



## TMDL Development for Mackinaw River 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 data collection—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 for the water body to fully support 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

Name	Segment ID	Designated Uses	Cause of Impairment
Mackinaw River	IL_DK-13	Primary Contact Recreation	<b>Fecal Coliform</b>
	IL_DK-17	Public and Food Processing Water Supply	<b>Nitrogen, Nitrate</b>
Hickory Grove Ditch	IL_DKB-01	Aquatic Life	<b>Dissolved Oxygen, Manganese, Sedimentation/Siltation</b> <sup>a</sup>
Prairie Creek	IL_DKF-11	Aquatic Life	Chloride <sup>b</sup> , Dissolved Oxygen <sup>b</sup>
East Branch Panther Creek	IL_DKKC-02	Aquatic Life	Dissolved Oxygen <sup>b</sup>
Sixmile Creek	IL_DKN-01	Aquatic Life	<b>Dissolved Oxygen, Sedimentation/Siltation</b> <sup>a</sup>
Henline Creek	IL_DKV-01	Aquatic Life	Dissolved Oxygen <sup>b</sup>
Indian Creek	IL_DKD-01	Aquatic Life	Phosphorus (Total) <sup>a</sup> , Total Suspended Solids (TSS) <sup>a</sup>
Dillon Creek	IL_DKC-01	Aquatic Life	Cause Unknown <sup>a</sup>
Lake Bloomington	IL_RDO	Public and Food Processing Water Supply	Total Dissolved Solids <sup>a</sup>

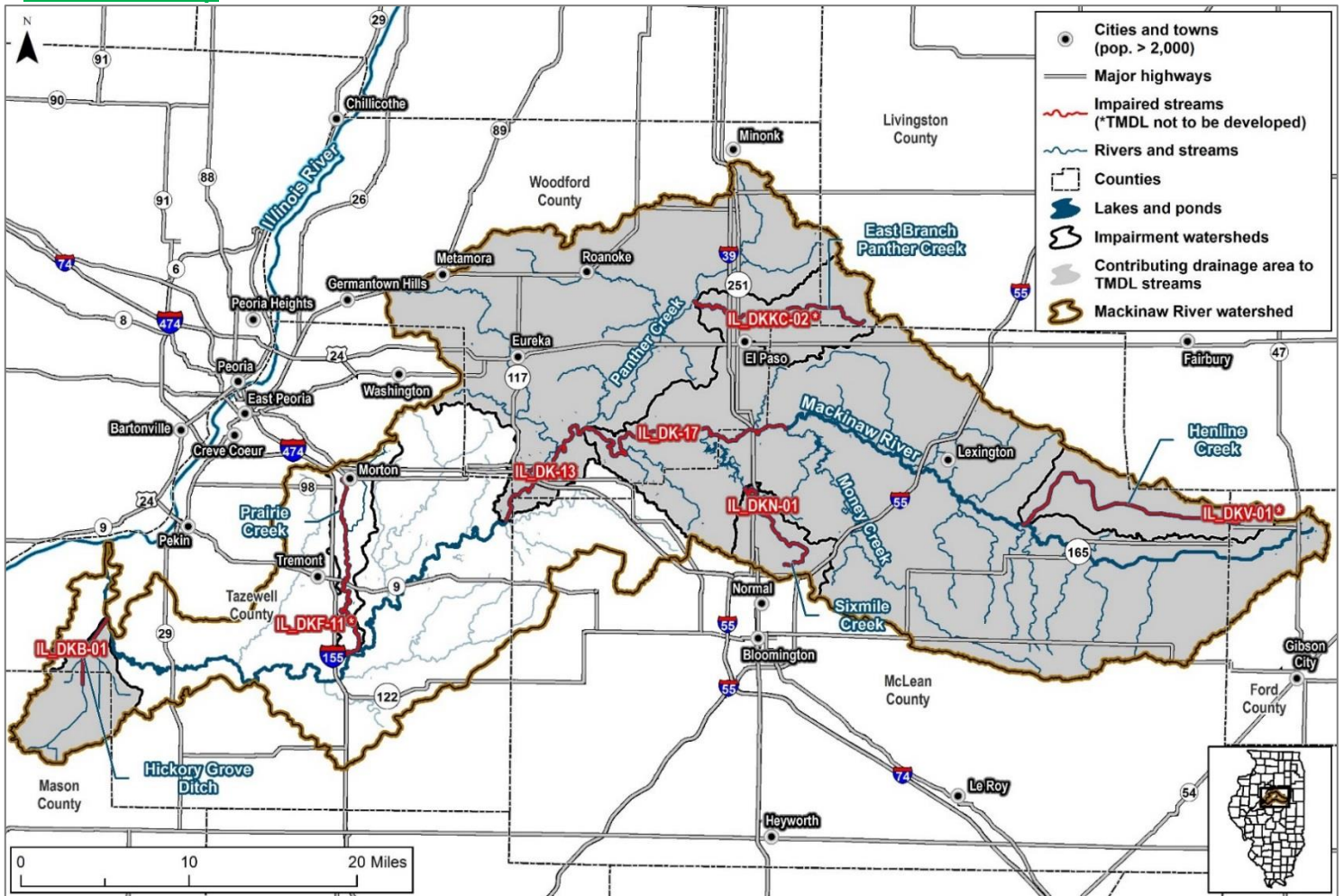
*Italics* – Based on evaluation of available data (2007–2016), it was determined that a TMDL is not required for this cause of impairment.

a. These causes of impairment are not being addressed as part of this project.

b. Impairment was removed from the 2018 draft 303(d) list and is not addressed further in this report.

**BOLD** – TMDLs are addressed in this Stage 1 report

## Watershed Map



## Watershed Information

The Mackinaw River watershed is located in central Illinois. The headwaters of the watershed begin north of Gibson City, IL. The Mackinaw River then flows just north of Bloomington, IL before joining the Illinois River south of Peoria, IL. The watershed covers 1,149 square miles. Counties with land located in the watershed area include Ford, Livingston, Mason, McLean, Tazewell, and Woodford. Land use in the watershed is heavily influenced by agriculture. Urban area is located near the cities of Normal and Morton and several small towns in the watershed. Land use in the watershed includes cultivated crops and pasture/hay (approximately 85 percent), forest (approximately 6 percent), and urban (approximately 8 percent).

## Potential Pollutant Sources

There are approximately twenty (20) point-source discharges (e.g. municipal or industrial wastewater treatment plant) in the impaired portions of this watershed. Potential nonpoint sources include: agriculture, crop production, urban runoff/storm sewers, and natural or unknown sources.

For more information on this specific TMDL or the TMDL program, visit the Illinois EPA website at:

<https://www2.illinois.gov/epa/topics/water-quality/watershed-management/tmdls/Pages/default.aspx>

For information on the assessment of Illinois waters, refer to the Integrated Report and 303(d) List at

<https://www2.illinois.gov/epa/topics/water-quality/watershed-management/resource-assessments/Pages/default.aspx>

If you have any questions, please contact the project manager, Tim Kelly (TMDL Unit) at 217-557-8743 or at [Tim.kelly@illinois.gov](mailto:Tim.kelly@illinois.gov) or Abel Haile by phone at 217/782-3362 or at [Abel.Haile@illinois.gov](mailto:Abel.Haile@illinois.gov)