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Water Appropriation Program Manager

# Limited Water in Kansas

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- Kansas: variability in hydrologic conditions across the state
  - Average precipitation ranges from 16 inches in western Kansas to 40 inches in eastern Kansas
  - Droughts can be persistent
- Western Kansas
  - Primarily relies on the Ogallala-High Plains aquifer for its water supply
- Eastern Kansas
  - Primarily relies on surface water supplies
- Central Kansas
  - Relies on a mixture of surface and groundwater



# Kansas Water Appropriation Act 1945

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- All water is dedicated to the use of the people of Kansas
- Right to use water is based on prior appropriation or **“First in time - First in Right”**
- Limits rights to reasonable needs
- Allows a limited resource to be allocated for beneficial use and to protect minimum desirable streamflows
- Protects investments, property rights and the resource



# Kansas Water Appropriation Act

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- Single priority system for groundwater and surface water
- A water right does not grant ownership of water. It is a real property right to divert and use water for beneficial purposes with reasonable limitations
- Priority date determines the right to pump not the use
- Conversions of water rights tend to move toward higher valued uses



# Protections

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- During periods of shortage, junior water rights may be curtailed to satisfy senior water rights and minimum desirable streamflows
- Releases from storage are protected
- Strict first in time, first in right can be harsh
- Statutes provide additional comprehensive tools such as LEMAs and IGUCAs to deal with long-term water problems

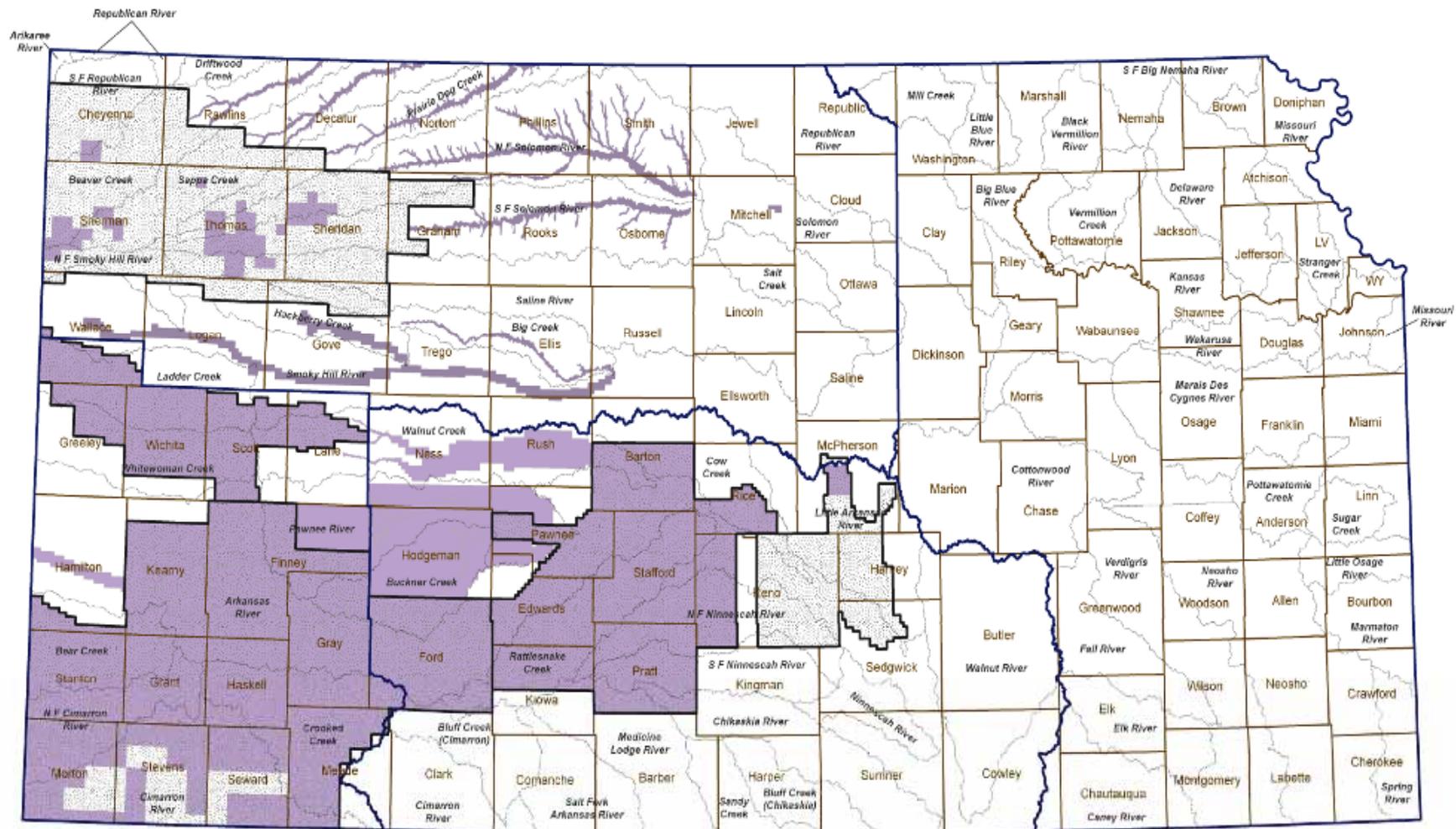
## Availability of Water in Fully Appropriated or Closed Areas

