

Barfield, David [KDA]

From: Titus, Kenneth [KDA]
Sent: Wednesday, March 7, 2018 4:28 PM
To: Preheim, Lynn
Cc: Hansen, Christina J.; Barfield, David [KDA]
Subject: FW: DRAFT GMD5 LEMA management plan - KDA edits 180303
Attachments: 180215.GMD5draftLEMA-MP_KDA20180306.docx

We weren't sure whether you had the latest version of our review of the management plan that we sent out on Tuesday. Additional information from Chris is in the emails below.

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From: Beightel, Chris [KDA]
Sent: Tuesday, March 6, 2018 9:33 AM
To: Orrin Feril <oferil@gmd5.org>
Cc: Letourneau, Lane [KDA] <Lane.Letourneau@ks.gov>; Lanterman, Jeff [KDA] <Jeff.Lanterman@ks.gov>; Pugh, Ginger [KDA] <Ginger.Pugh@ks.gov>; Barfield, David [KDA] <David.Barfield@ks.gov>; Engelhaupt, David [KDA] <David.Engelhaupt@ks.gov>; Titus, Kenneth [KDA] <Kenneth.Titus@ks.gov>
Subject: RE: DRAFT GMD5 LEMA management plan - KDA edits 180303

Orrin,

Here's some additional language included to address the case where the 19,000 AFY plus 4,000 AFY might turn into different numbers so long as the hydrologic result is the same.

Talk with you at 1:30.

Chris

From: Beightel, Chris [KDA]
Sent: Saturday, March 3, 2018 8:43 AM
To: 'Orrin Feril' <oferil@gmd5.org>
Cc: Letourneau, Lane [KDA] <Lane.Letourneau@ks.gov>; Lanterman, Jeff [KDA] <Jeff.Lanterman@ks.gov>; Pugh, Ginger [KDA] <Ginger.Pugh@ks.gov>; Barfield, David [KDA] <David.Barfield@ks.gov>; Engelhaupt, David [KDA] <David.Engelhaupt@ks.gov>; Titus, Kenneth [KDA] <Kenneth.Titus@ks.gov>
Subject: DRAFT GMD5 LEMA management plan - KDA edits 180303

Orrin,

Attached is our work on the draft GMD 5 LEMA management plan.

Our main areas of focus were to make sure that the essence of the plan, including timelines, numbers, actions, and consequences were up front and described as clearly and concisely as possible so that this draft, while certainly not final, would have all the essential elements in enough detail that public will be able to understand the full breadth of the plan and the thought that has gone into it.

We realize that at time of your 2/15 draft, several element of the plan had not yet been settled, so could not have been included at that time.

With all of the additional information that KDA-DWR and the GMD5 LEMA Committee have discussed since then, we felt like it would be more productive to suggest this substantial revision of the document instead of trying to make the very unique GMD5 plan fit into the much different GMD4 plan framework.

You'll find that large sections of your 2/15 draft have been moved but left largely untouched, but that we have suggested removing some other sections. The Background section, for example, while informative, given the already substantial length of the LEMA plan document, we felt like might be better placed in an appendix.

Also, several sections towards the end of the document need a bit more work and have outstanding questions/issues that KDA-DWR and the Committee need to resolve.

Thank you for your very good work refining the first 6 versions of the plan. It was much easier for us to take your document and attempt to incorporate all these other elements we've been discussing over the past couple of weeks.

I'm sending out a meeting invitation for **Tuesday, March 6 at 1:30 PM** for a call/Zoom to review this document with you and the Committee and plan our next steps forward. If that time doesn't work for you, please suggest another one.

Thanks,
Chris

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**Request for Rattlesnake Creek LEMA Submitted to the
Chief Engineer, Kansas Department of Agriculture, Division of Water Resources**

XXXX XX, 2018

1) Overview and Goals

In an effort to provide a remedy to the Quivira National Wildlife Refuge (“the Refuge”) impairment complaint and to maintain the useful supply of groundwater to diversion points in the upper reaches of Rattlesnake Creek Basin in Big Bend Groundwater Management District #5 (“the District”), the District Board of Directors proposes the following plan be submitted via the Local Enhanced Management Area (“LEMA”) process per K.S.A. 82a-1041 for an area designated in Attachment 1.

Hydrologic modeling commissioned by the District, and reviewed by the Kansas Department of Agriculture Division of Water Resources (“KDA-DWR”), shows that reducing water withdrawals by an average of 23,000 acre-feet per year (“AFY”) within the LEMA boundaries, including 4,000 AFY within an area where pumping draws 40 percent or more from what would otherwise become streamflow (so called “Zone D”), in combination with augmentation supplying up to 5,000 acre-feet (“AF”) of water per year at rates up to 15 cubic feet per second (“cfs”), will resolve the impairment of the Refuge, ensure the viability of the augmentation project for several decades, and maintain the useful supply of groundwater to the upper reaches of Rattlesnake Creek. See Appendix X (Seahorse map).

The average annual withdrawals within the LEMA boundaries and within Zone D over the base period 2003-2012 are 233,335 AF and 29,655 AF respectively.

Therefore, **the goals of the LEMA are to:** 1) by 2022 have an operational augmentation project that will supply the Refuge with up to 5,000 AFY of water at rates up to 15 cfs; 2) to limit withdrawals of water within the LEMA to a total of 2,103,350 AF over 2020-2029; and 3) to further limit withdrawals of water within Zone D to a total of 128,275 AF over the same period. See [Table 1](#).

	LEMA (includes Zone D)	Zone D
Baseline - 2003-2012 average withdrawals (AFY)	233,335	29,655
Annual savings goals (AFY)	23,000	4,000
Ten-year withdrawals total (AF)	2,333,350	296,550
Ten-year savings total (AF)	230,000	40,000
Five-year (2020-2024) withdrawals targets for evaluation (AF)	1,051,675	128,275
Ten-year (2020-2029) withdrawals with savings (AF)	2,103,350	256,550

Table 1 - LEMA baseline use and 5- and 10-year withdrawal targets

Initial Corrective Controls and Voluntary Actions 2019-2024 – The District believes that removing end guns, as described in Section 2) a. below, along with other voluntary actions described in that section will reduce water withdrawals by 19,000 AFY across the LEMA and that voluntary, incentivize actions, also described in that section, will reduce withdrawals by 4,000

AFY in Zone D. The District holds that, together, these actions will accomplish the reductions in water withdrawals necessary to maintain the viability of the augmentation project for several decades. If during the course of the LEMA, water users limit the withdrawals within the LEMA and within Zone D in another combination that has the same hydrologic result as demonstrated with the GMD5 Model and approved by the chief engineer, then the goals will be met.

