

Western Kansas GMD No. 1 Considerations of Additional LEMAs

**For GMD 1's 2021 Annual Meeting
August 11, 2021**

**By Kyle Spencer, District Manager and
David Barfield, consultant**

1

Introduction

- The GMD 1 Board has long supported water conservation to extend aquifer benefits:
 - Cost-share programs, education and research
 - Support Wichita County WCA development
- 2012 Amendments to the GMD Act to allow for the creation of Local Enhanced Management Area (LEMAs).
 - 2013-14: District-wide LEMA development; total vote count showed insufficient support for the proposed plan
 - 2018-20: The Board again discusses LEMAs for the District; decided to move forward with Wichita County LEMA first as it had the greatest support, the most urgent need, and to gain experience in LEMA processes.
 - 2021: Approval and implementation of Wichita County LEMA for 2021-2025

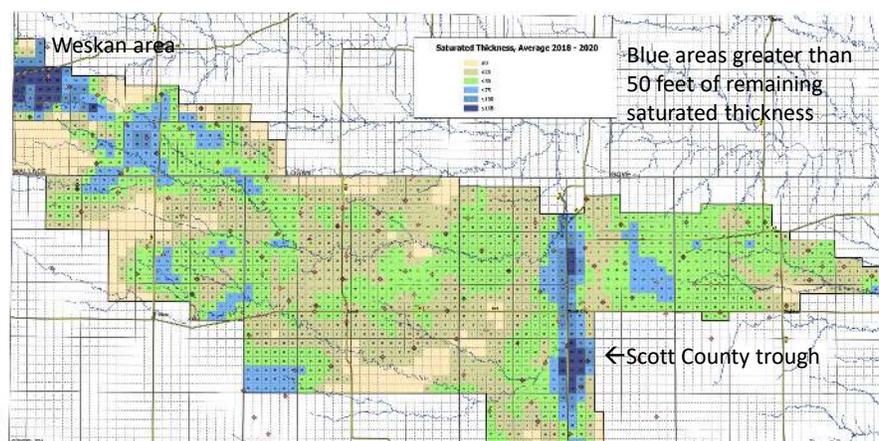
2

Board's On-going Consideration of Additional LEMA(s)

- Fall 2020: The GMD Board re-starts discussions on additional LEMA(s) to fulfill its mission to extend the useful life of the aquifer.
- Hired technical help: David Barfield, retired Chief Engineer
- Board's objectives for additional LEMAs:
 - "Get Started LEMA": the goal is not sustainability, but a significant step to extend the life of the aquifer; encourage maximum economic benefit
 - Overall savings of approximately 10-15%
 - Maximum reduction of 25% to individual waterusers, smaller reductions for limited water users
 - Allocation method different than the Wichita County LEMA
 - Provide as much flexibility as possible: 5-year allocations; group allocations

