Breakfast with Barfield

Governor's Water Conference
November 8, 2019

David Barfield, Chief Engineer

Division of Water Resources
Kansas Department of Agriculture

Kansas
Department of Agriculture
Division of Water Resources

KDA Division of Water Resources (DWR) major responsibilities:

- Allocate and regulate the State's water resources
- Protect public safety and private property (dam/levee safety; regulation of stream and floodplain projects)
- Insure Kansas obtains its share of interstate supplies
- Other services: water right and water use data, flood mapping and insurance, much more

For more information

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Division of Water Resources

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

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)**

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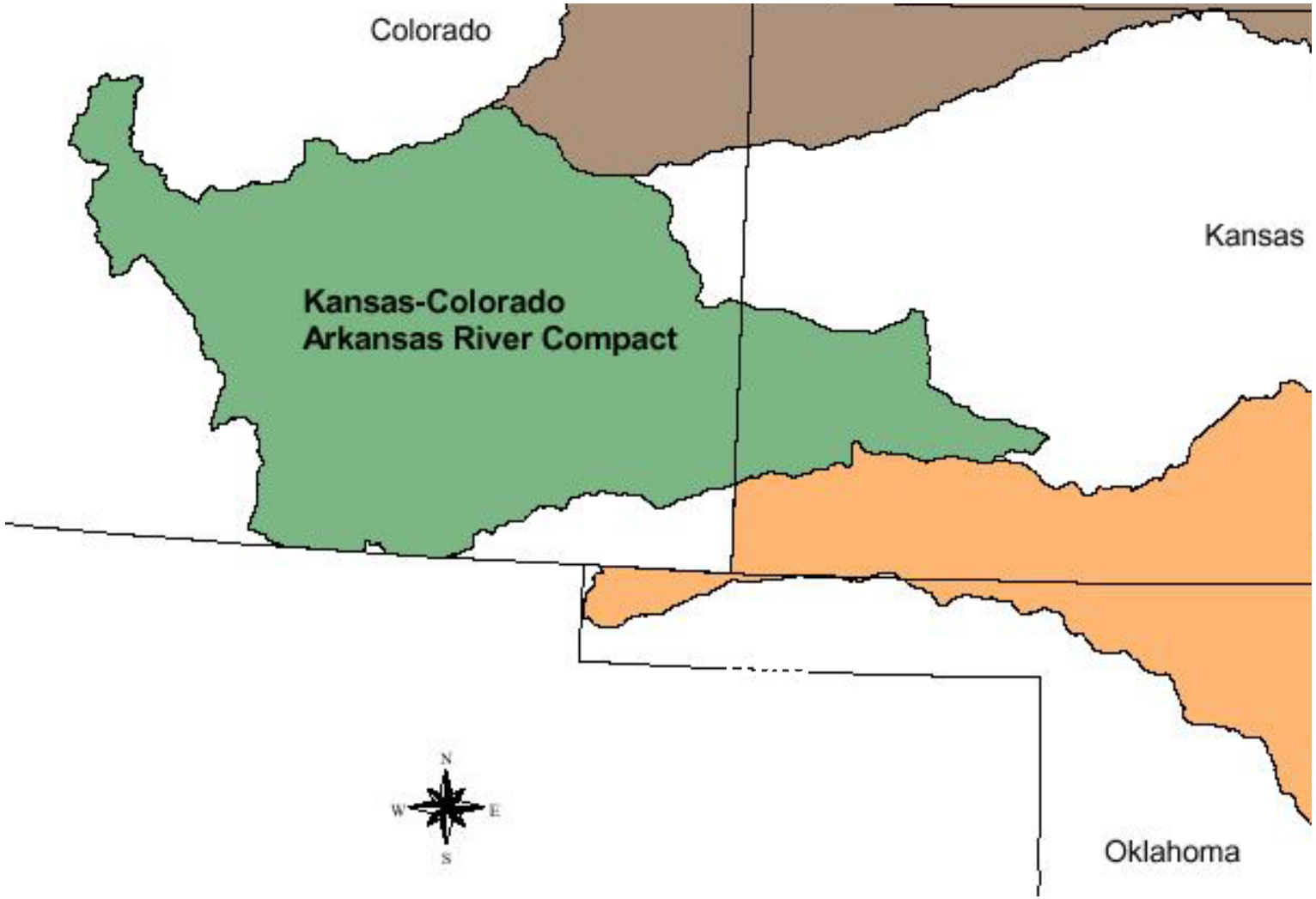
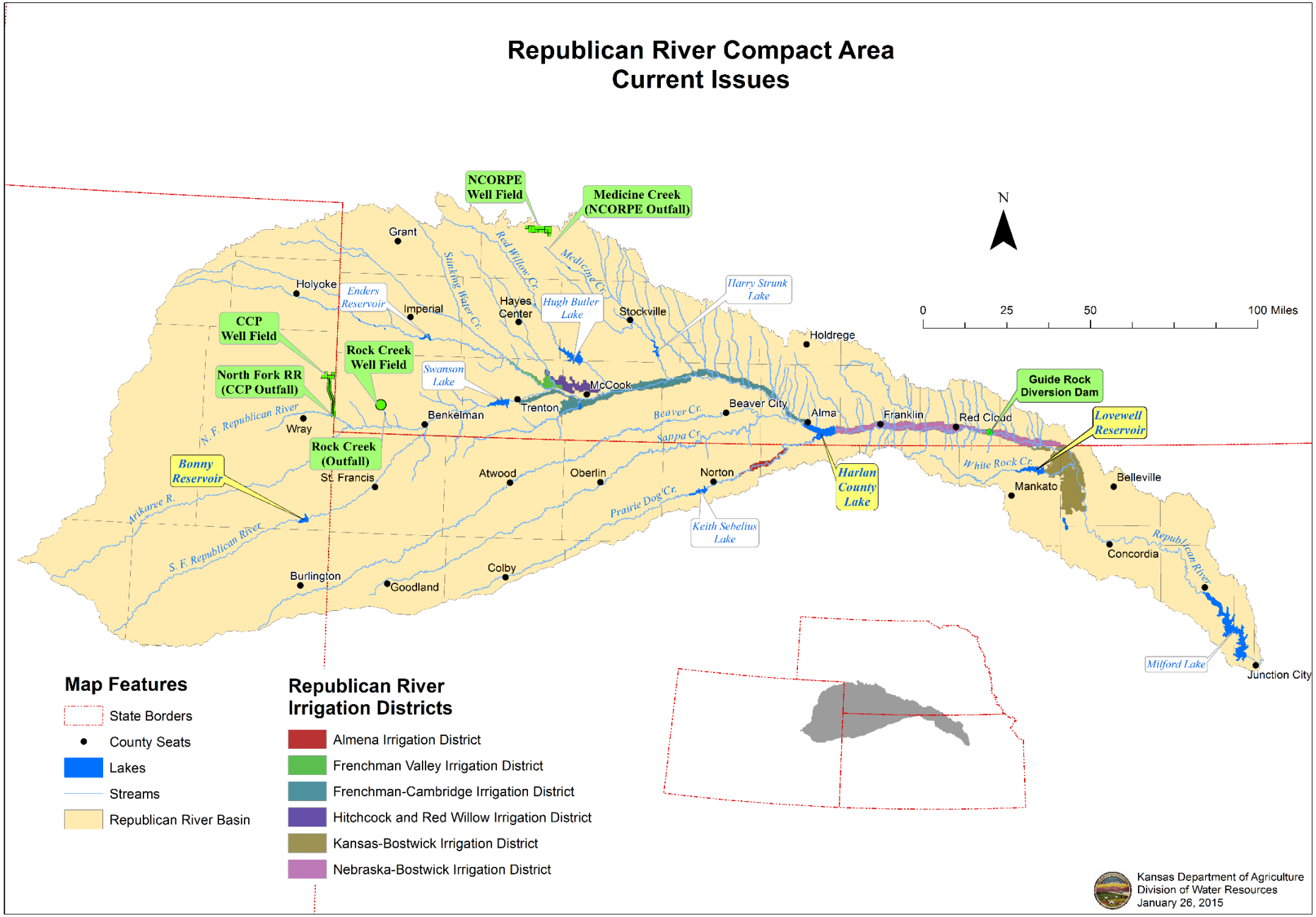
Kansas Interstate Water Compacts:

KS-CO Arkansas River



- Decades of litigation, starting in 1902.
- Kansas lost two cases in the first half of the twentieth century, allowing Colorado to develop over 80% of the reliable supply of the basin in Colorado.
- Compact agreed to in 1948:
  - Allows Colorado to continue to develop but such development cannot materially deplete usable flows to Kansas.
  - Provides KS with 40% of the benefits of John Martin Reservoir.
- 25 years of litigation, 1984-2007, to define what this means.
- "The Decree" – very complex, but compact compliance defined, Offset account
- Improved coordination as CO develops: irrigation improvement rules, model update, much more.
- Current issues:
  - A new CO account?
  - Seeking water quality improvements

