

WCA/LEMA Update for 2019

Kansas Water Authority

December 19, 2019

David Barfield, Chief Engineer

Division of Water Resources
Kansas Department of Agriculture

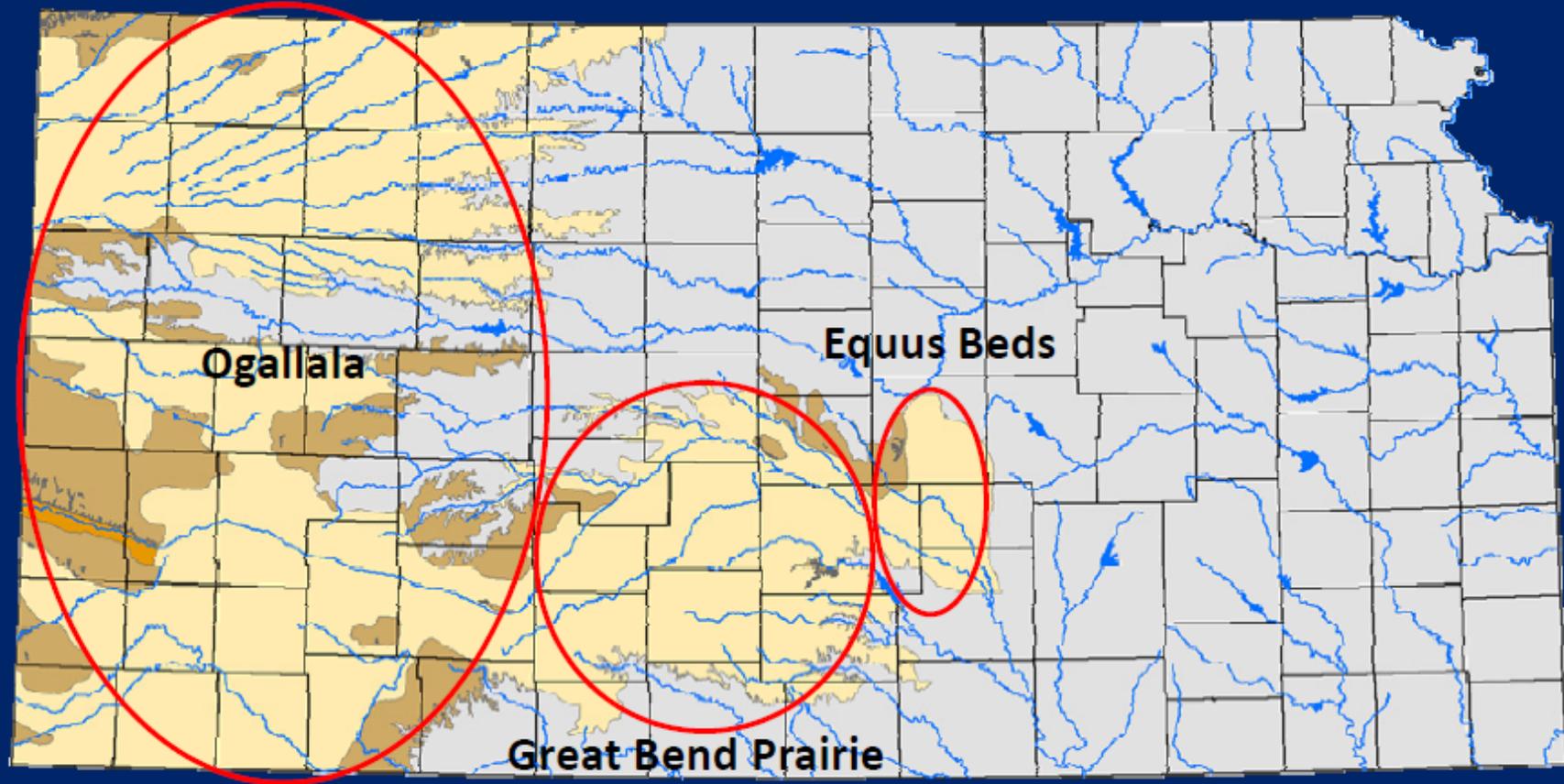


The Kansas High Plains Aquifer

GMD 4 LEMAs
* Sheridan County
* District-wide

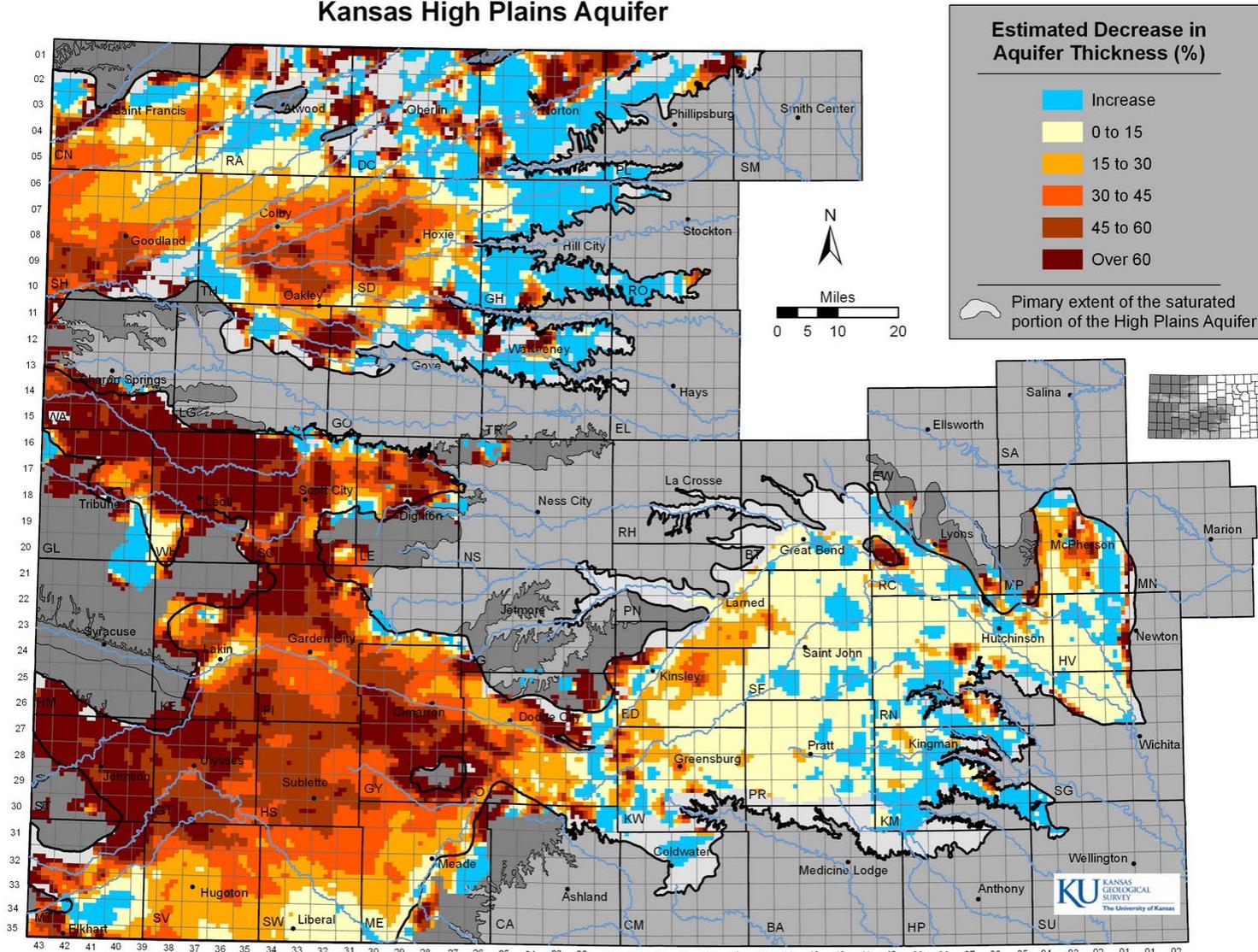
GMD 1 -Wichita
County
* WCA
* LEMA? IGUCA?

