

# 10. Waukegan Harbor

## Background

This unique study area includes the Waukegan Harbor and the two branches of the Waukegan River that flow into Lake Michigan south of the harbor. It includes the north branch west to Yeoman Park and the south branch west to Lincoln Avenue.

The Waukegan AOC is located in Lake County, Illinois, on the west shore of Lake Michigan. There is also an Expanded Study Area (ESA) bounded by Dead River on the north, a bluff line which parallels Sheridan Road on the west, the southern boundary of the former U.S. Steel Property on the south, and the nearshore waters of Lake Michigan on the east. The ESA was added to explore additional concerns of the citizens beyond the AOC.

A natural inlet and portions of adjacent wetlands were filled to form the present shape of the harbor. Waukegan Harbor consists of approximately 1.2 km<sup>2</sup> of industrial, commercial, municipal and open/vacant lands. The watershed of the Waukegan ESA contains the Waukegan River drainage basin, the North Ditch drainage basin and other nearshore areas which drain to Lake Michigan.<sup>2</sup>

## Status of Watershed Management Efforts in the Study Area

The Waukegan Harbor Citizens Advisory Group was organized in August, 1990, to help citizens and business leaders concerned about the harbor environment develop plans to identify and clean up contaminated harbor properties. The CAG is composed of business, fishing, recreation, environmental, government, and other interested groups and individuals. They formed a partnership with the Illinois Environmental Protection Agency to develop a two-part plan, the Waukegan Harbor Remedial Action Plan, detailing use impairments and how these impairments could be restored through a cooperative effort. In July 1999 the Stage III Report<sup>3</sup> was completed. This report is the most complete compendium and analysis of monitoring information for Waukegan Harbor. Considerable monitoring information exists for the Waukegan Harbor and Waukegan River Watershed area. Most monitoring information supports a project or specific investigation to resolve a problem.

## Pollutants of Concern

### Aquatic Monitoring

Monitoring coverage for LaMP pollutants reported into the STORET system is shown in Figure 34. The map indicates that there is very little coverage of LaMP pollutant monitoring in the AOC region. Stations exist for two (mercury and dieldrin) of seven critical pollutants, four out of ten pollutants of concern, and none of the listed emerging pollutants. However, the only monitoring close to Waukegan Harbor is for arsenic. There is no monitoring for these pollutants on Waukegan River. Organizations monitoring for LaMP pollutants in the region include IEPA, and U.S. EPA.

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<sup>2</sup>Excerpted in part from the Waukegan Harbor AOC website (<http://www.epa.gov/glnpo/aoc/waukegan.html>).

<sup>3</sup>*Final Stage III Report, Waukegan Harbor Remedial Action Plan*, Illinois Environmental Protection Agency, July 1999.