Target Allocations – Beginning in 2020, each water right subject to the LEMA will be given a non-mandatory, target annual allocation. The target allocation serves two principle purposes: 1) to provide guidance to the water right operator on how much water should be used annually and in total over the evaluation periods 2020-2024 and 2025-2029, and 2) to provide the foundation and starting point for mandatory allocations should the five-year withdrawal targets, as set forth in Table 1, be exceeded over 2020-2024, or should a fully functional augmentation project not be in place by 2022 as further discussed below.

Alternative Corrective Controls – KDA-DWR has agreed in principle to the District’s approach, but to resolve the Refuge’s impairment complaint through a LEMA without full assurance that the necessary reductions will be accomplished, KDA-DWR requires, as part of this Plan, that certain milestones be met, and that the LEMA’s corrective controls include provisions to further adjust groundwater withdrawals in the cases that either the end gun removal and voluntary reductions in the LEMA and Zone D do not meet the stated goals, or the augmentation project is not completed by 2022, or both.

The target allocations, and if necessary mandatory allocations, shall be based on a percentage of a water right’s authorized quantity and the three factors: 1) the priority date of the water right – senior water rights will be allocated a larger percentage of their authorized quantity; 2) impact to the Rattlesnake Creek streamflow – water rights with less impact to streamflow will be allocated a larger percentage of their authorized quantity; and 3) net irrigation requirement for corn, 50% chance rainfall (NIR50) – no water right shall receive an allocation less than 50% of NIR50. Furthermore, if a water right is perfected for less than 50% NIR50, its allocation shall be its authorized quantity.

Commented [BC1]: Yet to be decided

In the case where an augmentation project has NOT been fully implemented by 2022, the mandatory allocations will set over 2023-2027 at a level that will stop the rate of growth of depletions to streamflow. Hydrologic modeling shows that pumping withdrawals would have to be reduced by 30% from the 2003-2012 baseline average to arrest the growth in depletions. Further, should augmentation continue to be unavailable by 2024, the chief engineer will initiate a process to determine the level of pumping reductions required to resolve the impairment based on pumping reductions alone. If and when augmentation is provided, allocations would be increased accordingly.

This LEMA shall be initiated upon an order of designation by the chief engineer and the corrective controls shall be effective beginning January 1, 2019. The proposed LEMA shall include all points of diversion within the LEMA boundaries except that, vested water rights and appropriation water rights senior in priority to Water Right File No. 7,571 are not subject to any of the restrictions or corrective controls of this LEMA management plan.

The LEMA will combine the efforts of several parties to create a holistic approach to stabilizing the use of water in and around the Rattlesnake Creek subbasin. The District is seeking partner

agencies at the state and federal levels in addition to working with both public and private organizations to bring all available resources together into a unified plan.

All water users within the District are encouraged to participate in the educational opportunities and incentive-based programs to increase conservation and help preserve the long-term economic well-being of our community.

2) LEMA Operations, 2019-2024

Commented [BD[2]]: Is there a better title, for operations under non-mandatory allocation provisions?

- a. **Pumping Reductions, LEMA-wide and in Zone D** – *Goal: to halve the rate of increasing depletions to Rattlesnake Creek streamflow caused by groundwater pumping by reducing withdrawals by 23,000 AFY within the LEMA including 4,000 AFY in Zone D.*
- i. **End Guns** - The LEMA management plan requires, by December 31, 2018, the removal of end guns, defined as any nozzle at the end of the center pivot system that has a larger bore diameter than the previous nozzle on the center pivot system, from all irrigation systems within the LEMA boundaries authorized by water rights junior in priority to Water Right File No. 7,571, and prohibits their further use. Vested water right owners and owners of water rights senior to Water Right File No. 7,571 may voluntarily remove their end guns to document conservation, increase eligibility for incentive program, and to follow best water management practices.

District staff has compiled a database of the end guns within the LEMA boundary. As of January 2015, the District determined that there were 1306 end guns installed on center pivot systems within the LEMA boundary. The District believes that removing end guns will accomplish most of the savings required LEMA-wide. See Appendix XX [Documentation of end gun locations and calculated savings methodology.]

Commented [BC[3]]: Lots of attachments and references to verify yet.

- ii. **Education/technology implementation** – To ensure the LEMA-wide savings are accomplished without the mandatory controls provided for herein, the District’s management program includes annual goals and objectives related to education including setting goals for the number of stakeholder meetings to host, goals for implementing technology through cost-share, and other activities. The District is committed helping its members be the best water managers in the nation. In addition, the District will work with KDA-DWR to annually update water users within the LEMA on the status of keeping water use, both collectively and individually with the target allocations provided herein.

Zone D – An additional 4,000 AFY of water use will be curtailed in Zone D, which is the area of focused impact on the stream near St. John. See Attachment 3. The reduction in water use in this area will be achieved through the implementation of one or more measures including but not limited to: 1) permanent retirement of water rights through the expansion of the Conservation Reserve Enhancement Program (“CREP”) and the Water Transition Assistance Program (“WTAP”), 2) permanent purchase and retirement of water rights by the District, 3) permanent movement of water from hydrologically sensitive areas to lesser sensitive areas, or 4) temporary water leases through the Central Kansas Water Bank.

The model shows that curtailing 4,000 AFY of water withdrawals in Zone D, combined with the 19,000 AFY of reductions within the LEMA boundary outside of Zone D will halve rate of growth of the pumping depletions to streamflow when evaluated at Zenith gage.