Kearney-Finney
* LEMA discussions
* WCA



The Ogallala challenge: Percent Change in Saturated Thickness of O-HP Aquifer

Percent Change in Aquifer Thickness, Predevelopment to Average 2016-2018,
Kansas High Plains Aquifer



Notes:

- Despite significant declines, significant use continues and the water resource is critical to today and tomorrow's economy.
- While south-central Kansas is experiencing less declines in groundwater levels, groundwater use is reducing streamflows.

Additional tools to address
water supply shortages and
groundwater declines

Legislative acts to encourage **groundwater conservation**

- Historic tools:
 - 1972: Groundwater Management District (GMD) Act allows for the creation of **GMDs** to lead in local water conservation efforts
 - 1978: GMD Act amended to allow for Intensive Groundwater Use Control Areas (**IGUCAs**).
- New tools:
 - 2012: Local Enhanced Management Areas (**LEMA's**) allowed
 - 2015: Water Conservation Areas (**WCA's**) allowed
 - Getting rid of use it or loss it:
 - 2012: Eliminating abandonment of groundwater rights in closed areas
 - 2015: Requirement for chief engineer to give due consideration of past voluntary conservation in all conservation programs

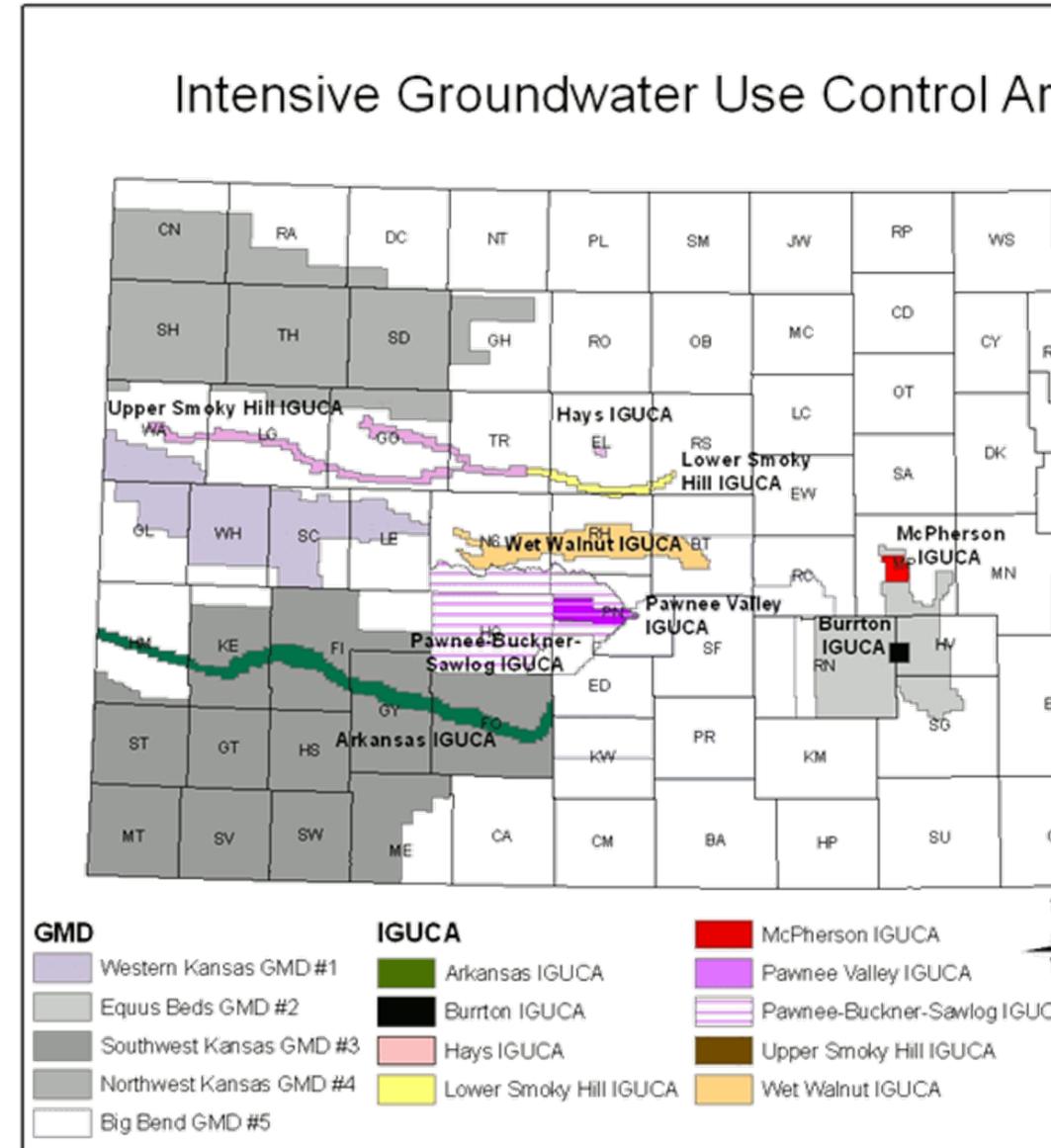
Intensive Groundwater Use Control Areas (IGUCAs), 1978

- Part of the Groundwater Management District (GMD) Act, but can be used outside GMDs
- Water management tool that works in conjunction with the Kansas Water Appropriation Act
- Allows for more flexible solutions than strict priority administration of groundwater rights, called “corrective controls” to address the problem.
- Formal public hearings are held to provide due process
- Decision by chief engineer based on hearing record

