Kansas' 50 Year Water Plan

aka Water Vision

Agriculture's role in conservation

Kansas Water Office

Components of the Vision

- Focus on the Ogallala/High Plains Aquifer and Water Supply Reservoirs
  - Nearly 300 action items
  - Conservation, Management, Crops & Technology and Additional Sources of Supply
- State divided into 14 planning regions
  - 160 volunteers appointed to serve on regional advisory committees
  - Committees develop over 60 action plans
- Education and funding plans developed separately

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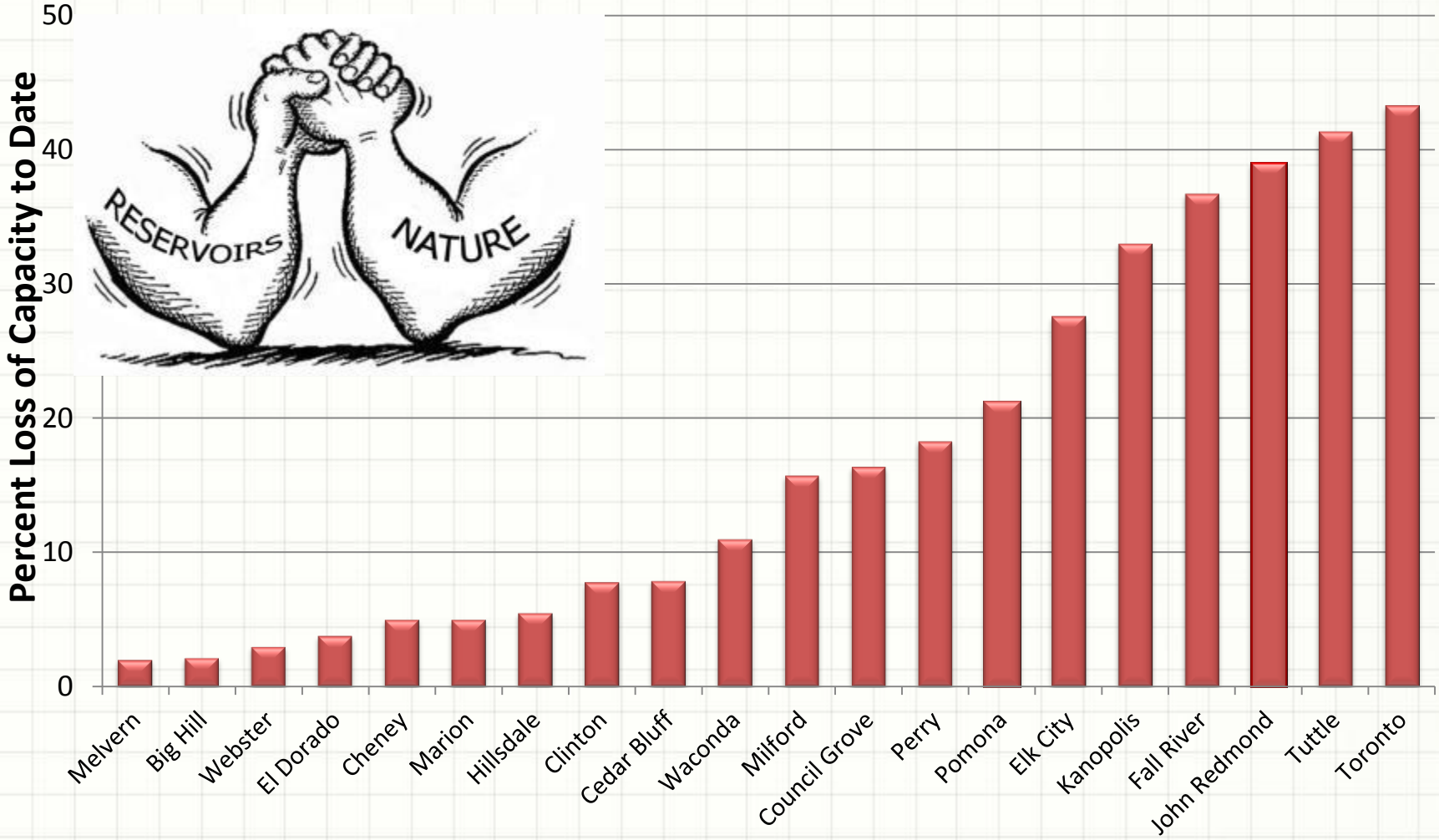
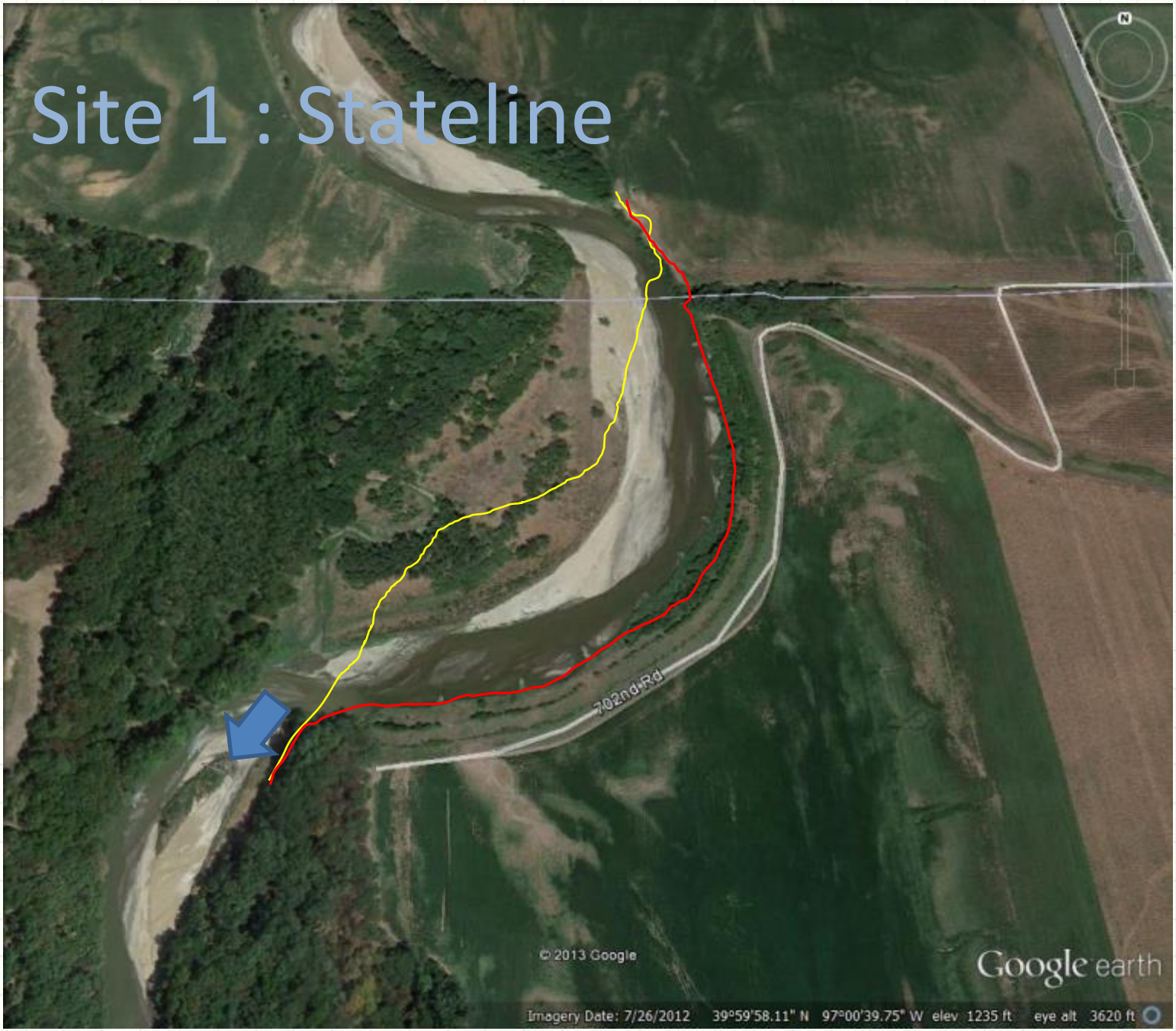
Kansas Reservoir Loss of Capacity