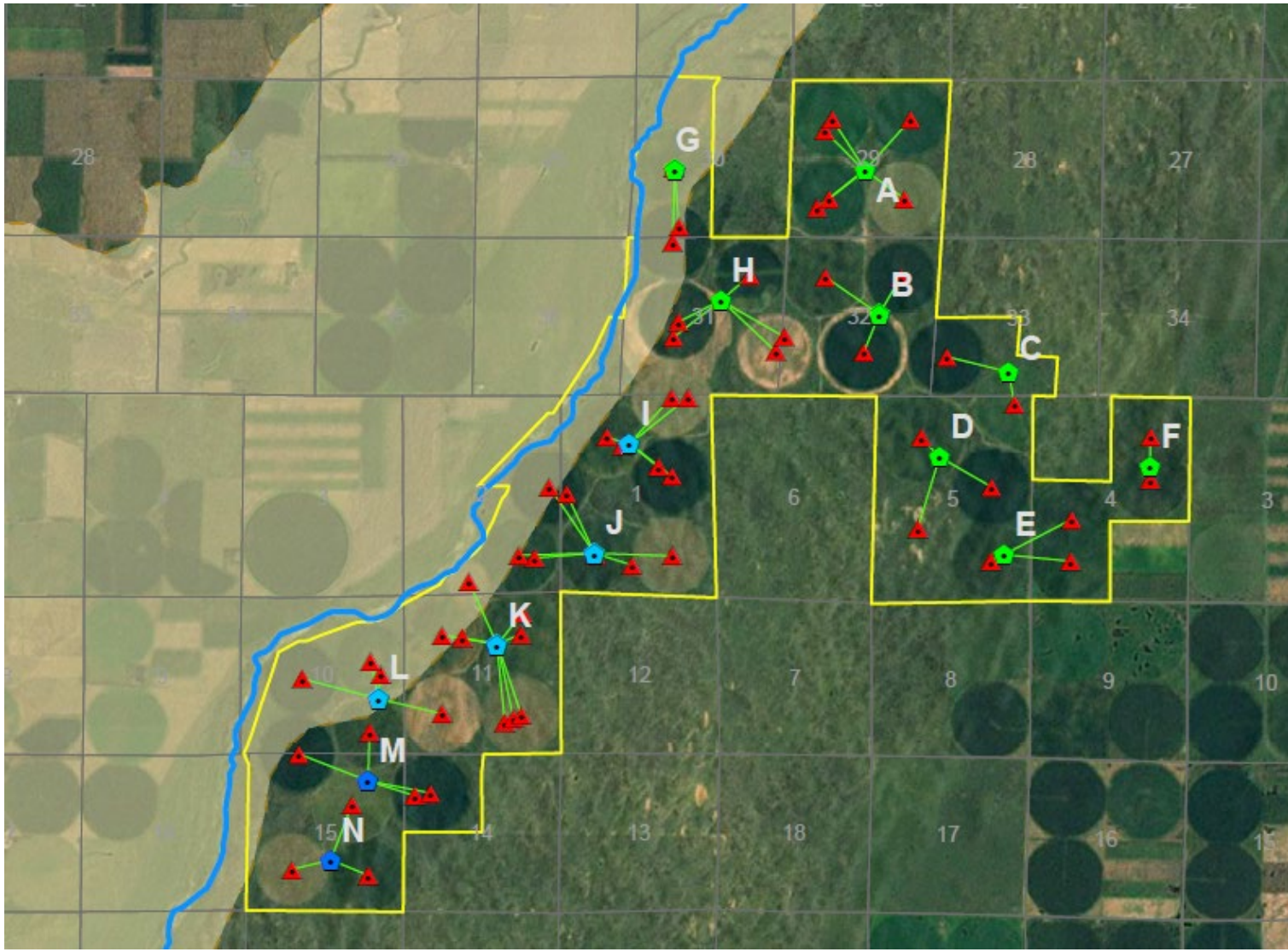


- Interstate water issues team started 1992
- U.S. Supreme court litigations, 1998, 2010
- 3 periods of intense negotiations
- 7 non-binding arbitrations
- Agreement on the final settlement situation (FSS), accounting methods, and the RRCA groundwater model
- 2016 long-term agreement marrying up NE and CO compliance methods with KS needs.

- Still work to be done, but a solid basis for the future

Hays/Russell Water Right Changes - Overview

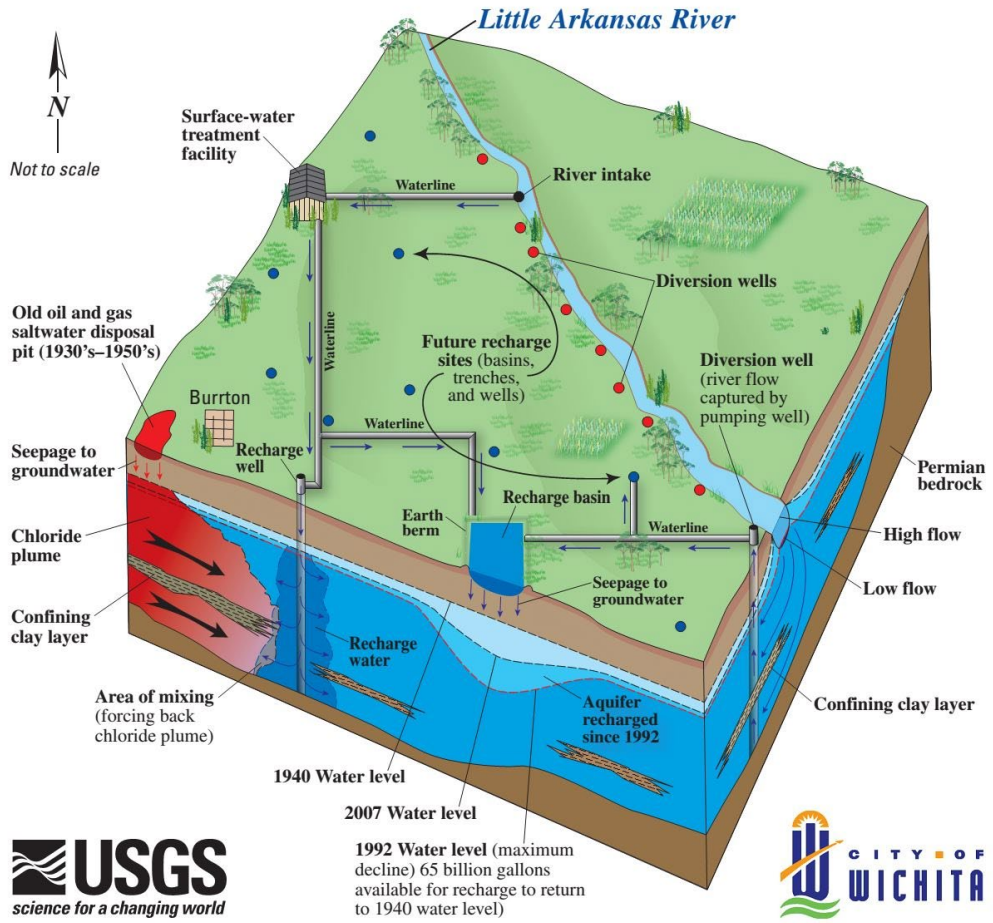
- Decades search for source of water to grow
- Purchased the R9 Ranch near Kinsley as their long-term solution.



Hays/Russell Pending Changes Applications and Proposed Water Transfer

- In June 2015, filed change applications to change 7,647 acre-feet (AF) from irrigation use on the R9 Ranch to municipal use for Hays/Russell
- Two approvals required:
  1) contingent approval from KDA-DWR to change applications (completed March 2019)
  2) approval of the proposed water transfer via the Water Transfer Act process
- March 2019, contingent approvals of change applications:
  - Annual limitation 6,756 AF/year and
  - 10-year limitation of 48,000 AF (an average of 4,800 AF/year).
  - Many more (70 page "Master Order")
- Decision on change approval under judicial review
- The Water Transfer proceeding will be delayed until judicial review is resolved.

Wichita's requested changes to its Aquifer Storage and Recovery (ASR) Project



BURNS McDONNELL

ASR Permit Modification Proposal
Revised Minimum Index Levels & Aquifer Maintenance Credits

CITY OF WICHITA

City of Wichita, Kansas

Project No. 71395

3/12/2018

Wichita ASR: Proposed changes

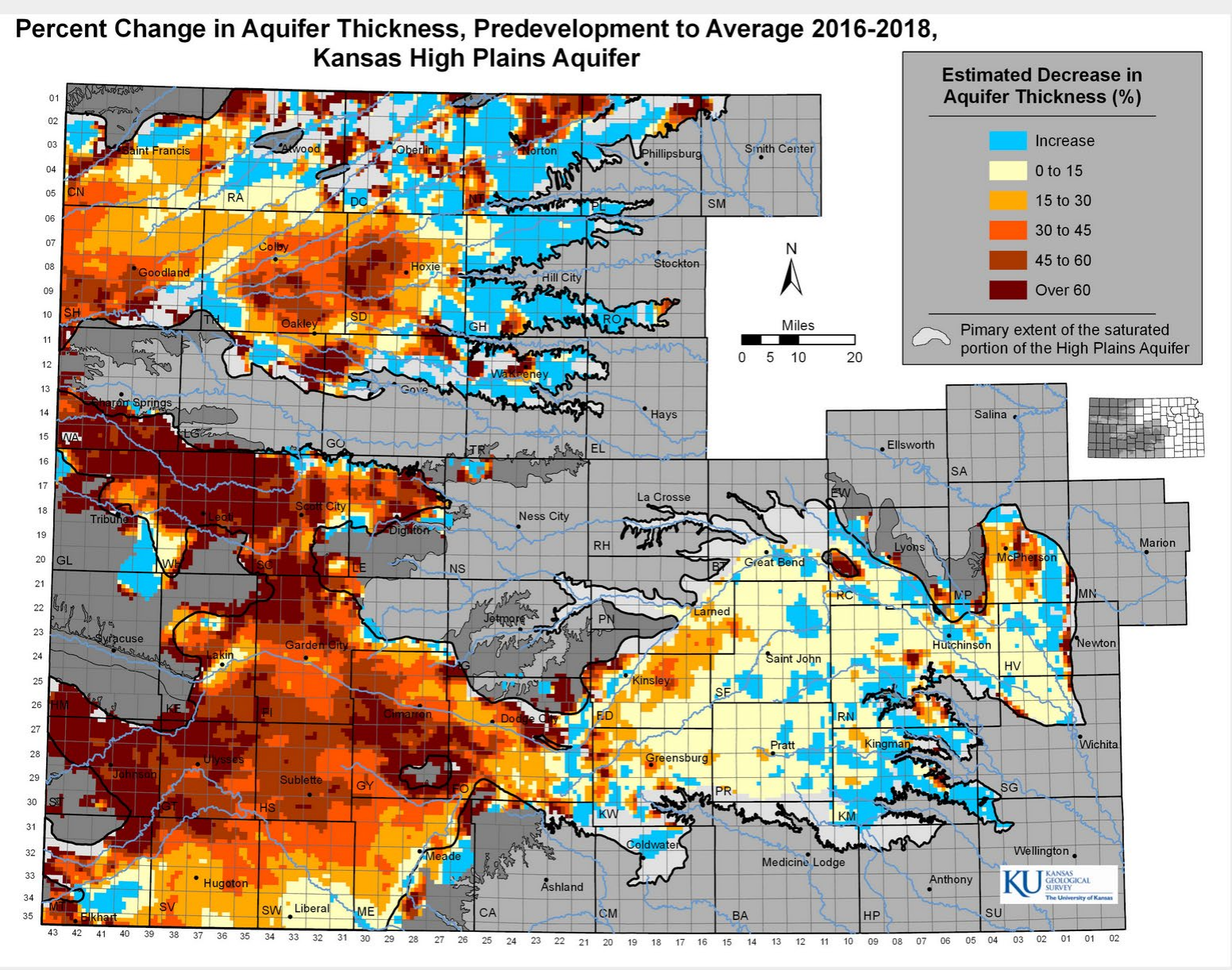
- Wichita's ASR was approved in phases: Phase I in 2005 (Burrton plume focus) and Phase II in 2009 & 2010 in its central well field.
- During March 2018, the City formally sent its request, which asks:
  1) that the bottoms of the basin storage area (BSA) be lowered and
  2) for a new method to generate recharge credits with the aquifer full.
- On June 28, 2018, a public informational meeting was held in Halstead.
- On December 11, 2018, a public comment hearing was held.
- During March 2019, the formal hearing and related matters were delegated to Connie Owen.
  - This formal hearing, principally for the formal parties, is planned for December 10, 2019.

