Small Agricultural Watershed Monitoring Updates

Objectives: (1) To evaluate the effects of agricultural management practices on monitored nutrient and sediment loads and (2) to generate monitoring-based insights that inform the management of agricultural Chesapeake Bay watersheds.

Approach: Streamflow and water-quality monitoring data will be collected from small (~5-10 mi^2) agricultural Chesapeake Bay watersheds. Ideally, monitoring will occur for multiple years at 5 stations throughout the Bay watershed that represent agricultural areas targeted for management-practice implementation. Monitoring data will consist of (1) a streamgage, (2) continuous water-quality data [WT, SC, pH, DO, TB, and nitrate], and (2) discrete water-quality samples [~20 samples / yr analyzed for a suite of nutrients and sediment].

Funds Required: Study funds include (1) one-time costs to establish the study and 5-station monitoring network and (2) reoccurring annual costs to maintain the 5-station network and analyze the data.

- 5-station one-time costs = **$675,000**
- 5-station reoccurring annual costs = **$690,000**

Funds Committed: Study funds are committed by the EPA and USGS.

- EPA: Year 1 funding = **$375,000**; Year 2-5 funding = **$157,500** (+5% per year).
- USGS: One-time funding for study design costs and selected instrumentation and installation costs; annual funding for study leadership and data analysis.

Challenges: (1) Additional funds are needed (**$86,500** per station) are needed to support all monitoring activities; (2) Partner collaboration (NRCS, state agencies, etc.) is needed to identify areas with planned management-practice implementation.

Next Steps: The USGS and EPA and in discussions with additional partners who may who may provide financial or technical support to this study. The timeline to initiate monitoring will be revisited when additional funds are identified.

Requests of the Monitoring Team: Can the monitoring team recommend any agencies who may be interested in partnering with the EPA and USGS on this study?