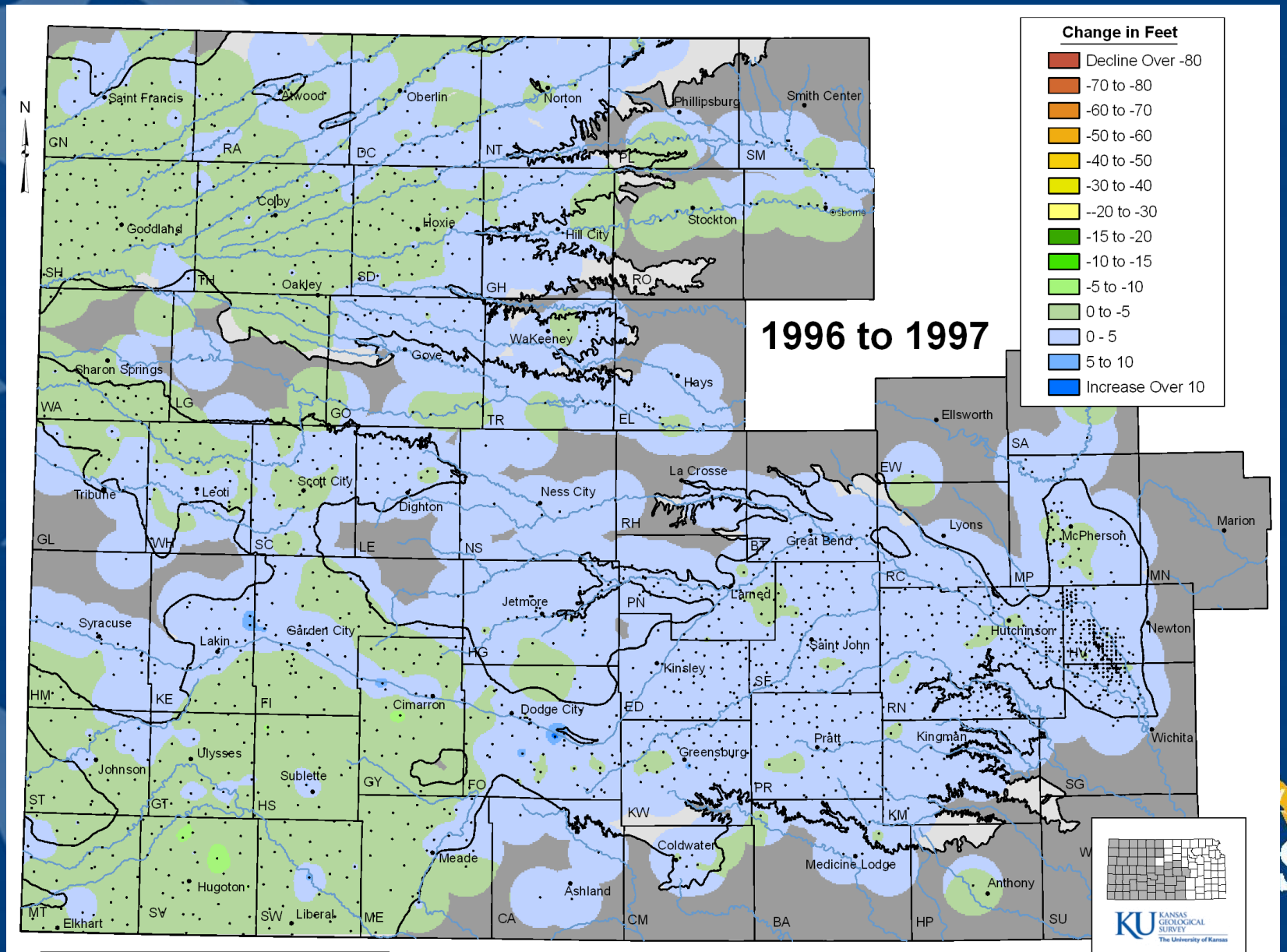


Watershed protection….cheapest alternative to addressing sediment and nutrients in our reservoirs

Site 1 : Stateline



Aquifer declines 1996 - 2017



2016 Water Technology Farms

Kansas Water Office

2016 Water Technology Farms

T&O Farm

South of Garden City

Roth-GCCo Farm

West of Garden City

WaterPACK / ILS Farm

South of Larned

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2016 Water Technology Farms

T&O Farm

-Water conservation (WCA)
-Telemetry
-MDI, Spray
-Soil water sensors

Roth Farm

-Effectiveness
-MDI, Bubbler, iWobs
-Zone management
-surface/well water

ILS Farm

-Efficiency
-MDI, Spray
-High capacity well, sandy
-Irrigation scheduling

2017 Water Technology Farms

Kansas Water Office

+ 2017 Water Technology Farms

Hatcher's Farm

- iWob, Bubbler, and spray
- Soil vs plant sensors
- Scheduling

Circle C Farm

- iWob, Bubbler, and spray
- Variable rate irrigation
- Cover crops use and mixes

NW Tech College Farms

- Soil water sensors
- Partner with 6 local water users
- Workforce development

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T&I

KANSAS CORN COMMISSION

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Expanded Premium Services, LLC

CropMetrics™
Yield Optimization Technology

NETAFIM™
PMDI™ PRECISION MOBILE DRIP IRRIGATION TECHNOLOGY

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Seaman CROP CONSULTING

KANSAS GRAIN SORGHUM
Growers Working Together

KU KANSAS GEOLOGICAL SURVEY
The University of Kansas

Conestoga energy partners, LLC

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Ogallala Aquifer
Funded by USDA ARS Research Initiative
A research consortium between USDA-Agricultural Research Service, Kansas State University, Texas AgriLife Research and Extension, Texas Tech University, and West Texas A&M University

