

**Western Kansas GMD No. 1
Considerations of Additional LEMAs**

**For GMD 1's 2022 Annual Meeting
February 23, 2022**

By David Barfield, consultant

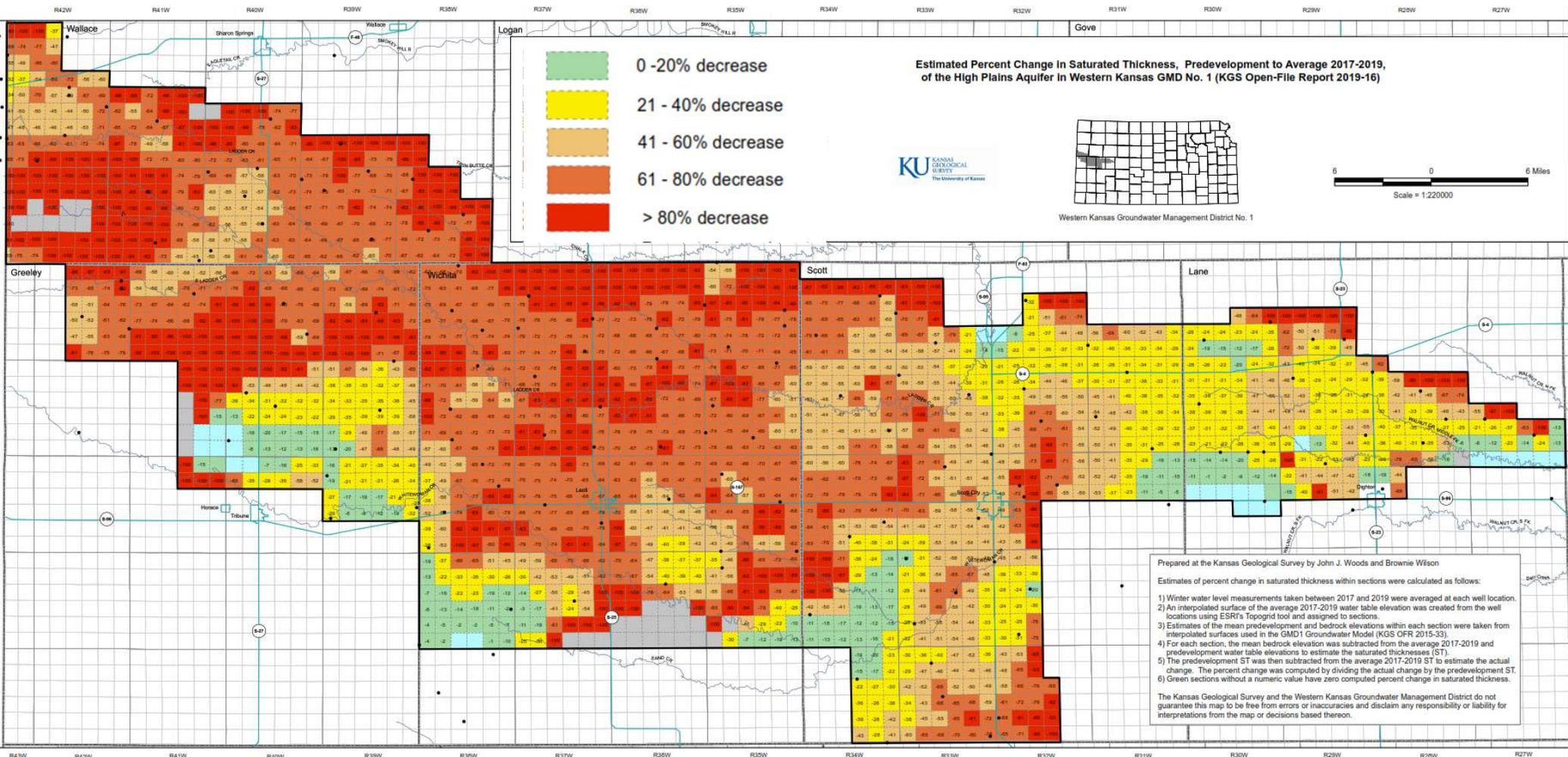
Introduction

- 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
 - 2016-17: Wichita County Water Conservation Area (WCA) developed
 - 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