Intensive Groundwater Use Control Areas

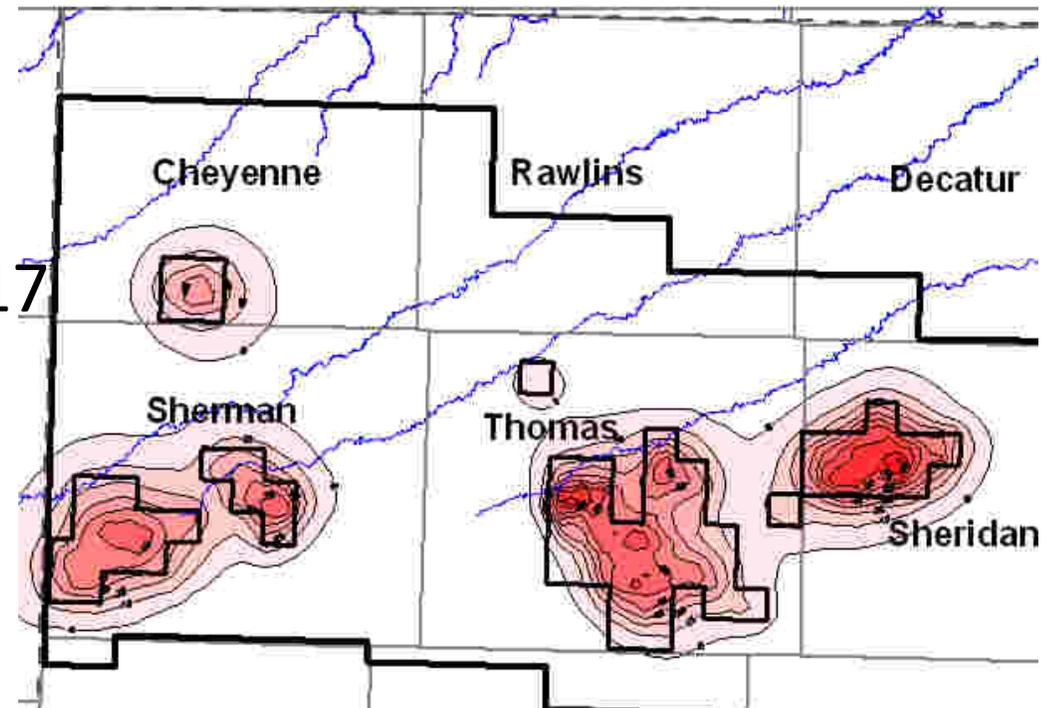
- **McPherson County**, 1979, closed area, required meters
- **Pawnee Valley**, 1980, set safe yield criteria
- **Burrton**, 1982, water quality concern; criteria for review
- **Lower Smoky Hill River**, 1983, closed area, 15 inch allocation
- **Upper Smoky Hill River**, 1984, closed area
- **Arkansas River Valley**, 1984, closed area, restrict moves
- **Hays and Immediate Area**, 1985, restrict lawn watering by domestic wells
- **Walnut Creek**, 1990, 5-year allocations: senior set at 12-14 inches; junior set at 5.25-6.25 inches, flexibility to move allocations.

- **None in Ogallala**



Northwest Kansas GMD 4 seeks Enhanced Management

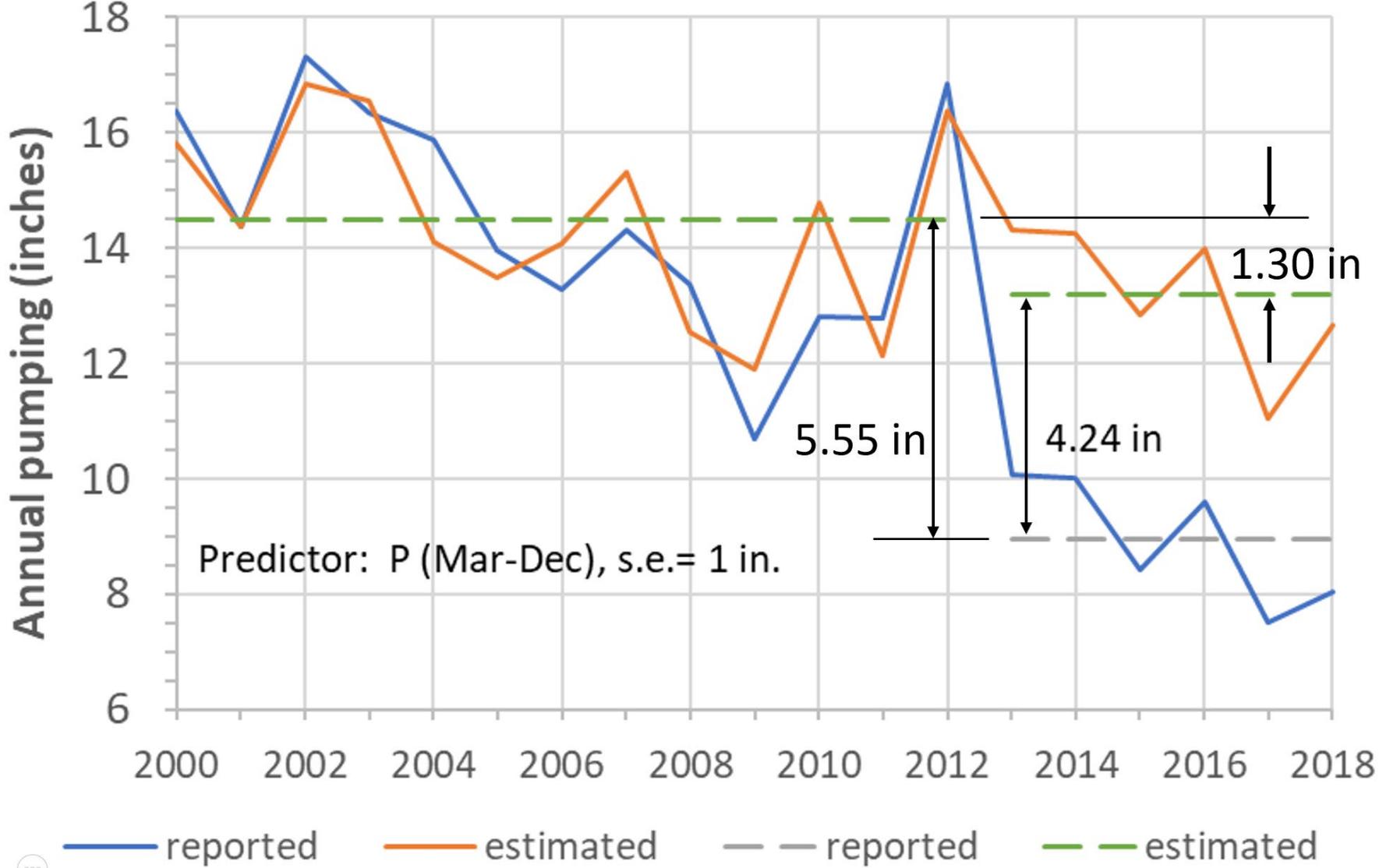
- “Sheridan 6” High Priority Area wanted to cut use by 20%, but not via priority administration, (2010-11)
- NW Kansas GMD No. 4 Board discusses and rejects IGUCA option
- Manager outlines new approach requiring new legislation
- Results in LEMA statute, 2012
- Sheridan 6 LEMA designated for 2013-17 and 2018-22, with the **goal of 20% reduction in use**
- Approx. 100 sq. mi.; 200 water rights



Local Enhanced Management Areas (LEMA), 2012

- Like IGUCAs:
 - Requires demonstrated groundwater problem
 - Similar tools “corrective controls”
 - Due process required via public hearings, decision based on the record
- Unlike IGUCA’s:
 - LEMA Plan developed by a GMD with a specific goal and defined “corrective controls” to address the problem.
 - After hearings, decision by the Chief Engineer to adopt, reject or return plan to the GMD
- Wayne Bossert: “you are not guaranteed to get what you want, but you are guaranteed to not get what you don’t want.”

