

# Proposed Rattlesnake Creek / Quivira NWR LEMA



# Background

## (Important Dates)

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- ▶ In 2013, USFWS filed impairment against junior appropriations within the Rattlesnake Creek subbasin
- ▶ In 2016, KDA–DWR filed final impairment report confirming impairment of Quivira NWR water right file number 7571
- ▶ July 2017, KDA–DWR KDA presents a strict administrative option as a remedy to the impairment
- ▶ August 2017, District proposes to pursue a LEMA to address the remedy





# Background

## (Important Criteria)

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- ▶ Water Right File No. 7571
  - ▶ Priority Date: August 15, 1957
- ▶ Rattlesnake Creek LEMA area
  - ▶ Modeled area having greater than 10% response at Zenith Gage; and
  - ▶ Remainder of Rattlesnake Creek subbasin
- ▶ ~ 1900 points of diversion
- ▶ ~ 1300 end guns installed on center pivot systems

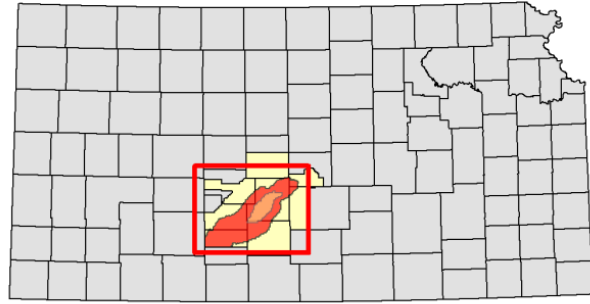




# PROPOSED LEMA BOUNDARY

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Index Map

By formal motion on August 11, 2017, Big Bend GMD#5 is pursuing a Local Enhanced Management Area (LEMA) within the area shown.

The map was created by combining the Zone A response area (>10%) and the Rattlesnake Creek subbasin.

The principle goal of the LEMA is to increase the efficiency and reduce waste of water within the region. Shown are the locations of the end guns as determined by District site inspections.

**LEMA area**  
909,368 acres

**Points of Diversion**  
1948 wells

**End Gun Locations**  
1306 Center Pivots

## Legend

- LEMA Boundary
- High Impact Area
- Subbasin Boundary
- County Boundary
- Township Boundary
- End Gun Location
- Point of Diversion
- Section Boundary



Coordinate System: NAD 1983  
Projection: UTM Zone 14N  
February 15, 2018

6 3 0 6 12 Miles  
1 inch = 7 miles

This map was created using WIMAS data and represents water right conditions as of August 11, 2017. GMD#5 exercises great care in creating data presentations but, offers no guarantee of accuracy or completeness of the data.





# Rattlesnake Creek LEMA Goals

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- ▶ To address the USFWS impairment complaint on Water Right File No. 7571,
- ▶ To reduce water-use in the LEMA area to a degree that will temper the growth of future streamflow depletion, and
- ▶ To restore the useful supply to diversion points on the upper reaches of Rattlesnake Creek





# Water Accounting

(Rattlesnake Creek LEMA Area)

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- ▶ Authorized Acre-Feet (AF): 303,598.85 AF (Irrigation)
- ▶ Modeled future use: 233,000 AF (Irrigation)
- ▶ End gun removal water savings: 19,000 AF (LEMA area)
- ▶ Modeled reduction needed: 4,000 AF (>40% area)
- ▶ Modeled water use target: 210,000 AF (Irrigation)
  - ▶ Achieves goal of reducing future stream depletions at Zenith gage





# Water Accounting

(Rattlesnake Creek LEMA Area)

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- ▶ In lieu of up-front allocations, the proposed LEMA will establish voluntary water use targets for the period 2020-2024
- ▶ All irrigation water rights are broken into groups based on Priority Date of each individual water right
- ▶ Voluntary water use target will be based on the individual water right certified appropriation amount
- ▶ There is recognition for those water rights that participated in the District's Agricultural Water Enhancement Program ("AWEP") to remove end guns