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MAKING EVERY OF WATER COUNT

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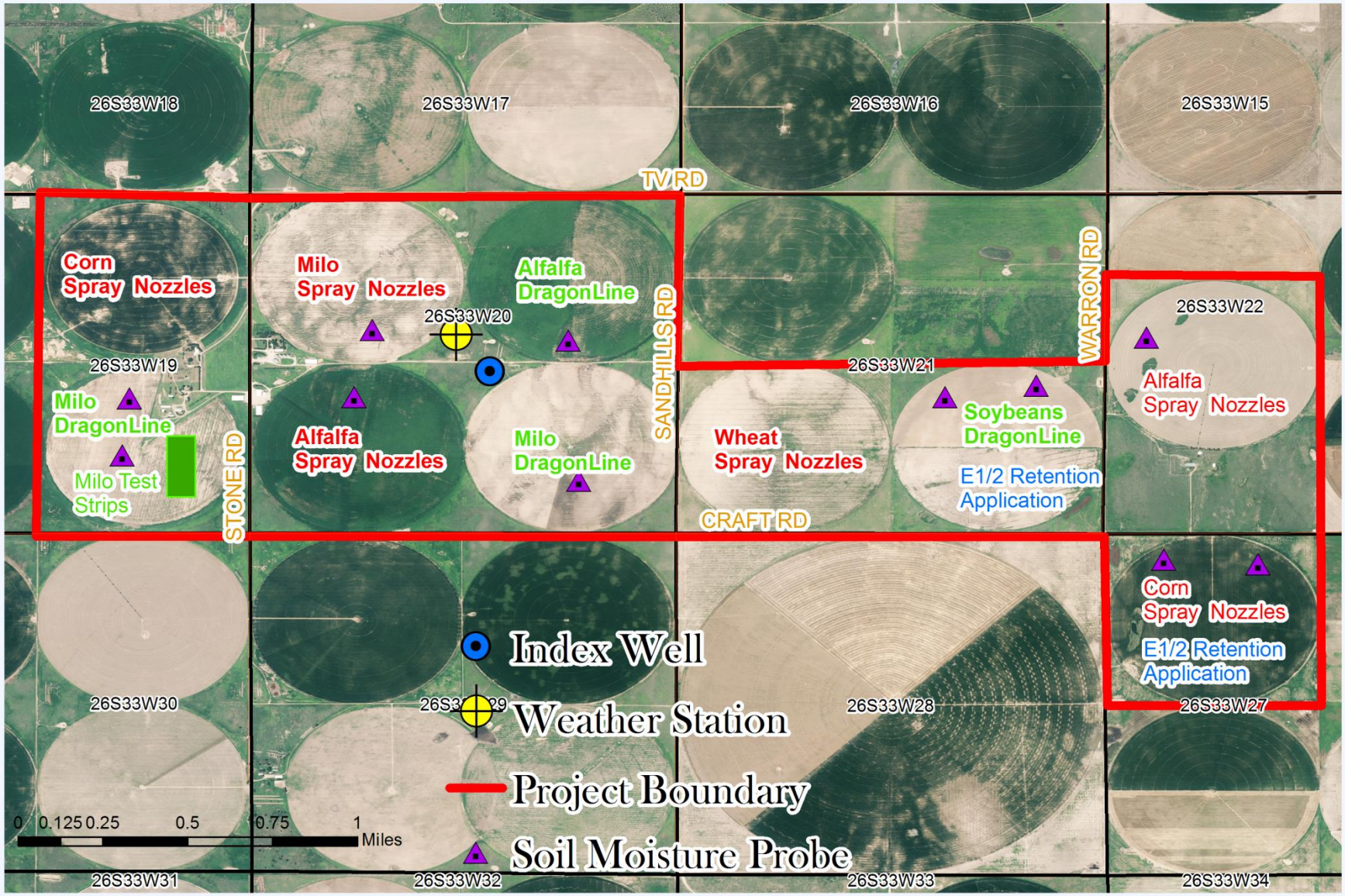
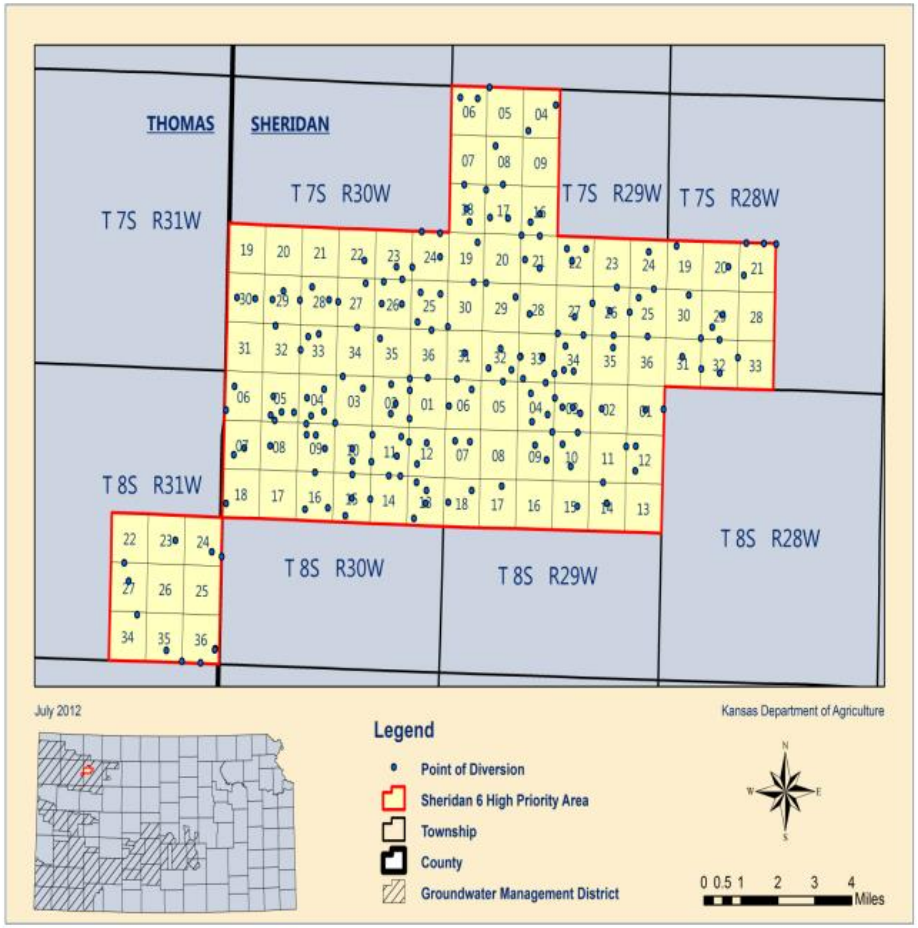
SW KS GMD #3



