

Kentucky Farm Bureau Water Management Work Group
Recommendations for Consideration
as of 12-14-16

Committee feels recommendations should be prioritized and coordinated to ensure water issues are undertaken in a productive and well-timed manner, understanding all are important and that funding opportunities may influence timing of successful implementation.

1. Monitoring:

- A. Monitoring and tracking of water resources – surface water, aquifer, springs, ponds, and lakes.
 - I. Continued support and funding for the Data Management and Integration Portal for water resources data maintained by KY USGS.
 - II. Support development of additional “super gauges” for water quality monitoring on KY and Salt Rivers by USGS as part of Kentucky’s nutrient reduction strategy.
- B. Develop a statewide water resources network for comprehensive monitoring of water resources. Coordinate the location of future sites, both surface and groundwater, in relation to existing and new monitoring sites.
 - I. Continued support to expand the KY Groundwater Monitoring Network by KGS.
 - a. Secure funding for additional monitor wells, data-collection equipment and operational costs.
- C. Develop an “early warning system” of low soil moisture and drought conditions that impact farming and identify any viable system that can be useful to producers.
- D. Continued expansion of the 66 Kentucky Mesonet sites into more counties and across state boundaries that impact Kentucky weather events.
 - I. Connect groundwater monitoring data and Kentucky Mesonet data into an effective water budget by county or region (similar to Pennsylvania system).
 - II. Evaluate the need for additional scientific instrumentation to enhance value of data collected from Mesonet sites.
 - III. Development of a phone app (similar to Oklahoma) with Mesonet data.
 - IV. Explore possibility of project funding for Mesonet sites in communities that may not have the resources to support a critical site. Support continued efforts of the Kentucky Ag Development funds to expand the Mesonet Network. (Possibly matching local funds with Kentucky Ag Development funds).

- E. Continued expansion beyond the ten Mesonet stations that have soil moisture and soil temperature sensors.
- F. Support adequate funding for Kentucky Mesonet operational cost.
- G. Identify better, more comprehensive ways to track, monitor, and report early onset of low soil moisture conditions to augment the computerized models that provide the soil moisture conditions in specific regions across Kentucky.
- H. (Development of Regional Water Budget Model – Sensor Wise Irrigation Monitoring (SWIM) Network).

2. Analysis of Water Use and Information Needs:

- A. Develop an accurate determination of water use for crop and livestock production on municipal systems.
- B. Support comprehensive rural water system source assessment, diversification and planning to determine capacities of rural water systems and assess their vulnerabilities during low flow or drought events.
- C. Project future needs or potential increases in agricultural water uses for expanded crop opportunities.
- D. Identify potential conflicts and resolutions of water use between users upstream and downstream, nearby domestic or public supplies, recreational, and industrial uses.
- E. Review and make recommendations to improve water laws, policies and drought plans. (Water Jurisdiction Issues)
- F. Understand the capacity of rural and urban water supplies and their vulnerability during low water flow or drought conditions to meet demand.
- G. Increase public awareness of the importance of our water resources to our agricultural production capacity and to our economic development potential.
- H. Develop a survey to explore what type of information the farming community finds useful relative to weather and water use understanding producers may have different informational needs at different times of the year.
- I. Encourage local citizen, landowners, and agriculture producers to participate in local "Source Water Protection Programs."

3. Water Resource Development and Technical Assistance:

- A. Develop and/or improve best management practices to improve water efficiency (increase technical assistance from multiple agencies).
 - I. Explore and support research into crop breeding programs to enhance development of major crop varieties that are more water-use efficient.