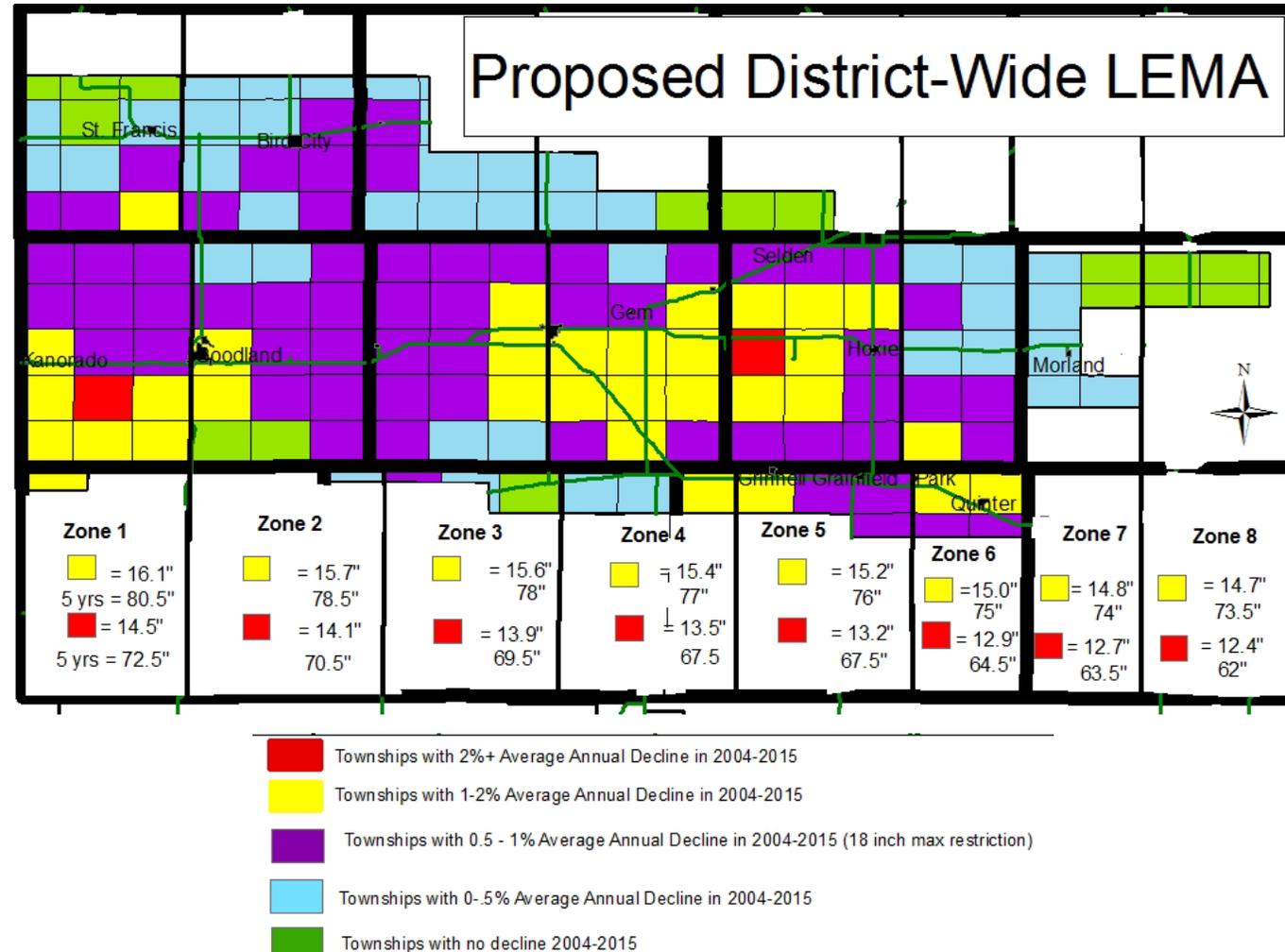
Sheridan 6 LEMA : Significantly reduced groundwater use



- Blue = reported use (inches/acre)
- Orange, 2000-12 = estimated use based on climate factors
- Orange, 2013-18, projected use with no change in behavior
- Average actual use for 2013-18 was 38% less than 2000-12, and 32% less than climate predicted values.

GMD#4 District Wide LEMA

- GMD 4 determined rate of decline by township
- Sets 5-year allocations in inches/acre based principally on NIR for corn
 - Highest decline areas (red): 13-14 inches
 - Second highest decline (yellow): 15-16 inches
 - Purple township, 18 inches
 - Blue/Green: no restrictions
- No additional flexibilities, encourages WCAs



GMD 4 District-wide LEMA, Process

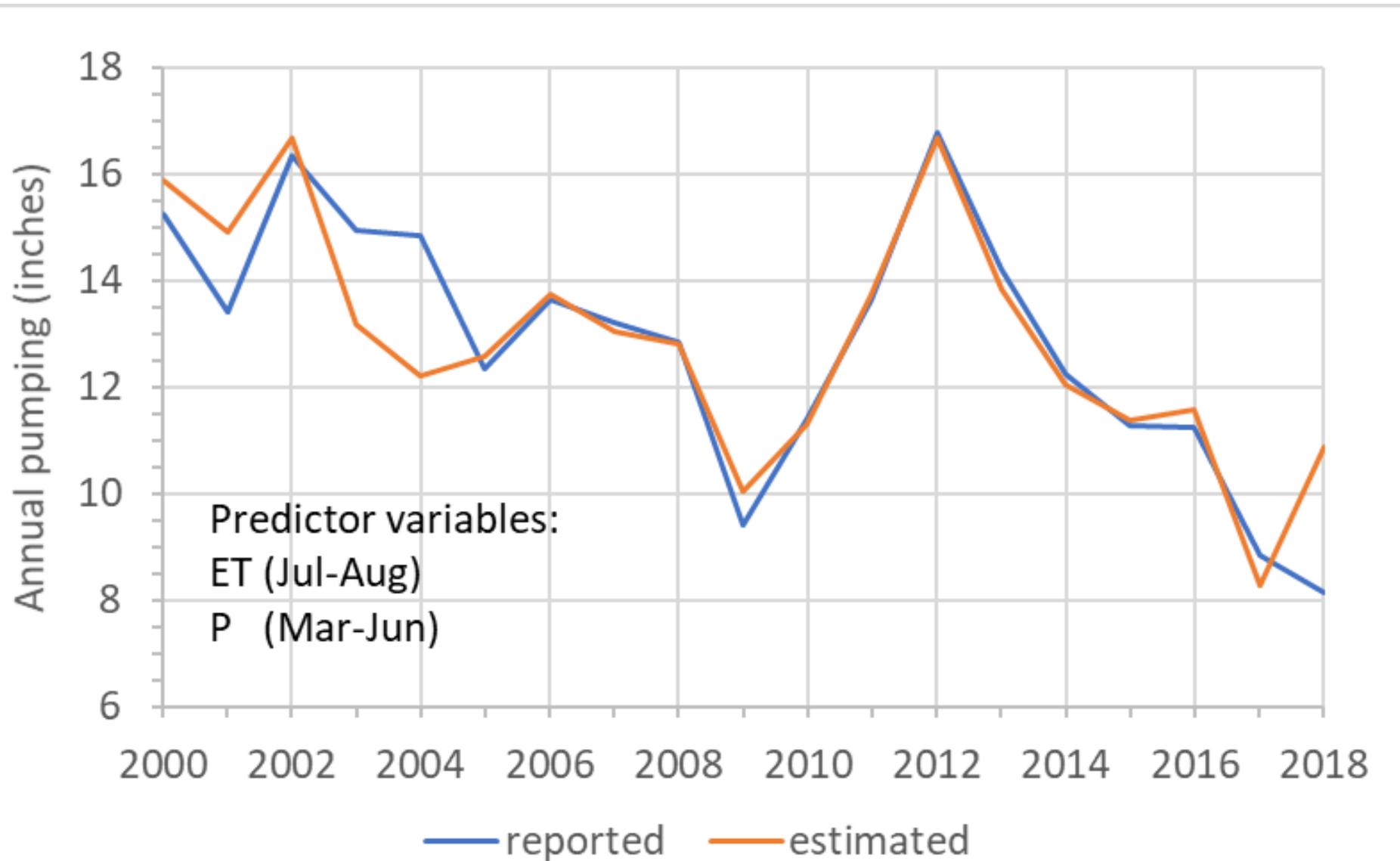
- Initial hearing held August 23, 2017; positive decision, LEMA needed
- Second hearing held November 14, 2017
 - a **group of intervenors** granted expanded “due process”
 - significant public comment received
- On February 23, 2018, Order of Decision issued, returning it to District with recommended changes to improve plans administration. GMD 4 accepted.
- On April 13, 2018, the **Order of Designation issued.**

GMD 4 District-wide LEMA, judicial review

- On June 13, 2018, Petitioners filed for **judicial review** in Gove County
- On October 15, 2019, the **District Court found** that the “...GMD 4 District Wide **LEMA should be upheld**. The LEMA Plan restrictions do not appear to be unconstitutional on their face or as applied. There is substantial evidence backing the agency's decision and therefore it is not arbitrary or capricious.”
- On November 12, 2019, Plaintiffs filed a motion requesting the Gove County District Court to alter and amend its decision. KDA and GMD 4 have responded to Plaintiffs’ Motion.