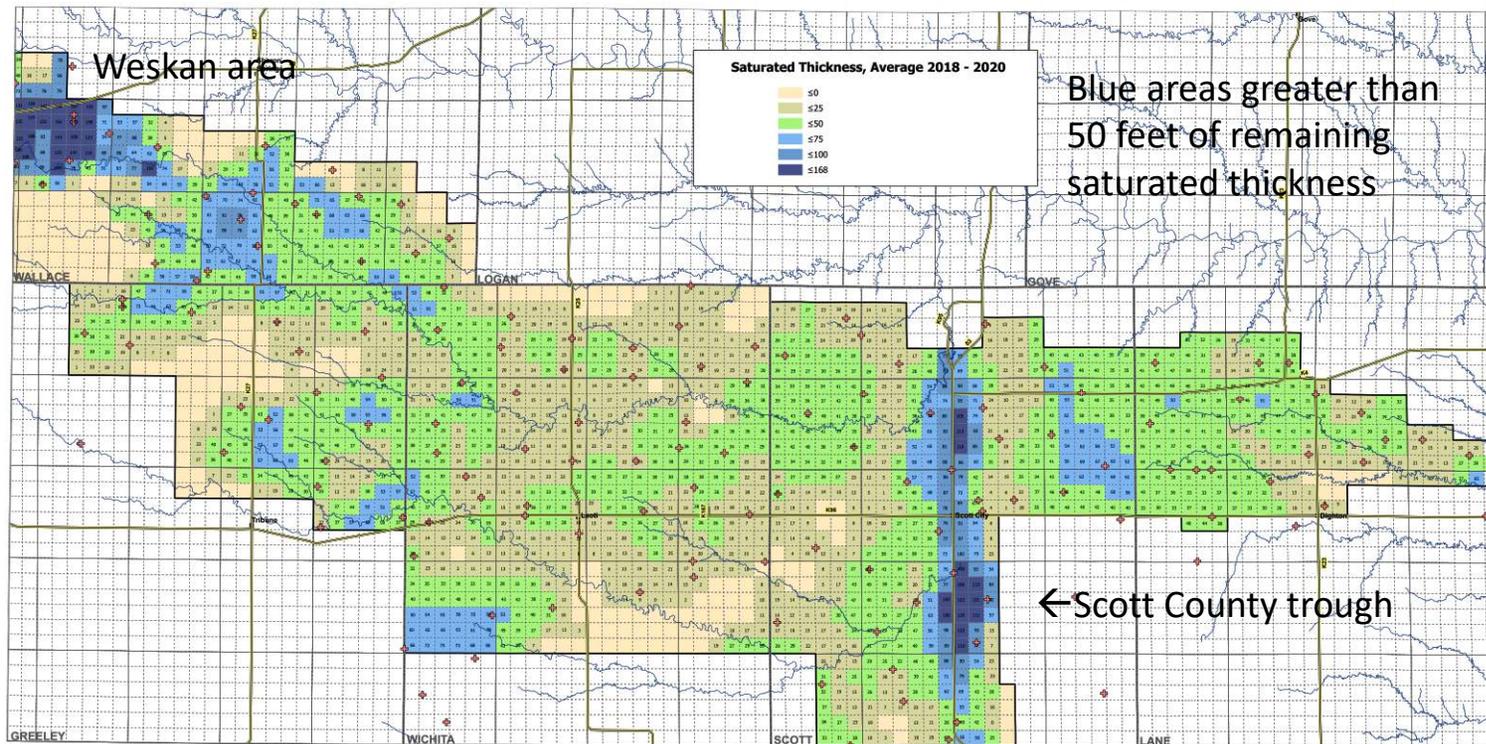
Board's On-going Consideration of Additional LEMA(s)

- Fall 2020: The GMD Board re-starts discussions on additional LEMA(s) to fulfill its mission to extend the useful life of the aquifer.
- 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
 - Robust allocation appeal process will be included in the LEMA plan