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- In areas closed to new appropriations of water, additional water use for population growth, new industry, or feedlot can be accommodated through purchase and conversion of existing water rights.
- Changes must pertain to the same local source of supply.
- Changes from irrigation to another use such as stock or municipal cannot increase net consumptive use.
- We no longer have to worry about “Use It Or Lose It” in closed areas of Kansas.



# Groundwater Areas Closed by Rule or Order



Kansas Department of Agriculture  
Administrative Services, GIS  
February 9, 2017

## Legend

- DWR Field Office Boundaries
- Closed Areas \*
- GMD Boundaries
- County Boundaries
- DWR Basins



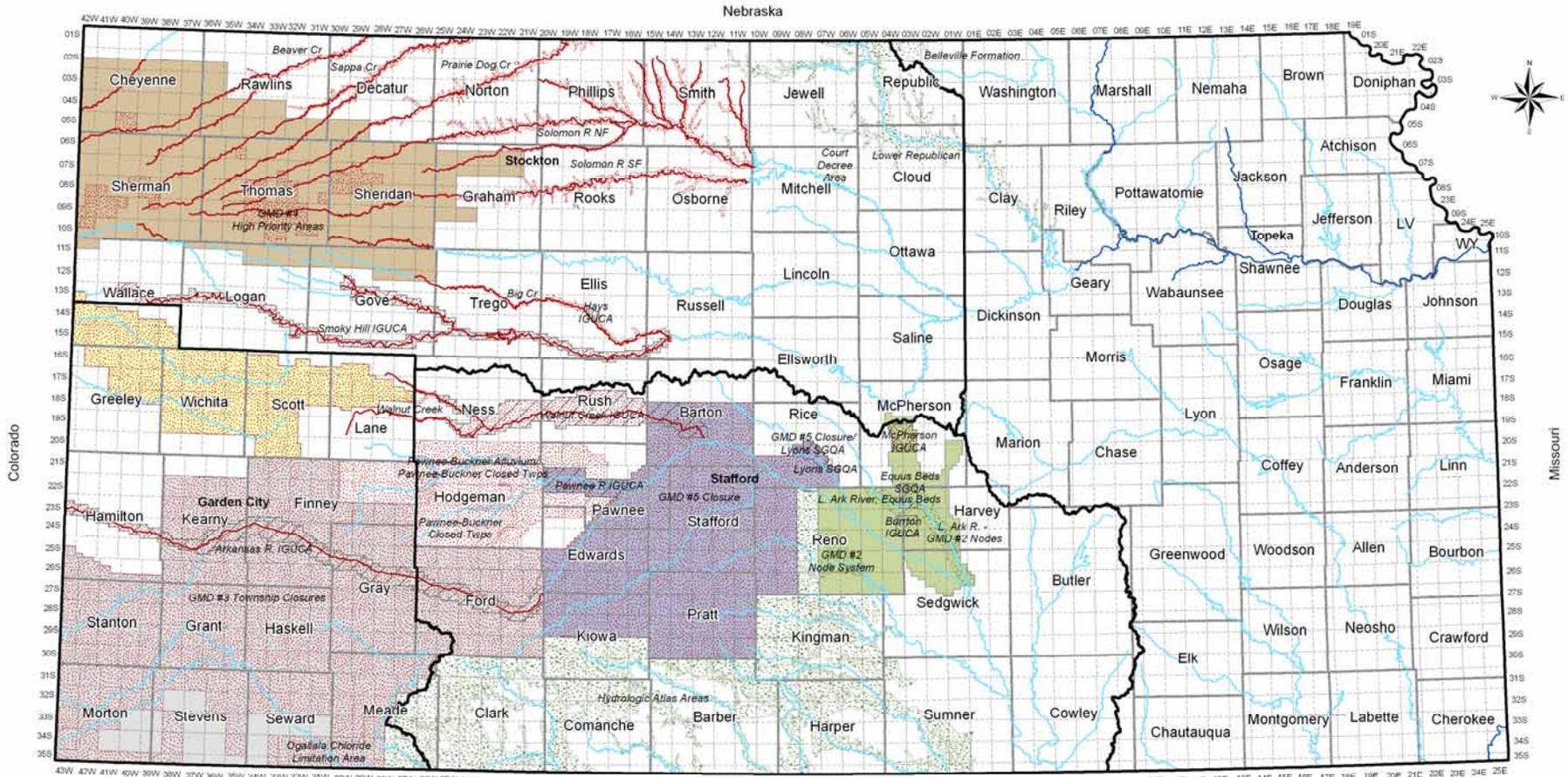
\* Western Kansas Groundwater Management District No. 1 has requested rules and regulations to close the Ogallala and Niobrara formations within the district to new appropriations of water. A moratorium is in place while the rules and regulations are in the process of being adopted.