Tools to address shortages and declines

Kansas Water Appropriation Act (KWAA), 1945

- *"**All water** within the state of Kansas is hereby **dedicated to the use of the people of the state**, subject to the control and regulation of the state in the manner herein prescribed."*
- Based on prior appropriation (first in time, first in right)
- Groundwater and surface water in single priority system
- Charges chief engineer to oversee:
  - **Allocation** of the State's water supply, allowing for orderly development of the state's water resources
  - **Regulation** of in times of shortage.
- K.S.A. 82a-706: *The Chief Engineer shall enforce and administer the laws of this state pertaining to the beneficial use of water and **shall control, conserve, regulate, allot and aid in the distribution of the water resources of the state** for the benefits and beneficial uses of all its inhabitants in accordance with the **rights of priority of appropriation**.*

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



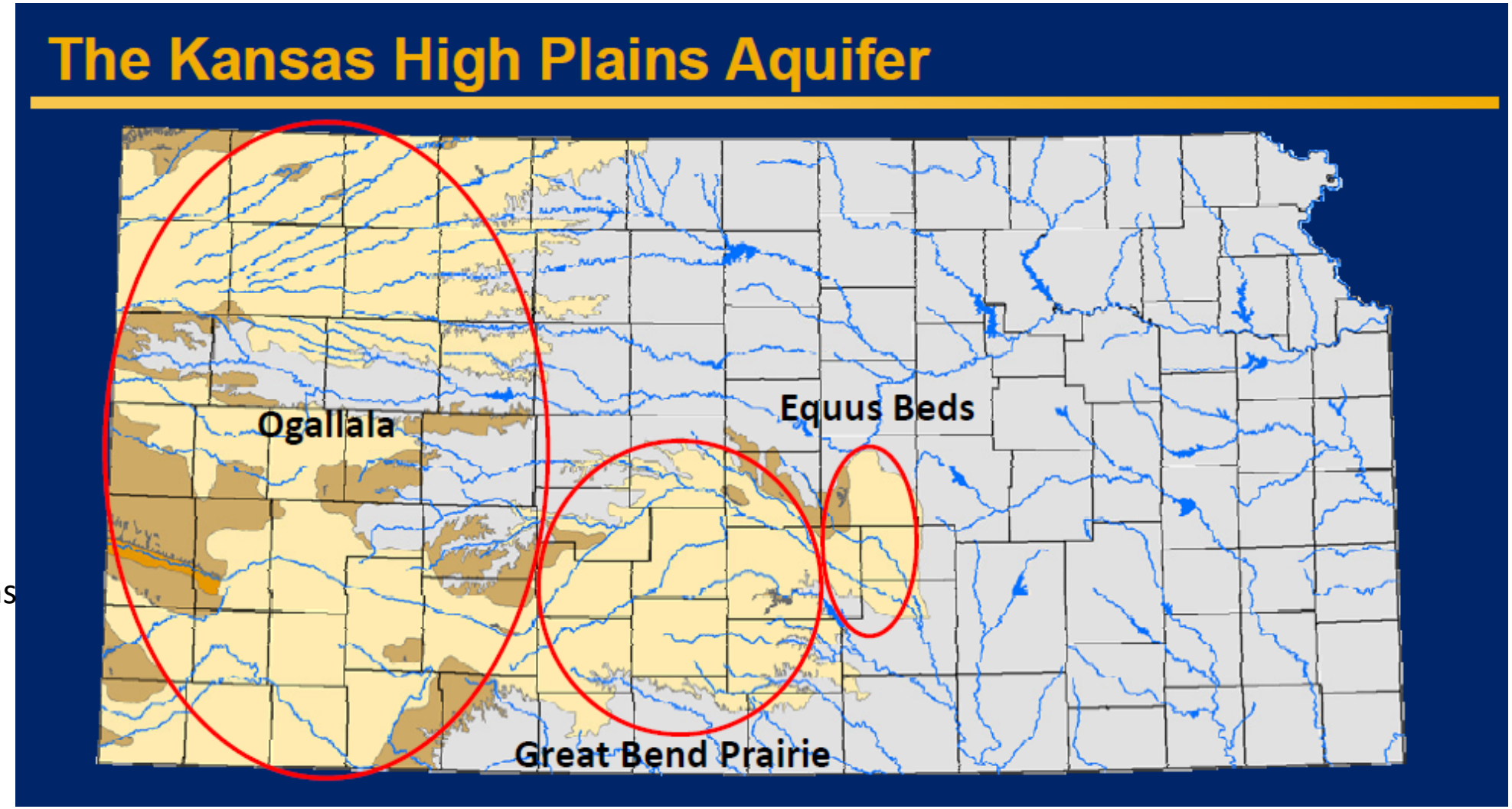
Notes:

- 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, ground use is reducing streamflows.

GMD 4 LEMAs
* Sheridan County
* District-wide

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

Kearney-Finney
* LEMA discussions
* WCA



Quivira impairment remedy

Legislative acts to encourage **groundwater conservation**

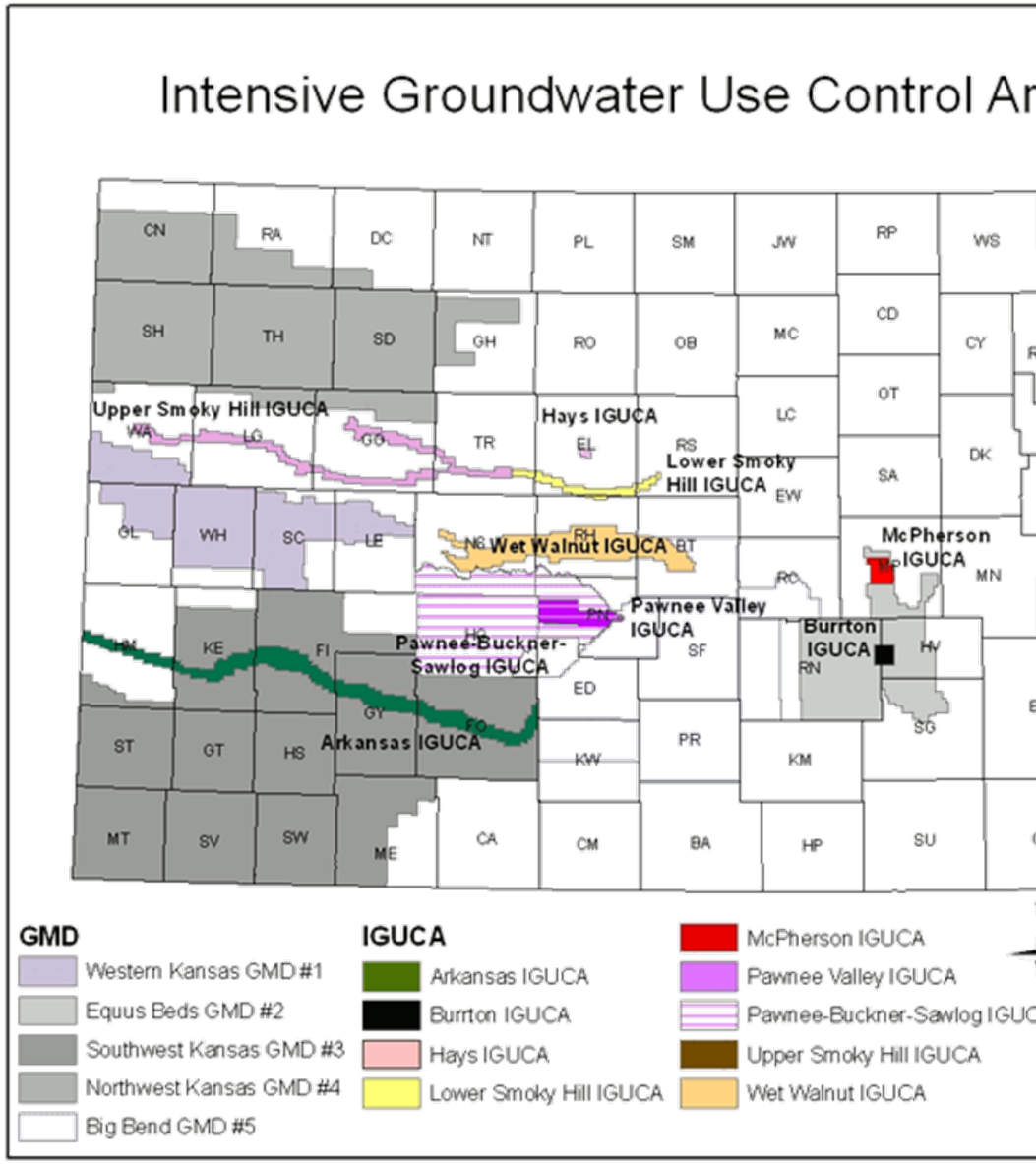
- 1972: Groundwater Management District (GMD) Act allow for the creation of **GMDs** to lead in local water conservation efforts
- 1978: GMD Act amended to allow for Intensive Groundwater Use Control Areas (**IGUCAs**).
- 2012: Local Enhanced Management Areas (**LEMA's**) allowed
- 2015: Water Conservation 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, considering the area and aquifer
- Provides alternatives to strict priority administration of groundwater rights
- Formal public hearings are held to provide due process
- Decision by chief engineer based on hearing record