Current situation, water level declines



Current situation, remaining saturated thickness

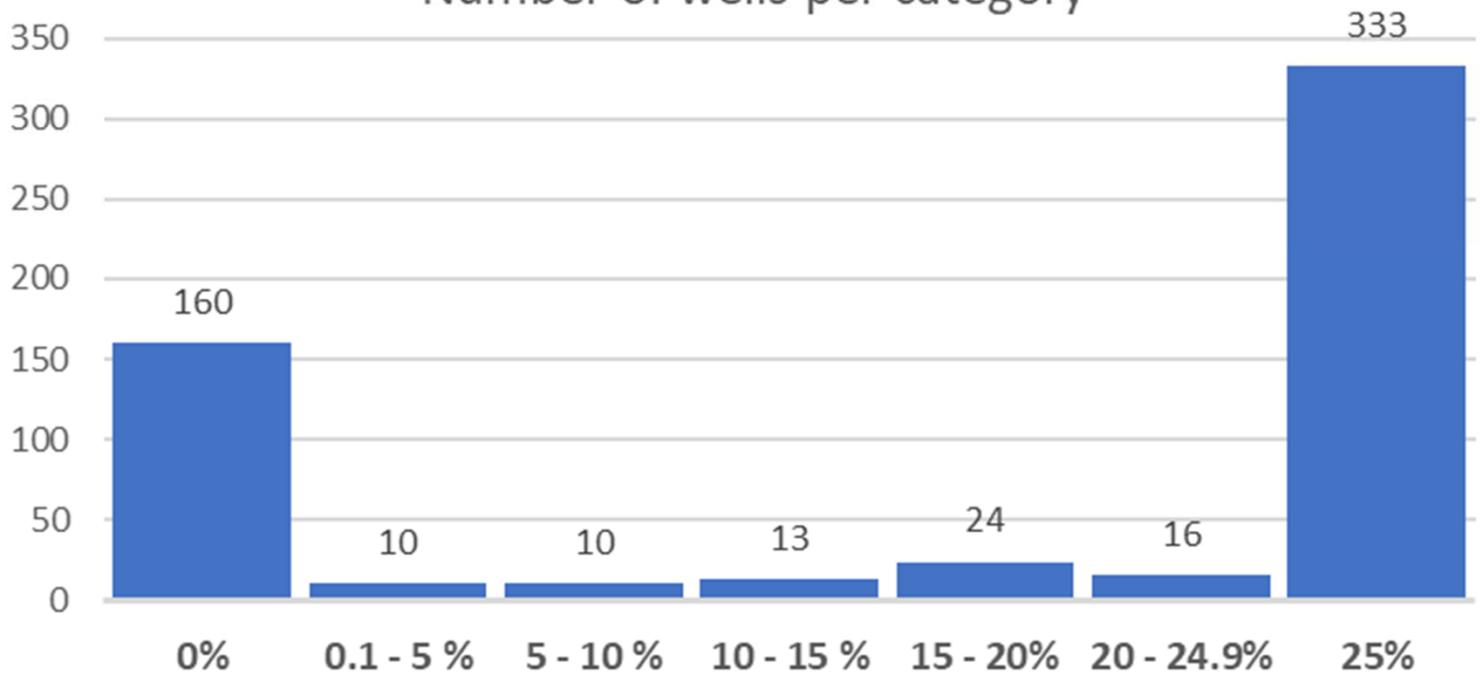


- Limited saturated thickness and well yields in much of the District, with the exception of the “Weskan” area and the Scott County trough.
- Yet, significant use remains and the desire to extend the benefits into the future

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

Wichita County LEMA
Percent reduction from historic use
Number of wells per category



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

Allocation methods 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.

Subsequently, the Board reviewed **three Hybrid methods**, with allocations based on recent historic use, but varying reductions based on a “sliding scale” measure of historic use vs authorization.

