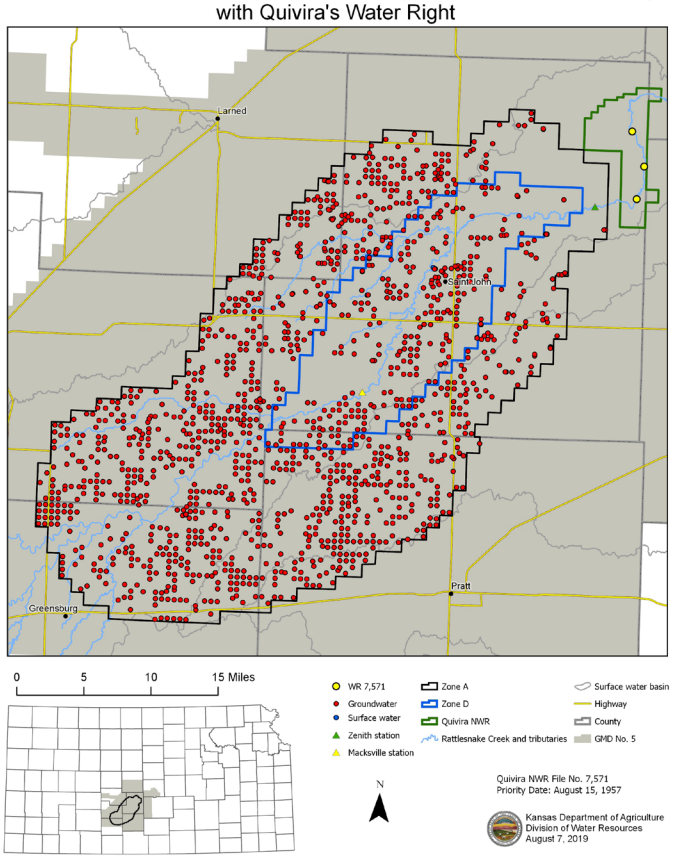
Conservation Storage Water Supply Fund

$2 million of revenue generated to be deposited into the conservation storage water supply fund and dedicated for reservoir protection and restoration.

Quivira/Rattlesnake Creek

In Kansas, as in most western states, the date of a water right defines its relative priority. When there is not enough water to satisfy all rights, older ("senior") rights are entitled to be satisfied before newer ("junior") rights can use the same source of water. For decades, the U.S. Fish & Wildlife Service (USFWS) expressed concern that its senior water right on Rattlesnake Creek, held for the operation of the Quivira National Wildlife Refuge, was being impaired by reductions to Rattlesnake Creek streamflow caused by junior groundwater pumping.

Points of Diversion under Junior Water Rights Found to be Interfering with Quivira's Water Right



In response to USFWS's 2013 formal complaint, KDA-DWR investigated and in 2016 found that junior groundwater pumping impairs the senior right frequently and significantly prevents the refuge from getting the water to which it is entitled. After years of negotiations, the USFWS and GMD No. 5 agreed to pursue stream augmentation (pumping groundwater into the stream) as the primary way to address the impairment. Other strategies to help relieve the impairment included development of a water rights purchase program, a water rights relocation program, and a program to incentivize the removal of center pivot end guns within the district.

In response to a request to secure water submitted by the USFWS on Feb. 6, 2023, DWR completed a draft supplement to the 2016 impairment report. The supplement confirmed the earlier finding that upstream junior groundwater pumping regularly and significantly impairs the Service's ability to use its water right. USFWS later withdrew its request to secure water provided KDA-DWR lead an effort to explore a collaborative remedy to the impairment rather than issuing administrative orders during 2024.