- II. Promote soil health practices to increase water holding capacity and the importance of organic matter relative to water resource management.
 - III. Coordinate efforts to define and plan research and demonstration irrigation projects at the UK Grain & Forage Center for Excellence.
 - a. Irrigation efficiency assistance (similar to energy efficiency programs currently available), drip irrigation or irrigation injection system development.
 - b. Development of effective water trapping, harvesting or alternative water storage systems (retrofitting tile drainage systems, backflow systems, etc.)
 - IV. Develop surface water resources to capture water during winter and spring months for use during drought – runoff water to be recycled back to irrigate crops.
 - V. Retrofitting tile drainage to possibly capture runoff water to be recycled as an irrigation resource. Identify and enhance all BMPs for their water management benefits.
 - VI. Identify funding for demonstration pilot projects or practices on innovative water management practices to trap, hold and better utilize water on the farm.
- B. Explore infrastructure improvements at some of the roughly 200 P.L. 566 and State Owned Dams to provide pumping stations and greater access during state drought declarations.
- C. Increase access to technical expertise assistance and funding in water development for farm use.
- I. Evaluate changes to Agricultural Development Fund, state cost share programs and CAIP projects to allow funding for new and innovative water resource development projects. Support continued efforts in CAIP to assist individual producers demonstrate water efficiencies and recommend establishment of a new state level program specifically for water management assistance.
 - II. Work with Congressional delegation on farm bill proposals to address changes needed to allow technical assistance in the initial development of water resources to demonstrate on-farm water resource development.
 - a. Allow NRCS to provide financial assistance through EQIP for the “best” alternative (vs. least-cost) for the identified resource concern. Develop criteria for determining “best” and sustainable alternative water source.
 - b. Allow NRCS to provide financial assistance through EQIP for new irrigation systems providing that parameters are developed, such as:
 - i. Consistent drought locations (number of years in documented drought status

- ii. Cap on dollars
 - iii. State or area must have baseline aquifer data available
 - iv. Require collection and usage reports to avoid aquifer drawdown or depletion
- D. Developing "water harvesting" technologies and/or best management practices to enhance water management and evaluate initial installation costs. Support continued programs that enhance on-farm water storage, assist with water development, and assist during droughts with pond clean-out like ECP.
- E. Establish an "Agricultural Water Resources Development Academy."

4. Drought Mitigation Plan and Response:

- A. Update the KY Drought Mitigation Plan and fund development of the NOAA Drought Early Warning System for Kentucky as part of that plan update.
- B. Strengthen the agriculture section of the Drought Mitigation Plan and expand on those things envisioned in the Plan.
 - I. Two main elements, the monitoring/response and the mitigation/risk reduction.
 - II. Baseline forecasting for future water needs and where Kentucky wants to be relative to water resources.
- C. Familiarize agencies with their roles as identified in the Drought Mitigation Plan.
- D. Document these conditions to appropriate USDA and state agencies to ensure timely emergency declarations and assistance.
- E. Define the specific problems that are most often encountered during drought and recommend viable solutions.
- F. Identify multiple ways that agriculture drought preparedness/response could be improved from impact assessments, climate/soil monitoring, financial assistance, on-farm water management projects etc. (a good plan has to have additional input and be organized and prioritized).
- G. Reduce financial impact of drought on agriculture- Corn crop yields varied from 68 bu/ac to 170 bu/ac over the past 15 years according to NASS. At \$4/bu that is a spread of \$408/a. variance.

5. Communications & Outreach:

- A. Assist public water systems with community drought preparation planning and source water protection programs.
- B. Develop effective proactive communication and outreach campaigns to educate water users about the urban/rural interface and how water resources would be impacted under serious drought conditions.

- I. Promote the current effort to identify and develop additional water resources that will complement municipal and rural water resources.
 - II. Address the importance of agriculture and define how agriculture's water needs would be addressed under various drought scenarios.
 - III. Develop and communicate water-use conservation recommendations that both urban and rural water users can utilize.
- C. Encourage development of a Kentucky comprehensive water management plan.

6. Recent WRDA Bill passage impact on rural water infrastructure:

- A. Transfer of Green and Barren Rivers infrastructure: The bill would authorize the US Army Corps of Engineers (USACE) to transfer certain inoperable lock and dam infrastructure along the Green and Barren Rivers in Kentucky to state and local entities so they can determine the best use of this infrastructure. The Senate WRDA bill authorizes the disposition of Green River Locks and Dams 3, 4, 5, and 6 and Barren River Lock and Dam 1. The Nature Conservancy of Kentucky, Kentucky Department of Fish and Wildlife Resources, and many stakeholders in the Mammoth Cave community have prioritized de-authorizing Dam 6 on the Green River with the goal of eventually removing the infrastructure to restore natural flows and enhance river-based recreation and tourism in the area. Green River Lock and Dam 3, also known as the Rochester Dam, serves as a vital water source for people and businesses in six counties who for years have sought local control of the infrastructure so it can be repaired and better maintained. The provision Senator McConnell secured would provide for the transfer of the Rochester Dam to the Rochester Dam Regional Water Commission.