Northern Kearny and Finney County Local Enhanced Management Area (KFL)

KFL INFORMATIONAL WORKSHOP ~ DEERFIELD, KS ~ JUNE 6, 2017

What is a LEMA?

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What is a LEMA?

A Local Enhanced Management Area, or LEMA, is tool that empowers local leaders to address local groundwater concerns.

A Groundwater Management District (GMD) has the authority to recommend a LEMA to the chief engineer.

By law, two public hearings will be held so that the chief engineer can ensure a LEMA is needed and is in the public interest.

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

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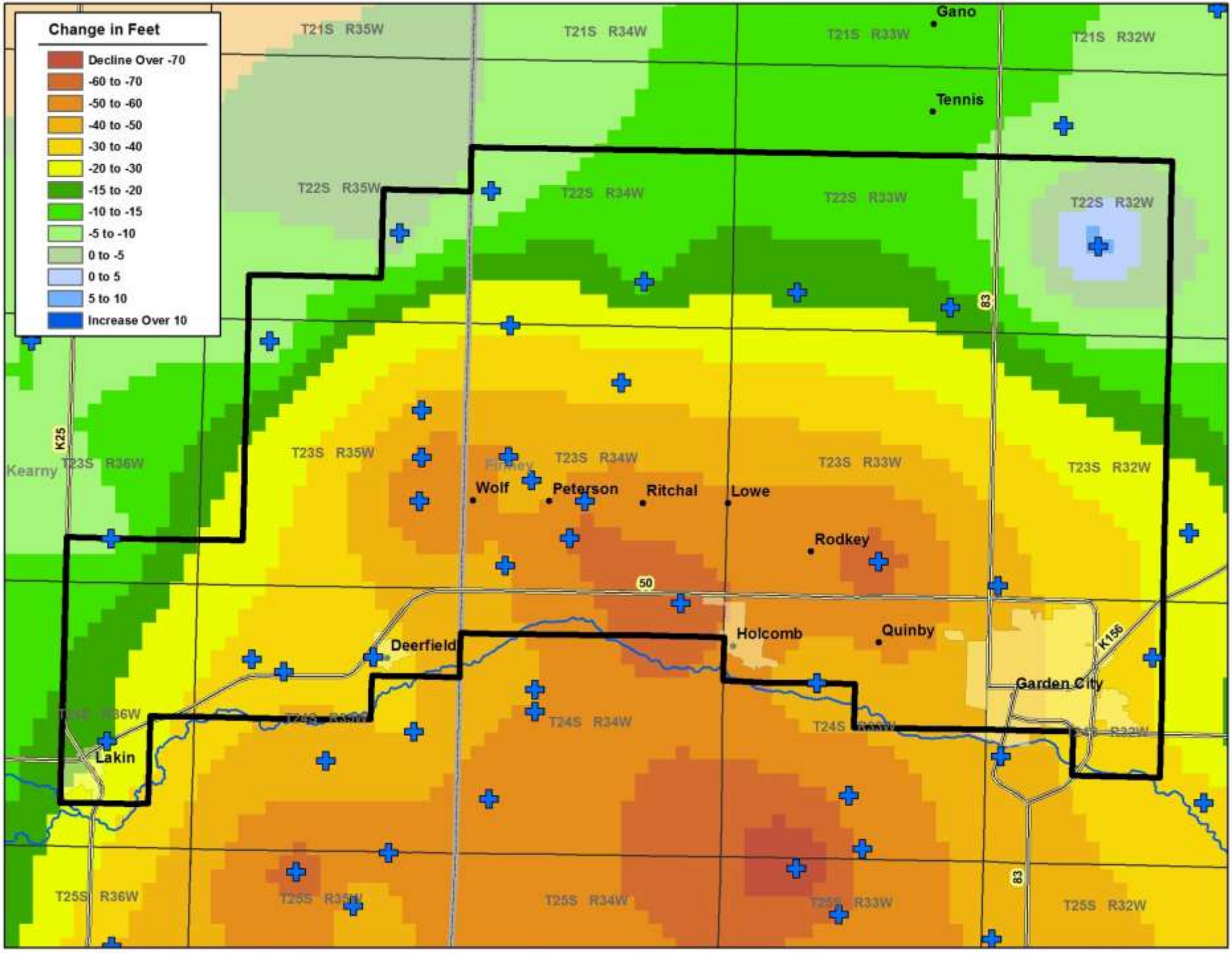
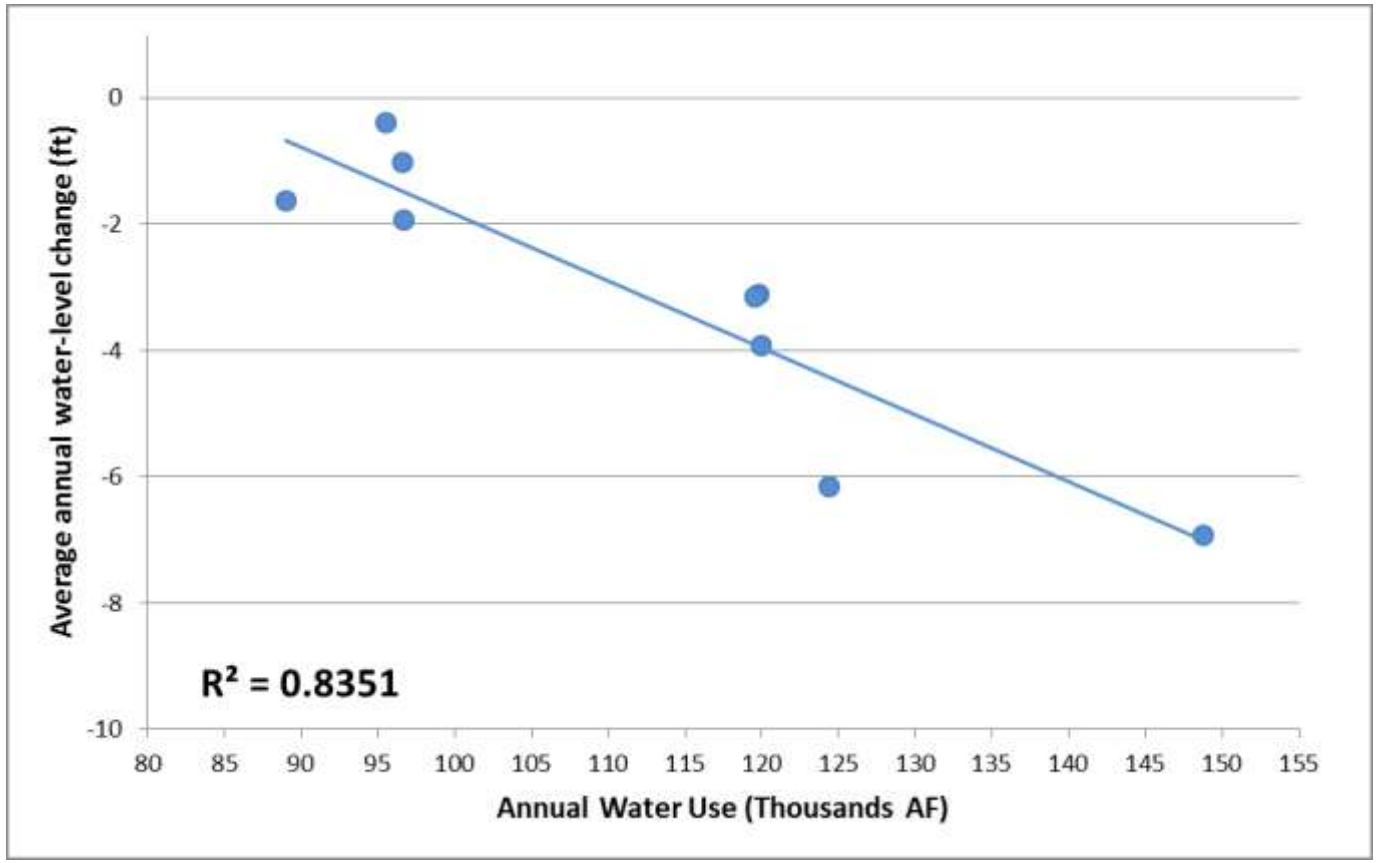
Water Level Changes (2005-2016)





Average Groundwater Use = 112,249 AF

Average Water Level Decline = 3.13 feet

Based on this relationship, using averages, on the short term:

- 26.3% reduction in average use = Stable Water Levels = Sustainable
- 20% reduction in average use = 0.76 feet annual decline = decline reduced by 76%
- 10% reduction in average use = 1.95 feet annual decline = decline reduced by 38%

What is being proposed?