Hays/Russell – R9 Ranch Water Transfer

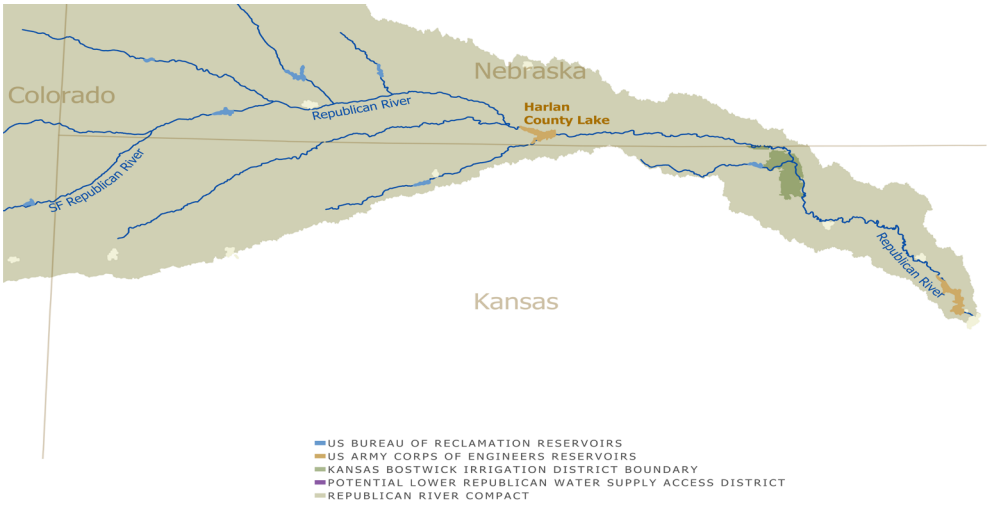
In 1995, the City of Hays purchased the R9 Ranch near Kinsley, KS, later selling an interest to the City of Russell. With this purchase, the cities own a cumulative water right authorization for irrigation use of approximately 7,700 acre-feet with a calculated consumptive use of 6,750 acre-feet, which could be requested to convert to municipal use.

In 2015, Hays and Russell began the process to request permission to convert the water rights to municipal purposes and transfer the water. Based on a modeling analysis with the change application process, they have agreed to limit the quantity which could be diverted from those wells for municipal use to a 4,800 acre-feet average over 10 years, an amount they describe as sustainable on an annual basis.

In 2019, following consideration of comments from local individuals and entities, including GMD No. 5, the Chief Engineer of KDA-DWR contingently approved the change applications submitted by Hays and Russell to convert the R9 Ranch irrigation rights to municipal use for the cities. In May 2019, the Water Protection Association of Central Kansas (WaterPACK) filed a request for judicial review. In June 2022, the district court held that WaterPACK had not shown that the chief engineer improperly considered the change applications. WaterPACK appealed that decision; the matter is now before the Kansas Supreme Court and that case remains in litigation. The cities have also filed a water transfer application and that process remains ongoing.

Republican River Update

After decades of legal conflict arising from violations of the Republican River Compact, Kansas received settlement funds from both Nebraska and Colorado to resolve any disputes over past use of water. Funds are being used to implement water conservation projects, water use efficiency upgrades, water management plans by water right holders, and cost-share programs in the Republican River Basin.



Republican River Water Conservation Project – Nebraska Fund $3.5 million

The Kansas Bostwick Irrigation District (KBID) is in the process of converting portions of their remaining open irrigation canals to a buried pipe system and automating the control structures that regulate the flow of water into and through the canal system. As of FY 2022, KBID has completed five installments of the canal project, which included the elimination of a total of 14.77 miles of open irrigation canals. As the price and availability of large diameter plastic pipe were impacted during and following COVID-19, KBID pivoted towards canal automation projects and upgrades.

These include a partnership with Bostwick Irrigation District in Nebraska (NBID) for the automation of the Courtland-Superior Diversion Dam near Guide Rock, NE. Additionally, KBID has automated every radial gate check structure on the Courtland Canal above Lovewell Reservoir. In 2023 and continuing through 2024, KBID will complete the automation of all significant lateral canal headgates below Lovewell Reservoir, as well as implementing remote waste-way monitoring of operational spills on the majority of open lateral canals remaining within the district.