# Closed and Restricted Areas

Kansas Department of Agriculture

## Closed and Restricted Areas

Division of Water Resources



Field Office Boundary

Southwest Kansas GMD #3

IGUCA or SGQA

Closed Streams, generally excluding temporary and other small uses in some cases. See regulation for details.

Disclaimer - Features on this map represent conditions as of the date of the map and are subject to change. The user is referred to specific policies, regulations, and/or orders of the Chief Engineer.

Western Kansas GMD #1

Northwest Kansas GMD #4

Closed Area, generally excluding temporary and other small uses in some cases. See regulation for details.

Streams, surface water generally available. Includes Missouri River.

Equus Beds GMD #2

Big Bend GMD #5

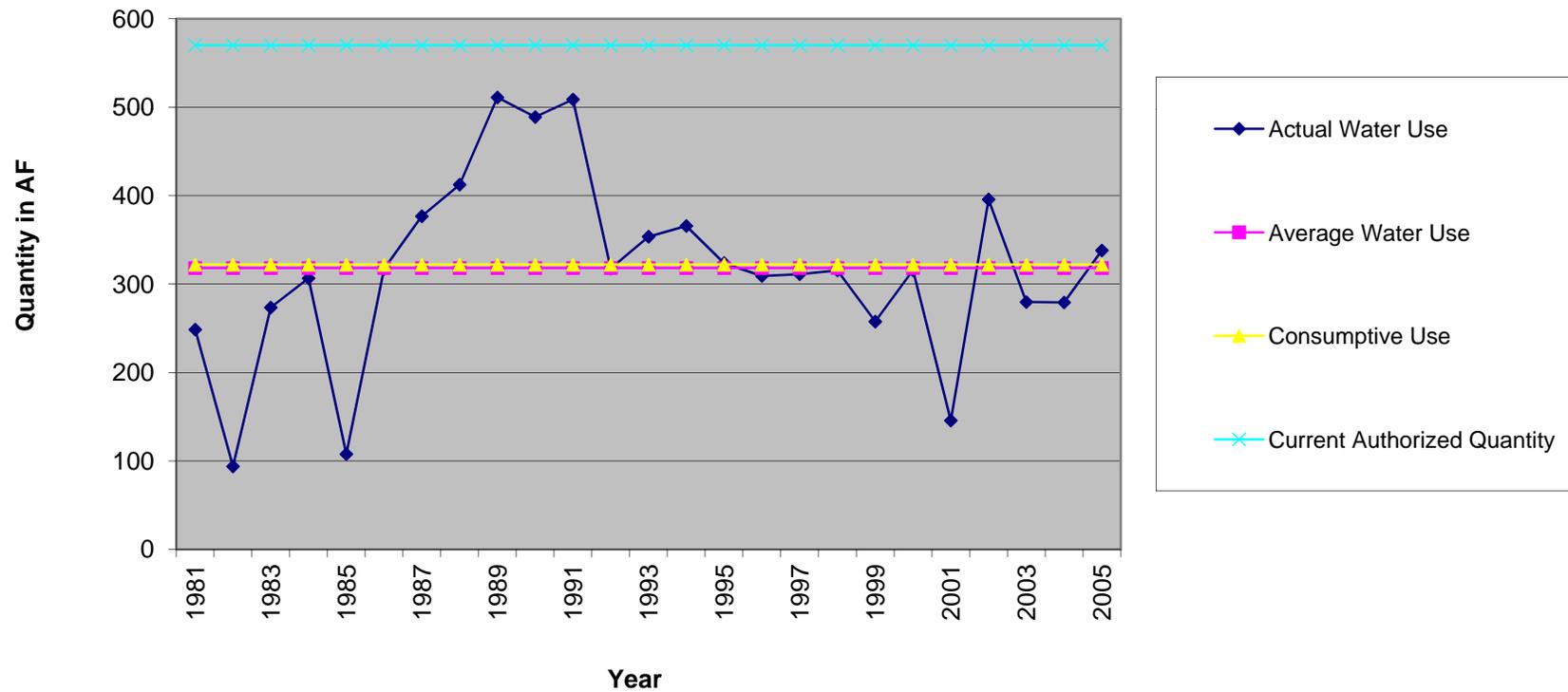
Area subject to Special Restrictions. See regulation for requirements.