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What is being proposed?

Provide a conservation allocation for **irrigation**, **groundwater (Ogallala)**, **appropriated** water rights within the KFL boundary to extend the usable lifetime of the water supplies throughout the region.

Proposal would be for five-years

Would not result in any permanent changes to the water rights included in the LEMA

Many options for allocations have been considered by the KFL Steering Committee

Three Options Under Evaluation

Option A

Flat 15% off Historical Use (2006-2015)

Option B

Sliding Scale based on Comparison of Historical Use to Authorized Quantity

Option C

Flat 40.5% off Maximum Use (2006-2015)

Option A – Flat 15% off Historical Water Use (2006-2015)

Year	Reported Water Use
2006	184
2007	119
2008	168
2009	143
2010	164
2011	177
2012	235
2013	165
2014	174
2015	115

Authorized Quantity = 258

Average reported water use (2006-2015) = 164

LEMA Allocation =
164 x 0.85 (applies 15% conservation factor) =
140 acre-feet per year x 5 =
699 acre-feet

Option B – Sliding Scale based on Comparison of Historical Use to Authorized Quantity

Year	Reported Water Use
2006	184
2007	119
2008	168
2009	143
2010	164
2011	177
2012	235
2013	165
2014	174
2015	115

Authorized Quantity = 258

Average reported water use (2006-2015) = 164

Average reported water use compared to Authorized Quantity = 164/258 = 63.5%

Conservation Factor = 63.5% of 24% or 15.24%

LEMA Allocation =
164 x 0.847 (applies 15.24% conservation factor) =
139 acre-feet per year x 5 =
695 acre-feet

Option C – Flat 40.5% Reduction off Maximum Use (25% Max reduction off average use) or Pump Test

Year	Reported Water Use
2006	184
2007	119
2008	168
2009	143
2010	164
2011	177
2012	235
2013	165
2014	174
2015	115

Authorized Quantity = 258

Maximum Annual Quantity Pumped = 235

Maximum annual reported water use LEMA allocation = 235 x 0.595 = 140 acre-feet (700 acre-feet for five-year allocation)

OR

Average Use (164.4 acre-feet) x 0.75 x 5 = 617 acre-feet

OR

Pump Test = 450gpm
450 x 1440 x 120 days/325,851 = 239 acre-feet
Therefore, 239 AF x 0.595= 142 AF x 5 years = 710 AF (5-yr Allocation)

How do these options compare for various water rights?

High

Average Historical Use (2006-2015) = 290 acre-feet

Authorized Quantity = 320 AF

Max pumped in a year = 310 AF

Option	% Reduction	LEMA Annual Allocation	LEMA 5-Year Allocation
A	15.0	246	1231
B	21.7	227	1135
C	40.5/25	184/218	922/1088

Medium

Average Historical Use (2006-2015) = 197 acre-feet

Authorized Quantity = 300 AF

Max pumped in a year = 215 AF

Option	% Reduction	LEMA Annual Allocation	LEMA 5-Year Allocation
A	15.0	167	836
B	15.7	166	830
C	40.5/25	128/148	640/739