Republican River Water Conservation Project – Colorado Fund $2 million

Approximately $235,190 has been allocated in 2023 for irrigation technology cost-share in the South Fork Republican River Basin to date. In October 2020, $500,000 was sent to the Cheyenne County Conservation District for projects supporting improved water use efficiency and water conservation in the South Fork Basin. By leveraging these funds, along with others contributed, the Cheyenne County Conservation District was awarded RCPP funding through NRCS. Since being awarded the RCPP, the conservation district has been underway with multiple phreatophyte removal projects in the basin.

Wichita Aquifer Storage and Recovery (ASR)

The City of Wichita currently operates an ASR project which allows for the diversion of water from the Little Arkansas River during high flow periods, treatment of the diverted water to drinking water standards, then injection of the treated water into the Equus Beds Aquifer for later recovery and use. Through this process, the city accumulates recharge credits with KDA-DWR, allowing Wichita to subsequently withdraw this recharged water from the Equus Beds Aquifer in addition to their water rights. With the recent recovery of the Equus Beds Aquifer in the Wichita wellfield area to near pre-development conditions, recharge activities were being hampered by limited space within the aquifer.

In March 2018, Wichita submitted to KDA-DWR a proposal for modifications to the conditions associated with Wichita's existing Phase II ASR permits. Formal administrative hearings took place from 2018 through 2021. In January 2022, the presiding officer recommended denying the proposal for modifications to the Chief Engineer of KDA-DWR. The Chief Engineer concurred that the modifications should be denied because they should have been lodged with DWR as new change applications. Though it was the main opponent to the proposed modifications and a participating party in the hearing process, GMD No. 2 has requested that the chief engineer's order denying the modifications be reviewed in district court. That review is currently underway.

Recharge basins are a key component of the overall project and do not have an upper index level limitation to put treated water in and obtain a recharge credit. The city is currently exploring additional recharge basins for this project. The basins are within the boundaries of the well field and the approved basin storage area. No permit modifications are required to add recharge basins.

Kansas-Colorado Arkansas River Compact Update

The Kansas-Colorado Arkansas River Compact (Compact) was signed and approved 75 years ago. Under the Compact, Kansas and Colorado (states) share the conservation benefits of John Martin Reservoir (JMR) located on the Arkansas River about 60 miles upstream of the state line. Not all water stored in JMR is water related to the Compact which is a common misconception. Kansas has two JMR accounts that can be called upon to satisfy the surface water irrigation demands by six irrigation ditches in southwest Kansas. In 2023, those JMR accounts were able to provide water for five ditches.

Colorado remains in compliance with the Compact based on annual evaluation by the states. The multi-purpose account pilot project entered its second year; the states continue to evaluate its operation including the addition of new sources vetted by the states. The 75th annual ARCA meeting is planned for Garden City, Kansas in 2024.

In a parallel cooperative effort, Kansas and Colorado are working on Arkansas River water quality issues and plan to hold the 2024 summit in Kansas. This includes a collaboration of water quality experts, water quantity administrators and most importantly producers to promote best management practices with the potential to improve water quality issues while ensuring the associated return flows are maintained to keep the river system whole in quantity.

Missouri River Coordination

The Lower Missouri River extends from Sioux City, Iowa, to St. Louis, Missouri, draining thousands of square miles of rural and urbanized areas while also containing numerous federal and non-federal projects that provide varying levels of flood protection. The Missouri River set a new record of flow in the Lower Missouri River Basin in 2019.

As a result of the record-setting flooding in 2019, the states of Kansas, Iowa, Nebraska and Missouri partnered with USACE to begin the process of developing a comprehensive plan to evaluate solutions to lessen flood risk in the Lower Missouri River Basin. These planning efforts included input from local citizens who have been repeatedly impacted by flooding.

In 2021, the 4 states signed a formal Memorandum of Understanding (MOU) designating the respective contribution amounts each would provide to the Lower Missouri River Flood Risk and Resiliency Study to comprise the total sponsor share in coordination with USACE. Kansas has contributed a total of $190,625 to fulfill our obligation, $6,250 under the initial Planning Assistance to States (PAS) reconnaissance study and $184,375 toward the subsequent flood risk and resiliency study. Various coordination meetings between the USACE, state sponsors, and stakeholders took place during 2023, providing status reports and requesting feedback on the project. The USACE has developed a website with more details on the study, spinoff projects and upcoming activities located on their website (https://www.nwk.usace.army.mil/Missions/Civil-Works/Civil-Works-Programs-And-Projects/Lower-Missouri-River-Basin/). A summit to update the four governors took place in December 2023. A System Plan report is scheduled to be given to the U.S. Congress in December of 2023.

