

Kansas Field Conference 2019, Managing Water For Wetlands and Farms: Cheyenne Bottoms and Quivira
David Barfield, Chief Engineer, KDA-DWR, June 10, 2019

Chief Engineer's duty to administer the state's water supply:

- Under the Kansas Water Appropriations Act, the Chief Engineer is charged with administering the state's water supply when insufficient for all uses (K.S.A. 82a-706 and 706b). *"The chief engineer shall enforce and administer the laws of this state pertaining to the beneficial use of water and shall control, conserve, regulate, allot and aid in the distribution of the water resources of the state for the benefits and beneficial uses of all of its inhabitants in accordance with the rights of priority of appropriation."* And *"It shall be unlawful for any person to prevent, by diversion or otherwise, any waters of this state from moving to a person having a prior right to use the same..."*
- The principal tool to fulfill this charge in circumstances of insufficient supply is direct water right administration. In groundwater systems, two additional tools can be used: Intensive Groundwater Use Control Areas (IGUCAs) and Local Enhanced Management Areas (LEMAs).

Background on Quivira Impairment

- The U.S. Fish and Wildlife Service (FWS) has complained for decades that upstream junior groundwater pumping has interfered with the use of their water rights.
- Rattlesnake partnership, 1993-2013, did not accomplish much.
- In 2013, US FWS requested DWR investigate and take action.
- During July 2016, DWR finalized our impairment report, finding 40,000-50,000 acre-feet (AF)/year of stream depletions from junior groundwater pumping leading to regular and significant impairment to the Service (0-9000 AF/year), regularly 3000 - 5000 AF/year.

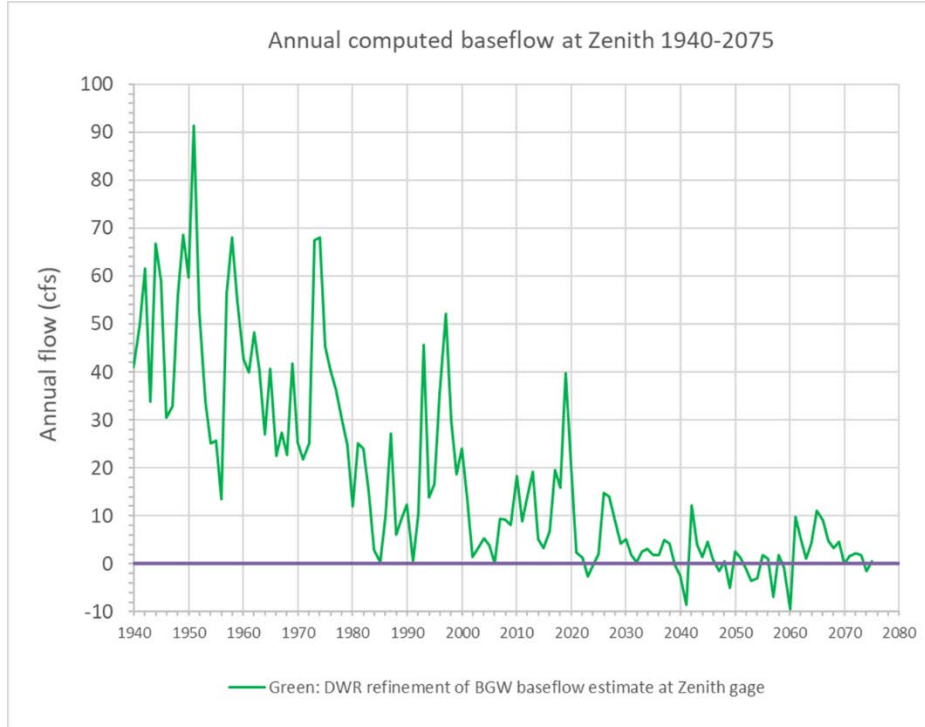
What is required to remedy the Quivira impairment?

- After the FWS found GMD5's augmentation only offers to resolve the impairment inadequate, GMD5 requested KDA-DWR specify what is needed to remedy impairment, beyond its proposed augmentation project.
- During July 2017, KDA-DWR presented remedy requirements beyond GMD5's proposed 15 cfs augmentation project. KDA-DWR found that streamflows will continue to decline under current pumping, determined what pumping is impacting flows above the Refuge (see attached response region map) and determined that pumping reductions of approx. 15% are required to reduce future streamflows declines.
- Subsequent work by GMD5 and DWR suggested these pumping reductions should be accomplished with flexibility (multi-year allocations, ability to move allocation around, etc.) and via a combination of retirements in the high impact area (4400 AF/year in Zone D) and general reductions (15,000 AF/year in Zone A).

Why does KDA-DWR maintain that pumping reductions are required when GMD5 states that augmentation only can remedy the impairment?

- KDA-DWR evaluated GMD5's consultant's groundwater model runs to determine expected future baseflows under the current level of pumping (see graph below). It shows that baseflows will decline to near 0 regularly in the future.

- These baseflow reductions will create greater and greater impairment in the future and lead to increased water quality concerns for the water supply into the Refuge.



GMD 5's Feb. 2019 LEMA plan remains unacceptable:

- The plan is inconsistent with statute's requirement for LEMA plans and
- The plan does not remedy the impairment because it does not require pumping reductions.