Low

Average Historical Use (2006-2015) = 85 acre-feet

Authorized Quantity = 312 AF

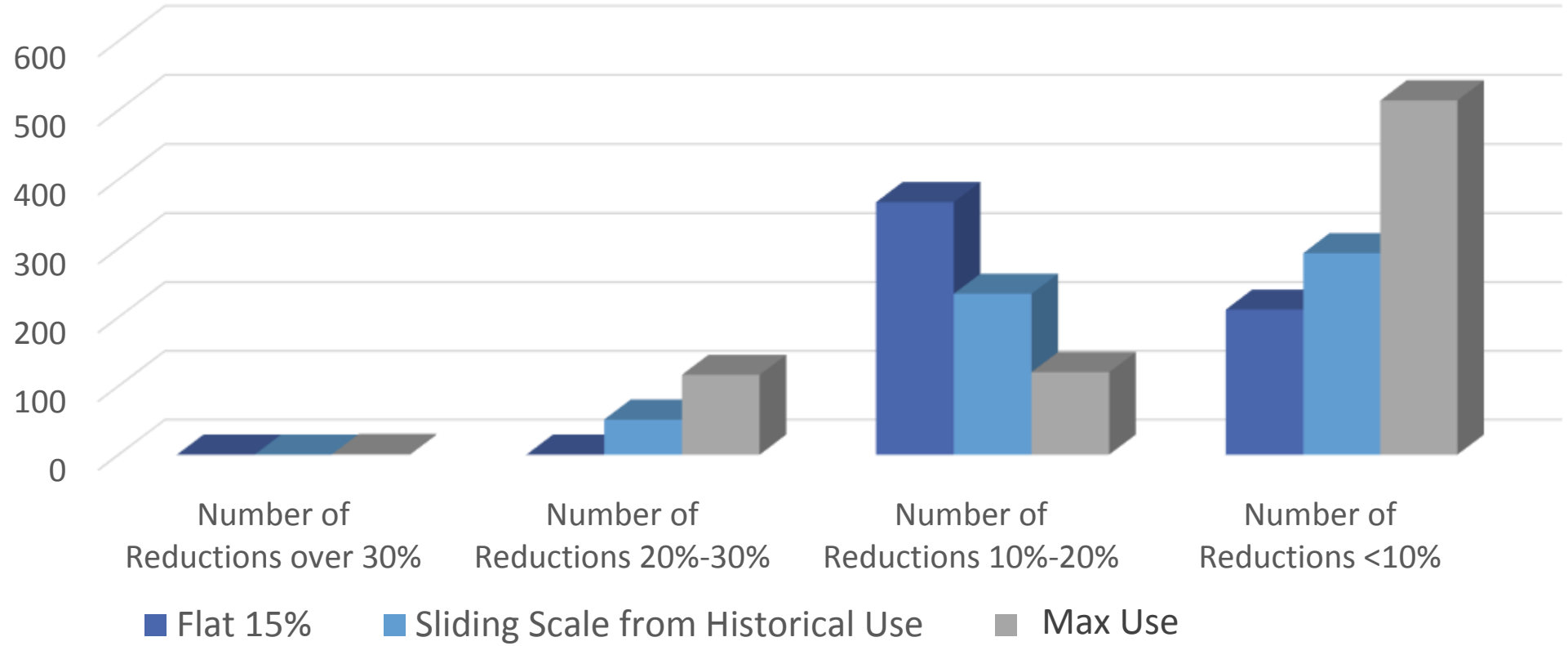
Max pumped in a year = 149 AF

Option	% Reduction	LEMA Annual Allocation	LEMA 5-Year Allocation
A	15.0	72	362
B	7.00	80	400
C	40.5/25	89/64	443/319

How do these options compare for meeting conservation goal?

	Maximum Percent Reduction	Overall Effective Reduction
Option A – Flat 15% Historical Use	15%	11.15%
Option B – Sliding Scale Historical Use	24%	11.06%
Option C – Flat 40.5% Max Use	25%	10.99%

How do these options compare for meeting conservation goal?



What about vested rights?

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What about vested rights?

A vested right is the claim to continue use of water having been applied for on or before June 28, 1945.

Any water right applied for after this date is considered an appropriated right.

There are 137 active vested water rights within the proposed LEMA boundary, comprising about 24% of the total average water use.

Pursuant to K.S.A. 82a-703 water rights cannot be compelled to reduce their water use, but may participate **voluntarily** to benefit from the **LEMA flexibilities**.

Will other uses (non-irrigation uses) be restricted?