T&O Farms LLC (Willis)
Water Technology Farm

Local Enhanced Management Areas (LEMA)



- Approved by 2012 Legislature
- Locally-led through groundwater management districts
- Allows for locally identified water use reductions with state enforcement
  - Water use flexibilities allowed
  - Does not permanently alter water right
  - Water allocations packaged into 5 year flex accounts
  - Mandatory participation for water users

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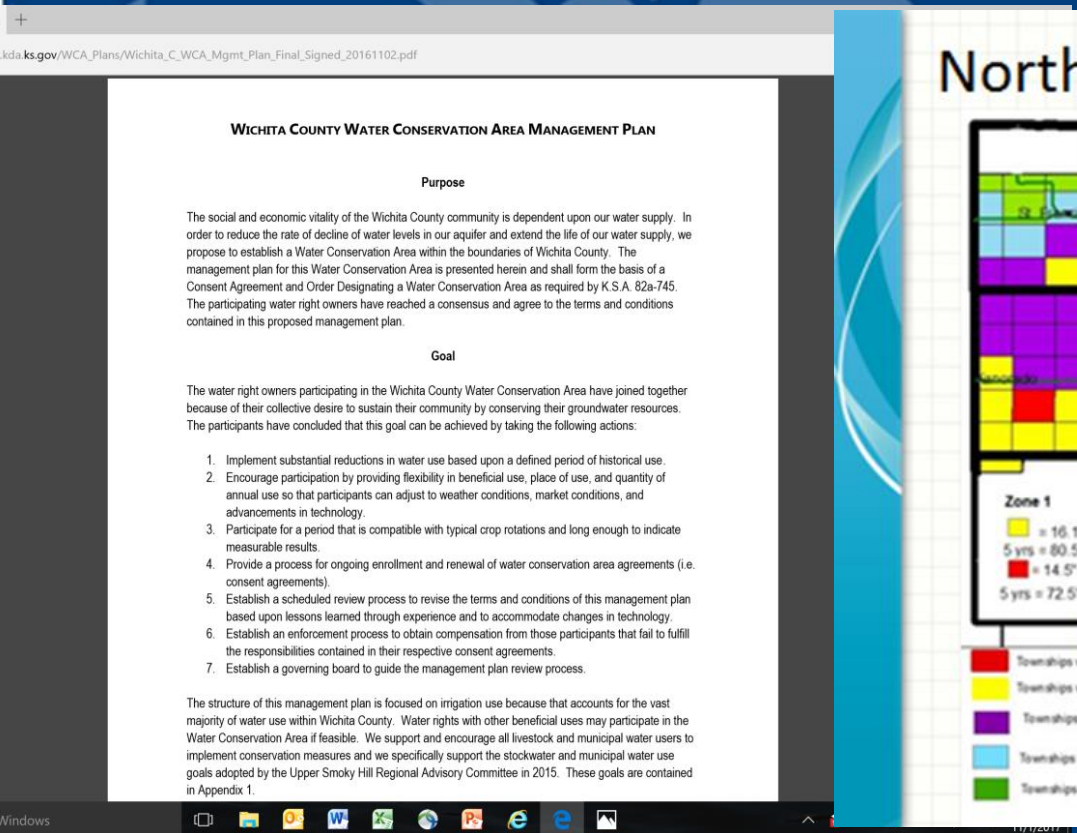
Water Conservation Areas & Local Enhanced Management Areas