An augmentation project cannot be ordered; it must be developed by the basin. Any augmentation will be considered by the Chief Engineer no matter what path is taken to remedy for the impairment. With the science that has been developed over the last couple of years, whatever **focused reductions** occur in Zone D, can also be considered in the Chief Engineer's administration for the impairment.

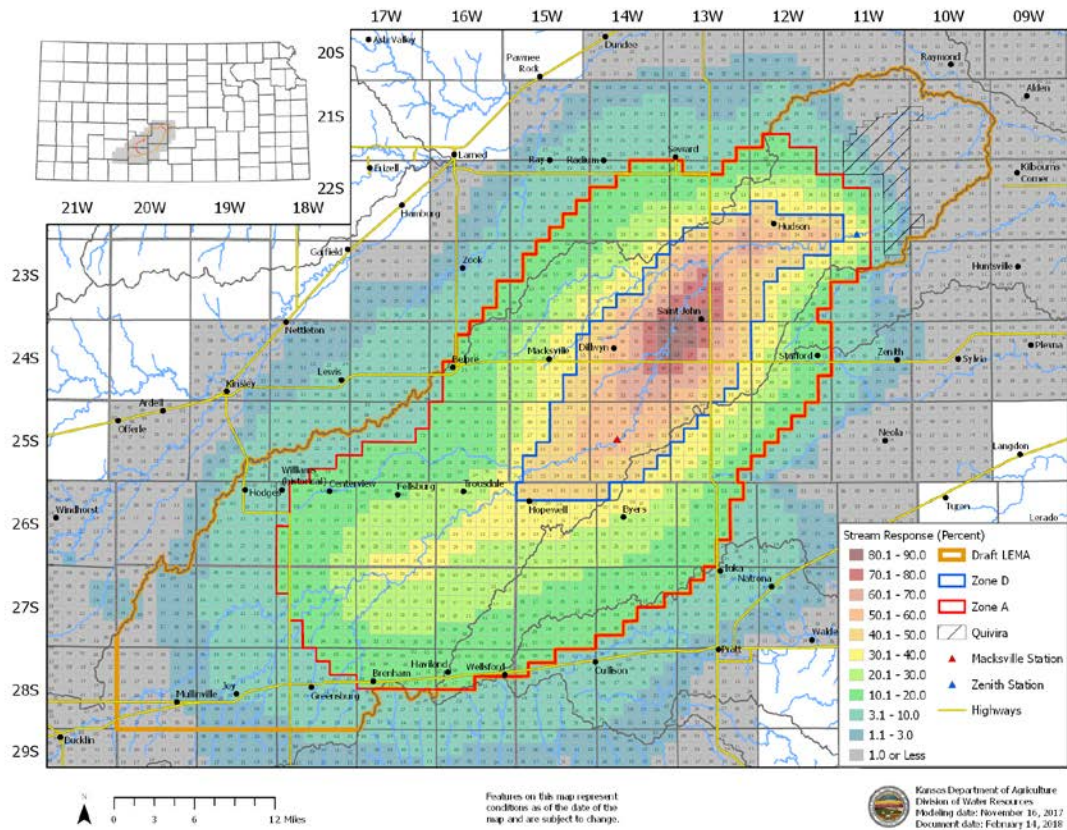
Failure to remedy the impairment could lead to action in state or federal courts to implement pumping reductions.

For more information:

- KDA-DWR web site:
 - <https://www.agriculture.ks.gov/Quivira>
 - <https://www.agriculture.ks.gov/GMD5LEMA>
- GMD 5 web site: <https://gmd5.org/proposed-rsc-lemma>

Rattlesnake Creek Streamflow Response Regions

1998 - 2007 average streamflow response (pct) at Zenith gage as calculated using the GMD No. 5 model.



Key events:

- 1980s: U.S. Fish and Wildlife Service (FWS) begins complaining that junior appropriators are impairing the refuge
- 1994-2013: Rattlesnake Creek Partnership (GMD5, WaterPACK, KDA-DWR, FWS) seeks voluntary solutions. Rattlesnake Creek Management Plan 2000-2012 accomplishes roughly 10% of its water use reduction goal.
- April 2013: FWS requests impairment investigation
- December 2015: KDA-DWR publishes its initial impairment investigation report
- December 2015: KDA-DWR hosts a public meeting in St. John to review the initial report
- July 2016: KDA-DWR publishes its final impairment report
- Fall 2016: Spring 2017 — GMD5 offers FWS augmentation-based solutions. FWS finds GMD5's proposals inadequate. GMD5 requests KDA-DWR specify what is needed to remedy impairment.
- July 2017: KDA-DWR presents remedy requirements in addition to GMD5's planned 15 cfs augmentation project to the GMD5 board
- August 2017: GMD5 outlines a proposed LEMA to remedy the impairment with augmentation, end gun removal, and other voluntary measures. KDA outlines the specific commitments to water use reductions and timelines that GMD5 needs to accomplish their plan as a LEMA.
- Fall 2017–November 2018: KDA works with GMD5 on LEMA development

- December 2018: GMD5 formally proposes a LEMA plan with the sole corrective control being removal of end guns and without a commitment to a quantified level of water use reductions.
- December 2018: KDA-DWR responds to GMD5 LEMA, citing insufficiencies
- Feb 2019, GMD5 submits a second LEMA proposal
- April and May 2019: KDA-DWR provides feedback on LEMA proposal