# Water Accounting

(Rattlesnake Creek LEMA Area)

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Group Number	Priority Date (from)	Priority Date (to and including)	AWEP Participation
1	Beginning	August 15, 1957	N/A
2	August 15, 1957	January 8, 1976	Yes
3	August 15, 1957	January 8, 1976	No
4	January 8, 1976	April 10, 1984	Yes
5	January 8, 1976	April 10, 1984	No
6	April 10, 1984	End	Yes
7	April 10, 1984	End	No





# Water Accounting

(Rattlesnake Creek LEMA Area)

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Group Number	Authorized Quantity (AF)	Percent of Authorized	Voluntary Water Use Target (AF)
2	7,009.00	75 %	5,256.75
3	140,529.40	72 %	101,181.17
4	5,894.00	70 %	4,125.80
5	129,158.15	68 %	87,827.54
6	2,413.00	60 %	1,447.80
7	18,595.30	55 %	10,227.42
Totals	303,598.85		210,066.48





# Water Accounting Examples

(Rattlesnake Creek LEMA Area)

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Group Number	Water Right File Number	Authorized Quantity (AF)	Priority Date	Voluntary Water Use Target (AF)
1	1180	89	January 29, 1953	89.00
2	7705	226	January 21, 1958	169.50
3	14759	480	March 8, 1968	345.60
4	25496	405	January 9, 1976	283.50
5	26049	139	March 2, 1976	94.52
6	37185	195	April 30, 1984	117.00
7	37194	120	May 10, 1984	66.00





# Augmentation

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- ▶ Following a study by an engineering firm and acquisition of water appropriation from KDA–DWR, the District will implement the augmentation project
- ▶ Deliver up to 15 cfs capacity to the Rattlesnake Creek stream channel
- ▶ Provide suitable water quality for Quivira NWR's habitat and in compliance with KDHE requirements
- ▶ The implementation timeframe is still being developed





# Aquifer effects

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- ▶ Balleau Groundwater has estimated that the effects of the LEMA and augmentation project are a net gain to the area
- ▶ The area that has historically seen declines in water table will see a net gain in storage of water
- ▶ The area immediately surrounding the augmentation will see negligible change in water table and water quality

