

Priority Goal #1: Achieve and maintain sustainable balance of groundwater withdrawals with annual recharge in the Equus Beds Aquifer by 2020. Ensure safe yield and recharge rate calculations in the Equus Beds Aquifer are accurate through a district wide integrated groundwater and surface water model by 2018.

Initial efforts will be focused on developing a refined understanding of the current balance of groundwater appropriations and sustainable yield. Subsequent efforts will focus future management strategies on achieving a long term balance between withdrawals and recharge.

Action Steps

- ❖ Complete ongoing KGS modeling effort currently scheduled for completion during 2016.
- ❖ Utilize the model results to support refinement of aquifer recharge rates.
- ❖ Consider application of the revised recharge rates to support safe yield calculations within modeled boundaries.
- ❖ Complete expansion of existing USGS Equus Beds MODFLOW Model to cover all of GMD2.
- ❖ Continue to encourage communication and collaboration between all responsible agencies and organizations tasked to implement this action.
- ❖ Utilize modeling results to inventory areas of over-appropriation or within the Equus Beds Aquifer.
- ❖ Consider implementation of management strategies for over-appropriated areas identified by model within the Equus-Walnut Region.

Agencies/Organizations

- ❖ GMD2, DWR, KWO, KGS, Equus Beds Stakeholders and Stakeholder Organizations.

Resources needed

- ❖ Continuation of joint funding agreement between GMD2 and KWO.

Timeframe:

- ❖ The timeframe for completion of the actions required to support this goal are outlined in the attached document. The actions are generally anticipated to be completed by the end of 2018

Geographic Scope:

- ❖ The action items identified generally cover the majority of the Equus Beds Aquifer. The modeling activities will help define the most vulnerable areas within the aquifer and facilitate prioritization of areas for safe yield adjustments.

Regulation/Policy Changes:

- ❖ Consider adjustment of GMD2 and DWR safe yield calculation criteria to reduce potential future over appropriation. Develop resource management strategies focused on achieving a long term balance between withdrawals and recharge.

Priority Goal #5: Allocate necessary resources (\$1-5 million) within five years to identify and prioritize current contamination issues impacting the Equus Beds Aquifer and develop a plan to manage and mitigate the contamination. Review existing studies and emerging technologies to develop a new conceptual plan with estimated costs. Begin implementation of the plan within 10 years of completing the study.

Action Steps

- ❖ Develop an inventory of known contamination sites within the Equus Beds Aquifer.
 - ◇ GMD2 to lead effort, anticipated completion by 12/2017
- ❖ Concurrent with development of contamination site inventory, identify data gaps associated with inventoried sites, this could include lack of definition regarding vertical or horizontal extent of contamination, concentration of contaminants or the source of contamination of an identified site.
 - ◇ GMD2 to lead effort alongside collaboration with KCC and KDHE.
- ❖ Prioritize sites for additional investigation utilizing development of prioritization criteria.
- ❖ Utilize and refine existing groundwater models to address site specific data needs associated with the performance of additional investigations.
- ❖ Install additional monitoring wells and piezometers as necessary to collect data where needs are identified.
- ❖ Complete a remediation feasibility study for the top three prioritized sites.
- ❖ Complete pilot studies as required to facilitate groundwater remediation feasibility.
- ❖ Develop a process to address the contaminated sites within the Equus-Walnut Region.

Agencies/Organizations

- ❖ GMD2 will lead the effort in collaboration with Equus Beds Stakeholders and Stakeholder Organizations, KDHE, KCC, KWO, KGS and DWR.

Resources Needed

- ❖ Successful implementation of this goal will require significant financial resources. It is estimated that completion of action steps I-III will require funding of approximately \$100,000 over the next two years. Funding levels associated with the remaining action items will be developed during the inventory and prioritization process. For planning purposes the total estimated funding requirements for the prioritized sites is in the 1-5 million dollar range.

Timeframe

- ❖ Achieve the initiation of active remediation within 5-10 years.

Geographic Scope

- ❖ The prioritization process will identify the sites offering the greatest return or cost benefit results. Stakeholder engagement will be utilized in the prioritization process.

Regulation/Policy Changes

- ❖ The need for regulatory or policy change will be identified throughout the process and additional action items developed to initiate any changes required.