Adjustment for Climate Variability – The reduction in pumping in Zone D (4,000 AFY) and the overall LEMA (23,000 AFY) will be evaluated for years 2020-2024 and adjusted for evapotranspiration and precipitation using a correlation of those factors to pumping that has been developed by KDA–DWR. **See Attachment XX.** This adjustment will make reasonable allowances for climate variability; for example, more water use would be expected in multi-year dry periods. The adjustment will be considered in determining if the LEMA management program is on course to meet its ten-year water withdrawal goals.

b. **Augmentation Program** – *Goal: provide up to 5,000 AFY at up to 15 cfs to the Refuge.*

In 2014, Governor Sam Brownback signed into law a provision specific to the Rattlesnake Creek subbasin to “allow augmentation for the replacement in time, location and quantity of the unlawful diversion, if such replacement is available and offered voluntarily.” This legislation had overwhelming supporting testimony from several groups from across the State that resulted in unanimous action from the Kansas legislature to approve this bill. The concept of augmentation is to utilize the aquifer underground as a reservoir to supply water to the stream in times of shortage.

Augmentation will be implemented from a to-be-constructed wellfield designed for up to 15 cfs capacity. Based on the analysis conducted by Balleau Groundwater Inc. (“BGW”), the intent of augmentation is to provide an additional tool to enhance the unique habitat the Refuge provides for various endangered species. The ability to utilize underground water in times of need further protects “the biological integrity, diversity and environmental health of the Refuge.” The area surrounding the Refuge has been underdeveloped for large-scale irrigation historically due to the water quality in the upper zones of the aquifer. Thus, this area does have water that can be appropriated in a sustainable manner. The sources supporting the augmentation wellfield have been examined in a water-accounting model as was done in the impairment analysis. The yield is supported by induced capture of evapotranspiration from adjacent water-logged soils and wetland vegetation, in addition to sources captured from formerly-rejected recharge by making space available in the aquifer. Rattlesnake Creek is to be augmented by waters that are now lost to the atmosphere, bypassed as storm runoff in Peace Creek, or discharged as brackish baseflow to the east. This further supports the concept of augmentation as a remedy for the impairment at the Refuge.

According to the various augmentation studies conducted within this subbasin, there are several key factors that need to be addressed. These include, but are not limited to: wellfield location, wellfield capacity, pumping rate, delivery rate, water quality, delivery frequency, and delivery location. The District has analyzed augmentation for each factor. The timeframe in which the augmentation well field will be implemented is outlined in **Attachment 4.**

i. Location

A wellfield south of the Refuge has been identified as an optimal location for the foreseeable future. The precise locations of this wellfield have not been finalized as further studies will be needed to determine water availability and quality. However, a conceptual augmentation system is shown in Attachment 5. The water table in this area is stable enough to support augmentation. The large-scale development for irrigation and other practices has been limited due to the natural water quality in the area. The water quality in the upper zones of the aquifer is very similar to the water quality already feeding the Little Salt Marsh. The conceptual wellfield is thought to overlie areas that can safely yield higher quantities of freshwater without risk of up-coning of poor quality water. Further site specific test drilling will be required to ensure proper placement of wells in a way to protect the upper zone of the aquifer from degradation. The multi-layer aquifer model simulates shallow fresh-water ingress to the wells at a higher rate and volume, dominating and diluting any smaller upward migration from saline sources. Observation wells will be installed to provide additional locations to test water quality and verify water table elevations, and eventual trends of water quality. The concept is to use a location in T23S, R10W south of Peace Creek and west of Salt Marsh Road. Wells will be sited with screen lengths and depths to access the yield and quality of water suited to the Refuge requirement as presented, or the range of 3,000 to 9,000 $\mu\text{S}/\text{cm}$ in terms of specific conductance.

ii. Diversion & Delivery Rate

The District will pay the cost to develop, construct, and operate a 15 cfs wellfield south of the Refuge. Based on conversations with the Chief Engineer, we have determined that up to 15 cfs is an appropriate flow rate/instantaneous capacity. Water will then be delivered directly to the Rattlesnake Creek channel immediately upstream of the Refuge. The discharge released to the stream is intended to make up the diversions required to serve the Refuge water right file # 7571 of 1957 priority date. Depletion of the stream will be relieved to the extent that the end gun program slows the future growth of effects on the stream. That effect is not expected to reverse trends or to provide a complete offset of future depletion; thus the augmentation wells will serve to deliver flow sufficient to meet the objective for serviceable supply on this reach of Rattlesnake Creek. Water lines will be installed in a manner that will minimize any disturbance to surface lands and utilize already authorized right of ways where possible to get access to the creek channel. This delivery location complies with the statutory requirement of K.S.A. 82a-706b (a)(2) to allow augmentation as a remedy. It is assumed that an NPDES permit will be applied for and approved due to the similarity of ground and surface-water quality in the area. Kansas Surface Water Quality Standards recognize the chloride content of Rattlesnake Creek above Little Salt Marsh being 1400 mg/l.

Commented [BD[4]]: Not sure this is necessary' a bit confusing.

iii. Real-Time Operation

The hands-on operation of the augmentation wellfield does not hinge on knowing the magnitude of effects from the District's efforts to reduce irrigation pumping. The wellfield will deliver a make-up flow to the stream depending on conditions of streamflow and diversion requirement as observed. Diversion requirements are given by the Refuge and applied with practical considerations in the Chief Engineer's impairment analysis and subsequently the peak 15 cfs wellfield has the ability to serve those requirements. Calculations and diversion reports suggest that about one-third of the time augmentation will not be needed, one-third of the time the 15 cfs will be needed, and a wellfield release

Commented [BD[5]]: We are in discussions with KDHE on this now. It will likely be exempt from NPDES permitting but will require either KDHE permitting, water quality conditions associated with DWR permitting, or both.

of 5 or 6 cfs will characterize the middle third of days. The Refuge is understood to have operable storage capacity to accommodate at least a week's volume if the deliveries over or under perform for a few cfs for a few days. The District proposes that the delivery rate be set weekly in coordination with Refuge requests and KDA-DWR staff review of conditions on the stream. Rain, high flows or bypass of the Refuge diversions would warrant shut-down of augmentation delivery, then restoration when those conditions pass. The Refuge reports about 25 cfs as the peak month average diversion rate. If that is the current diversion capacity on the Refuge, then augmentation can be shut down at higher flows. The Refuge and District will need to coordinate such factors. As confidence in standard practice is realized, the initial hands-on control of discharge might be handed over from The District to KDA-DWR or Refuge staff.

