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## TMDL Development for Lake Michigan Beaches

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### **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. The Illinois EPA makes the decision to list a beach as not meeting its Primary Contact use of swimming and recreation based on the Illinois Department of Public Health beach closings.

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. The model selected for the Lake Michigan beaches is a statistical model. It leverages the data more efficiently by grouping the beaches on various characteristics. An implementation plan is then 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.

All of the beaches along Lake Michigan are included on the impaired waters listing for Escherichia Coli (E. coli), Mercury and Polychlorinated biphenyls. This TMDL is to address the E. coli impairment.

### **Beach Names and Sizes (miles)**

12th St. Beach	2.0
31st St. Beach	1.8
49th St. Beach	2.0
57th St. Beach	0.9
67th St. Beach	0.7
Albion Beach	0.3
Armitage Beach	0.5
Calumet Beach	3.0
Clark Beach	0.6
Elder Beach	0.7
Foster Beach	1.0
Fullerton Beach	1.4
Gilson Beach	1.9
Glencoe Beach	3.4
Greenwood Beach	0.6
Hollywood/Ostermann Beach	0.6
Howard Beach	0.3
IL Beach State Park North	3.1
IL Beach State Park South	3.1
Jackson Park/63rd Beach	0.7
Jarvis Beach	0.3
Juneway Terrace	0.3
Kenilworth Beach	2.0
Lake Bluff Beach	3.3
Lake Forest Beach	4.2

Lee Beach	0.6
Lighthouse Beach	0.6
Lloyd Beach	0.7
Loyola (Greenleaf) Beach	0.3
Maple Beach	0.7
Montrose Beach	2.0
North Ave. Beach	0.5
North Point Beach	1.6
North Shore/Columbia	0.3
Northwestern University Beach	0.6
Oak St. Beach	0.7
Ohio St. Beach	1.8
Park Ave. Beach	1.0
Pratt Beach	0.3
Rainbow	1.2
Rogers Beach	0.3
Rosewood Beach	1.9
Schiller Beach	0.5
South Boulevard Beach	0.6
South Shore Beach	0.7
Thorndale Beach	0.6
Touhy (Leone) Beach	0.3
Tower Beach	0.7
Waukegan North Beach	2.0
Waukegan South Beach	3.3
Webster Beach	0.5

### **Potential Pollutant Sources**

Potential nonpoint sources include agriculture and crop-related sources, land disposal, on-site wastewater systems, bank or shoreline modification/destabilization, habitat modification, urban runoff, and waterfowl.

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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/>.

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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