GMD 4 LEMA, reported use and estimated use

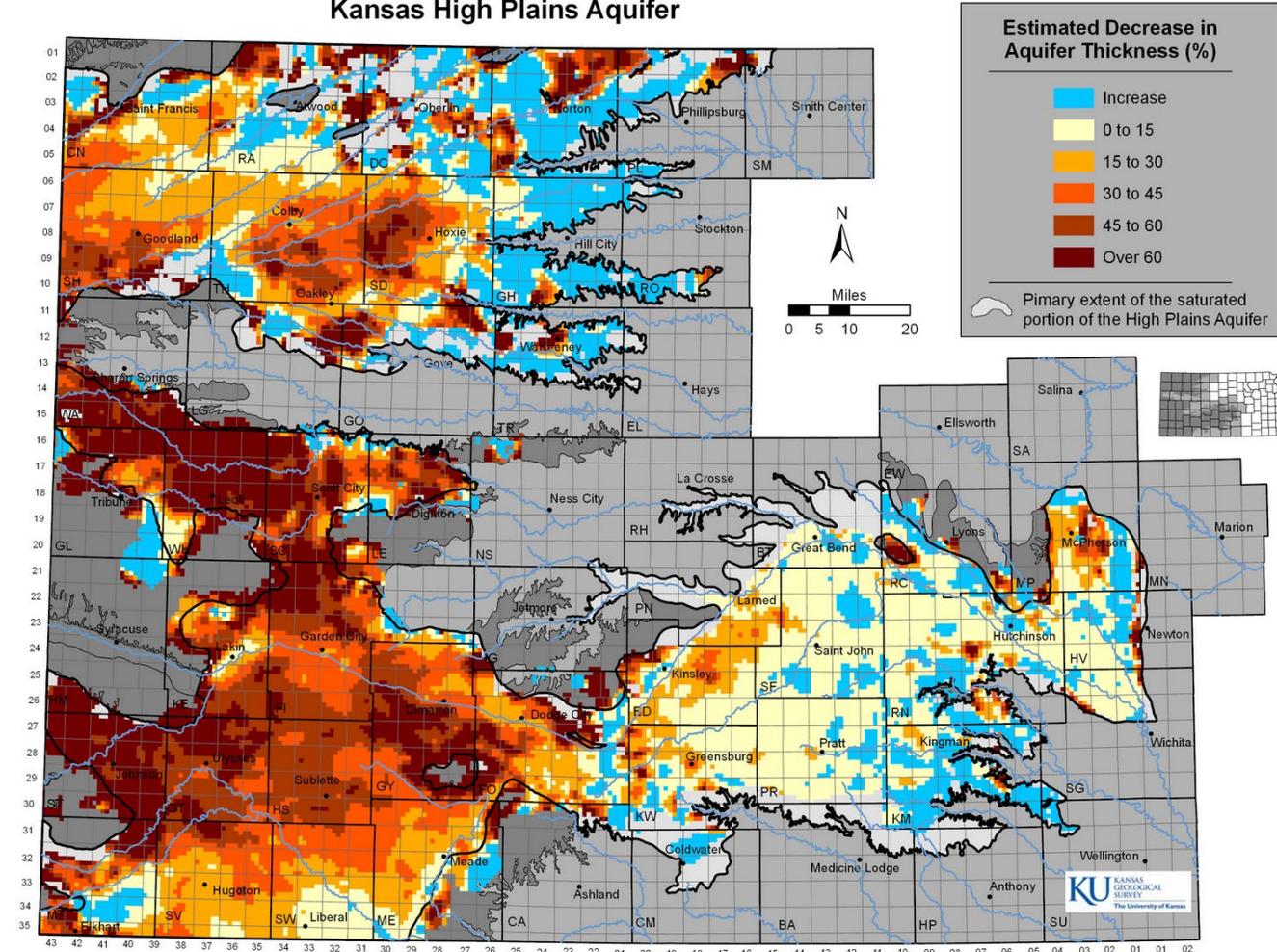
2018 first year of LEMA



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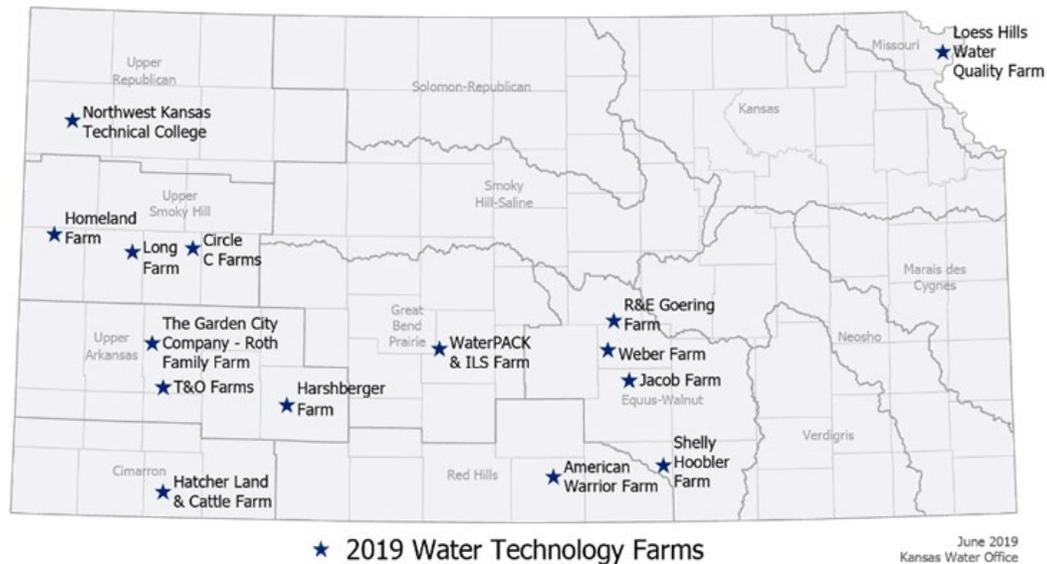


As of late 2014:

- Only LEMA: Sheridan County
- Proposed GMD 1 District-wide LEMA by did not move forward
- GMD 3 policy on use LEMA tool required local consensus
- Water users wanted a simple, streamlined tool to facilitate water conservation

Growing awareness driving change

Water Technology Farms demonstrate water saving methods



Key findings from recent sociology research:

- Kansas producers overwhelmingly support groundwater conservation
- Primary motivation is supporting the local community & future generations
- **Most believe they are already doing all they can individually to conserve**
- **Producers in LEMA's and WCA's are finding additional ways to conserve**
- With support, voluntary group efforts have opportunity to grow
- 5 recommendations for voluntary group conservation efforts

From: <https://kwo.ks.gov/projects/water-technology-farms>

From Stephen Lauer, KSU

2015 Legislation: Water Conservation Areas (WCAs)

K.S.A. 82a-745. Water conservation areas; establishment procedures; duties of chief engineer; notice; orders; consent agreement; review.