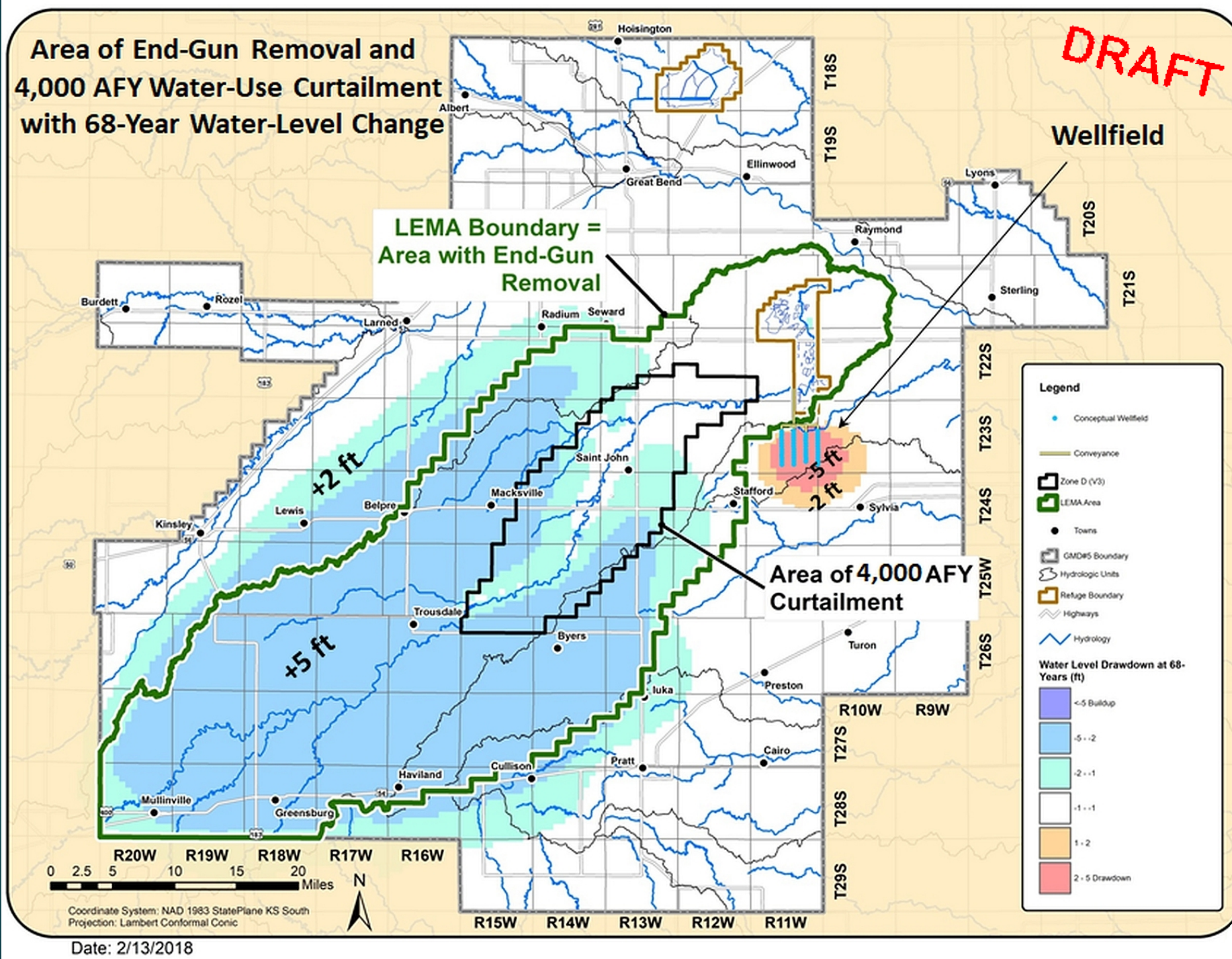




# Area of End-Gun Removal and 4,000 AFY Water-Use Curtailment with 68-Year Water-Level Change

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# Corrective controls

(with augmentation)

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- ▶ The water conservation the District estimates will be evaluated in 2025
- ▶ If the water use goals are met at that time, there will be NO change in status
- ▶ If the water use goals are not met, there will be required water allocations in order to meet the goals by 2029





# Corrective controls

(with augmentation)

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- ▶ If an individual water user meets the voluntary water use target by the evaluation at 2025
  - ▶ No modification required
- ▶ If an individual water user does not meet the voluntary water use target by the evaluation at 2025
  - ▶ Water use target becomes mandatory for the period 2025-2029
  - ▶ The shortfall quantity shall be distributed starting with Group 7 through 2 to bring in line with 210,000 AFY





# Corrective controls

(without augmentation)

- ▶ If augmentation is not implemented by 2022
  - ▶ Water allocations for 2023-2027 totaling 210,000 AFY
- ▶ If augmentation is not implemented by 2024
  - ▶ Water allocations 2025-2029 revised to hydrologic equivalent of LEMA goal
- ▶ When augmentation is provided, allocations will be increased starting with Group 2 through 7





# Appeals Process

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- ▶ The appeals process outlined in Section 9
  - ▶ Identify errors in the calculation of the voluntary water use targets
  - ▶ Consider prior conservation measures that can be documented in writing to the Board of Directors
- ▶ Following appeal period, water use targets become final during the LEMA period





# Questions & Comments

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- ▶ Public informational meeting is scheduled:
  - ▶ August 27, 2018
  - ▶ 7:00 pm
  - ▶ Stafford County Annex building in St John
- ▶ Review latest draft document and provisions within the proposed LEMA will be discussed
- ▶ Q/A session following