Restricted Streams, specific restrictions for streams and alluvium given in regulation.

August 22, 2011

# Why DWR Considers Consumptive Use

Example Water Use and Consumptive Use  
Thomas County - Random Selection



# Groundwater Impairment Investigations

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- We are starting to see impairment complaints in areas that used to have a robust water supply
- Investigations can be very complex
- Administration has curtailed pumping on junior rights.
- USFWS has asked we start an investigation relative to Quivira National Wildlife Refuge
- Litigation has happened. Junior rights are shut off and DWR has been ordered by the court to craft a remedy.
- Strict water rights administration is not the preferred method if we can create a softer landing with LEMAs and IGUCAs



# Groundwater Impairment Investigations

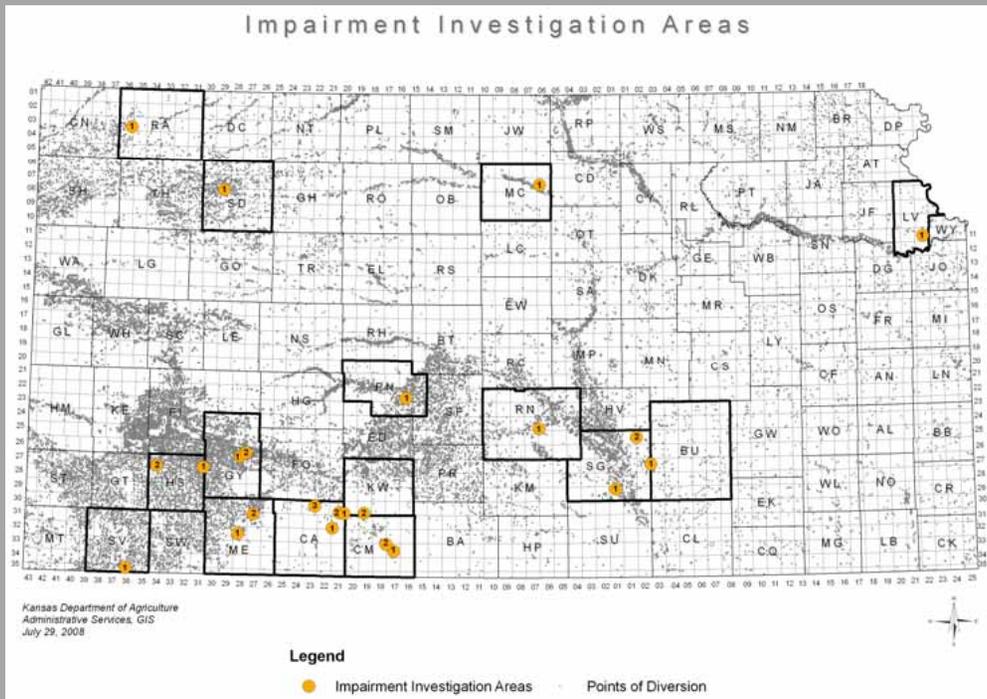
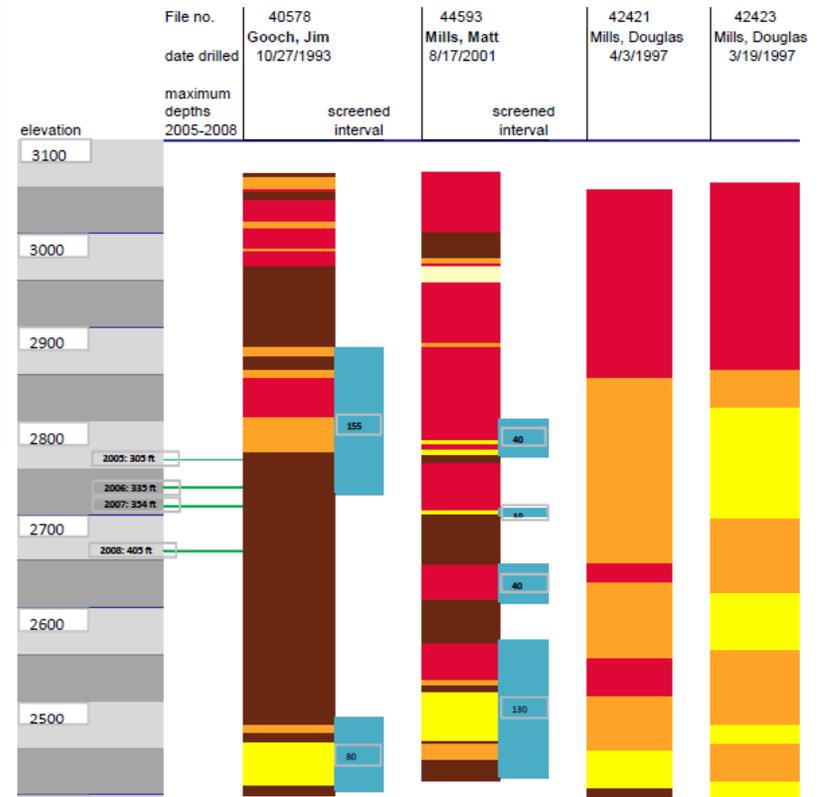


Figure 1. Lithologic profile of irrigation wells.