(a) Any water right owner or a group of water right owners in a designated area may enter into a consent agreement and order with the chief engineer to establish a water conservation area. The water right owner or group of water right owners shall submit a management plan to the chief engineer.

- A Water Conservation Area (WCA) is a designated area with an approved management plan developed by a water right owner(s) with the consent of the chief engineer to reduce water withdrawals while maintaining economic value via water right flexibility.
- **Flexibilities** can include multi-year allocations, exceeding annual authorized quantities, allowing for new uses of the water, when no impairment.
- **No hearings**; streamlined process
- WCAs do not make a permanent change in the water right

Wichita County WCA development / LEMA discussions

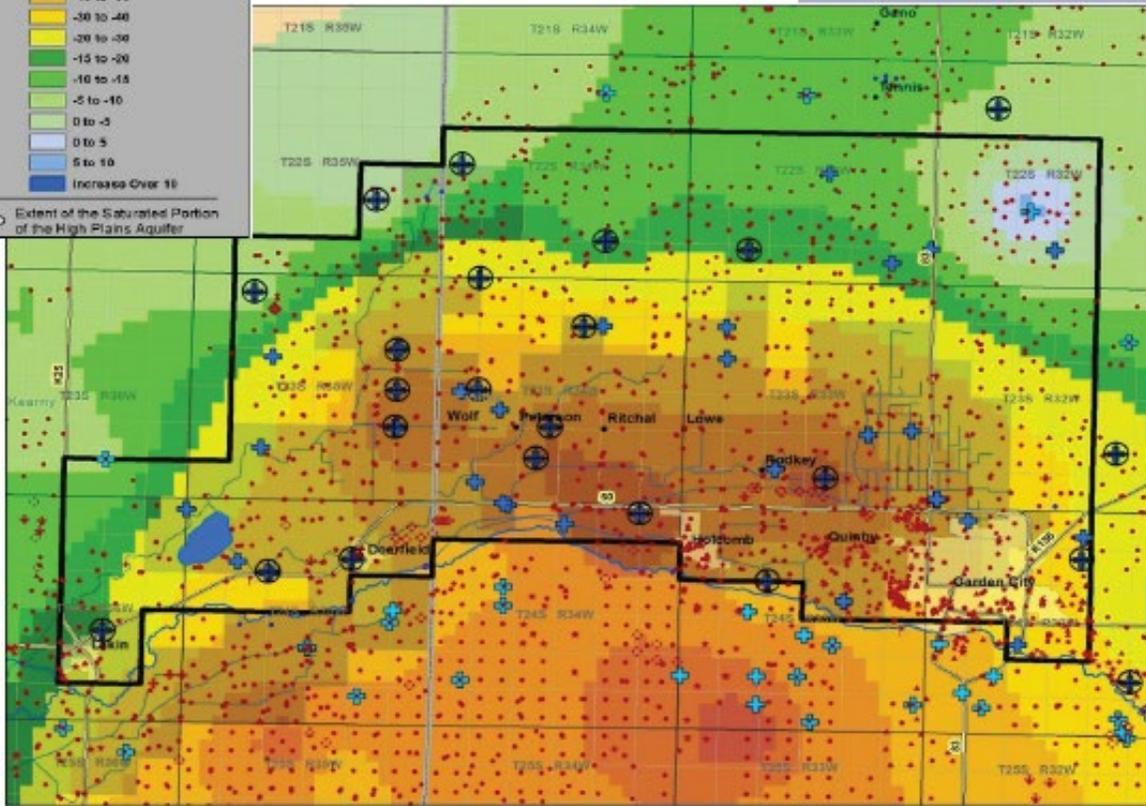
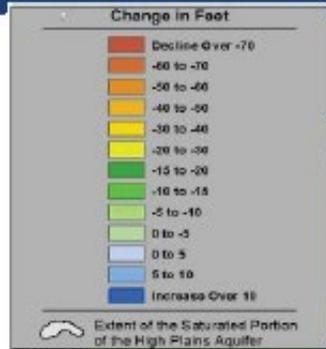
- 20 feet of average remaining saturated thickness, well rates dropping, less than 25 years of remaining life.
- Unique, county-wide WCA developed that producers can enroll in
- Extensive process to develop proposal, driven by a local committee, initiated August 2016
- Plan approved March 2017
- Conservation factor, starts at 29% increasing to 50%
- 20% of county enrolled
- Committee pushing GMD 1 for a LEMA, or will petition for an IGUCA



KEARNY, FINNEY COUNTY

PROPOSED LOCAL ENHANCED MANAGEMENT AREA (KFL)

PROPOSAL SUMMARY



What is a Local Enhanced Management Area (LEMA)?

A Local Enhanced Management Area, or LEMA, is a management plan to address local groundwater concerns. A Groundwater Management District (GMD) has the authority to recommend a LEMA to the chief engineer.

The following provides a summary of discussions for a potential LEMA and does not represent a final proposal.

Water level changes, 2005-2016, (Kansas Geological Survey), (Black line indicates proposed LEMA boundary)

Why is a LEMA being considered for Northern Finney and Kearny counties?

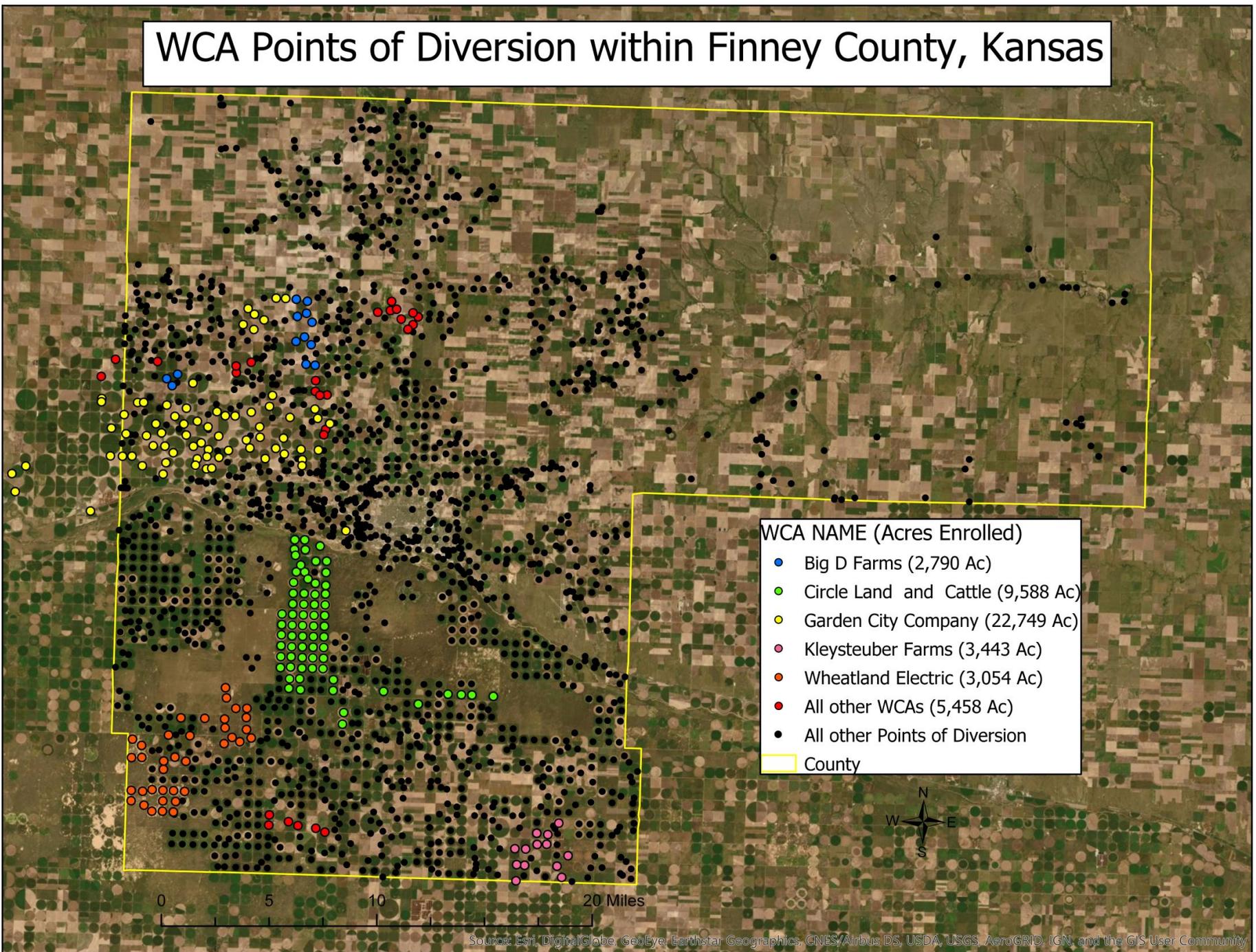
Local water right owners in northern Finney and Kearny counties are seeking ways to reduce the rate of decline in the