GMD 1 Board's preferred allocation method

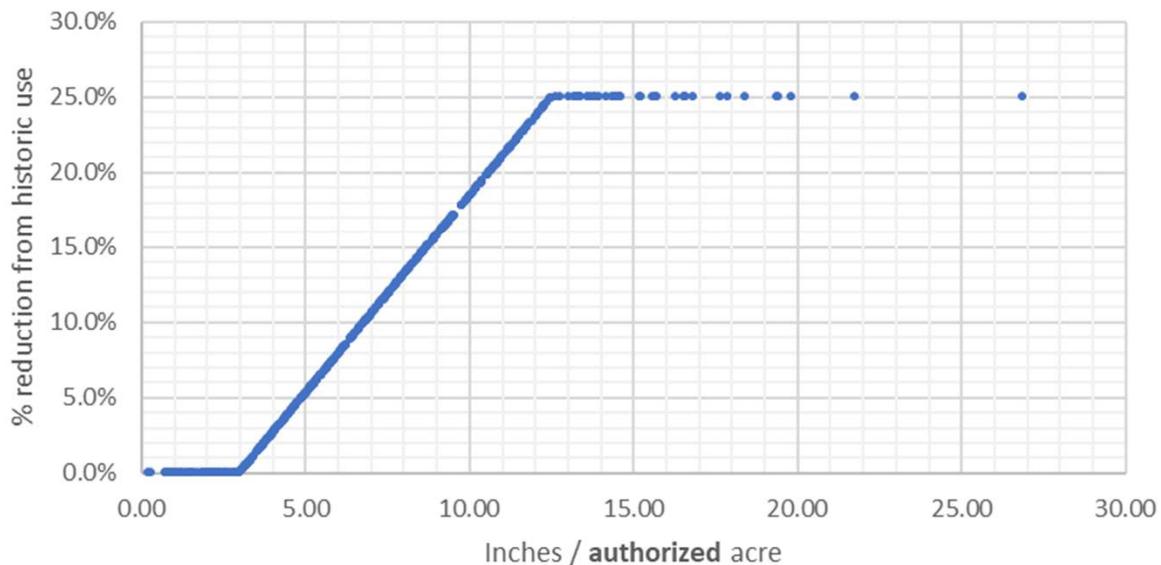
- After carefully examining the three hybrid, the GMD 1 Board decided on the allocation method which reduces historic use (2011-20) based on use as **Inches/authorized acres**, as it more evenly and fairly distributes pumping reductions.
- Again, for **flexibility**, water users will be provided allocations as a **single, shared, 5-year, allocation among water right groups**. A water right group is composed of all legally overlapped water rights.

Work since August 2021 annual meeting

- Worked with DWR to improve the data: DWR has proofed all wateruse data
- Worked with DWR to develop draft allocation reports to provide water users with improved understanding of the effect of its preferred allocation method on their specific water rights under the proposed LEMA.
- Carefully examining options for its **appeal procedures** to give due consideration for past conservation and ownership changes.
- As a first step for considering past conservation, the Board decided to exclude **years of non-use** from averaging.
- As the work presented in August 2021 included non-use years in the averaging, this has required adjustment of the sliding scale to achieve the same overall savings (approx. 10%).

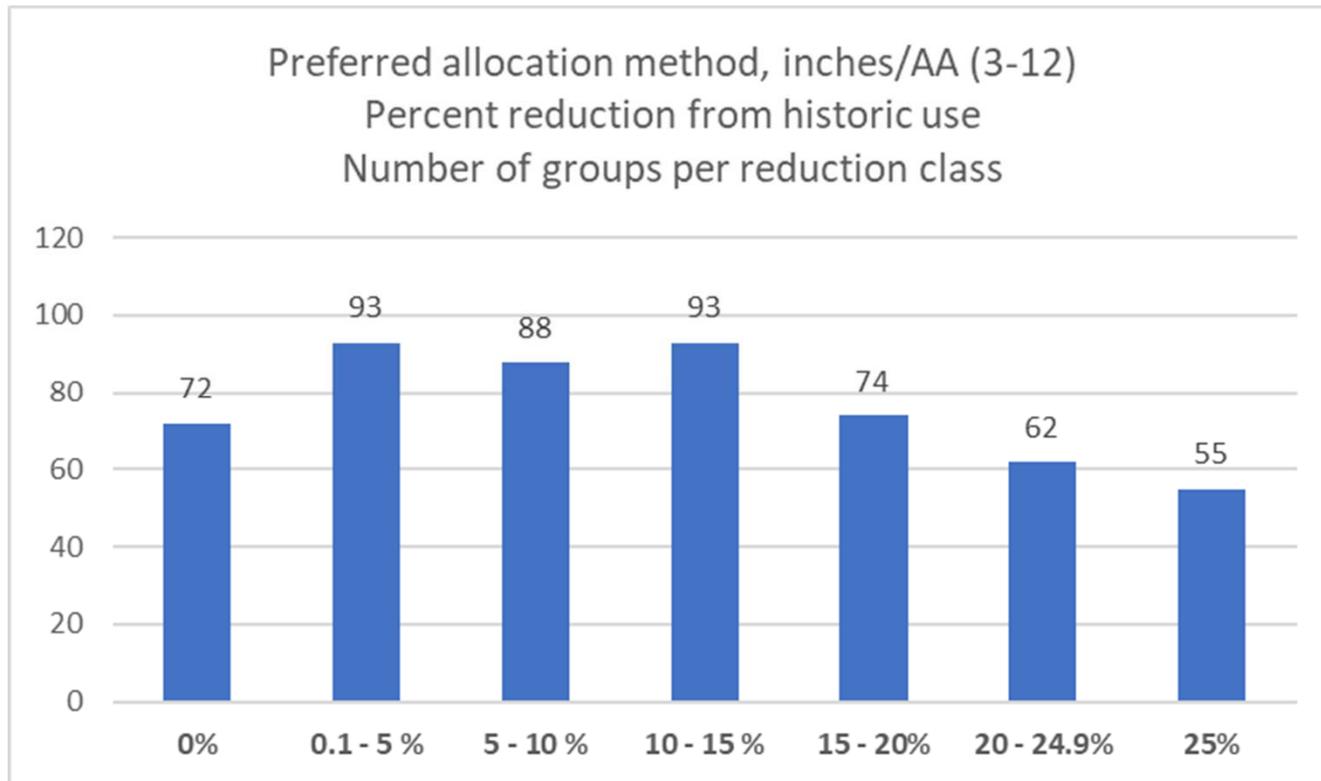
Allocation method selected: Reduction % based on Inches used per Authorized Acre