- Local developed management plans with state approval/oversight



kda.ks.gov/WCA_Plans/Wichita_C_WCA_Mgmt_Plan_Final_Signed_20161102.pdf

WICHITA COUNTY WATER CONSERVATION AREA MANAGEMENT PLAN

Purpose

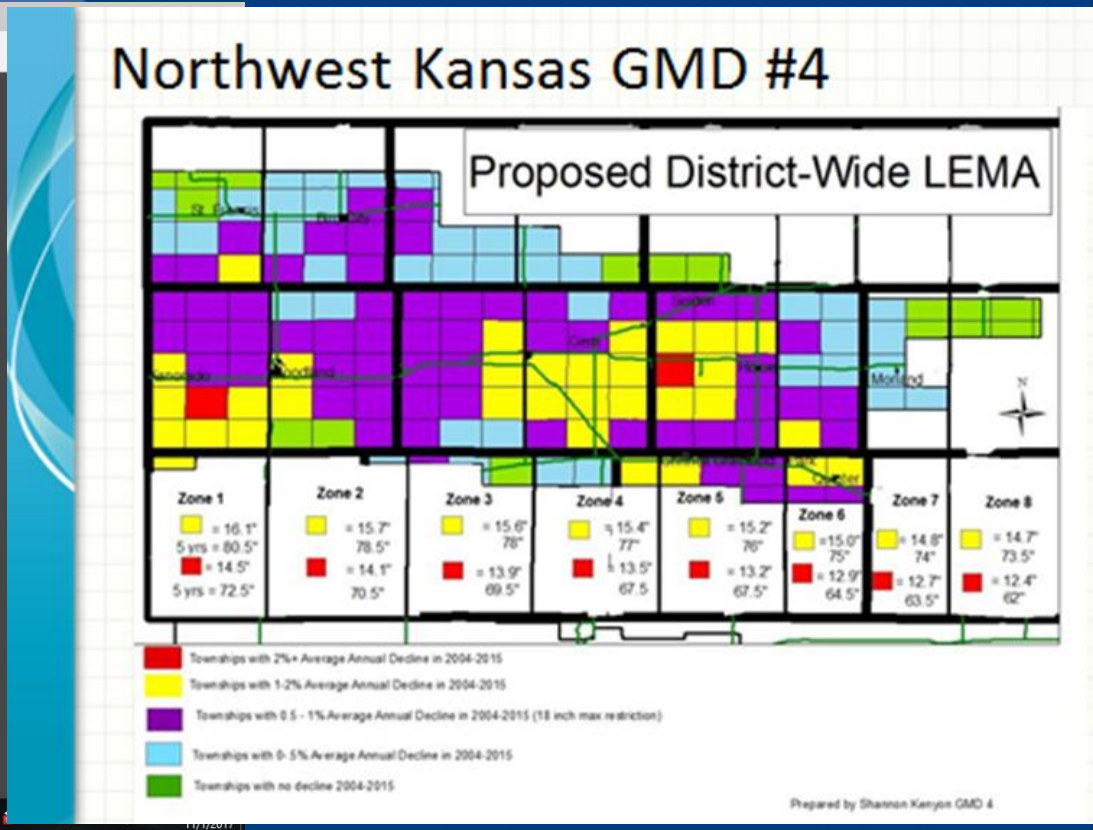
The social and economic vitality of the Wichita County community is dependent upon our water supply. In order to reduce the rate of decline of water levels in our aquifer and extend the life of our water supply, we propose to establish a Water Conservation Area within the boundaries of Wichita County. The management plan for this Water Conservation Area is presented herein and shall form the basis of a Consent Agreement and Order Designating a Water Conservation Area as required by K.S.A. 82a-745. The participating water right owners have reached a consensus and agree to the terms and conditions contained in this proposed management plan.

