Appendix D
Watershed Fact Sheets

Linking LaMP Goals to Effective Implementation: The Watershed Scale

The development of the LaMP holds great promise for achieving environmental improvement in the Lake Michigan basin, but it also offers significant challenges in terms of practicing environmental restoration and protection on this scale. One of the most significant of these challenges is the need for cross-program and cross-jurisdictional coordination. This includes coordination between the U.S. and Canada, between federal agencies, and among states, provinces, and tribes, as well as coordination across a variety of statutory authorities. Because of this, EPA has taken the approach of using existing tools, as well as developing new and innovative ones, in concert with federal, tribal, state, and local partners to achieve environmental results that are relevant to a given place. To simplify the myriad of statutes, regulations, and resources affecting the management of Lake Michigan, Appendix D of LaMP 2000 presents a matrix of the major governmental units, regulatory agencies, and other significant stakeholders that are responsible for managing the Lake Michigan ecosystem. The matrix includes a description of these units, their goals, and their roles and responsibilities as they pertain to the restoration and maintenance of the chemical, physical, and biological integrity of the Lake Michigan ecosystem.

Lake Michigan's 33 Tributary Watersheds

The first step in advancing work watershed by watershed is to provide the available data in that format. Lake Michigan has 33 tributary watersheds at the 8-digit hydrologic unit code (HUC) in the U.S. Geological Survey system as EPA has indicated.

Although a decade of effort has resulted in a general awareness of the watershed approach within EPA, recent evaluations show substantial gaps in implementation. The watershed approach should not be seen as merely a special initiative targeted at just a selected set of places or involving a relatively small group of EPA or state staff. Rather, it should be the fulcrum of our restoration and protection efforts, and those of our many stakeholders, private and public. Failure to fully incorporate the watershed approach into program implementation will result in failure to achieve our environmental objectives in many of our nation's waters.

The hydrologic unit code (HUC) that represents a geographic area representing part or all of a surface drainage basin, a combination of drainage basins, or a distinct hydrologic feature

The Geographic Information Retrieval and Analysis System (GIRAS) was developed in the mid 70s to put into digital form a number of data layers which were of interest to the USGS. One of these data layers was the Hydrologic Units. The map is based on the Hydrologic Unit Maps published by the U.S. Geological Survey Office of Water Data Coordination, together with the list descriptions and name of region, subregion, accounting units, and cataloging unit. The hydrologic units are encoded with an eight- digit number that indicates the hydrologic region (first two digits), hydrologic subregion (second two digits), accounting unit (third two digits), and cataloging unit (fourth two digits).

The following fact sheets provide a picture of Lake Michigan divided into watersheds, showing the special and important elements present in the watershed as well as the impairments that currently exist. Also provided is an overview of the planning underway and the groups involved. We seek comments on these fact sheets as to content and usefulness of them as a tool. For additional information, see the Lake Michigan Watershed Academy description in Chapter 9, the EPA NPDES watershed permit discussions in Chapter 9, and the area of concern charts in Chapter 7.

Lake Michigan Overview

- Lake Michigan, the second largest Great Lake by volume with just under 1,180 cubic miles of water, is the only Great Lake entirely within the United States.
- Approximately 118 miles wide and 307 miles long, Lake Michigan has more than 1,600 miles of shoreline.
- Averaging 279 feet in depth, the lake reaches 925 feet at its deepest point.
- It has a water surface area of 22,300. The drainage basin, approximately twice as large as the 22,300 square miles of surface water, includes portions of Illinois, Indiana, Michigan and Wisconsin.
- On average, a molecule of water will spend 100 years in Lake Michigan before exiting to Lake Huron at the Straits of Mackinac.
- The lake's northern tier is in the colder, less developed upper Great Lakes region, while its more temperate southern basin contains the Milwaukee and Chicago metropolitan areas.

Lake Michigan 8-Digit HUC Watersheds

Watershed	HUC Code
Betsie-Platte	04060104
Black-Macatawa	04050002
Boardman-Charlevoix	04060105
Brevoort-Millecoquins	04060107
Brule	04030106
Cedar Ford	04030109
Door-Kewaunee	04030102
Duck-Pensaukee	04030103
Ecsanaba	04030110
Fishdam-Sturgeon	04030112
Lower Fox	04030204
Upper Fox	04030201
Lower Grand	04050006
Upper Grand	04050004
Kalamazoo	04050003
Lake Winnebago	04030203
Little Calumet-Galien	04040001
Manistee	04060103
Manistique	04060106
Manitowoc-Sheboygan	04030101
Maple	04050005
Menominee	04030108
Michigamme	04030107
Milwaukee	04040003
Muskegon	04060102
Oconto	04030104
Pere-Marquette-White	04060101
Peshtigo	04030105
Pike-Root (Waukegan)	04040002
St. Joseph	04050001
Tacoosh-Whitefish	04030111
Thornapple	04050007
Wolf	04030202