iv. Annual Water Quantity

The augmentation well field will release an adequate volume of suitable groundwater delivered to the creek channel for use by the Refuge to meet the management objectives for maintaining forage and habitat. The water provided will be measured for rate and quality at the point it is placed in the creek channel, or at Zenith Gage, whichever is closer to the mouth of the Refuge. The capacity of the wellfield exceeds the 5,000 AFY amount suggested to relieve the impairment, in most years, of the Service's water right at the Refuge in the Chief Engineer's final impairment report. In the Chief Engineer's final impairment report, the analysis conducted was retroactive and reviewed any impairment that may have occurred prior to the Refuge's claim of impairment in 2013. Based on a prospective analysis by BGW that looks at years after the 2013 claim of impairment, augmentation pumping is sustainable, effective, and does not degrade the quality of water the Refuge requires. The authority for such water will be processed in the same manner as any other water right with KDA-DWR. This evaluation by KDA-DWR will further ensure that there will not be an increase in permitted consumptive use in the area. The new appropriation water right will be considered non-consumptive as the quantity authorized will be combined and limited to the authorized quantity already appropriated under Water Right File No. 7571. In no calendar year will the combined quantity diverted from the augmentation well fields and the surface diversions at the Refuge exceed 14,632 AF. However, Rattlesnake Creek runs through the Refuge and only the portion of streamflow diverted by the Refuge under Water Right File No. 7,571 will be counted against the Refuge's annual quantity limitation.

v. Water Quality

The quality of this water would fall within the specified range (3,000 to 9,000 $\mu\text{S}/\text{cm}$) presented by the Service. The water quality can be managed based on the requirements of Refuge staff by providing more or less fresh water from redundant capacity of wells with varying water quality. As stated before, the water quality in the aquifer surrounding the Refuge is to the source of the baseflow water quality utilized in Little Salt Marsh. As a result, the water quality at the Refuge will not be altered in suitability for use through the implementation of the augmentation plan. Coordination with Kansas Department of Health and Environment will be crucial in this process to ensure the water quality of the Rattlesnake Creek stream channel is maintained throughout this project.

vi. Drought

Commented [LJ6]: Does this section need major reconstruction. When will the new water conservation plan will be implemented.

Should this section essentially say just that they will follow their approved conservation plan in times of drought.

Commented [BC[7R6]: Yes, we need to acknowledge the new conservation plan when it is finalized. Can't be bound to 2000 plan when it is superceded.

In times of severe drought, as defined by the Palmer Drought Severity Index of -3.0 or less, augmentation will continue to be provided to those water management structures defined in the Service’s KDA-DWR-approved water conservation plan.

Augmentation shall not occur in times of bypass flow or times of release from storage in Little Salt Marsh. The augmentation water must be put to a concurrent beneficial use or held in storage for later beneficial use.

Commented [BC[8]]: I get the sentiment – don’t waste augmentation water - and I agree with it, but want to make sure this is stated correctly.

3) Reducing Hydrologic Stress on Streamflow and Groundwater Supplies

The District will work with water right owners and users to enhance the water use efficiency for all types of use within the LEMA boundary including, but not limited to, irrigation, municipal, stock water, recreation, domestic, and industrial uses

- a. **Irrigation Use:** This will be achieved by requiring the removal of any nozzle at the end of the center pivot system that has a larger bore diameter than the previous nozzle on the center pivot system, commonly referred to as end guns. Effective December 31, 2018, all of these types of end guns will be removed to prevent the wetting of the acres beyond the end of the center pivot system. The end gun removal component of the LEMA management plan is described above in Section 1.

In addition to the removal of end guns on center pivot systems, the use of other technologies that increase the efficiency of water use will be promoted. Such technologies include, but are not limited to, mobile drip irrigation, soil moisture probes, telemetry monitoring, and variable rate irrigation. The District will work with state and federal agencies to provide cost share incentives for the implementation of technologies that conserve water.

Water technology farms are a good way to showcase these technologies to nearby producers. Through these farms, producers can see how the implementation of new technologies can save water while maintaining or improving the economic viability of the area. In support of the goals of the LEMA, the District will work to promote the establishment of additional technology farms within the LEMA boundary.

- b. **Municipal Use:** According to the U.S. Geological Survey, (Lanning-Rush & Restrepo-Osorio, 2017) the average gallons per capita per day (gpcd) for public water suppliers (PWS) in this region of Kansas is 138 gpcd over the past 5 years. There are seven PWS within the LEMA boundary:

Public Water Supplier	GPCD (2011-2015)	UFW (2011-2015)
Belpre	152	21 %
Greensburg	283	11 %
Haviland	152	8 %
Macksville	123	12 %
Mullinville	203	15 %
Stafford	124	12 %

Commented [PG[9]]: I think you’re looking at the 2012 report Jeff, but yeah, the statewide average is way lower in either case.

From the 2015 water use one (that they’re referencing) Macksville, Stafford and St John all in the 6ML (region/size) category -avg 5-year GPCD = 138
Others in list all in region 5 -avg 5-year GPCD =131
The 5-year avg region/size specific numbers are what the 2007 KWO guidelines use for municipal conservation plans to compare individual systems to.
Could add a field to table with region/size and the two reference gpcds potentially.

St John	140	20 %
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The U.S. Geological Survey study also calculated the percent unaccounted for water (UFW) for each PWS. The gpcd and ufw are listed above.

The Great Bend Prairie Regional Advisory Committee (“the RAC”) has a goal to attain less than 20% water loss by 2025. The RAC’s goals go on to reach less than 10% water loss by 2045. The District will work with the RAC and each municipality to reduce the gpcd and ufw. This will involve educational outreach to schools and public service groups.

Commented [LJ10]: This is a good goal. We use 25% unaccounted for water as a benchmark when certifying water rights. We don't use years of record with >25% UFW

- c. **Stockwater Use:** There are thirteen feedlots within the LEMA area. The District will work with each facility, KDA–DWR, and KLA to improve the efficiency of water delivery where feasible through existing tools available. Some of these tools are the utilization of thermostatically controlled tanks vs continuous flow water tanks and the implementation of water reuse systems. The water savings will be on a case by case basis.
- d. **Recreation Use:** There are 31 water rights within the LEMA area for recreation use. The District intends to work with each to ensure the water being utilized for this use is put to beneficial use when appropriate for the area in which they are diverting water.