Intensive Groundwater Use Control Areas

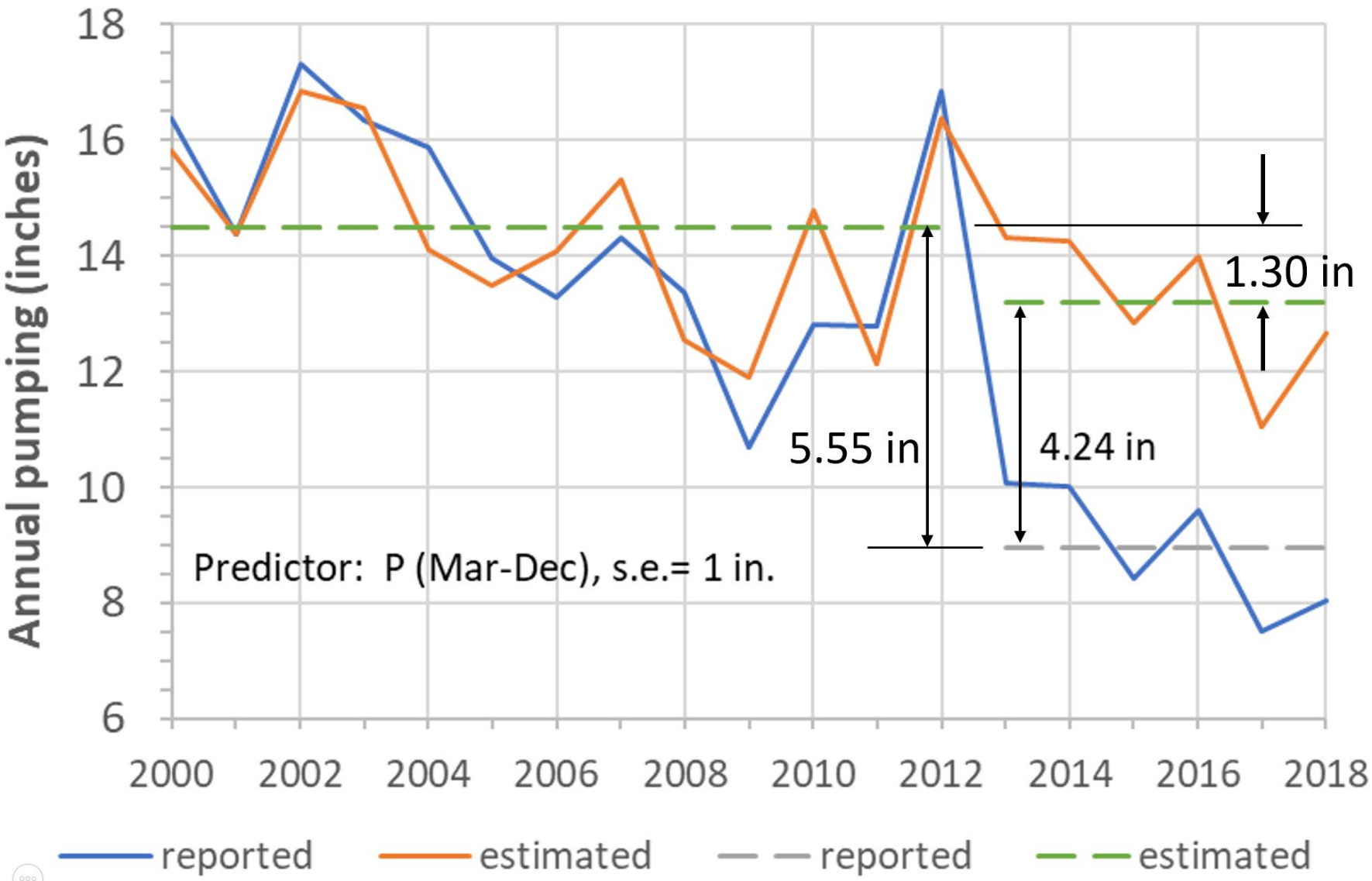
- **McPherson County**, 1979, closed area, required meters
- **Pawnee Valley**, 1980, set safe yield criteria
- **Burrton**, 1982, water quality concern; criteria for review
- **Lower Smoky Hill River**, 1983, closed area, 15 inch allocation
- **Upper Smoky Hill River**, 1984, closed area
- **Arkansas 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.



Local Enhanced Management Areas (LEMA), 2012

- Like IGUCAs, requires demonstrated groundwater problem
- Similar tools to address the problem as IGUCAs.
- Like IGUCAs, due process required via public hearings, decision based on the record
- 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."

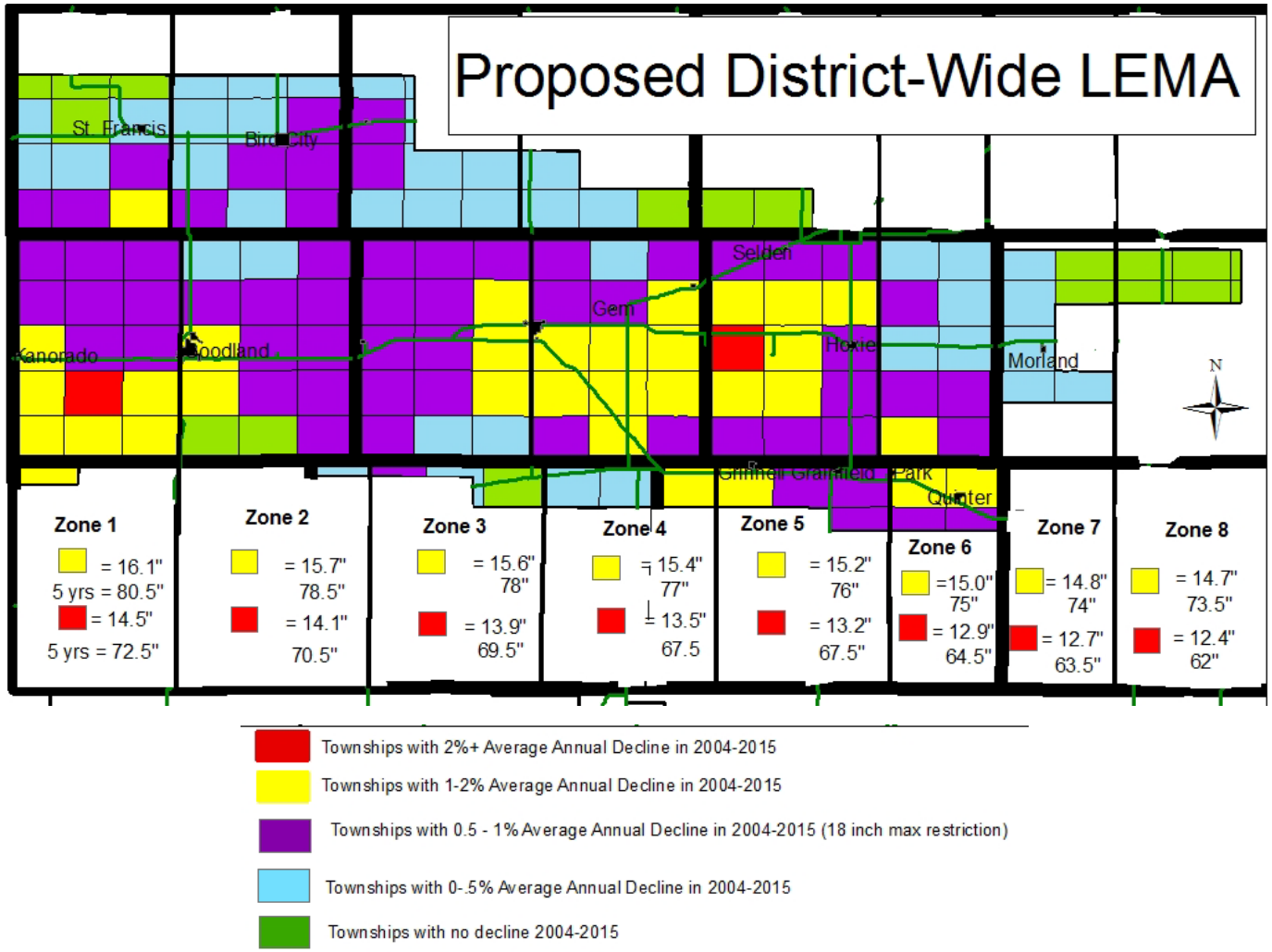
Sheridan 6 LEMA : Significantly reduced groundwater use



- Blue = reported use
- Orange = estimated use based on climate factors (2000-12)
- 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

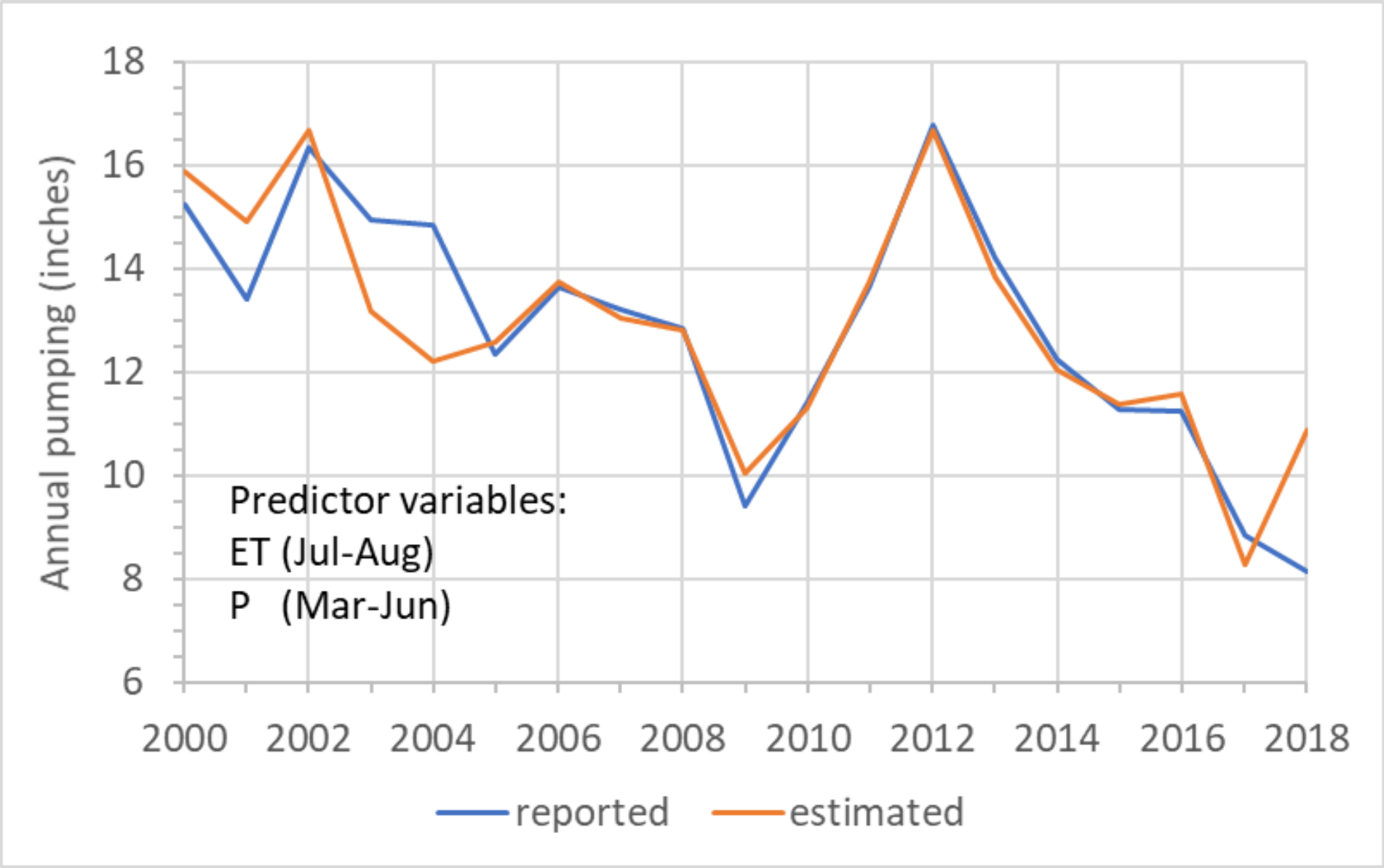


GMD 4 District-wide LEMA, Process and status

- 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.
- Petitioners filed for judicial review in Gove County
- On October 15, 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.”