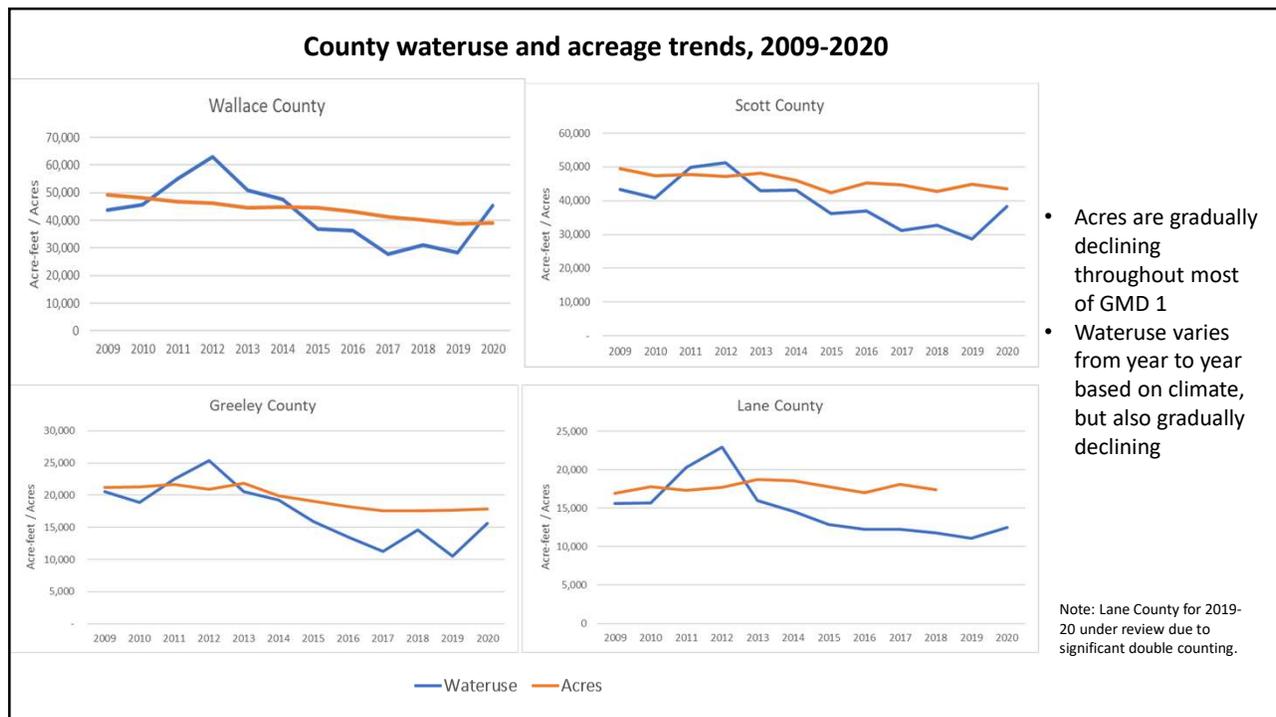
3

Current situation



- Limited saturated thickness and well yields in much of the District, with the exception of the "Weskan" area and the Scott County trough.
- Yet, significant use remains and the desire to extend the benefits into the future

4



5

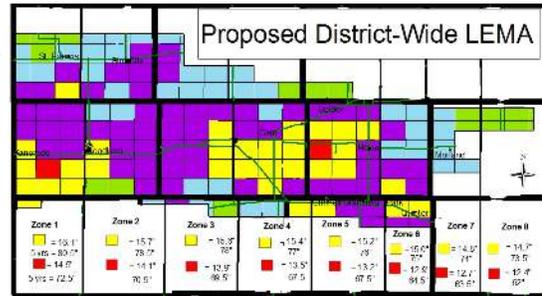
LEMA statute – Process and key provisions

- LEMA process
 - [Alternative to IGUCA process where the Chief Engineer conducts hearing(s) to determine “corrective controls” to address ground water declines.]
 - In LEMAs, GMD develops a plan to address groundwater declines, including goals and proposed regulation to reduce use. The Chief Engineer conducts hearings to determine if the GMD’s plan should be adopted.
- The heart of LEMAs is its **“corrective controls,”** typically water use **allocations** that implements reduced groundwater use.
- LEMAs typically **provide flexibility** in use of allocations (multi-year, and at times, allowing allocations to be grouped or moved around)
- Other elements: appeal process; enforcement