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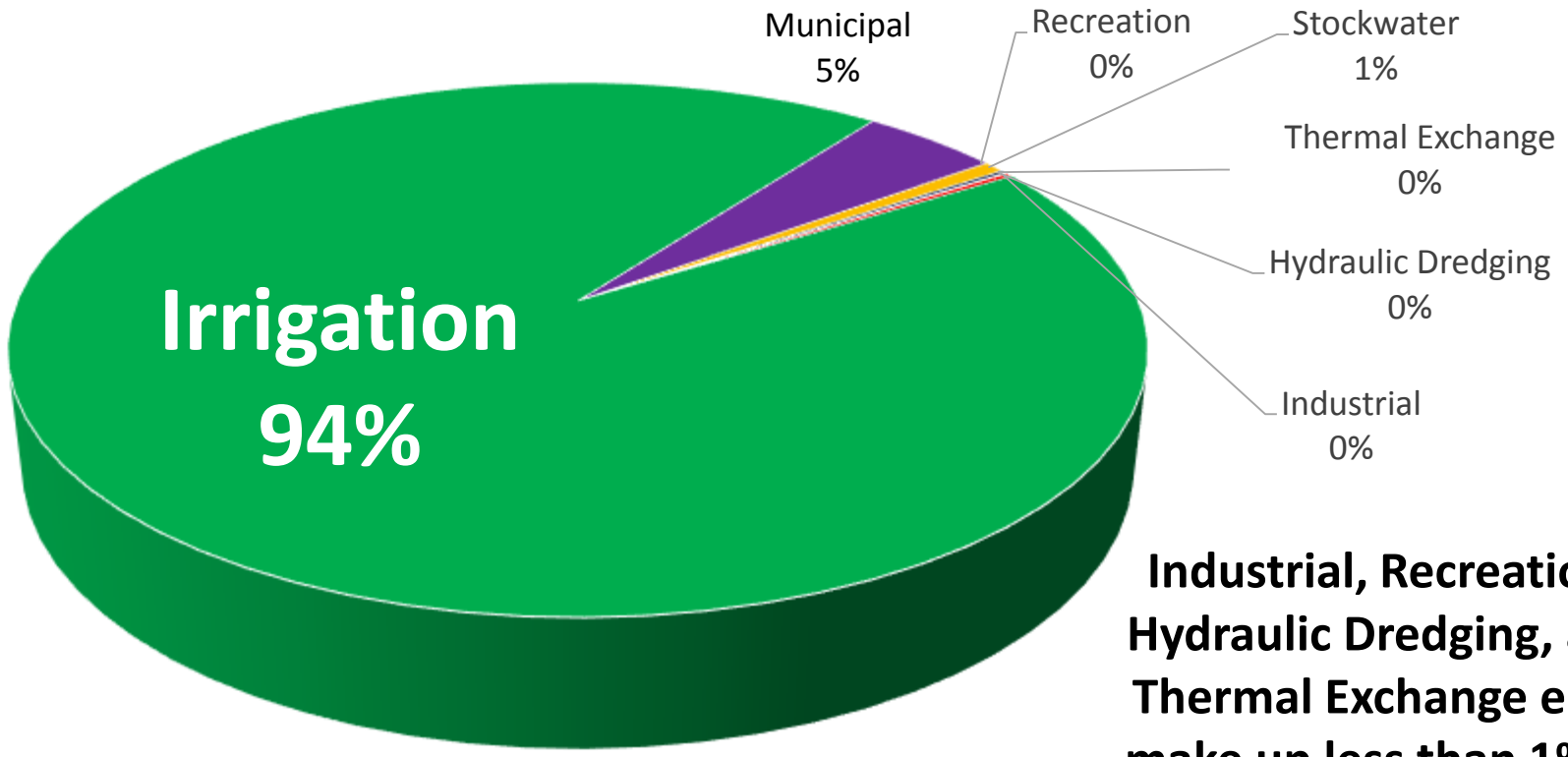
KFL Average Water Use Per Year, 2006-2015

Use Made of Water	Average Acre-Feet
HYD	77
IND	258
IRR	110,740
MUN	5,474
REC	9
STK	804
THX	221



Industrial, Recreation, Hydraulic Dredging, and Thermal Exchange each make up less than 1% of the total use for the area

Will any credit be given for those who have already been voluntarily conserving?

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Due Consideration for Past Conservation

By law, LEMAs must give due consideration for past voluntary conservation

Can be used to account for years without use or with limited use due to situations such as equipment breakdowns, voluntary conservation, or years of Ditch water use

Replace years of non-use or limited use with:

- Average use without zeros
- Pump Test
- 50% Net Irrigation Requirement (NIR) for Corn

Year	Reported Water Use	Average Use w/o Zeros	Pump Test (350gpm)	50% NIR (130 Acres, KE County) (NIR for KE County = 1.24 AF/AC))
2006	**0**		**185**	**161**
2007	**0**		**185**	**161**
2008	**0**		**185**	**161**
2009	143	143	143	143
2010	164	164	164	164
2011	**25**	**25**	**185**	**161**
2012	**20**	**20**	**185**	**161**
2013	165	165	165	165
2014	174	174	174	174
2015	115	115	115	115
Average	*81*	*115*	*175*	*157*

What flexibilities are proposed for this LEMA?