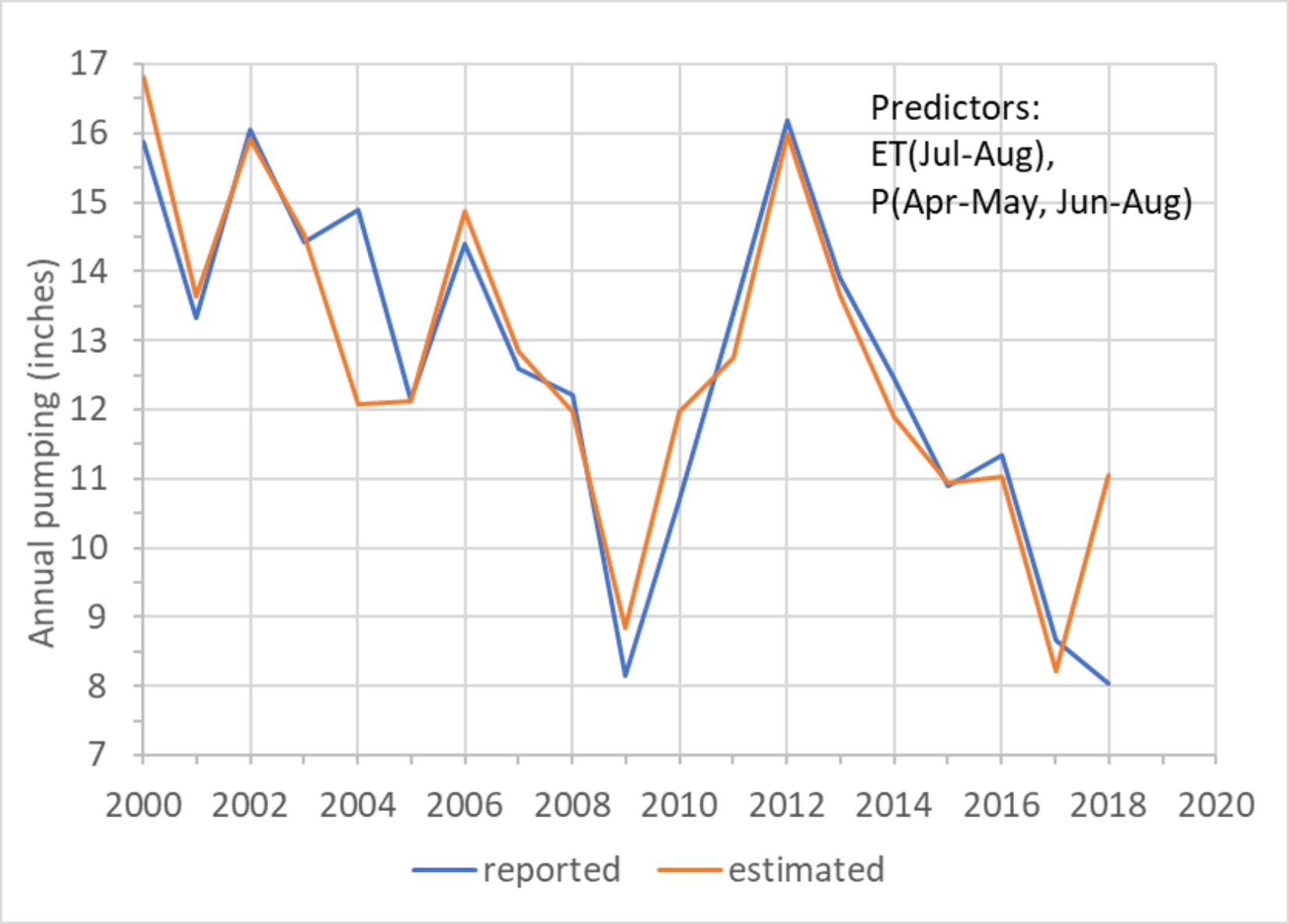
GMD 4 LEMA, reported use and estimated use

2018 first year of LEMA



Thomas County, reported use and estimated use

2018 first year of LEMA



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.

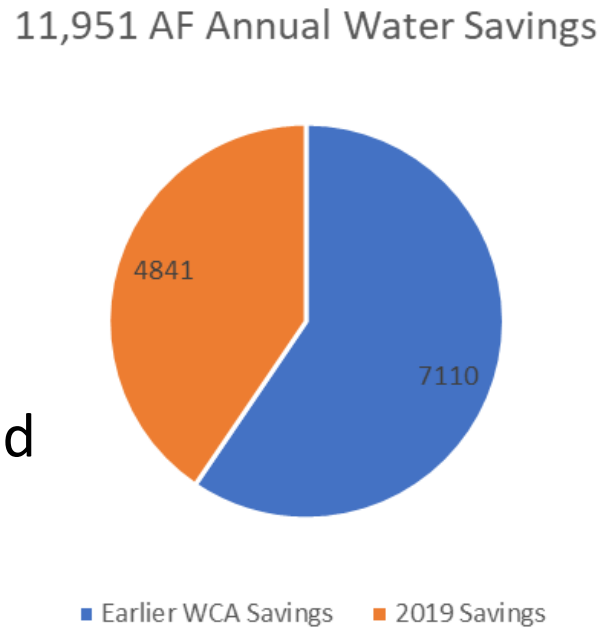
(a) Any water right owner *or a group of water right owners in a designated area may enter into a* ***consent agreement and order with the chief engineer*** *to* ***establish a water conservation area****. The water right owner or group of water right owners shall submit a management plan to the chief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

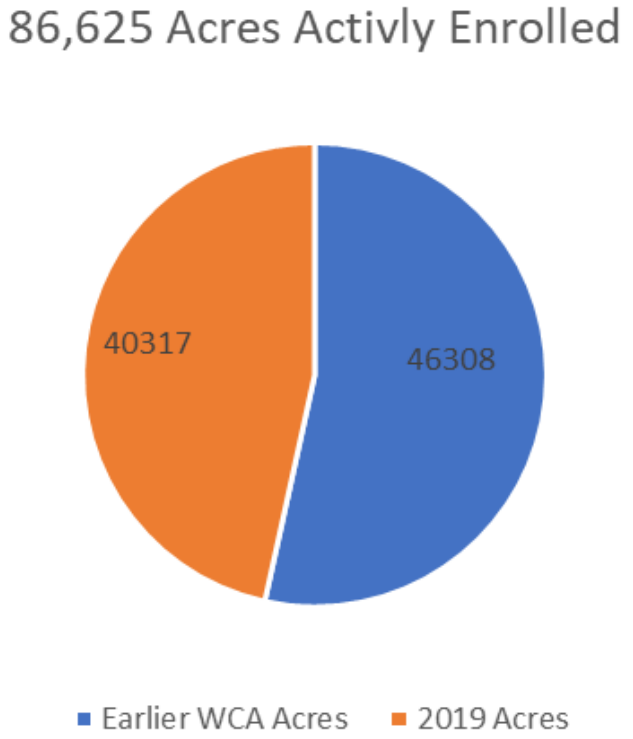
- A Water Conservation Area (WCA) is a designated area with an approved management plan developed by a water right owner(s) with the consent of the chief engineer to reduce water withdrawals while maintaining economic value via water right flexibility.
- **Flexibilities** can include multi-year allocations, 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

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	Acres Enrolled(Ac/Yr)	Savings (AF/Yr)	Date Approved
D	SC/WH	WCA Plan	WCA CAO	2019-2025	5,959	812	10/04/2019
rden City (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	11	06/28/2019
	ST	WCA Plan	WCA CAO	2019-	720	212	06/11/2019





Wichita County WCA proposal development

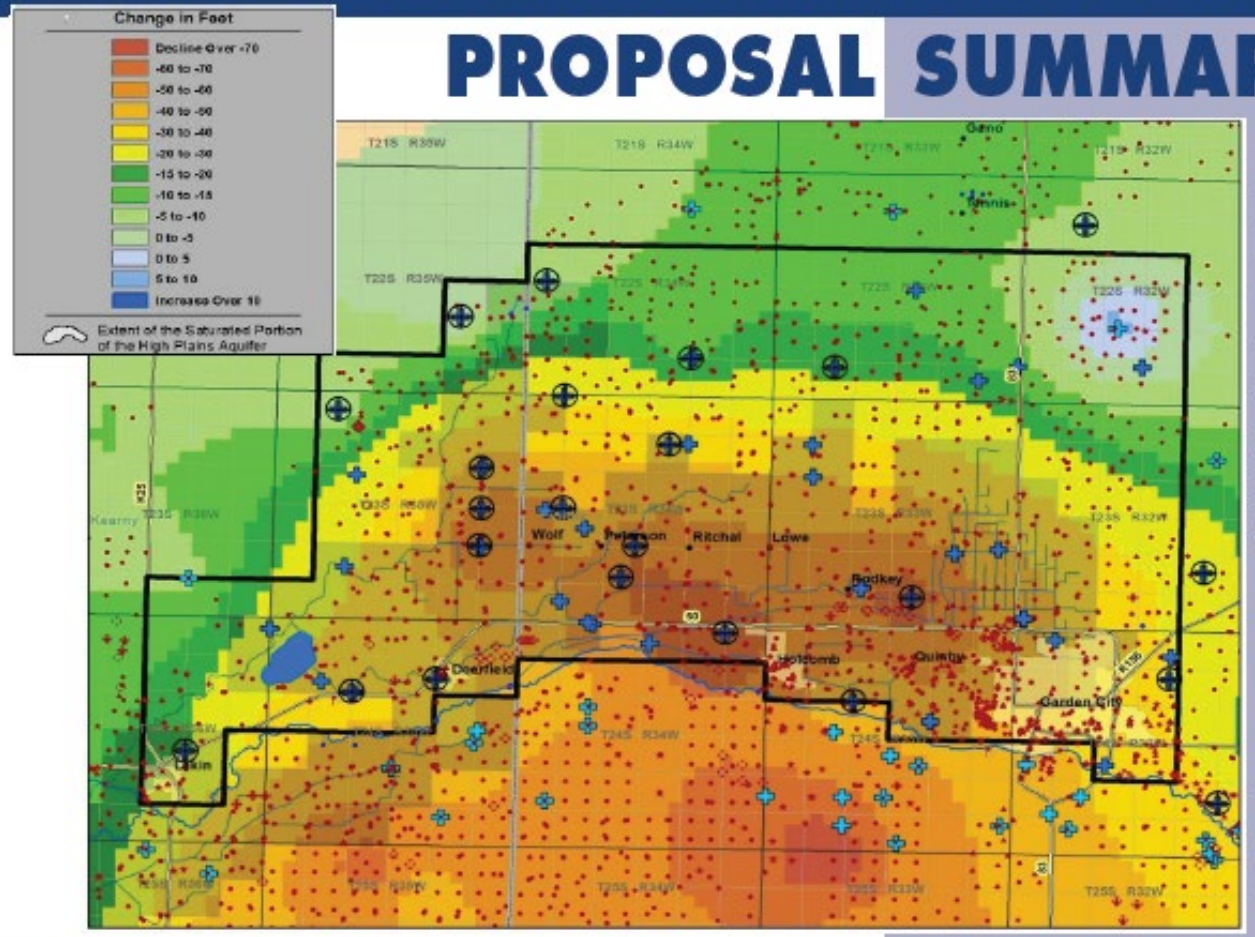
- 23 feet of average remaining saturated thickness, well rates dropping, less than 25 years of remaining life.
- Unique, county-wide WCA developed that producers can enroll in
- Extensive process to develop proposal, driven by a local committee, initiated August 2016
- Plan approved March 2017
- Conservation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