The District will work with state agencies to ensure that water rights with existing conservation plans are brought up-to-date to promote more efficient methods of operations that are specific to the needs of each water right.

- e. **Industrial Use:** There are 26 water rights for industrial use within the LEMA area. These uses will be reviewed to determine if and where water efficiencies can be gained. The District will encourage the use of lower quality water where feasible as a replacement for high quality water.

4) Target allocations and annual progress reports

- a. The average annual withdrawals within the LEMA boundaries and within Zone D over the base period 2003-2012 are 233,335 AF and 29,655 AF respectively.
- b. The ten-year goal for the LEMA is to limit total withdrawals within in the LEMA boundaries and within Zone D to 2,103,350 AF and 256,550 AF respectively. These numbers represent a ten-year sum.
- c. To document conservation and progress towards the quantitative goals of the LEMA management plan, the District has calculated target water withdrawal goals for each water right based on its priority date and on its modeled pumping impact to Rattlesnake Creek streamflow at Zenith gage. See Appendix XX
- d. Annual progress report - The first evaluation of progress towards the LEMA goals will take place early in 2025 and will consider the period 2020-2024. Target allocations will be calculated for each water right for that five-year period and shall be provided to each subject water right no later than June 1, 2019. Beginning in 2021, each water right’s use

Commented [BD[11]: Where will the basis of this be further described? In an appendix, with a table of the results?

Commented [BC[12R11]: This will be where the allocations from the spreadsheet will be presented.

and target allocation, along with the LEMA-wide and Zone D total use and target allocations, will be published on GMD5's website.

- 5) Initial evaluation (2025), due consideration of past conservation, and alternative controls
- a. Five-year evaluation and due consideration for past conservation – the five-year targets for total withdrawals in Zone D and in the entire LEMA are (25,655 AFY X 5 years) = **128,275 AF** and (210,335 AFY X 5 years) = **1,051,675 AF** respectively. The 2025 LEMA progress evaluation will rely on the compilation of the annual progress reports to determine if the five-year withdrawal targets have been met. If the targets have been met, then the LEMA management plan will be considered on track.
 - b. If the LEMA management plan is on track, then no additional management actions will be required.
 - c. If either or both of the LEMA-wide and Zone D goals is not on track, then the alternative corrective controls will be implemented. Mandatory allocations will be calculated to ensure that the ten-year goals for the LEMA and Zone D are achieved.
 - i. Those water rights that have exceeded their target allocations over 2020-2024 as reported by their annual progress reports will, for 2025-2029, be allocated their 2020-2024 target allocations less the amount they exceeded their 2020-2024 target allocations.
 - ii. Those water rights that have withdrawn less than their target allocations over 2020-2024 as reported by their annual progress reports will, for 2025-2029, be allocated their 2020-2024 target allocations plus the portion of their 2020-2024 target allocations that they did not withdraw.
- 6) Central Kansas Water Bank Association [need to address water in savings accounts, or do the goals already do this?]

Commented [BC[13]: I don't think this needs to be a section. CKWB is one of several tools available to move water out of zone D.

- a. The District is fortunate to have the only functioning water bank in the state of Kansas. This provides a unique opportunity to allow for additional flexibility in the water use of the area while implementing real water conservation. In the early years (2005-2010), there was little participation in the Association due to restrictive rules, uninformed public, and confusing methodologies. The Association has addressed these issues through public outreach meetings and amendments to statute, rules, and policies governing water bank activity. In recent years there have been significant advances in the participation from area water users. It is anticipated that this growth will continue in coming years. The Association is beginning another evaluation required by statute by an independent panel of experts in water law, economics, geology, and hydrology. The District intends to work with the Association to update the programs to promote the movement of water away from highly sensitive areas within the Rattlesnake Creek subbasin.
- b. The review process will take time to be completed. As a result, it is difficult to estimate the outcome of the review in addition to the timeliness of the updates.

- c. The District has partnered with The Nature Conservancy (“TNC”) to pursue funding to incentivize the transfers of water out of areas of concern. The intent of this funding is to provide added financial incentive to water users in priority areas to deposit water into the Association for use outside of these priority areas. By providing financial incentive it is believed that this will further promote these transfers and provide added water conservation for areas of high impact to the stream channel.

7) Water use reporting

Beginning in 2019, all non-domestic water rights owners within the LEMA boundaries shall, by January 15, submit their annual water use report for the previous calendar year using KDA-DWR’s online water use reporting application. Assistance with using the application to report water use will be available from GMD5 and KDA-DWR staff.

Commented [BC14]: This is ambitious, but we need a plan to make the whole “report card” thing work

8) Appeals on Target Allocations

- a. Because the target allocations described in Section 1 may, if the alternative corrective controls are implemented, become the basis for mandatory allocations to ensure that the LEMA goals are met, the GMD5 LEMA Advisory Committee (See Section 10), will, until August 30, 2019, accept appeals by water right owners regarding the target allocations set for their water rights. The Committee shall consider factual evidence brought by the water owner and shall decide if any adjustment to the initially-determined target allocation is warranted.
- b. If an adjustment to an initial target allocation is warranted, then the adjustment shall be made for the entire 2020-2029 period.
- c. If the Committee deems no adjustment is necessary, then the water right owner may seek recourse in district court.