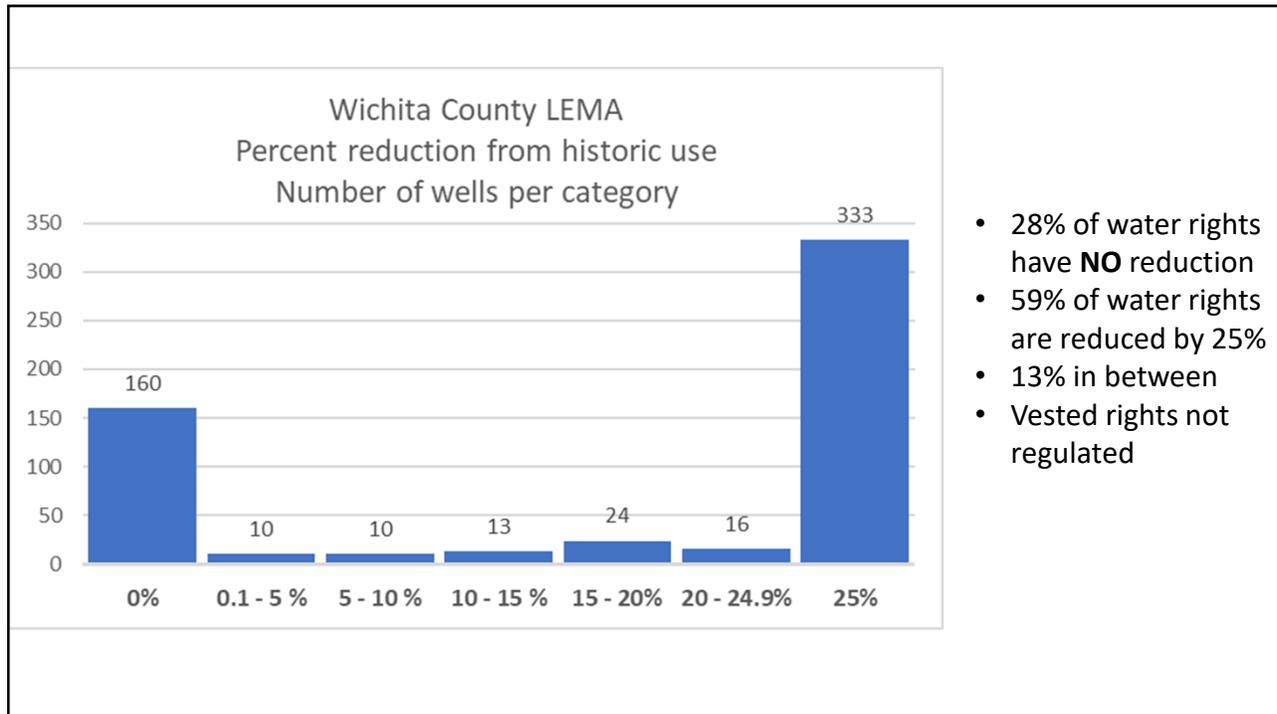
6

Existing LEMA allocation methods

- Sheridan (2013, 2018): allocations = 11 inches on recent acres
- GMD 4 District wide (2018): allocations based on inches on recent acres, with the inches depending on rate of groundwater decline in the township but are generally greater than 15 inches/acre.
- Wichita County LEMA (2021): Allocations based on a 25% reduction from 2009-15 wateruse, except for those using less than 20% of their authorized quantity



7



- 28% of water rights have **NO** reduction
- 59% of water rights are reduced by 25%
- 13% in between
- Vested rights not regulated

8

Allocation methods initially reviewed

1. Allocations based on **fixed** percent of authorized quantity
2. Allocations based inches per authorized acre
3. Allocations based inches per maximum acres of a recent period
4. Allocations based inches per average acres of a recent period

None of these were found suitable as each method gives allocations greater than historic use to some; thus necessitating greater reductions of others to accomplish the overall reduction goal.

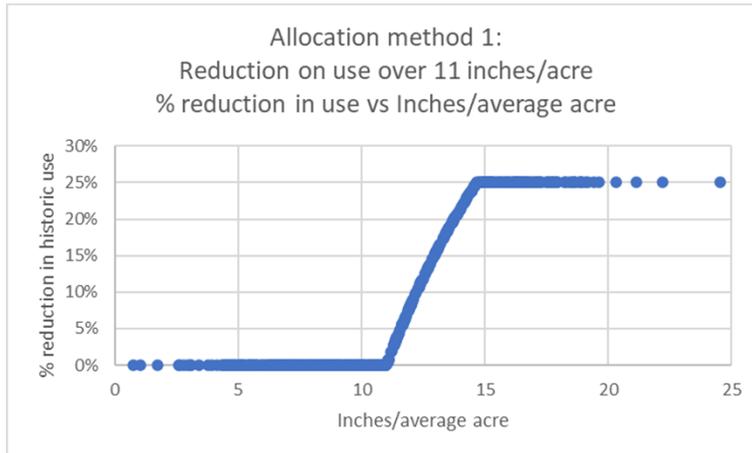
9

Two new allocation methods evaluated

- Since March, the Board has been carefully examining two new allocation methods.
- Both use a “**sliding scale**” **percentage reduction of average historic use**, between 0% to 25%.
- Water users will be provided allocations as a single, shared, 5-year, allocation among **water right groups**. A water right group is composed of **all legally overlapped water rights**.
- **The time period** selected as basis for allocations is 2011-2020, the most recent, most reliable, and most defensible data.

10

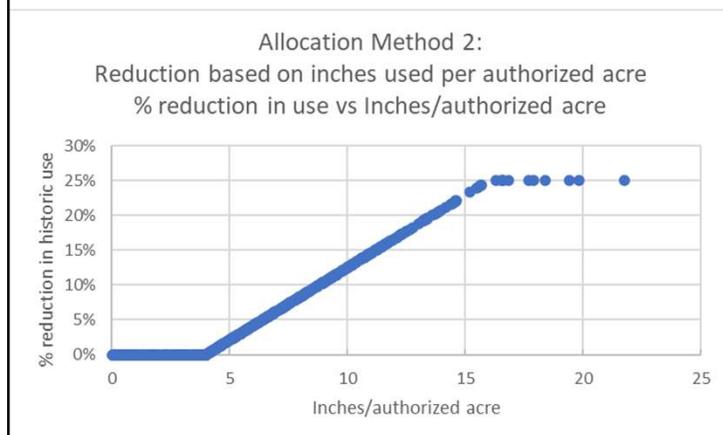
Allocation method 1: Reduction on use over 11 inches/acre