3/20/17

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

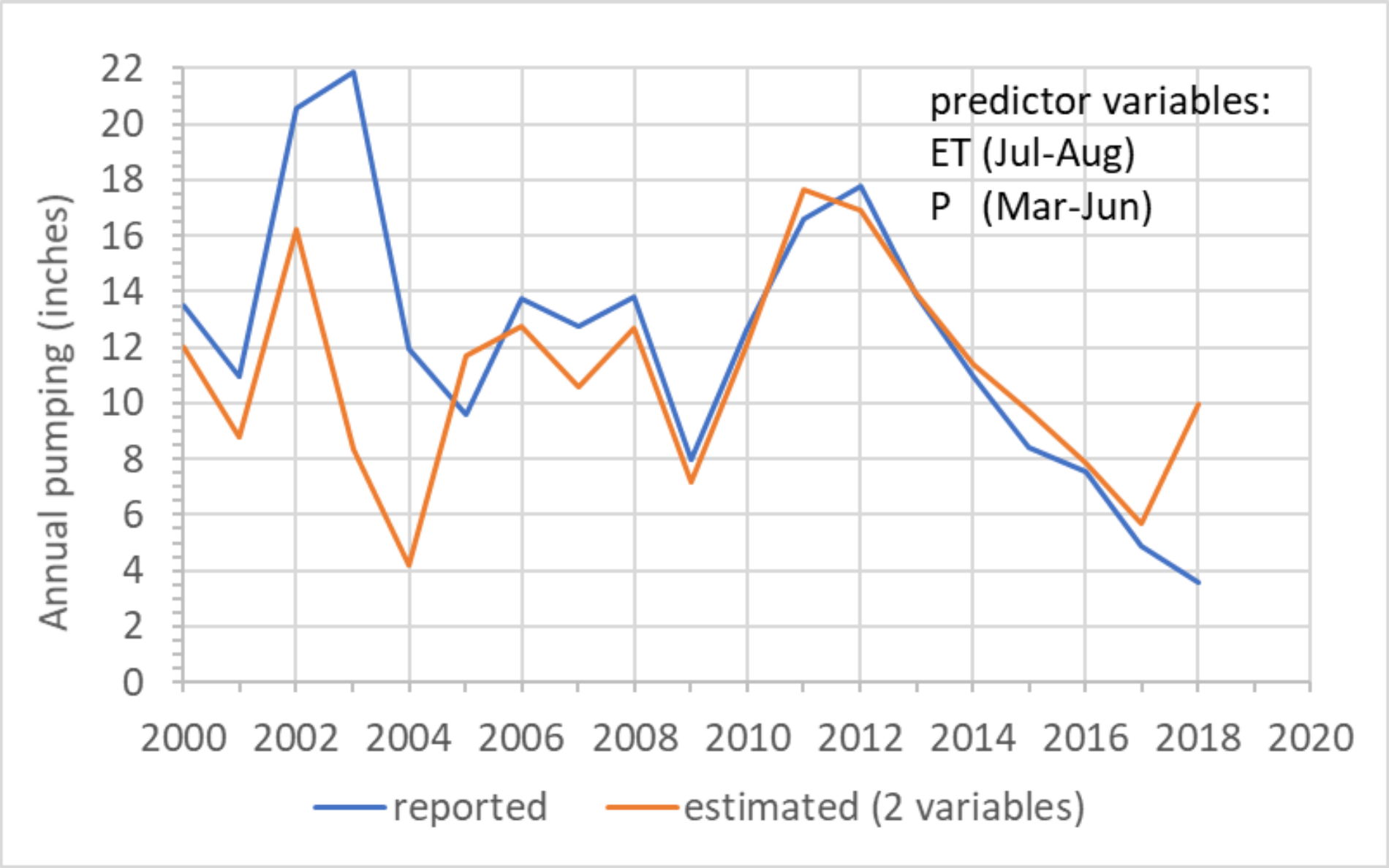
When will this proposed LEMA take effect?

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 4000+ AF/year of savings

- 20% of Finney Counties in WCAs

Big D Farms WCA, started 2017 – use vs estimates

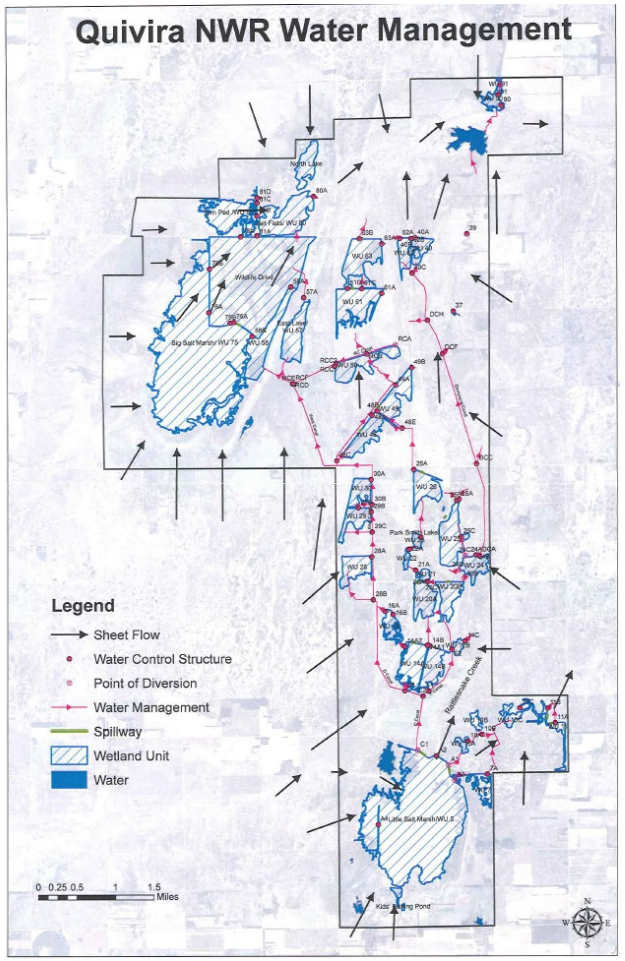


Ogallala – next steps

- While these new tools (LEMA, WCAs) represent progress, esp. in areas like the Sheridan LEMA, Wichita County WCA, and the KFL area WCAs, **the benefits on local**.
- Declines continue through much of the Ogallala, resulting in declining pumping rates, increasing conflicts, limited future. Changes is needed.
- **Individual waterusers can take 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 we are seeing it is possible and benefits long-term, those who make those changes. Talk to DWR and your GMD about options for using these tools

Quivira National Wildlife Refuge

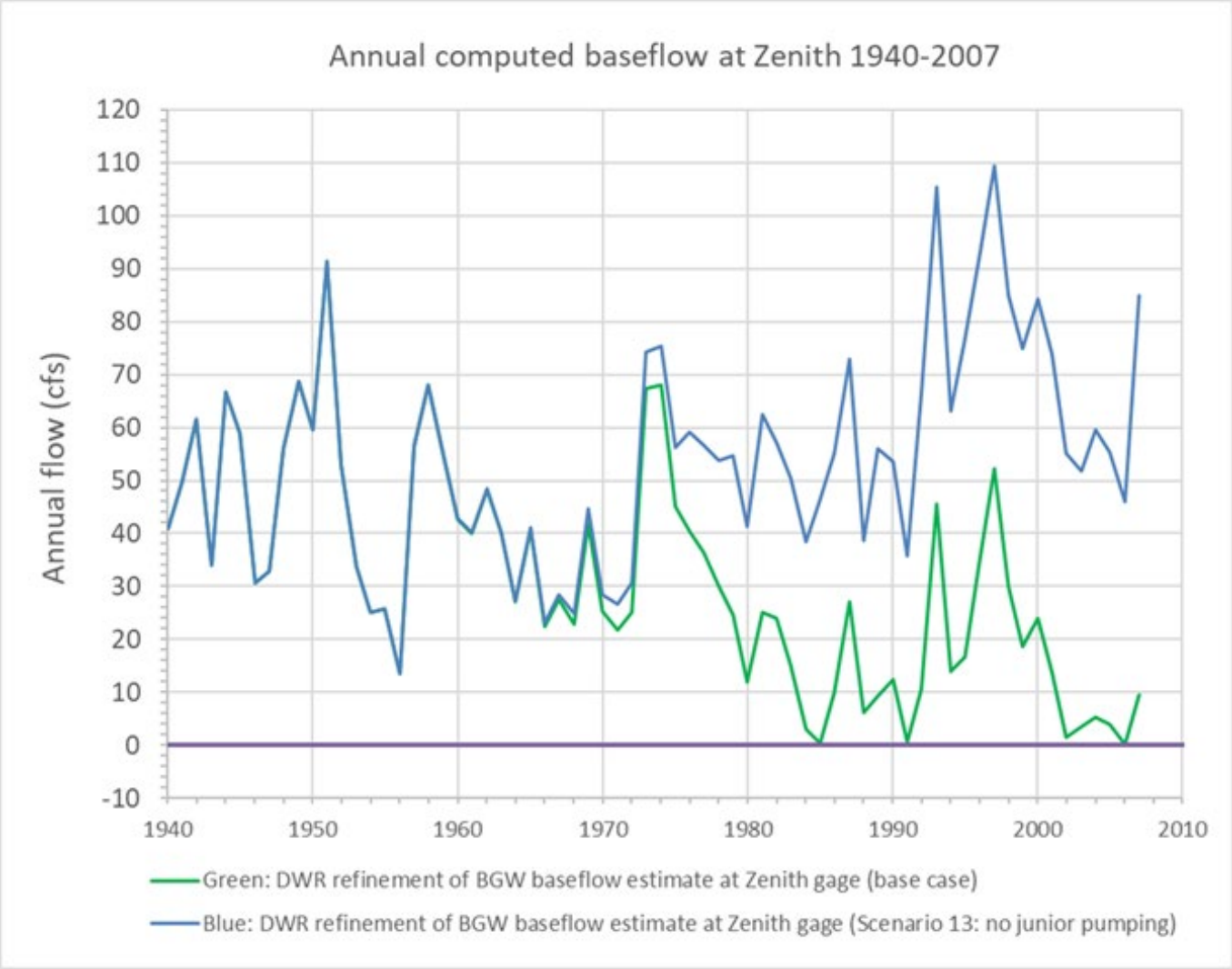
- Senior Water Right: held by the U.S. Fish and Wildlife Service
- Service has said for decades that their water right is being impaired
- Rattlesnake Partnership, 1993-2012:
  - Service, GMD 5, DWR, WaterPACK
  - Decades of voluntary efforts unsuccessful
- April 2013: Service filed an impairment complaint;
- July 2016 Final Impairment Report confirms impairment