9) Violations

- a. The LEMA order of designation shall serve as initial notice of the creation of the LEMA and its terms and conditions to all water right owners within the Rattlesnake Creek LEMA area on its effective date.
- b. Upon the District learning of an alleged violation, District staff will provide KDA-DWR with the information the District believes shows the alleged violation. KDA-DWR, under its discretion, may investigate and impose restrictions and fines as allowed by law.
- c. In the event that the District or KDA-DWR determine that a water user is operating a center pivot system with a functional end gun installed, KDA-DWR and the District will address these violations as follows
 - i. operation of the end gun within the first six months of the LEMA plan will result in notification by the District of the offense to the landowner;

- ii. operation of the end gun following the first six months of the LEMA plan will result in an automatic one-year suspension of the water right and a \$1,000 fine for every day of operation up to a maximum of \$10,000.
- d. KDA-DWR will address violations of the authorized quantities as follows:
 - i. exceeding any total allocation quantity of less than 4 AF within the allocation period will result in a \$1,000 fine for every day the allocation was exceeded;
 - ii. exceeding any total allocation quantity of 4 AF or more within the allocation period will result in an automatic two-year suspension of the water right and a \$1,000 fine for every day the allocation was exceeded up to a maximum of \$10,000.
- e. In addition to other authorized enforcement procedures, if the District Board finds by a preponderance of evidence of watering of unauthorized acres, waste of water, meter tampering, removing the meter while pumping, or any other overt act designed to alter the metered quantity as described in K.A.R. 5-14-10 occurred, then the District Board will make a recommendation to the Chief Engineer that a written order be issued which states:
 - i. the nature of the violation;
 - ii. the factual basis for the violation; and
 - iii. that the water right is suspended for 5 years.

Commented [LJ15]: I would recommend using our new regulations strictly 5-14-12. What do they mean by allocation here. In our terminology it is a 5 year allocation. Or do they mean an annual quantity.

Commented [BC16]: This whole section is predicated on the implementation of the alternative controls, I think. Needs some more work.

Commented [LJ17]: These are not the same category as meter tampering in my opinion and a different penalty.

Commented [BC18R17]: Agreed, needs some more work here. Need to consult with Orrin/board to work through all this enforcement/penalty stuff

Commented [LJ19]: District staff when they find this need to report it to DWR asap so we can begin enforcement and get the illegal use stopped. Don't wait for a board meeting.

Commented [LJ20]: I don't see us actually suspending someone for 5 years. Im OK with this here but will it actually happen.

10) Meters

- a. All water right owners shall be responsible for ensuring their water flow meters are in compliance with state and local law(s). In addition to maintaining compliance and reporting water usage annually from each point of diversion, all water right owners shall install and maintain an alternative method of determining the time that the well is operating. This information must be sufficient to be used to determine operating time in the event of a meter failure. Should the alternative method fail or be determined inaccurate the well shall be assumed to have pumped its full annual authorized quantity for the year in question. Well owners/operators are encouraged to give the details of the alternative method in advance to District staff to ensure that the data is sufficient.
- b. Any water right owner or authorized designee who finds a flow meter that is inoperable or inaccurate shall within 48 hours contact the district office concerning the matter and provide the following information:
 - i. water right file number;
 - ii. legal description of the well;
 - iii. date the problem was discovered;
 - iv. flow meter model, make, registering units and serial number;
 - v. the meter reading on the date discovered;
 - vi. description of the problem;
 - vii. what alternative method is going to be used to track the quantity of water diverted while the inoperable or inaccurate meter is being repaired/replaced;
 - viii. the projected date that the meter will be repaired or replaced; and

Commented [LJ21]: We think the alternative method should be defined by the water user and required to be reported to the GMD and accepted as an alternative by GMD. This is a tough issue every day for the field office. Just our MYFA's. People don't have them.

Commented [LJ22]: MYFA Attachment A says 150%. If we are in a drought they could very well exceed their authorized quantity. If there are allocations 100% may not be enough.

Commented [LJ23]: See LJ 10

- ix. Any other information requested by the District staff or Board regarding the inoperable or inaccurate flow meter.
- c. Whenever an inoperable or inaccurate meter is repaired or replaced, the owner or authorized designee shall submit form KDA-DWR 1-560 Water Flowmeter Repair/Replacement Report to the district within seven days.
- d. This metering protocol shall be a specific annual review issue and if discovered to be ineffective, specific adjustments shall be recommended to the chief engineer by the advisory committee.

Commented [LJ24]: Any penalty for not submitting the above procedures?

11) Advisory Committee

- a. The Rattlesnake Creek LEMA Advisory Committee (“Committee”) shall be appointed and maintained by the District board consisting of 7 members as follows: one (1) District staff; one (1) District Board Member; one (1) representative of the Division of Water Resources, Kansas Department of Agriculture as designated by the Chief Engineer; and the balance being stakeholders from within the Rattlesnake Creek LEMA area (“LEMA members”). One of the LEMA members shall chair the committee whose direction shall be set to further organize and meet annually to consider:
 - i. Progress towards the LEMA goals;
 - 1. educational efforts and opportunities,
 - 2. irrigation technology implementation and opportunities,
 - 3. water use data,
 - 4. climatic conditions, and
 - 5. Other opportunities to increase efficiency and conservation.
 - ii. water table and streamflow information;
 - iii. economic data as is available;
 - iv. compliance and enforcement issues;
 - v. any new and preferable enhanced management authorities that become available;
 - vi. other items deemed pertinent to the advisory committee.

12) LEMA Order Reviews

- a. The LEMA will be evaluated twice in the first ten (10) years, which would allow the parties evaluate its efficacy after a meaningful period of observation.
- b. In addition to the annual status reviews per Section 11, the Rattlesnake Creek LEMA Advisory Committee shall also conduct a more formal LEMA Order review every five years within the term of the LEMA. The first of these reviews shall be for the years 2020-2024. Review items will include economic impacts to the LEMA area and the local public interest. Water level data may be reviewed by the committee.
- c. The committee, in conjunction with KDA–DWR and the District, shall also produce a report following each formal review to the chief engineer and the District board which

Commented [BD25]: We should discuss

contains specific recommendations regarding future LEMA actions. All recommendations shall be supported by reports, data, testimonials, affidavits or other information of record.

13) Impairment Complaints

- a. While this program is being undertaken, the District stakeholders request that any impairment complaint filed in the district while this management plan is in effect, which is based upon either water supply issues or a regional decline impairment cause, be received by the Chief Engineer, and be investigated by the Chief Engineer with consideration to the on-going Local Enhanced Management Area activities.

14) Water Level Monitoring

- a. The District maintains a routine water level measurement network throughout the Rattlesnake Creek subbasin area. This monitoring will continue throughout the term of the LEMA plan. In addition to the existing network, the District will install observation wells as necessary to monitor the impact of the augmentation well field. These measurements will be a part of the existing WIZARD database curated by the Kansas Geological Survey.