Preferred allocation method:
Sliding scale, 3-12 inches



- Average non-0 use per authorized acres computed
- When use is less than 3 inches/ authorized acre, a 0% reduction
- When use is more than 12 inches/authorized acre, a 25% reduction.
- In between, a sliding scale reduction

Effect of the Preferred Allocation Method



- Average reduction over the 4 counties (before appeal): 10.5 %
- 13 % of water rights have **NO** reduction
- 10 % of water rights are reduced by 25%
- 76 % in between

Appeal procedure considerations

- As with the Wichita County LEMA Plan, this proposed LEMA plan will include a comprehensive and fair appeal process, again considering:
 - Verification of water use history (user supplied data)
 - Consideration for previous voluntary conservation measures, as substantiated by water users, and
 - Water right ownership/control changes.
- It is expected that the appeal procedure will include a pump test.
- The Board continues to examine the appeal procedure since this LEMA has differences with the Wichita County LEMA:
 - Different allocation provisions (with lesser cuts for most),
 - Based on longer and a more recent wateruse period, and
 - Will encounter a greater diversity of situations (e.g higher pumping rates).

Proposed elements of the LEMA plan

- Vested Rights will be exempt from the LEMA. Other water rights in the group will be provided an allocation based on the same principle as non-vested groups.
- One **combined, 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:
 - Historical Use Period: 2011 – 2020
 - Non-use years will be excluded from the averaging
 - Average use of less than 3" per authorized acre = No reduction.
 - Maximum reduction of 25% for average use greater than 12" per authorized acre.
 - A sliding scale between these values

Potential elements of the LEMA plan, con't

- 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.

Explanation of Allocation Reports

- Your allocation forms will be available after this presentation.
- Again, note you will have a chance to appeal these allocations, based on:
 - Better wateruse data
 - Consideration for previous voluntary conservation measures
 - Water right ownership/control changes.

Water Right Group 4 ■

For reference only

File Number	Point of Diversion	Group Authorized Quantity, AF	Group Authorized Acres	Group Average Historic Use 2011-2020, AF	Group Historic Inches on Authorized Acres	Group % Reduction from Historic Use	Group Proposed 5-Year Allocation AF	Group Average Reported on Acres	Group Inches, Allocation Reported on Acres	Group Inches, Historic Use Reported on Acres
SC 2 ■	3413N 933W	■	W 4							
803 ■	2621N 5250W AKA: 246'N C	■	2W 5							
252 ■	2805N 2574W	■	2W 1							
Group Information:		863.00	664.00	478.75	8.65	15.70%	2,017.93	758.60	6.38	7.57

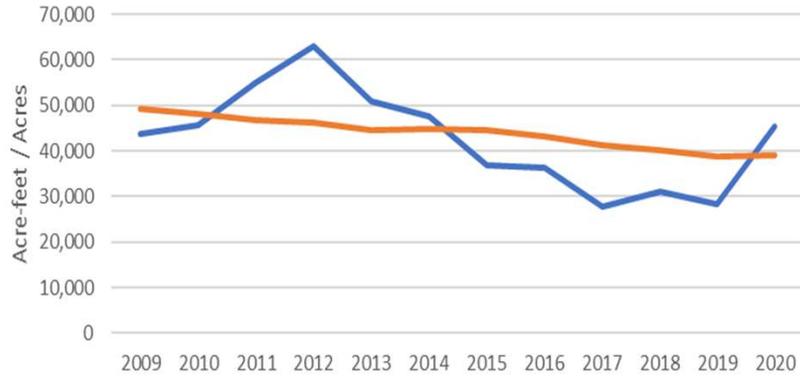
Process ahead

- County meetings this spring for additional input.
- The Board's hope is to finalize the LEMA plan and submit it to the Chief Engineer by June 30, 2022
- If the LEMA plan is submitted, the Chief Engineer will hold two hearings this fall on the LEMA Plan.
- If approved, LEMA Plan would take effect January 1, 2023.

