

**KENTUCKY WATER RESOURCES BOARD
PROJECTS SUBCOMMITTEE - INITIAL CONCEPTS**

- 1) **MESONET (SOIL MOISTURE AND CLIMATE) – (3 Years) - WESTERN KENTUCKY UNIVERISTY - (\$824,000 - Matching Funds – TSA, WKU, and Local Gov. & Private)**
 - a. Acquisition and installation of soil moisture probes (50 new sites) **\$275,000**
 - b. Install 12 NEW basic MESONET Stations (EXCLUDING SOIL PROBES) with a cost estimate cost of \$20,750 each, including equipment, material, and installation costs. **\$249,000**
 - c. Expand capacity of the MESONET SCIENTIFIC INSTRUMENT CALIBRATION FACILITY **\$100,000**
 - d. EXPAND THE SUITE OF INSTRUMENTATION AT 40 MESONET STATIONS **\$200,000**
- 2) **DATA MANAGEMENT AND INTEGRATION – US GEOLOGICAL SURVEY - (\$34,000 - Matching Funds – TSA & USGS)**
 - a. **\$28,000** to design and implement a data integration and management portal centered on water-use and drought-related data. USGS will provide \$12,000 CWP funding as match (total project cost is \$40,000). Note also that there are nominal annual operation and maintenance cost associated with maintaining a dynamic web page and these are detailed below (\$3,000 per year).
- 3) **Funding for updating and adding agriculture concerns to Kentucky Drought Mitigation Plan. Development of NOAA Drought Early Warning System for Kentucky. – (\$25,000 - Matching Funds – TSA, NOAA, and State Gov.)**
- 4) **SURFACE WATER (STREAMFLOW) – (3 Years) - US GEOLOGICAL SURVEY - (\$468,500 - Matching Funds – TSA, USGS, and State Gov.)**
 - a. 5 Gages (installation, equipment, and operation costs) total within 22 counties with a cost estimated cost of \$26,000 each one time cost and O&M \$14,000 each annually. **\$272,500**
 - b. **\$98,000** for construction of a new water-quality monitoring station on the Salt River at the confluence with the Ohio (this cost includes supporting sampling and laboratory analyses). The Salt River site has been identified as being of importance to KY Agriculture as it quantifies the nutrient loads from a large urban area and places the primary agricultural basins into context. USGS will provide \$42,000 CWP funding as match (total project cost is \$140,000 in year one).
 - c. **\$98,000** for construction of a new water-quality monitoring station on the Kentucky River at the confluence with the Ohio (this cost includes supporting sampling and laboratory analyses). The Kentucky River site has been identified as being of importance to KY Agriculture as it quantifies the nutrient loads from a large portion of the Commonwealth and also places the primary agricultural basins into context. USGS will provide \$42,000 CWP funding as match (total project cost is \$140,000 in year one).
- 5) **GROUNDWATER – (3 Years) - KENTUCKY GEOLOGICAL SURVEY - (\$366,000 - Matching Funds – TSA, USGS, KGS, and State Gov.)**
 - a. Drill 10 NEW observation wells in critical areas **\$118,000**
 - b. Upgrade 15 existing wells with real-time satellite telemetry **\$57,000**
 - c. Operation and Maintenance (25 WELLS) **\$177,000 – over 3 Years**
 - d. Equipment replacement contingency **\$14,000**

- 6) Rural Water System Source Assessment, Diversification, and Planning – (\$500,000 - Matching Funds – TSA, SRF, and Local Gov.) Understanding the capacity of rural and urban water supply systems and their vulnerability during low flow or drought conditions to meet demand.
 - a. Community Low Flow Variability (Single versus multiple source water supply assessments)
 - b. Water Use Inventory - Agriculture
 - c. Community Drought Preparation Planning.
 - d. Source Water Protection Program.
- 7) Demonstration on-farm water management BMPs – (\$750,000 - Matching Funds – TSA, CIG, RCPP, SCS, SRF)
 - a. Water trapping, harvesting, and alternative water storage BMPs.
 - b. Retrofitting of tile drainage system to control water flow during dry periods
 - c. Irrigation efficiency assistance, variable rate, drip and injection systems for irrigation systems, etc.
 - d. Alternative water source development and efficiencies for animal agriculture water supply.
- 8) Infrastructure Improvements in P.L. 566 and State Owned Dams – (\$200,000 - Matching Funds – TSA, SRF, and State Gov.)
 - a. Providing access and pumping stations for use during drought declarations.
- 9) Support USDA program modifications to allow NRCS to provide technical assistance for the planning and development of new on-farm water supplies and irrigation systems.
- 10) Demonstration of Groundwater Recharge Facilities - (Matching Funds – TSA, CIG, RCPP, SCS)

TOTAL ESTIMATED COST FROM ALL SOURCES \$3,167,500.00