Commented [BD[26]: Not reviewed; specifics will be added as we develop

15) Water Quality Monitoring

- a. The District has been monitoring the surface water quality along the Rattlesnake Creek channel for several years. This monitoring will continue throughout the term of the LEMA plan no less than on a quarterly basis. The observation wells that will be installed around the augmentation well field will be sampled routinely to enhance the understanding of the water quality in this area. Coordination with Kansas Department of Health and Environment will be crucial in this process to ensure the water quality of the Rattlesnake Creek stream channel is maintained throughout this project.

Commented [BD[27]: Not reviewed; specifics will be added as we develop

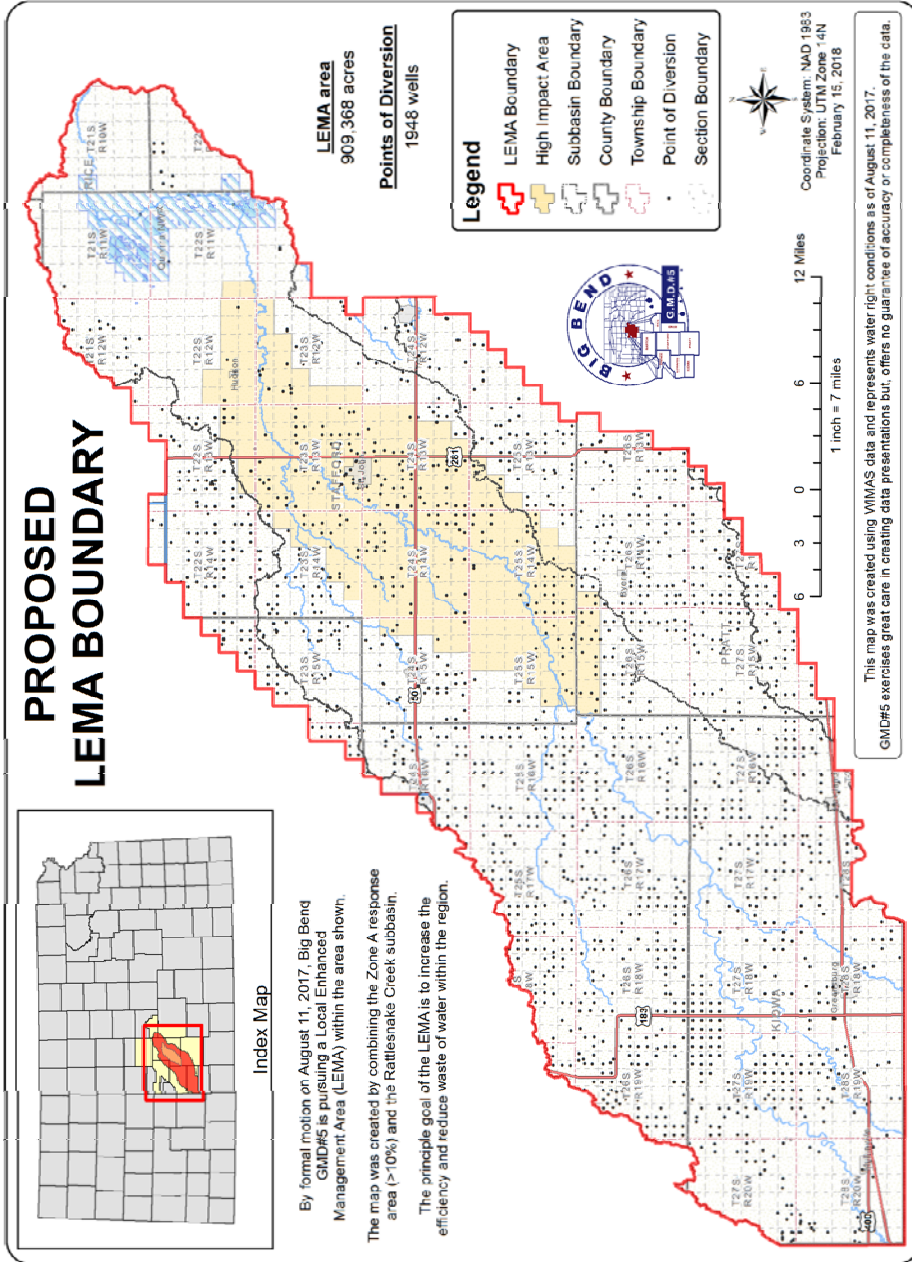
16) Coordination

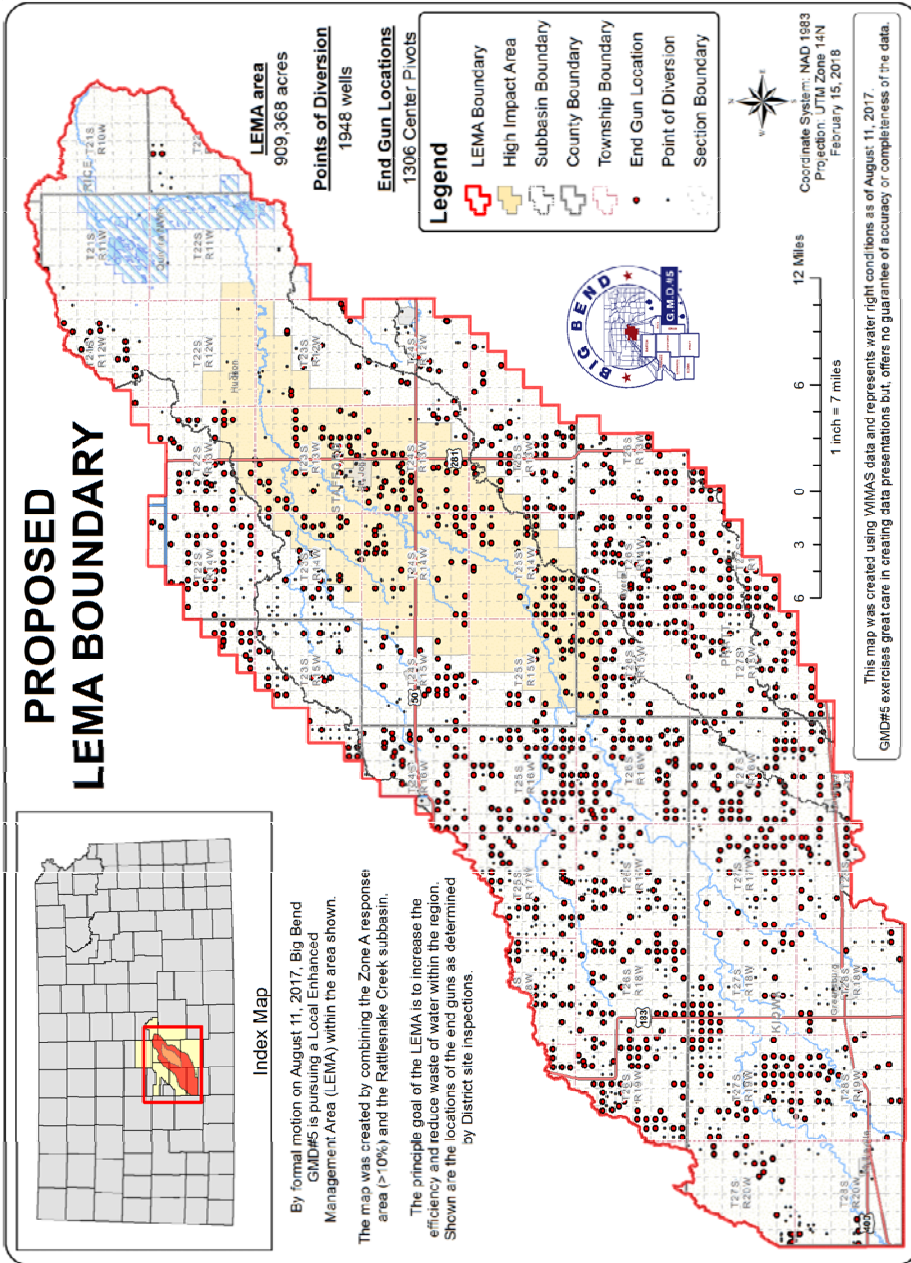
- a. The District stakeholders and the Board of Directors expect reasonable coordination between the Chief Engineer's office and the District board on at least the following efforts:
 - i. Development of the LEMA Order resulting from the LEMA process;
 - ii. Compliance and enforcement of the Rattlesnake Creek LEMA order;
 - iii. Annual reporting of water usage and evaluation of progress toward overall LEMA goals.

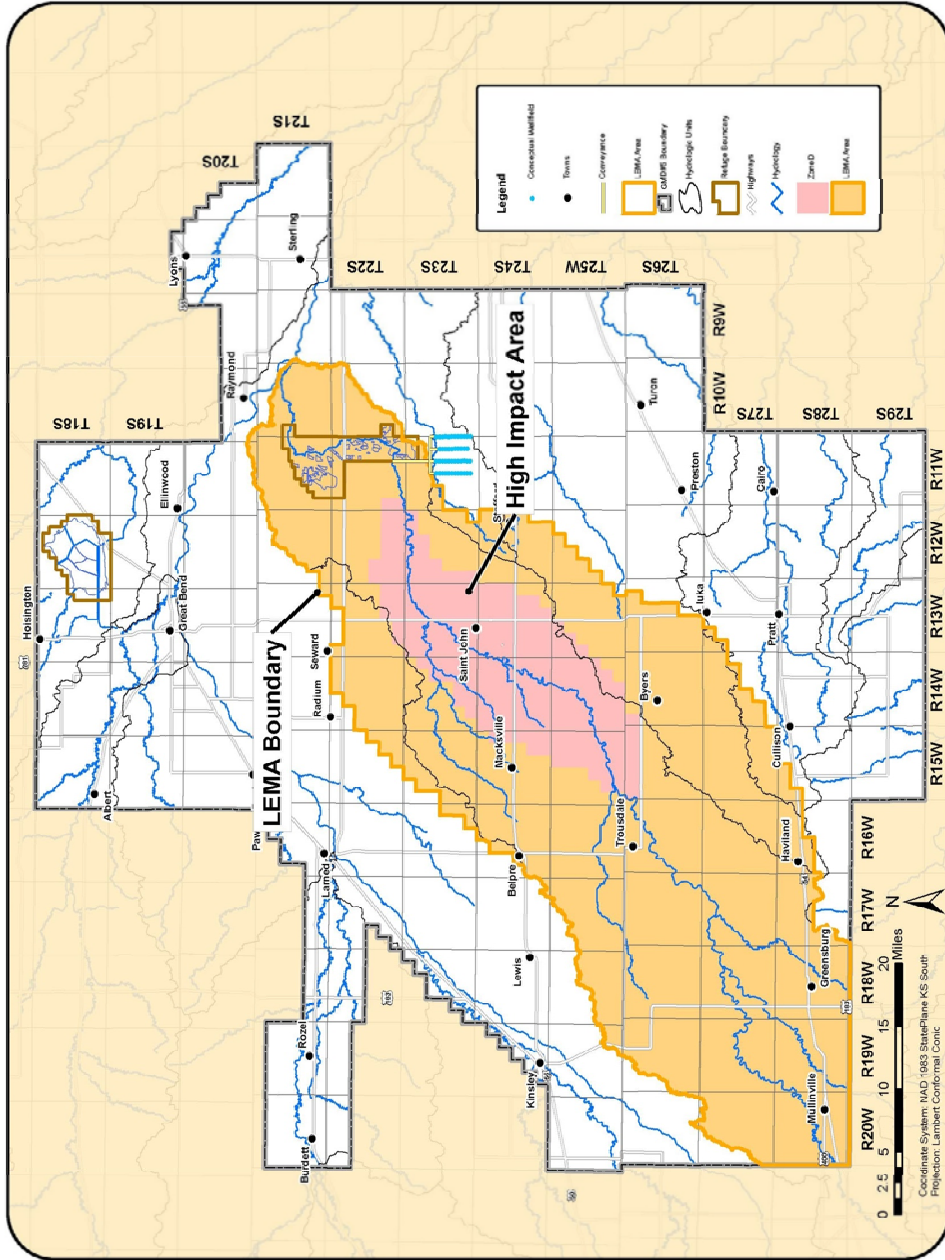
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DRAFT







Attachment 4

The augmentation well field implementation schedule is being refined currently.

