TMDL Development for Horseshoe Lake Watershed

Background

Over the last 30 years, waters in Illinois have been monitored for chemical, biological and physical conditions. In some cases, the conditions of those rivers and lakes fall short of the need to support basic water quality use goals. These waters are deemed impaired since they cannot meet use expectations set for them under state and federal law. When this happens Total Maximum Daily Load (TMDL) reports are developed for impaired waters to determine the maximum amount of a pollutant a water body can receive and still meet water quality standards and support its designated uses. Designated uses include aquatic life, public water supply, swimming, recreation, fish consumption, and aesthetic quality.

TMDLs are done in stages to allow for public involvement and input. TMDL development in Illinois begins with the collection data—water quality, point source discharge, precipitation, soils, geology, topography, and land use—within the specific watershed. All impaired water body segments within the watershed are identified, along with potential pollutants causing the impairment. Illinois EPA determines the tools necessary to develop the TMDL. In most cases, computer models are used to simulate natural settings and calculate pollutant loads. Along with data analysis, model recommendations are made in the first stage of the TMDL. This information is presented at the first public meeting.

The appropriate model or models are selected based on the pollutants of concern, the amount of data available and the type of water body. In some cases, additional data needs to be collected before continuing. The model is used to determine how much a pollutant needs to be reduced in order for the water to be meeting its designated uses.

An implementation plan is developed for the watershed spelling out the actions necessary to achieve the goals. The plan can specify limits for point source dischargers and recommend best management practices (BMPs) for nonpoint sources. Another public meeting is held to discuss this plan and to involve the local community. Commitment to the implementation plan by the citizens who live and work in the watershed is essential to success in reducing the pollutant loads and improving water quality.

Waterbody Designated Uses and Impairments

| Waterbody	Designated Use(s)	Impairment(s)	TMDL or Load Reduction Strategy *
Horseshoe Lake	Aesthetic Quality	Total Phosphorus, Total Suspended Solids *	TMDL and LRS *
* Load Reduction Strategies address pollutants that do not have numeric water quality standards.			

Watershed Information

The Horseshoe Lake is a 1,890 acre lake created from a natural oxbow of the Mississippi River. The lake and its watershed are located entirely within Alexander County in southwestern Illinois, near the confluence of the Ohio River and Mississippi River and the community of Olive Branch.

Land cover data reveal that approximately 41 percent of the total watershed area supports cultivated crops or pasture/hay and 7 percent is developed. The majority of the watershed consists of forest, wetlands, and open water including the lake.

Watershed Map
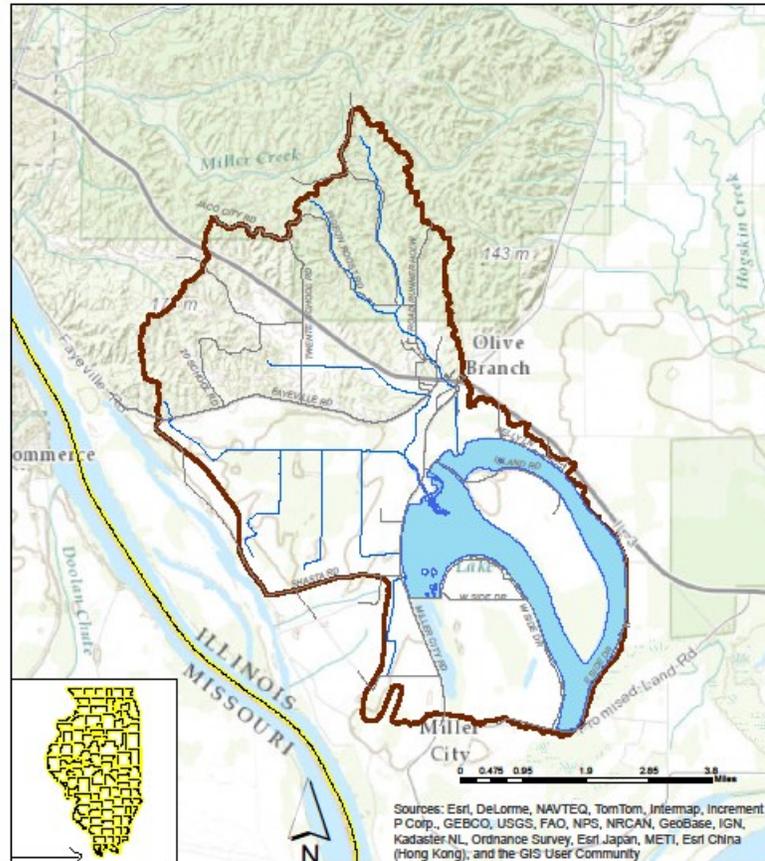
Potential Pollutant Sources

There are no point source discharges (e.g. municipal or industrial wastewater treatment plant) in this watershed. Potential nonpoint sources include: crop production (crop land or dry land) and runoff from forest/grassland/parkland.

For more information on this specific TMDL or the TMDL program, visit the Illinois EPA website at http://www.epa.state.il.us/water/tmdl/.

For information on the assessment of Illinois waters, refer to the Integrated Report and 303(d) List at http://www.epa.state.il.us/water/tmdl/303d-list.html.

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