Goal

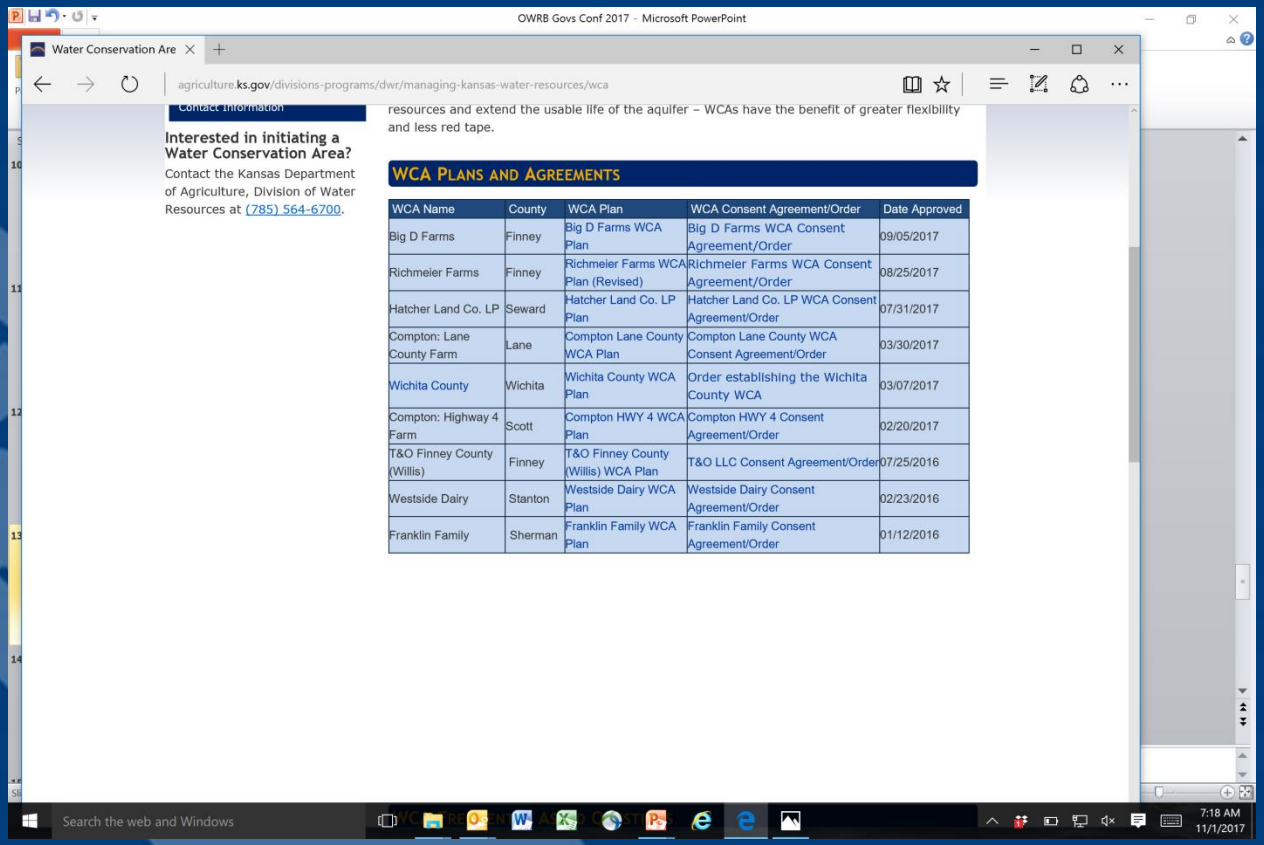
The water right owners participating in the Wichita County Water Conservation Area have joined together because of their collective desire to sustain their community by conserving their groundwater resources. The participants have concluded that this goal can be achieved by taking the following actions:

1. Implement substantial reductions in water use based upon a defined period of historical use.
2. Encourage participation by providing flexibility in beneficial use, place of use, and quantity of annual use so that participants can adjust to weather conditions, market conditions, and advancements in technology.
3. Participate for a period that is compatible with typical crop rotations and long enough to indicate measurable results.
4. Provide a process for ongoing enrollment and renewal of water conservation area agreements (i.e. consent agreements).
5. Establish a scheduled review process to revise the terms and conditions of this management plan based upon lessons learned through experience and to accommodate changes in technology.
6. Establish an enforcement process to obtain compensation from those participants that fail to fulfill the responsibilities contained in their respective consent agreements.
7. Establish a governing board to guide the management plan review process.

The structure of this management plan is focused on irrigation use because that accounts for the vast majority of water use within Wichita County. Water rights with other beneficial uses may participate in the Water Conservation Area if feasible. We support and encourage all livestock and municipal water users to implement conservation measures and we specifically support the stockwater and municipal water use goals adopted by the Upper Smoky Hill Regional Advisory Committee in 2015. These goals are contained in Appendix 1.