Priority Goal #6: While focused on the preservation of our water resources agricultural water users will double the value of irrigation-based production over the next 50 years. Coordinate with public/private research and development programs to develop and promote less water and nutrient intensive crops. Provide incentives for operators to implement irrigation efficiency improvements immediately. Increase efforts to implement water conserving agricultural production practices utilizing no-till methods, cover cropping systems and a rangeland cedar tree management program.

Action Steps

- ❖ Preserve water resources and coordinate programs to develop less water-intensive crops.
 - ◇ Develop 4 water demonstration farms which compare multiple less water intensive crops.
- ❖ Coordinate public/private research and development for development of viable drought tolerant crops.
 - ◇ Invest in Center for Sorghum Improvement.
- ❖ Identification and development of markets for alternative crops.
- ❖ Establish a technology farm within the Equus-Walnut Region where no-till, cover cropping systems and a rangeland management program can be evaluated. Rely on expertise of state and local experts to identify an appropriate location for technology farm within the Equus-Walnut Region.
- ❖ Provide and support workshops and field days starting in February/March 2017 in advance of annual burn season for fire management of invasive vegetation for improved rangeland management.
 - ◇ Outcome of these efforts and previously mentioned technology farm would be improved soil health, improved moisture holding capacity of soils, and increased groundwater recharge potential through increased education and awareness area residence

Responsible and Assisting Agencies/Organizations

- ❖ State of Kansas, Kansas Department of Agriculture, Kansas Water Office, Kansas State University, Grain Associations, willing farmers, Kansas Livestock Association, Kansas Farm Bureau, Kansas Grazing Land Coalition

Resources Needed

- ❖ \$80,000 for equipment and consultant salary for water demonstration farms.
- ❖ \$400,000 for investment in Center for Sorghum Improvement.
- ❖ Funding for Land Grant College Research.
- ❖ Payments to farmers for research plots.

Timeframe of Completion

- ❖ Complete within 2 years.

Geographic Scope

- ❖ Sedgwick and Harvey Co for water demonstration farm development.
- ❖ Statewide area of impact for Center for Sorghum Improvement.

Regulation/Policy Changes

- ❖ GMO approvals

Priority Goal #7: Encourage municipal, commercial, and industrial users of water to increase the efficiency of net water use by reducing the volume of water used per unit of measure by 5% per decade. Provide incentives for users to implement water efficiency improvements.

Action Steps

- ❖ The RAC will discuss the regional vs. statewide nature of this goal. If this discussion supports pursuing the goal on an Equus-Walnut RAC basis that will dictate a significantly different approach to outreach than if it becomes statewide in scope. This process needs to be completed before any further development of an action plan for this goal. Place this question on the May Equus-Walnut RAC meeting agenda for discussion and possible message to the KWA.
- ❖ By Q1 2017, identify a comprehensive list of major water users in each of the three categories (municipal, commercial, and industrial) for the RAC. Will need to decide on how small to go on commercial users.
- ❖ Communicate with all of the targeted entities in each category to determine if they would be willing to attend a “brainstorming session” on the goal and how it might be effectively and efficiently implemented. Consider as a special session during the annual Governor’s Water Conference in November 2017.
- ❖ Have entities that have recently implemented water efficiency projects to present their success to the attendees of the “brainstorming session”.
- ❖ Analyze the results from Step 2 to determine a plan forward.
- ❖ Integrate action items of Goal 7 with Goal 2
- ❖ Consider incentives that have been successful in other parts of the country that encourage water efficiency projects.
- ❖ By the end of 2017, ask major water users to include a 5% improvement in water use efficiency per decade in their annual goals.

Responsible and Assisting Agencies/Organizations

- ❖ KWO
- ❖ Equus-Walnut RAC
- ❖ Kansas Water Authority
- ❖ KDHE source of data on public water suppliers within the RAC and coordination with existing water planning required/expected of public water suppliers.

Resources Needed

- ❖ Initially, KWO staff time to perform the action steps above. The process could lead to additional actions that might require additional resources.

Timeframe of Completion

- ❖ Complete within 5 years.

Geographic Scope

- ❖ Equus-Walnut RAC

Regulation/Policy Changes

- ❖ N/A