

**Project:** Mill Creek Watershed Assessment  
**Location:** Bucks County, Pennsylvania  
**Client:** Bucks Conservation District

Aqua Link, Inc. was retained by the Bucks Conservation District to conduct a watershed assessment for Mill Creek. As part of this project, Mill Creek, its tributaries and two county-owned lakes (Silver and Magnolia Lakes) were intensely studied. Mill Creek serves as the major tributary to both of these lakes. Silver and Magnolia Lakes are located within County-owned parklands and therefore serve as their focal points. The Mill Creek Watershed Assessment was funded by Pennsylvania Department of Environmental Protection (PADEP) through the federal Nonpoint Source Program (Section 319 of the Clean Water Act).



A key product of this assessment was to develop a comprehensive management plan for the entire Mill Creek watershed. This management plan was constructed using watershed-specific data and data gathered during field investigations. Trained volunteers collected streamflow data and stream water samples for later laboratory analysis during both low flow (baseflow) and high flow (storm events). Important watershed-specific information (e.g., land use, hydrology, soils) was compiled and mapped using GIS (Geographical Information System) software.

Stream and reservoir data collected during the assessment were analyzed in order to assess the overall “ecological health” of these waters. Water quality and quantity data were also used to determine pollutant budgets for the entire Mill Creek watershed. Water quality models using pollutant budgets and reservoir data were used to determine total maximum daily loadings (TMDL’s) for the reservoirs and to predict phosphorus loading reductions that are needed to improve reservoir water quality. Watershed and riparian investigations were performed to identify major problematic areas (e.g., insufficient buffers, excessive soil erosion, in-stream sediment bars, streambank erosion/failure) contributing excessive nonpoint source (NPS) pollution to the study lakes.

The final product of the Mill Creek watershed assessment was a detailed final report that assessed the water quality of major streams and reservoirs, identified major sources of nonpoint pollution to these waters, prioritized subwatersheds on a NPS loading basis, and provided a technically sound comprehensive watershed management plan to reduce NPS pollution to streams, the County-owned reservoirs and ultimately the Delaware River.