SILVER LAKE STUDY December 2003

A proposed lake management study of Silver Lake could include, but not be limited to, the following components:

Water Budget – This would study the inflow of water to Silver Lake from the groundwater and from the watershed, and would study the outflow of water from the lake. Hydrologist or hydrogeologist involvement would be required through the consultant and/or USGS.

Water Quality Analysis – This includes a comprehensive study of all aspects of the water quality of Silver Lake. This would include a phosphorus study to identify all sources of phosphorus and a ranking of the sources so lake protection efforts can be prioritized. The analysis should include a study of the relationship between the high water levels and the algae bloom experienced in 2003.

Water Quality Response Estimation – Given comprehensive efforts to reduce the phosphorus input to the lake, estimate the water quality improvement that could be expected with appropriate measures including secchi disk readings.

Watershed Study – This includes study of the current land uses and identification of all sources of runoff that could impact the water quality of Silver Lake. The study would also include recommendations for reducing non-point pollution from the watershed.

Development Pressure – The study would include determining what role shoreline development has on the water quality of Silver Lake. Soils in the area are naturally high in phosphorus and a soils test of riparian properties, as part of evaluated development pressure, would provide valuable information.

Lake Use – The study would include identification of changes in amount and type of use of Silver Lake. Identification of changing use patterns may identify a relationship between lake use and changes in water quality.

Shoreline Assessment Survey – A survey or inventory of the shoreline should be completed. The inventory would include the extent of development, shoreline erosion, shoreline buffers and habitat.

Fisheries Assessment – The study would include an assessment of the fish species and populations and an evaluation of the existing habitat and potential habitat improvement needs.

Exotic Species – The study would conduct an inventory of exotic species that could have a negative impact on Silver Lake and the habitat. Species identification would include, but not be limited to, Purple Loosestrife, zebra mussels and Eurasion Milfoil.

Health Concerns – The study would include testing of Silver Lake for bacteria that are harmful to humans. If bacteria or health concerns are identified the study should further identify the source(s).

Septic Systems – The study should include an inventory of existing septic systems, the year of installation, the type of system and a check for proper functioning, primarily in older systems. This would identify a potential contribution of phosphorus to the lake.

100 Year Floodplain Identification – The study would include identification of the area around the lake that is in the 100 year floodplain.

Infrastructure Activities – The study should include a study of potential impact to Silver Lake for completed infrastructure work including bridge, culvert, road and other work near Silver Lake.

Lake Management Recommendations – The study would include lake management and protection recommendations based on findings of the lake study components.