Quivira: Junior groundwater pumping has significantly reduced streamflow, reducing Quivira's usable supply

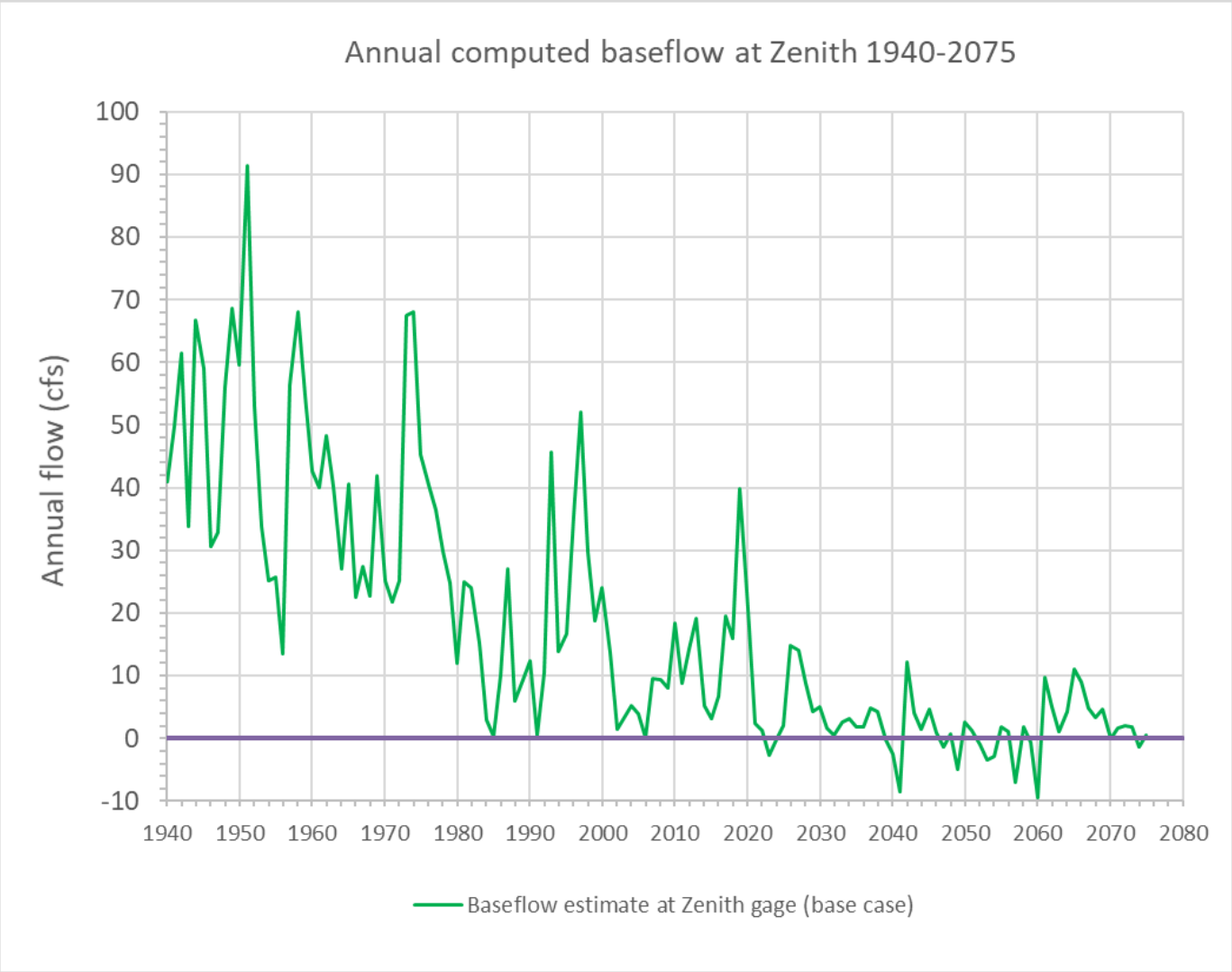
GMD 5's model shows the dramatic and growing reductions in streamflow started in the 1970s.

These reductions have led to the **regular and significant impairment** of Quivira's water right.

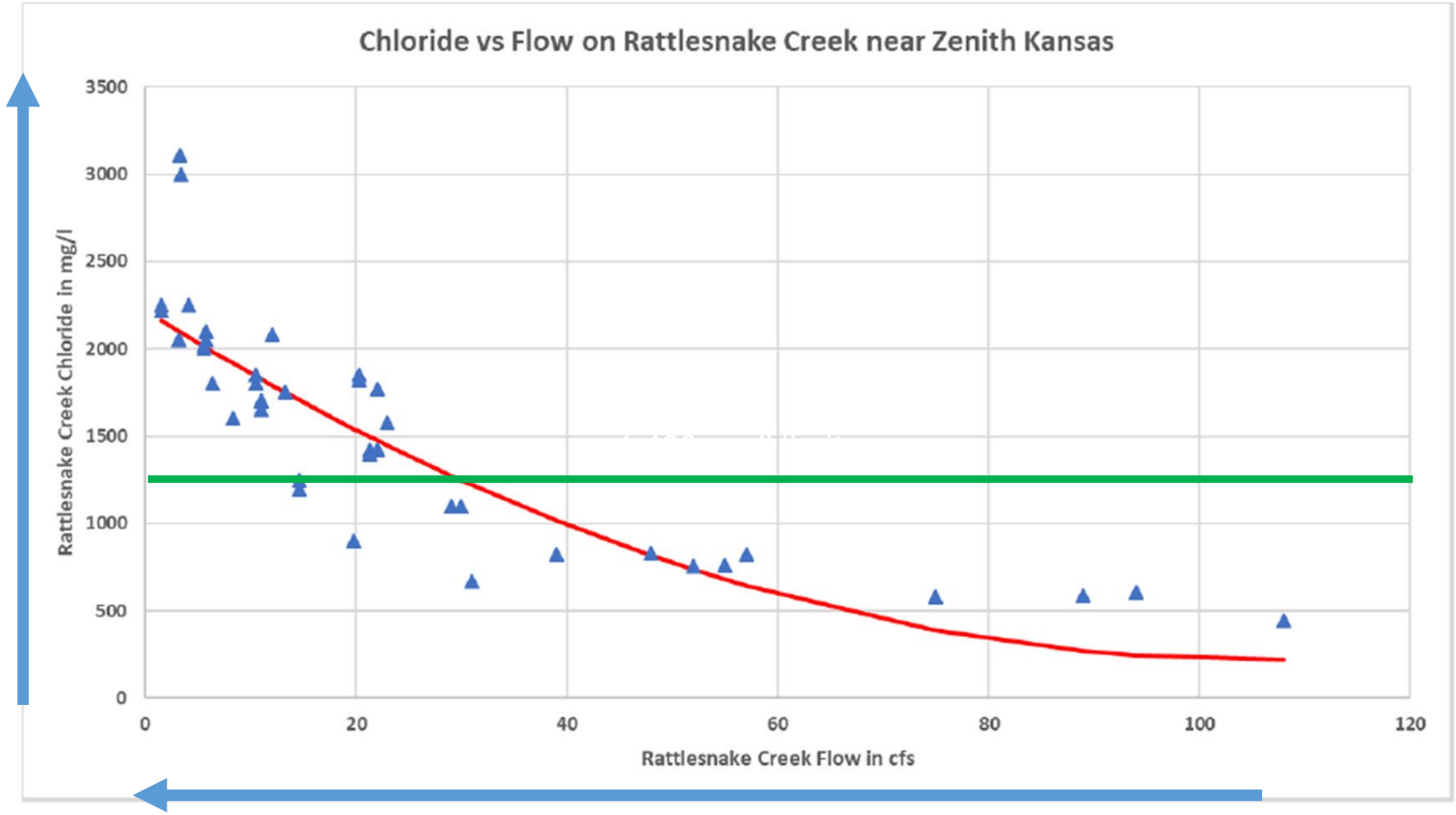


The groundwater model shows streamflows will continue to decline into the future

So the impairment is growing in frequency and magnitude



As streamflows decline, the stream water quality degrades



Initial efforts to develop a remedy to the impairment

- KDA has been working with GMD 5 since 2016.
- GMD 5 proposed an augmentation project as the cornerstone of the impairment remedy.
- GMD 5 provided two offers to the U.S. Fish and Wildlife Service but were unable to reach agreement.
- GMD asked DWR what would be required to resolve the impairment.
- DWR completed additional technical work to provide a preliminary answer in July 2017.

What level of reductions are needed?

- A 30% reduction in pumping is required to stabilize streamflows.
- A minimum reduction of 15% in pumping is required to support the augmentation project and protect water quality.