When will this proposed LEMA take effect?

The goal is to have the proposed LEMA in place by January 1, 2018. By law, two public hearings are required to ensure the LEMA is needed and is in the public interest.

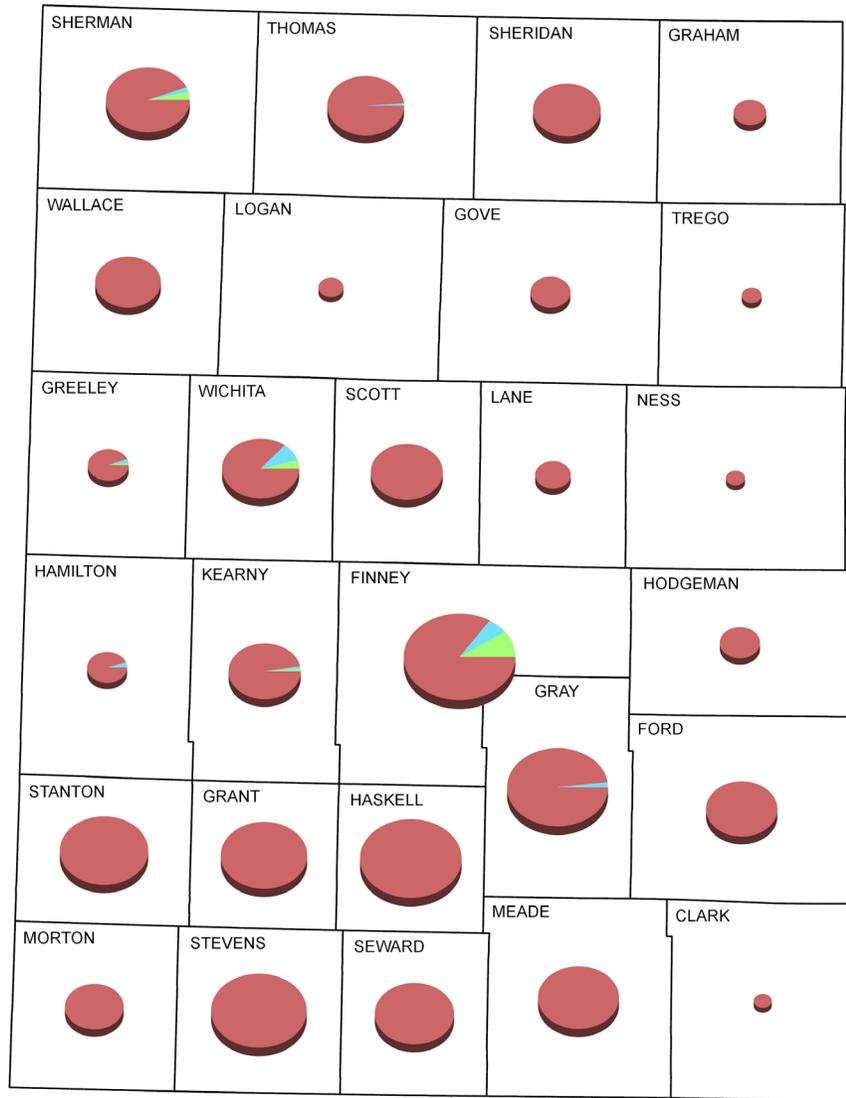
- Discussions initiated among water users, fall 2016 as WCA
- Discussion moved to LEMA but stalled due to lack of consensus.
- Waterusers moved back to WCAs:
- 30,000+ acres with 4000+ AF/year of savings
- Approaching 20% of Finney Counties in WCAs

WCA Points of Diversion within Finney County, Kansas



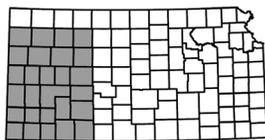
2019 WCA Enrollment in Kansas

Proportion of irrigation acres enrolled in a WCA, by county, sized by total authorized irrigation acres.



Acres Authorized for Irrigation

- 2019 WCA Enrolled Acres
- Pre-2019 WCA Enrolled Acres
- Irrigation Acres Not Enrolled in WCA

