



Missouri Regional Advisory Committee Priority Goal #1 & #3 Action Plan

Preamble

Groundwater quality and groundwater quantity are closely related and the approaches to understanding each are similar. For that reason, the 2 goals and the overall guiding principle are recognized in this action plan.

Regional Goals as adopted by the Kansas Water Authority, August 2015

Guiding Principle:

Over the next 50 years, there needs to be an adequate, sustainable and affordable quality water supply in the Missouri Region, while protecting Tribal water rights and sacred and cultural sites. All government agencies, local through state, shall vigorously uphold and enforce all water conservation and management rules and regulations throughout the state.

Priority Goal #1: Since groundwater quality is not well known, compile existing and collect additional data over the next 5 years to establish a baseline. Within 3 years after the baseline is established, a plan to implement best management practices will be developed to maintain and improve existing conditions. Monitoring and reevaluation of groundwater quality conditions and should continue at 5 year intervals.

Priority Goal #3: Collect additional information to improve safe yield estimate of groundwater and tributary streams within 3 years. Place a moratorium on additional permits until safe yield is identified. Once determined, only issue permits that do not exceed that yield. Safe yield should then be continuously monitored.

Action Steps

- ❖ **Evaluate what is known about groundwater quantity and quality in glacial, alluvial and bedrock aquifers in the Missouri Region**
 - ◇ Any and all available information about groundwater quantity and quality will be collected and compiled.
 - ◇ Digital database from the collected historical and online existing data would be constructed.
 - ◇ Digital maps of updated bedrock surface topography, saturated aquifer thickness, pre-glacial drainage ways, water use, and groundwater quality from digital databases would be prepared
 - ◇ An assessment report would be prepared that includes:
 - ◇ A determination of groundwater in storage and groundwater quality conditions in the glacial, alluvial and bedrock aquifers in the area.
 - ◇ A determination of the greatest needs for collection of additional data.
 - ◇ Recommendations on the need for, and number and location of wells to allow for well level and quality monitoring on a continuing basis.
 - ◇ This phase would be conducted by the KGS for at a cost of \$50,000. The work would take 12 months, beginning August 2017.
- ❖ **Collection of additional data and re-evaluation of groundwater information**
 - ◇ Based on needs as determined in the evaluation phase, obtain a scope of work on collection of additional data that would improve the characterization of the glacial, alluvial and bedrock aquifers. Main expected field activities would include: drilling, hydraulic testing, and groundwater sampling and analysis.
 - ◇ Enter new data into databases developed in the evaluation phase.



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- ◇ Re-evaluate groundwater recharge estimates at a more detailed scale than the currently available potential annual recharge estimates based on soils.
- ◇ Combine existing and new data to establish safe groundwater yields and a groundwater quality baseline.
- ◇ On the basis of future climate and water usage conditions, establish a plan to periodically update safe yield estimates of groundwater resources.
- ◇ This phase would be a minimum of 18 months, as determined in the evaluation phase. Cost would be determined in Phase 1.
- ❖ **Maintain and Improve groundwater quality conditions**
 - ◇ Evaluate groundwater quality protection practices based on needs as determined in the assessment.
 - ◇ Within 3 years after the baseline is established, a plan to implement best management practices will be developed to maintain and improve existing conditions.
- ❖ **Ongoing monitoring and evaluation**
 - ◇ Expand groundwater level monitoring wells as determined during Assessment phase.
 - ◇ Monitoring and reevaluation of groundwater quality conditions should continue at 5 year intervals.

Priority Goal #2: To ensure a reliable surface water supply in the future, best management practices will be implemented so surface water quality in identified drainages is maintained or improved using goals and milestones as identified in the Missouri Watershed Restoration and Protection Area 9 Element Plan.

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Action Steps

❖ Collection of Additional Data

- ◇ Collect data on a voluntary basis to evaluate the benefits of tile outlet terrace systems within the Missouri Region. Prior to proposing any design changes to outlets of tile terraces in the Missouri Region, conduct research on cropland field input amounts (rates, dates applied, how it was applied, etc.) and collect water samples to evaluate the water runoff into the streams in the region. Collect data working with interested local landowners with assistance of area conservation districts, Kansas Department of Health and Environment (KDHE), Natural Resources Conservation Service (NRCS) and other existing agencies. Collection sites will be: tile terrace runoff, waterway runoff, land with no conservation work or no conservation tillage, and land with no conservation work but using no-till.
- ◇ Collect data on the benefits of capturing and reusing water on a producer's property.
- ◇ Gather existing information on the impact of extreme events (droughts and floods) on water quality and availability of water resources into the future in the Missouri Region.
- ◇ Assess what other interest groups, agencies and individuals locally and from states with similar topography and precipitation (Iowa, South Dakota, Nebraska, and Missouri,) can provide on alternative projects that could contribute to water quality in the Missouri Region.

❖ Implementation

- ◇ Support and encourage implementation of the best management practices (BMPs) in the adopted 9-Element Plan. Those BMPs are: No-till, cover crops, grassed and forested buffers, convert steep slopes, sediment basins, pasture management, nutrient management, livestock waste management, alternative watering supplies, streambank stabilization, onsite wastewater system repair, urban lawn management, pet waste management. The Plan should be updated every 5-years.
- ◇ Focus on finding local volunteers that are willing to adopt and promote new practices, including streambank stabilization.
- ◇ Ensure the value of maintenance of BMPs is understood to allow BMPs to have the desired long term effects, through education and outreach.
- ◇ Recognize the value of protection of water quality through education and outreach.
- ◇ Prevent sedimentation by using existing cost - share programs through the Kansas Department of Agriculture, Division of Conservation (DOC); KDHE; and NRCS, to fund conservation practices in the Missouri Region.
- ◇ Continue to use the NRCS for technical assistance on implementation practices suited to the unique topography of the Missouri Region.
- ◇ Prioritize the existing ranking systems from agencies, to secure funding for protecting water quality and water supply in the Missouri Region.



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- ◇ Raise awareness about water quality and the importance of proper urban lawn application.

❖ **Monitoring**

- ◇ Determine if additional monitoring sites are needed to better characterize and prioritize project priorities in the Region.

❖ **Funding Needs**

- ◇ To ensure water quality is maintained and improved, the state should fully fund the Kansas Water Plan for implementation of best management practices through programs of the DOC, KDHE and others as needed.
- ◇ Ensure continued and improved coordination with the NRCS to access and make the best use of funding for priority projects for water quality protection in the Region.
- ◇ Assess possible involvement of other agencies, businesses and interest groups to determine interest and possible funding of water quality projects in the Region.
- ◇ Continue to ensure that funding from the Clean Drinking Water Fee Fund for technical assistance for small public water supply systems is maintained at least at the current level.
- ◇ Include funding for streambank stabilization projects as identified in the WRAPS 9 Element Plan.
- ◇ Fully fund the 9-Element Plan implementation (approximately \$140,000/year).
- ◇ Develop a funding strategy within the next year for additional data collection and implementation as identified above in a phased manner in conjunction with DOC, NRCS, and KDHE and others as appropriate. Funding needs will then be reviewed on an annual basis and brought to the KWA.