Proposed Augmentation Project

- GMD 5 developed a conceptual proposal for an augmentation project.
- KDA strongly supports augmentation as a crucial part of the remedy and continues to urge its development.
  - Developed an MOU with GMD5
  - Developed regulations to allow the project's development without purchasing water rights
- Concerns:
  - long-term yield is unclear
  - will need to be carefully monitored to ensure it will not create a water quality problem

GMD 5 LEMA Proposal / Why rejected

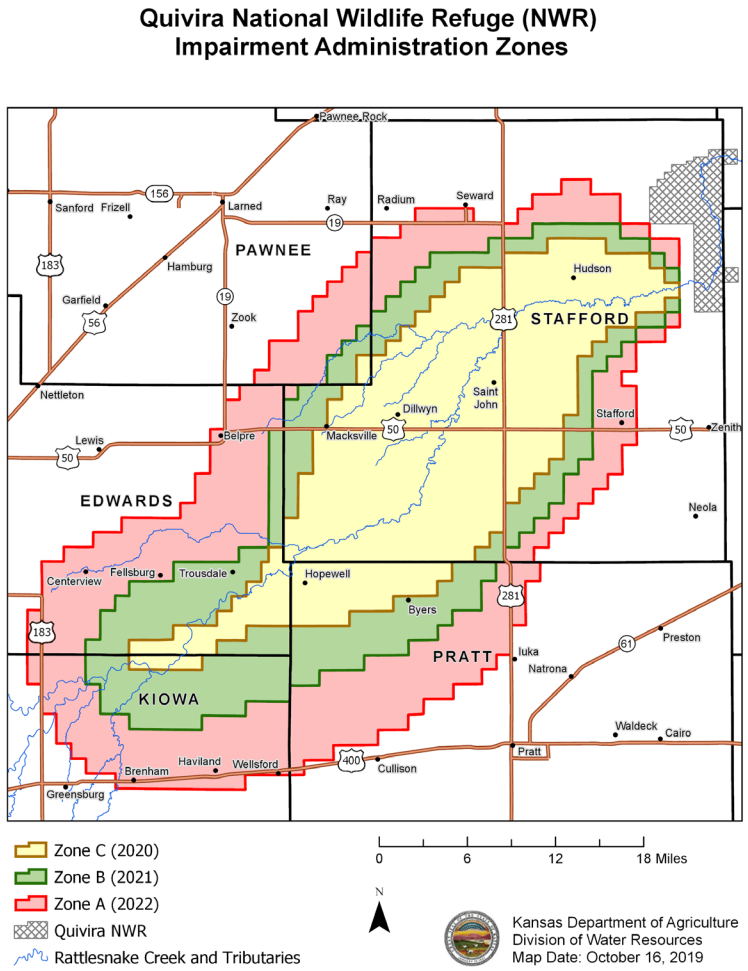
- In August 2017, GMD 5 told DWR it wished to use a Local Enhanced Management Area (LEMA) to remedy the impairment.
- GMD 5's LEMA proposal included:
  - Augmentation project
  - Removal of end guns, other voluntary actions to reduce pumping
  - 4400 acre-feet of focused reductions
- LEMA rejected July 2019 as it did not meet statutory requirement for a LEMA or meet the basic threshold for consideration.
  - No specific schedule to complete the actions
  - No required reductions in water use
  - No enforceable commitment to reduce water use

Why was KDA-DWR planning to take water administration action?

- It has been **3 years** since the final impairment report.
- Service filed Request to Secure Water for 2018 and 2019, but DWR did not yet act due to negotiations toward a solution. RSW expected for 2020.
- Progress toward a locally developed solution has halted.
- Augmentation is not available and not in sight.
- Further delay in action to address the impairment is **inconsistent with state law**.
- Further delay exposes the basin to much more significant and inflexible reductions being ordered by a Court.

Proposed administrative orders

- Orders were developed in preparation of the US FWS filing a “Request to Secure Water” for 2020.
- Notices sent to give water users time to prepare.
- The overall reduction of approx. 14%, although impacts vary by individuals according to the priority of water rights and historic use pattern
- Plan included phasing in over 3-years based on a Zone map.
- WCA planned to provide multi-year allocations and allocations to be moved around



What is the current situation?

- Senator Moran obtained agreement from the Dept. of Interior to delay filing a Request to Secure Water through Sept. 30, 2020 to allow more time for finding a solution.
- No orders will be sent. If a solution isn't found and Service files Request to Secure Water, KDA-DWR will again respond with appropriate action.
- We encourage all water users to be actively involved moving forward.
- Augmentation needs to be developed aggressively regardless of the path forward.

JERRY MORAN

FOR IMMEDIATE RELEASE – October 18, 2019
Contact: Trenton Kennedy | 202-228-6519

PHOTO

Sen. Moran Discusses Quivira National Wildlife Refuge Water Rights with FWS Nominee Aurelia Skipwith

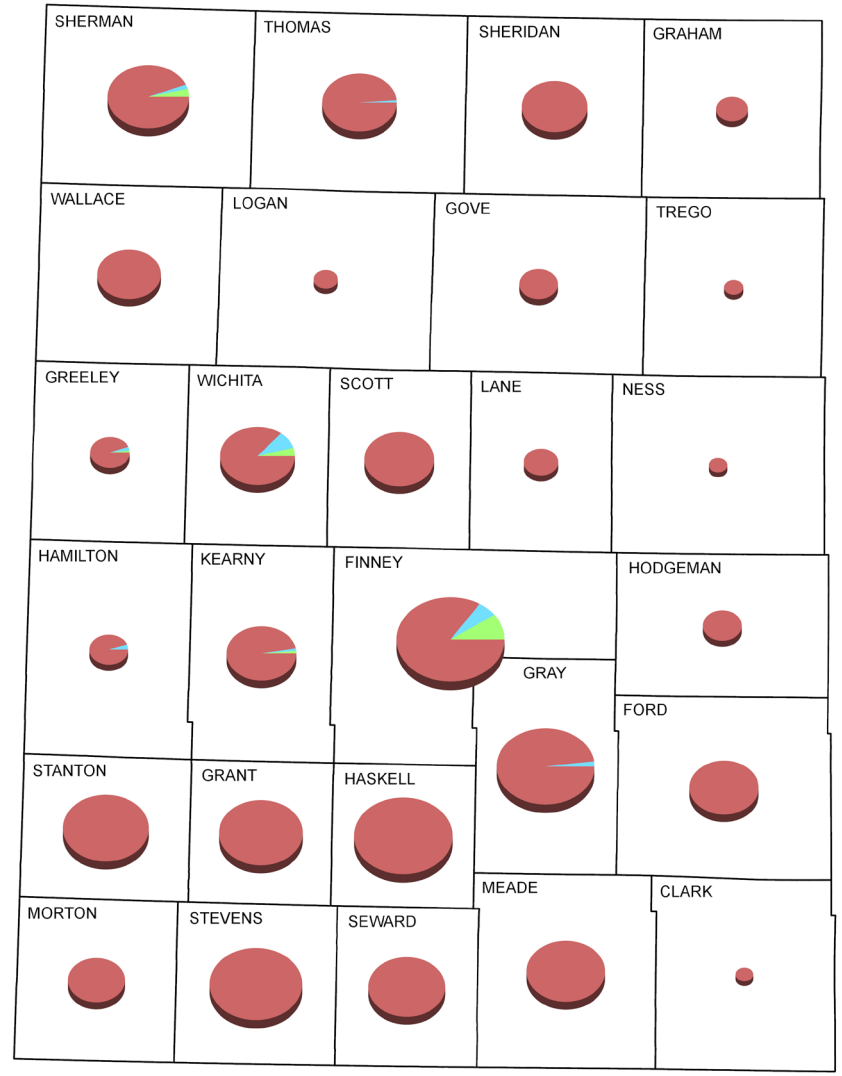
"I am pleased that Ms. Skipwith committed to working with local stakeholders to find a voluntary solution to satisfy the Quivira water impairment. . ."

Sen. Moran with Aurelia Skipwith, nominee to be the Director of the U.S. Fish and Wildlife Service

Questions

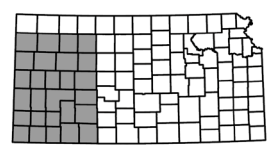
2019 WCA Enrollment in Kansas

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



N

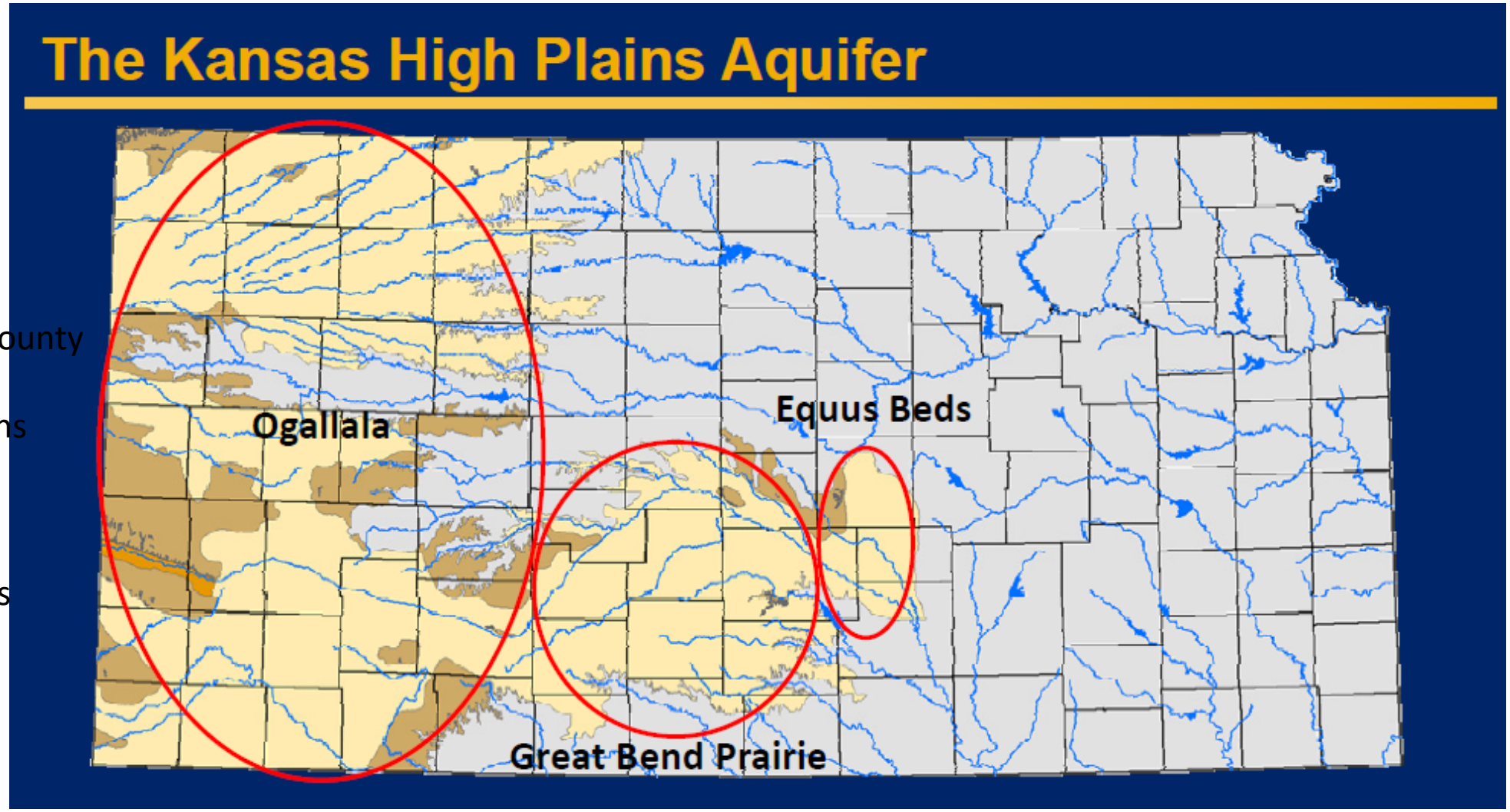
0 10 20 40 Miles

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

GMD 4 LEMAs
* Sheridan County
* District-wide

GMD 1 -Wichita County
* WCA
* LEMA? discussions

Kearney-Finney
* LEMA discussions
* WCA



Hays/Russell Changes

Quivira impairment remedy

Wichita ASR