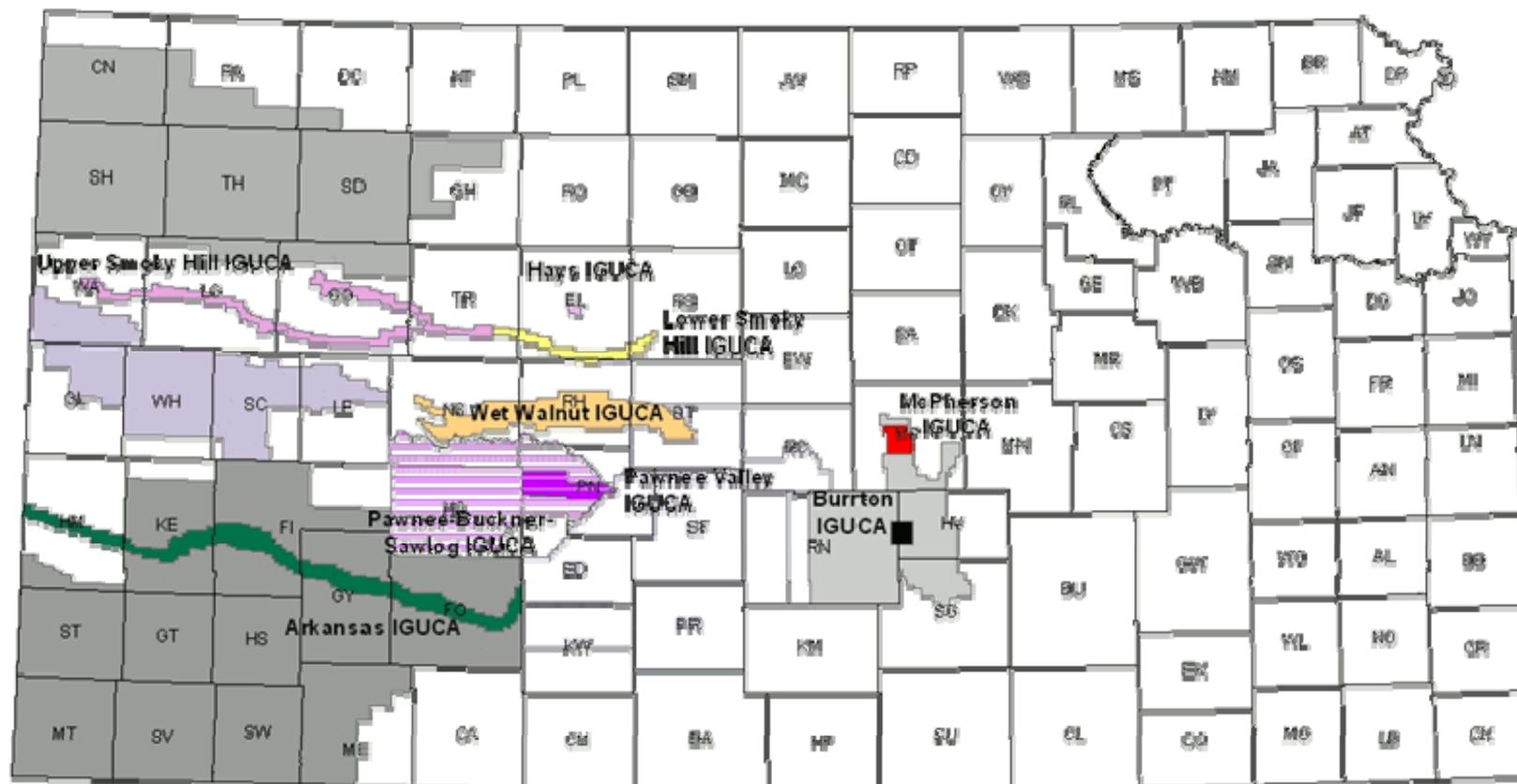
# Intensive Groundwater Use Control Areas (IGUCAs)

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- Created in 1978 when permits were required
- Water management tool that works in conjunction with the Kansas Water Appropriation Act
- Allows for more-flexible solutions taking in to account the area and aquifer
- Provides alternatives to strict administration of water rights by priority
- Formal public hearings are held
- Decision by chief engineer based on hearing record



# Intensive Groundwater Use Control Areas in Kansas



## GMD

-  Western Kansas GMD #1
-  Equus Beds GMD #2
-  Southwest Kansas GMD #3
-  Northwest Kansas GMD #4
-  Big Bend GMD #5

## IGUCA

-  Arkansas IGUCA
-  Burton IGUCA
-  Hays IGUCA
-  Lower Smoky Hill IGUCA
-  Pawnee Valley IGUCA
-  Pawnee-Buckner-Sawlog IGUCA
-  Upper Smoky Hill IGUCA
-  Wet Walnut IGUCA

 McPherson IGUCA



Kansas Department of Agriculture  
Division of Water Resources  
October 18, 2007



