



# ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

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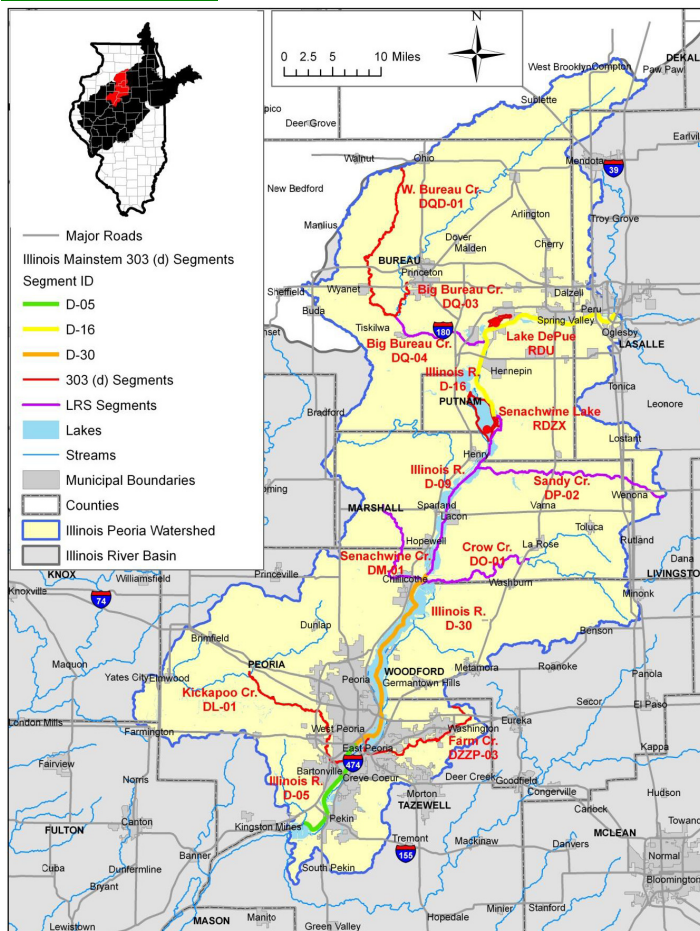
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## TMDL and LRS Development for Middle Illinois River Watershed

Total Maximum Daily Loads (TMDLs) and Load Reduction Strategies (LRSs) 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. Waters in the Middle Illinois River watershed are impaired due to elevated levels of fecal coliform bacteria. Stakeholders recommended additional analysis on suspended solids and nutrients due to the excessive sediment loading in Peoria Lake. Tributaries in the watershed were monitored and analyzed for total suspended solids, total phosphorus and nitrate-nitrogen. Elevated levels of parameters are included in table 1.

### Watershed Map



### Water Quality Targets

The numeric standard for fecal coliform bacteria is 200 cfu/100 ml geometric mean for 5 samples in 30 days and the instantaneous standard of 400 cfu/100 ml that no more than 10 percent can exceed.

The numeric standard for phosphorus in lakes is 0.05 mg/L. Illinois EPA does not have numeric standards for nutrients or total suspended solids for streams.

Nutrient targets are based on reference conditions for Ecoregion 54 from the U.S. EPA document "Ambient Water Quality Criteria Recommendations", which is intended to address cultural eutrophication. The target for nitrate-nitrogen is 1.798 mg/L and 0.072 mg/L for total phosphorus.

The total suspended solids targets are based on reference conditions from the USGS document "Present and Reference Conditions and Yields of Suspended Sediment in Streams in the Great Lakes Region and Adjacent Areas". The targets are 59.3 and 50.4 mg/L depending on the zone.

### Illinois River (Peoria Area) TMDL Workgroup Committee

The workgroup committee includes the following entities: City of Peoria, Illinois Environmental Protection Agency, Illinois State Water Survey, Tri-County Regional Planning Commission, United States Environmental Protection Agency, and the United States Geological Survey. The workgroup committee provides technical data and assistance for a successful TMDL and implementation. U.S. EPA is the overall project overseer, Illinois EPA is the state project manager, and Tetra Tech is the consultant.

**Table 1. Waterbody Names and Impairments**

Water Name	ID	Fecal	TSS	TP	NO3
Illinois River	D-05	X	X	X	X
Illinois River	D-09			X	X
Illinois River	D-16	X		X	X
Illinois River	D-30	X	X	X	X
Kickapoo Creek	DL-01	X	X	X	X
Senachwine Creek	DM-01				X
Crow Creek	DO-01				X
Sandy Creek	DP-02				X
Big Bureau Creek	DQ-03	X	X	X	X
Big Bureau Creek	DQ-04			X	X
West Bureau Creek	DQD-01	X	X	X	X
Farm Creek	DZZP-03	X	X	X	X
Depue Lake	RDU		X	X	X
Senachwine Lake	RDZX		X	X	X

TMDLs are done in stages to allow for public involvement and input. The stage one report and meeting outlined the TMDL process and featured the data collected in the watershed. Stage two was additional monitoring completed in the watershed. The stage three report displays the load duration curves and reductions needed for the waterbodies impaired. A general implementation plan is included and specific implementation is planned for the second phase of this project. As part of this next phase, urban best management practices for stormwater will be included as well as BMPs to curb the erosion from hillslopes and river bluffs in the watershed. 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.

### **Implementation**

For bacteria, point sources in the watershed have to meet their effluent limits given in their NPDES permits. There are facilities in the watershed that have a chlorination exemption and may be required to reapply for this at their next permit renewal. Sewage treatment plants with combined sewer overflows (CSOs) that require a Long-Term Control Plan (LTCP) must meet these permit requirements. The LTCP includes measures that provide for compliance with the Clean Water Act, including attainment of water quality standards. Nonpoint sources of bacteria include livestock and failing septic systems. BMPs such as fencing to keep livestock out of streams along with maintenance of septic systems are recommended for reducing bacteria levels.

Nutrients are elevated throughout the watershed. Major sewage treatment plants (over 1 million gallons discharge per day) will be required to monitor for phosphorus and nitrogen in future permit renewals. Nonpoint sources of nutrients include fertilizer application and erosion from farmlands and stream banks. BMPs include nutrient management plans and streamside riparian areas. Urban sources of pollutants are primarily related to stormwater runoff. Urban areas with MS4 permits must meet the stormwater requirements. Total suspended solids are elevated at higher flows indicating stream bank and gully erosion as a significant source of sediment. The next phase will focus on urban BMPs and hillslope and river bluff erosion control practices.

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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/>

If you have any questions, please contact Amy Walkenbach by phone at 217/782-3362 or email at

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