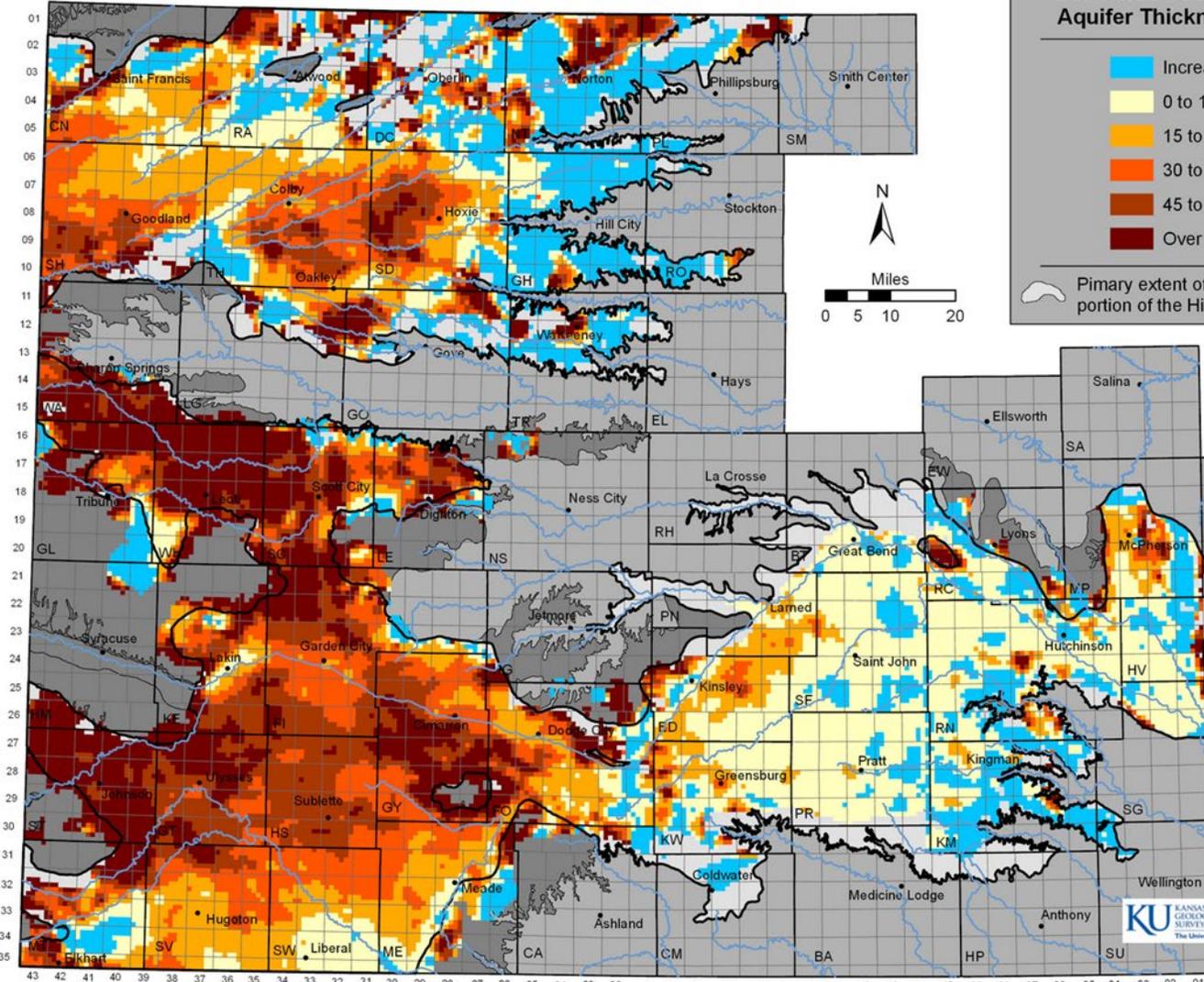


0 10 20 40 Miles



Kansas Department of Agriculture
Division of Water Resources
November 4, 2019

Percent Change in Aquifer Thickness, Predevelopment to Average 2016-2018, Kansas High Plains Aquifer

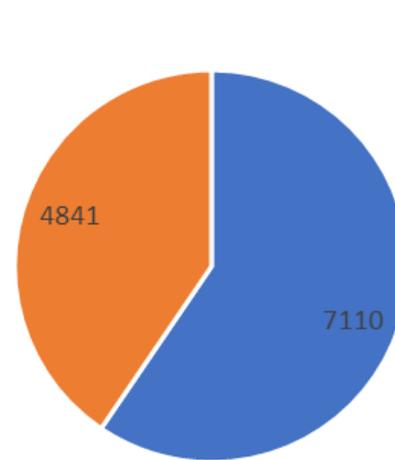


WCA's totals

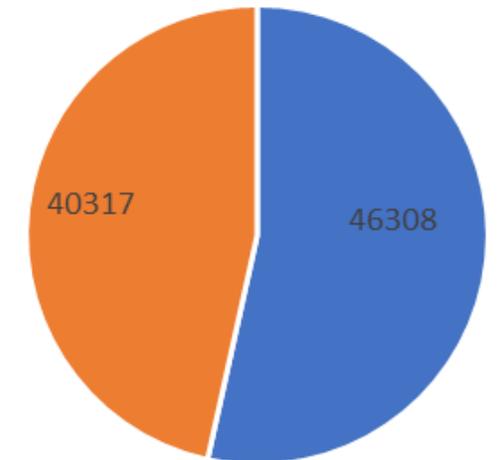
- Current status:
 - 27 plans active as well as 26 Wichita County WCA consent agreements
 - 86,625 active acres enrolled
 - 11,951 acre-feet of annual water savings
- Several significant WCA plans have been approved this year:
 - Seven (7) plans approved in 2019
 - 40,317 acres enrolled in 2019
 - 4,841 acre-feet annual water savings
- Renewals, first round WCAs buying back in:
 - T&O LLC and Westside Dairy with increased annual savings

WCA Name	County	Plan	Agreement & Order	Period	Enrolled(Ac/Yr)	Savings (AF/Yr)	Approved
	SC/WH	WCA Plan	WCA CAO	2019-2025	5,959	812	10/04/2019
Wichita County (2018)	FI/KE	WCA Plan	WCA CAO	2018-2022	15,578.97	2,001	07/22/2019
& Cattle	FI	WCA Plan	WCA CAO	2018-2022	9,588.3	1,074	06/28/2019
(9)	FI	WCA Plan	WCA CAO	2019-2021	1,570	110	06/28/2019
	ST	WCA Plan	WCA CAO	2019-	720	212	06/11/2019

11,951 AF Annual Water Savings
86,625 Acres Actively Enrolled



■ Earlier WCA Savings ■ 2019 Savings



■ Earlier WCA Acres ■ 2019 Acres

Ogallala – next steps

- While these developments and new tools (LEMA, WCAs) represent progress, esp. in areas like of the GMD 4 and Sheridan County LEMAs, the Wichita County WCA, and the Finney County areas, **the benefits on local.**
- Declines continue through much of the Ogallala, resulting in declining pumping rates, increasing conflicts, limited future. **Much more is needed.**
- **In some areas, individual waterusers are taking action** to extend the life of their water supply use via individual voluntary action, WCAs, etc.
- But **expanded joint action offers the best hope for extending the regional economies** depending on the declining Ogallala.
- Change is difficult but possible and needed for the long-term good of the Region. Local leadership needed to expand action for good of future.

Water Appropriation

Floodplain Management

Dam Safety

Stream and Floodplain
Permits

Interstate Rivers and
Compacts

Managing Kansas' Water
Resources

Maps

DWR Field Offices

Laws, Statutes & Regulations

FAQ

[Home](#) > [Divisions & Programs](#) > Division of Water Resources

Division of Water Resources

The Division of Water Resources administers [30 laws and responsibilities](#) including the Kansas Water Appropriation Act which governs how water is allocated and used; statutes regulating the construction of dams, levees and other changes to streams; the state's four interstate river compacts; as well as coordinating the national flood insurance program in Kansas.

COMMON SEARCHES

- **Quivira:** Information about the investigation of the impairment complaint filed by the U.S. Fish and Wildlife Service on behalf of the Quivira National Wildlife Refuge.
- **Hays R9:** Information about the City of Hays' applications to KDA-DWR for water right changes and water transfer of the R9 Ranch.
- **Water Conservation Area (WCA):** Information about WCAs and active or pending WCA plans.
- **Local Enhanced Management Area (LEMA):** Information about LEMAs including the GMD No. 4 District-wide LEMA, the Sheridan County 6 LEMA and the proposed GMD No. 5 Rattlesnake/Quivira LEMA.
- **Wichita ASR:** Information about the City's request for changes to the conditions associated with the Phase II Aquifer Storage and Recovery Project.
- **Kickapoo Water Right:** Information on the Kickapoo Indian Reservation Water Right Settlement Agreement.
- **Republican River Compact:** Information on the latest resolutions and annual meetings between Kansas, Colorado and Nebraska on this compact.
- **Multi-Year Flex Accounts (MYFAs)**

For more information

<http://www.agriculture.ks.gov/dwr>

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Questions