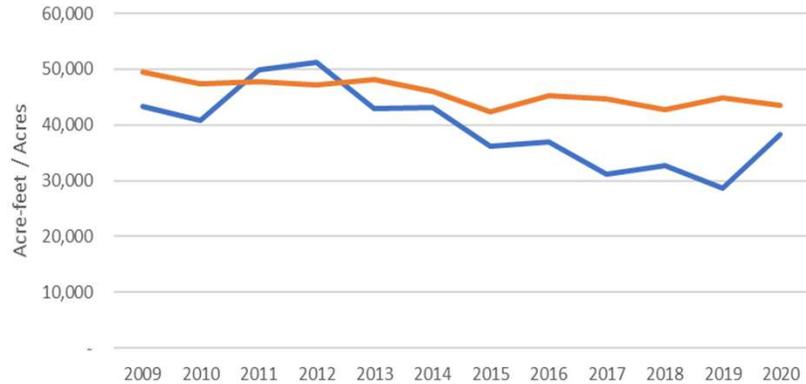
Questions?

County wateruse and acreage trends, 2009-2020

Wallace County



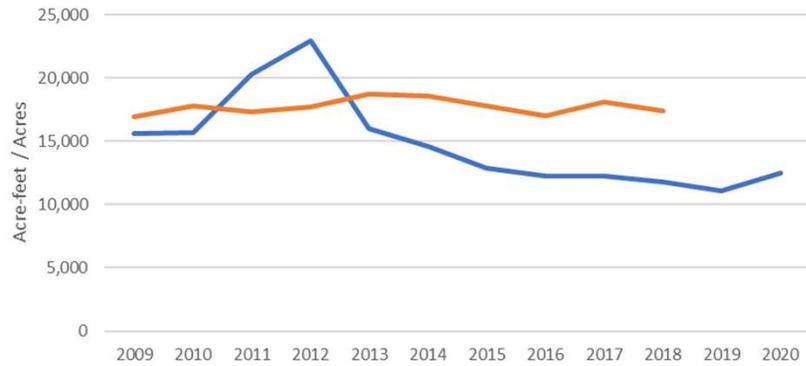
Scott County



Greeley County



Lane County



- Acres are gradually declining throughout most of GMD 1
- Wateruse varies from year to year based on climate, but also gradually declining

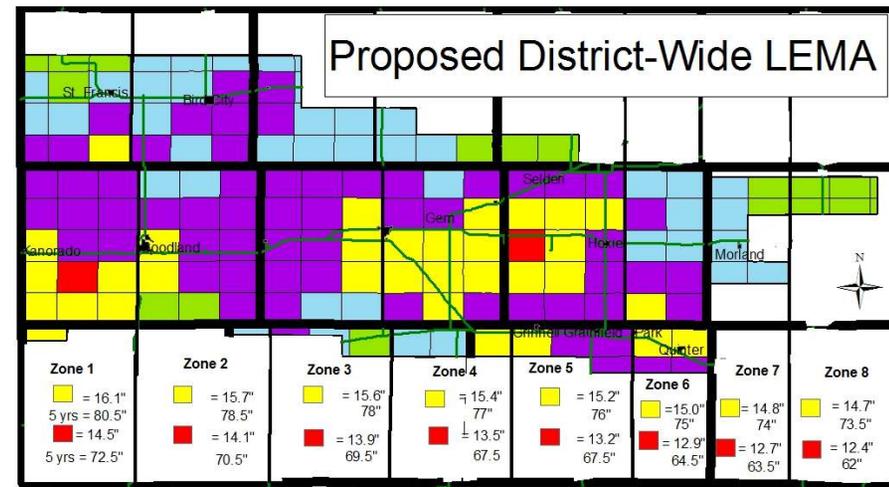
Note: Lane County for 2019-20 under review due to significant double counting.

— Wateruse — Acres

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 water use, except for those using less than 20% of their authorized quantity