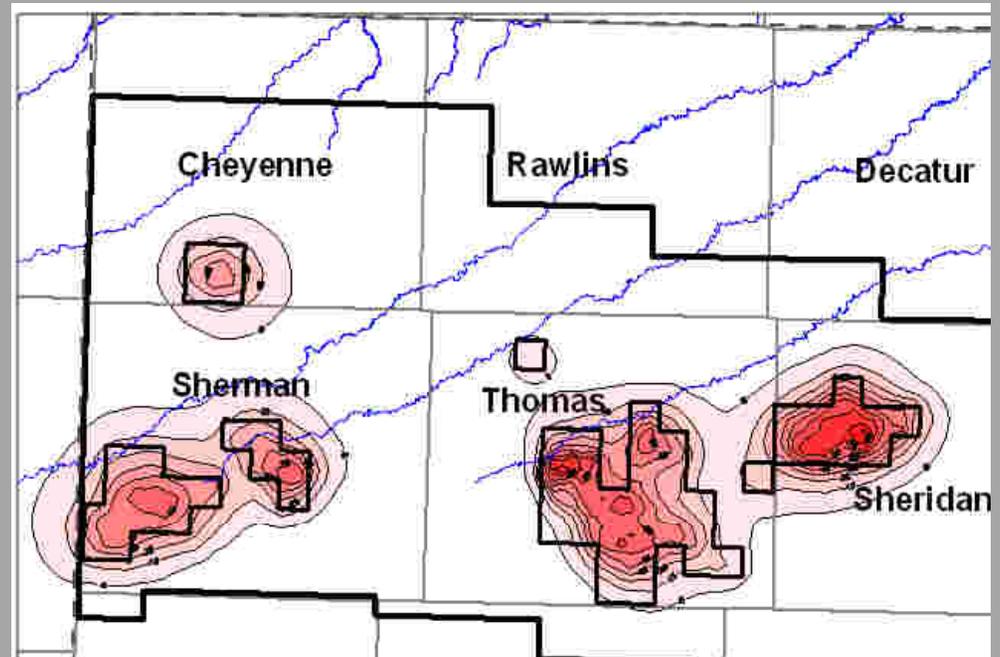
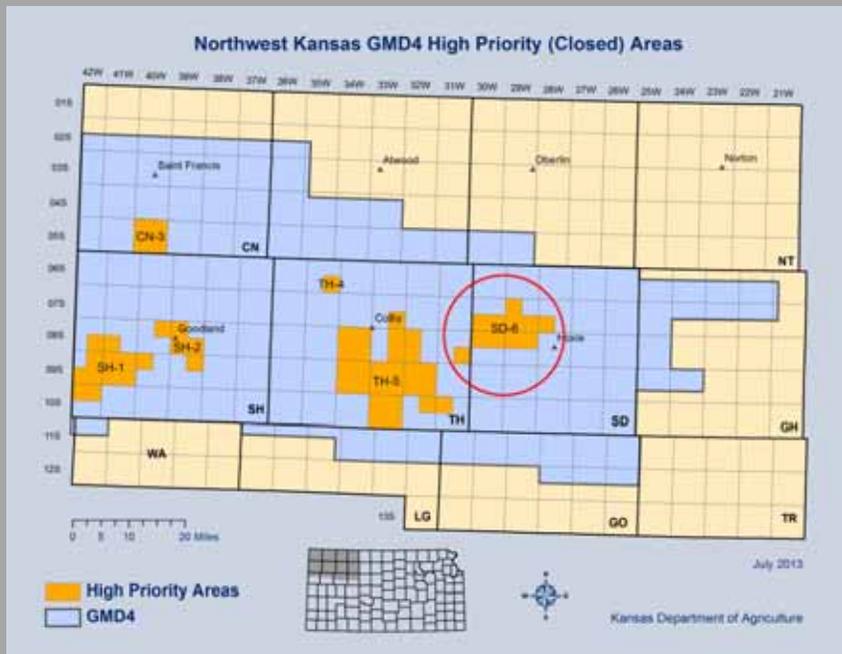
## Local Enhanced Management Areas (LEMAs)

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- Proactive plans developed by locals and GMDs
- Include conservation measures to address specific water resource problems.
- Hearings before the Chief Engineer to adopt, reject or return plan to the GMD
- Shared solution respecting priority

# LEMA Example

- GMD 4 identified high priority areas (HPA)
- Model demonstrated benefits of cuts stay put
- “Sheridan 6” HPA wants to cut use 20%
- Tried regulations; explored IGUCA option



# LEMA Status

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- GMD 4 initiated Sheridan 6 proceedings
  - Two hearings: September and November 2012
  - Orders of decision and designation
  - In our first season of actual use
- Governor actively encouraging more
- On going county meetings in GMD 1
  - Establishing goals and voting procedures
- Looking at two more areas in GMD 4



## Multi-Year Flex Account

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Tool providing multi-year flexibility without increasing long-term water use

- A 5 year Term permit using a base water right to establish a 5 year quantity of water.
- The quantity can be used in a flexible way over the term period
- Can divert in excess of the base right's annual quantity if under the total quantity
- This is a planning and flexibility tool not a conservation tool



# Water Management Trends

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- Areas increasingly becoming fully appropriated and/or closed to new appropriations.
- Increased use of metering
- Increased need for water conservation
- Stricter penalties for non-compliance
- We will see more LEMAs