- Inches/acre = average wateruse/average acres
- When historic use is less than 11 inches/acre, 0% reduction
- When historic use is greater than 14.67 inches/acre, a 25% reduction.
- In between, a sliding scale reduction

11

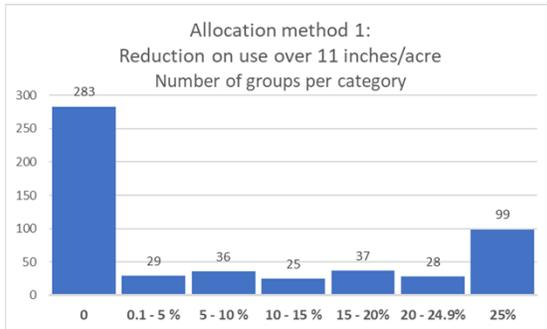
Allocation method 2: Reduction based on Inches used per Authorized Acre



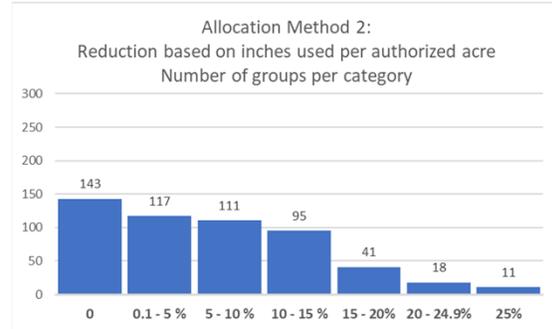
- Average use per authorized acres computed
- When use is less than 4 inches/authorized acre, a 0% reduction
- When use is more than 16 inches/authorized acre, a 25% reduction.
- In between, a sliding scale reduction

12

Effects of Two Allocation Methods



- Average reduction over the 4 counties: 10.4 %
- 53 % of water rights have **NO** reduction
- 18 % of water rights are reduced by 25%
- 29 % in between



- Average reduction over the 4 counties: 9.6 %
- 27 % of water rights have **NO** reduction
- 2 % of water rights are reduced by 25%
- 71 % in between

13

GMD 1 Board's preferred allocation method

- The GMD 1 Board prefers the allocation method which reduces use based on use as **Inches/authorized acres**, as it more evenly and fairly distributes pumping reductions.
 - The allocation method reducing use over 11 inches/average acres is not preferred as it cuts waterusers who choose to stack their water but requires no reductions for those who spread their water.
- Again, for **flexibility**, water users will be provided allocations as a **single, shared, 5-year, allocation among water right groups**. A water right group is composed of all legally overlapped water rights.

14

Estimated County reductions of Allocation Method 2

- The overall estimated savings achieved by Allocation Method 2 is 9.6%.
- The savings are greatest in Wallace County as it has the greatest average use by water right group.
- Scott County has the lowest reductions.
- The Wallace County sub-area analysis reinforces the finding that greatest reductions are in the areas of greatest water supply

Percentage reductions achieved by County and Wallace County sub-areas

County	Allocation Method 2
Greeley County	10.3%
Lane County	8.5%
Scott County	7.5%
Wallace County	11.6%
Sum/averages for the 4 counties	9.6%
Wallace County sub-areas	
Weskan subarea	13.2%
Sharon Springs subarea	12.6%
Outside special subareas	9.6%

15

Potential elements of the LEMA plan

- Vested Water Rights would be exempt from the LEMA and excluded from utilizing LEMA flexibilities, unless voluntarily enrolled.
- One joint, five-year allocation would be provided for each Water Right Group, composed of all legally overlapped water rights.
 - While water rights would share the group allocation, each water right is limited each year to its annual authorized quantity, just as they are today.
- Allocations based on a sliding scale percent reduction of historical use based on inches applied to a Water Right Group's Authorized Acres where:
 - Average use of less than 4" per authorized acre = No reduction.
 - Maximum reduction capped at 25% for average use greater than 16" per authorized acre.
 - A sliding scale between these values

16

Potential elements of the LEMA plan, con't

- Historical Use Period: 2011 – 2020 Inclusive – 10 year average use.
- Allocation appeal opportunities, per point of diversion, based on three reasons:
 1. Verification of water use history
 2. Consideration for previous voluntary conservation measures
 3. Water right ownership/control changes.
- Any unused LEMA allocation will be recommended as allowable carryover to a new 2028 LEMA plan without the carryover quantity being subjected to the new LEMA's conservation factor.

17

Process ahead

- County meetings this fall / winter for additional input
- Refine the plan and present at the February 2022 annual meeting
- Submit plan spring of 2022 for hearings.
- If approved, plan will take effect January 1, 2023

18

Questions?