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Flexibilities, Temporary Transfers and Benefits of Proposed LEMAs

One allocation – five years to use it

Use your allocation between your wells as needed:

- Wells within a consolidated well unit (connected by pipe) or within a limited distance (2 miles) will be allowed to share the combined quantity of the individual LEMA allocated quantities as long as the annual authorized quantity of any individual well is not exceeded during any calendar year.
- Wells within a distance greater than 2 miles will be allowed to share the combined quantity of the individual LEMA allocated quantities if the annual average historical use of any individual well is not exceeded during any calendar year.

Term permit to make the best use of your wells

Carry over to the next LEMA/Don't "Use it or lose it"

Additional Frequently Asked Questions

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Additional Frequently Asked Questions

The following frequently asked questions will be addressed from other workshop presenters:

- If we reduce our water use won't that water benefit others outside of the LEMA instead of those who conserve?
- How will reductions in water use impact farm profit and the regional economy?
- How does this proposal compare to other LEMAs in Kansas?
- How will the LEMA impact my crop insurance coverage?
- What role can irrigation and soil moisture management technologies play in the success of the LEMA?

Where can I find out more about this proposal and provide input?

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Water Right Owner Survey

https://fs22.formsite.com/KansasDeptAg/form48/index.html

Questions & Discussion

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What is a Water Conservation Area (WCA)?

Voluntary agreement by a water right owner or a group of water right owners to reduce water withdrawals

Provides benefits of flexibilities such as multi-year allocations, movement of allocations, and allowing for new uses of the water

WCAs do not make a permanent change in the water right

Can be limited in duration to allow water right owners to try out control

Pre-LEMA Water Conservation Area Example (Using Option A – Flat 15% off Historical Use)

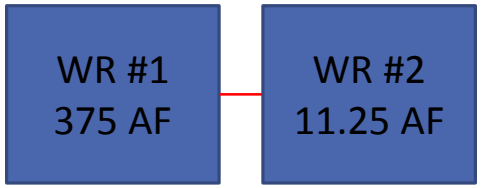
Water rights to be enrolled in WCA total annual authorized quantity	980 AF
Annual average historical use	513 AF
Applying 15% conservation factor, WCA annual allocation	436 AF
WCA 5-year allocation	2180 AF

	2017	2018	2019	2020	2021
Annualized WCA Allocation	436 AF	436 AF	436 AF	436 AF	436 AF
Actual Use	400 AF	405AF			

LEMA Implemented in 2019

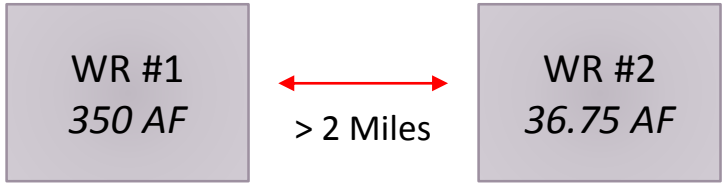
Rollover Quantity	
10% Annualized WCA Quantity	(436 * .10) = 43.6 AF
10% Unused Annualized WCA Quantity	((36 + 31) * 0.1) = 6.7 AF
Total Quantity Rolled Over into LEMA	(43.6 + 6.7) = 50.3 AF

	Annual Authorized Quantity	Annual Historical Use	KFL Allocation	5 X Authorized Quantity	5 X Historic Use
Water Right #1	75	70	297.5	375	350
Water Right #2	25	21	89.25	125	105
	100 AF	91 AF	386.75 AF		



Consolidated Well Unit

Can move allocation from WR#1 to WR#2 (or Vice Versa) up to 5 X Authorized Quantity as long as 5-year KFL allocation of the rights is not exceed.



More than 2 Miles

Can move allocation from WR#1 to WR#2 (or Vice Versa) up to 5 X Historic Use as long as 5-year KFL allocation of the rights is not exceeded.

Up to 2 Miles

Can move allocation from WR#1 to WR#2 (or Vice Versa) up to 5 X Authorized Quantity as long as 5-year KFL allocation of the rights is not exceed.