WCAs



WCA Name	County	WCA Plan	WCA Consent Agreement/Order	Date Approved
Big D Farms	Finney	Big D Farms WCA Plan	Big D Farms WCA Consent Agreement/Order	09/05/2017
Richmeier Farms	Finney	Richmeier Farms WCA Plan (Revised)	Richmeier Farms WCA Consent Agreement/Order	08/25/2017
Hatcher Land Co. LP	Seward	Hatcher Land Co. LP Plan	Hatcher Land Co. LP WCA Consent Agreement/Order	07/31/2017
Compton: Lane County Farm	Lane	Compton Lane County WCA Plan	Compton Lane County WCA Consent Agreement/Order	03/30/2017
Wichita County	Wichita	Wichita County WCA Plan	Order establishing the Wichita County WCA	03/07/2017
Compton: Highway 4 Farm	Scott	Compton HWY 4 WCA Plan	Compton HWY 4 Consent Agreement/Order	02/20/2017
T&O Finney County (Willis)	Finney	T&O Finney County (Willis) WCA Plan	T&O LLC Consent Agreement/Order	07/25/2016
Westside Dairy	Stanton	Westside Dairy WCA Plan	Westside Dairy Consent Agreement/Order	02/23/2016
Franklin Family	Sherman	Franklin Family WCA Plan	Franklin Family Consent Agreement/Order	01/12/2016

- Conservation factors range from 10-29% of average water use in approved plans
- Multi-year allocations
- Flexibility to move water between enrolled water rights
- Totally voluntary

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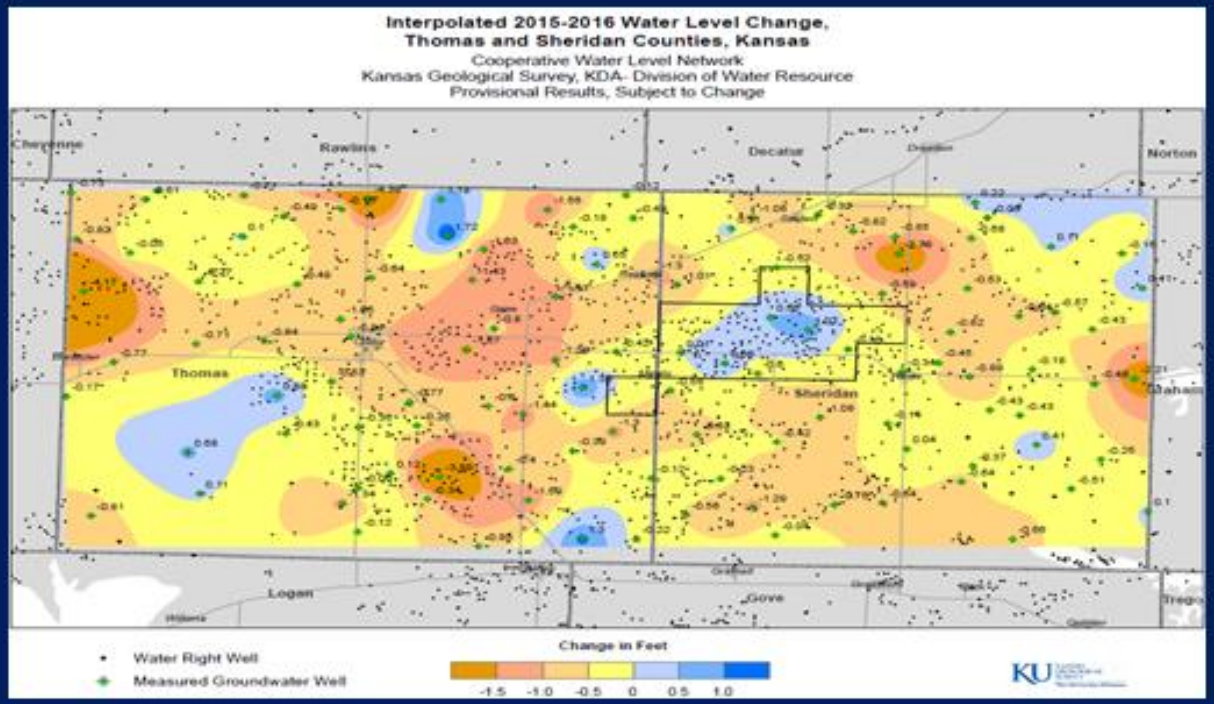
LEMAs

- 1st LEMA established in Sheridan County
  - 100 sq mi, 5 year, 55” allocation per water right, 20% reduction
  - 5th year complete. Locals asked for renewal
  - Economic evaluation showed no significant impact



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Public outreach and other activities

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WTF/WCA Results

- Roth - Garden City
  - Yield – 241 on 5”
  - Neighbor’s yields
    - 233 on 14”
    - 222 on 13.5”
  - Soil moisture probes made the difference

Franklin Farms-Goodland

- Added probes in ’17
- 9.8” applied
- Yield 208 bu.
- Saved $74 per acre on pumping costs

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Building Water Resource Workforce

- NW Tech & Local Irrigation Companies partnering with neighboring landowners, GMD 4 and KWO to develop water technology farms within the Precision Ag Dept at NT
- Students working on campus & in the field to develop irrigation water management skills
- Irrigation Technology (soil probes, Variable Rate Irrigation) and Scheduling to demonstrate water savings and profitability
- Six farms participating this year

NT PRECISION AGRICULTURE

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