Kansas River Reservoirs Flood and Sediment Study

KANSAS
River Reservoirs Flood and Sediment
STUDY

The Kansas River Basin includes 18 federal reservoirs, 12 of which reside in the State of Kansas, which regulate 85% of the drainage area in the basin, providing critical water supply, flood damage risk reduction, and vital river flow support to downstream regions. In an effort to more effectively manage those resources and improve overall understanding of the Kansas River Basin, the U.S. Army Corps of Engineers, Kansas Water Office, and Kansas Department of Wildlife and Parks launched the Kansas River Reservoirs Flood and Sediment Study in March 2019.

Study efforts have included planning discussions and stakeholder outreach to identify and define issues and opportunities, goals and objectives, and measures and strategies for the watershed. Additionally, assessments to evaluate existing conditions and projected future conditions without action in the watershed have been completed for flood risk management, water management, sediment management, water supply, water quality, and biological resources. The Shared Vision Milestone was completed in June 2021, and the Recommendations Milestone was completed in June 2023. The Watershed Study Report is currently in the review process and is expected to be completed in 2024. The total cost of the study is $3,000,000 including $2,250,000 from USACE and $750,000 in contributions from the State of Kansas.

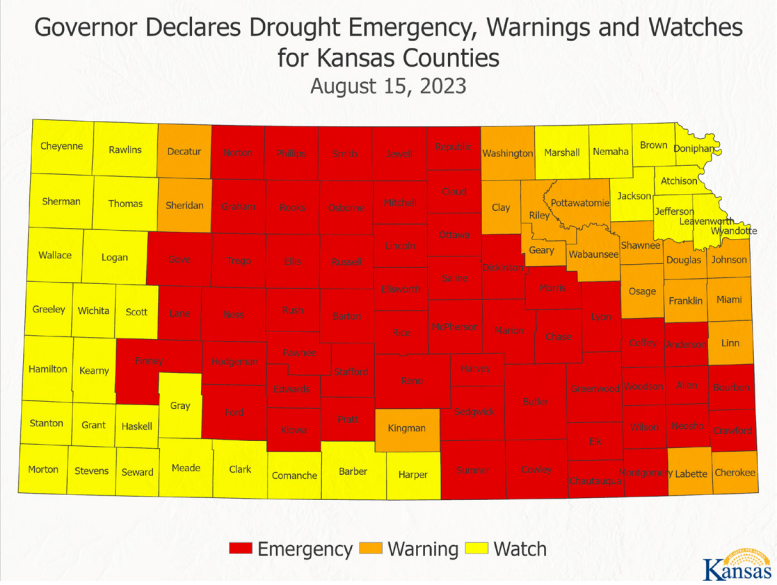
Drought Monitoring and Response

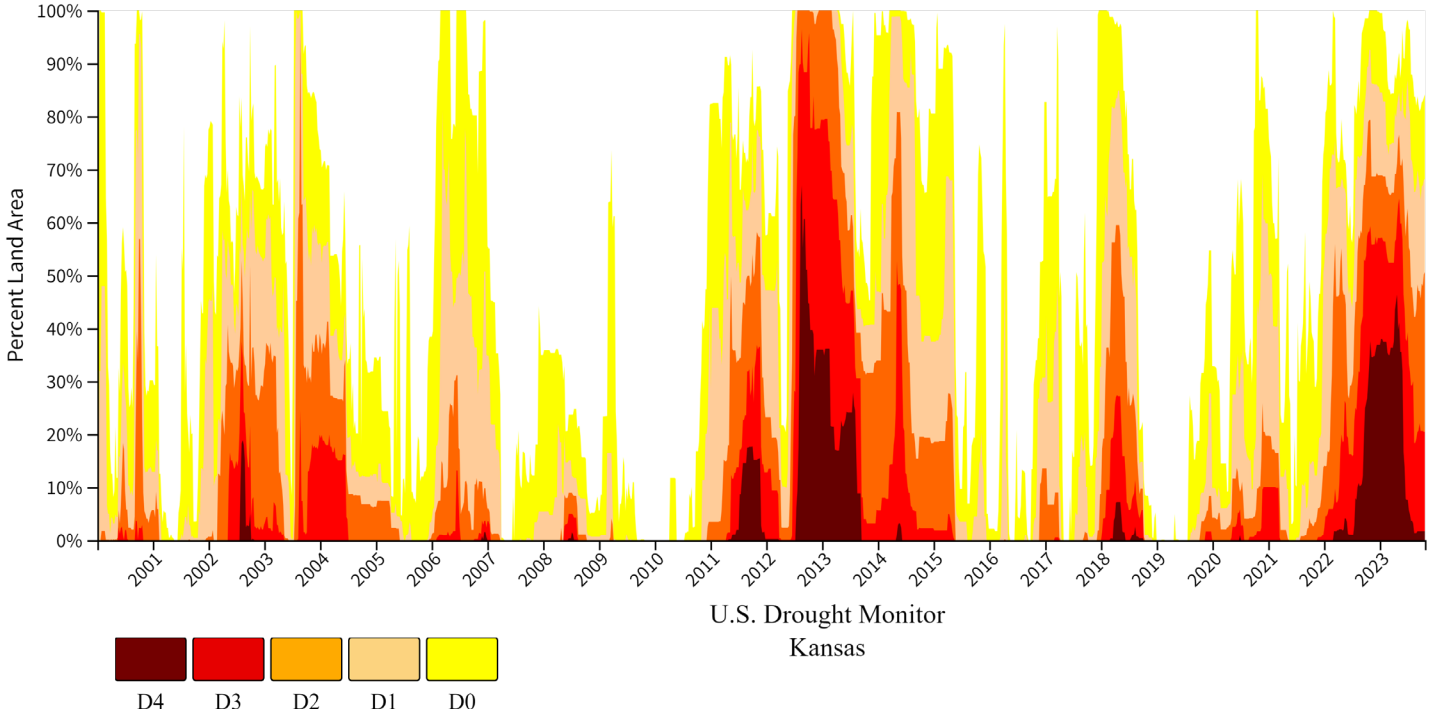
The Kansas Water Office is responsible for monitoring drought and notifying the Governor when drought conditions exist within the state and recommending assembly of the Governor's Drought Response Team. The team reviews conditions and recommends drought stages for each county. The Director of the Kansas Water Office makes a recommendation to the Governor, who then issues a drought declaration through executive order. This declaration is in effect until rescinded or superseded.

Response to drought is provided through many state programs and associated authorities or responsibilities. The Drought Response Team is responsible for implementing an interagency state government response to drought that is properly coordinated with local and federal response activities at all drought stages. For example, an interagency agreement between the Kansas Water Office, Kansas Department of Wildlife and Parks, and the Kansas Division of Emergency Management qualifies counties in emergency status for emergency use of water from certain state fishing lakes to fight wildfires. These counties also become eligible for water in some federal reservoirs, in addition to state fishing lakes, for domestic stock water.

The latest drought declaration from the Governor was issued on August 15, 2023 with Executive Order #23-04. The drought declaration placed 55 counties in emergency status, 18 counties in warning status, and 32 counties in watch status. This past year (October 2022 – September 2023) is the 33rd driest on record (since 1895), 3.56 in. below normal.

The KWO is also responsible for the management of state-controlled conservation storage in 15 federal reservoirs to maintain adequate streamflow and water supplies for Kansans, primarily critical to satisfy municipal and industrial demands. Two thirds of the state's population is reliant on stored water in federal reservoirs during drought, and all 15 reservoirs are being used to support these needs. Reservoir support of streamflow has been quite dramatic in 2023, with reservoir releases making up more than 90% of the flow in some river reaches.





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