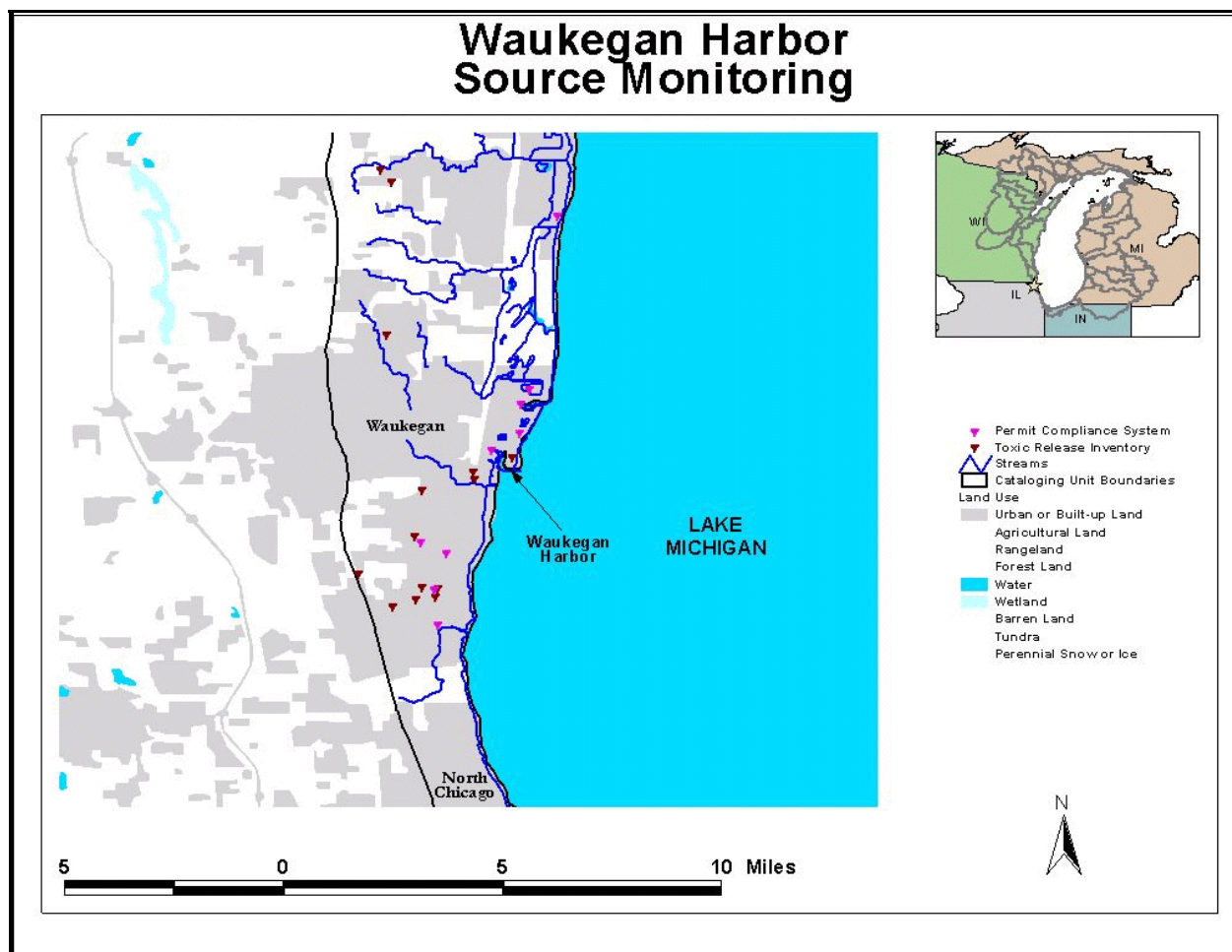


Figure 35. Waukegan Harbor AOC pollutant sources from the Permit Compliance System and Toxic Release Inventory database as indicated by indicators measured.

In addition, surveys indicate that three other organizations monitor LaMP pollutants in the AOC to some extent. The Outboard Marine Corporation and the Illinois State Water Survey monitor PCBs at sites throughout the AOC, while EJ&E Railway Company monitors groundwater for mercury, lead, cadmium, zinc, and chromium at a site adjacent to the Waukegan River.

### Pollutant Release Monitoring

An examination of Permit Compliance System and Toxic Release Inventory reporting locations in the Waukegan Harbor AOC indicates a number of potential pollution sources near the harbor and along Waukegan River as well (see Figure 35).

### Nutrients and Bacteria

The IEPA maintains 22 water quality monitoring stations within the Waukegan Harbor AOC, as listed in the STORET system. Nearly all of these stations (shown in Figure 34) monitor for some form of nitrogen and phosphorus, the chief nutrients impacting water quality. Stations are located all around Waukegan Harbor as well as along the Waukegan River.

Prior to the year 2000, no stations report to monitor for *E. coli* in the watershed. Currently, some county health departments favor using fecal coliform over *E. coli*. Monitoring for fecal coliform is significantly

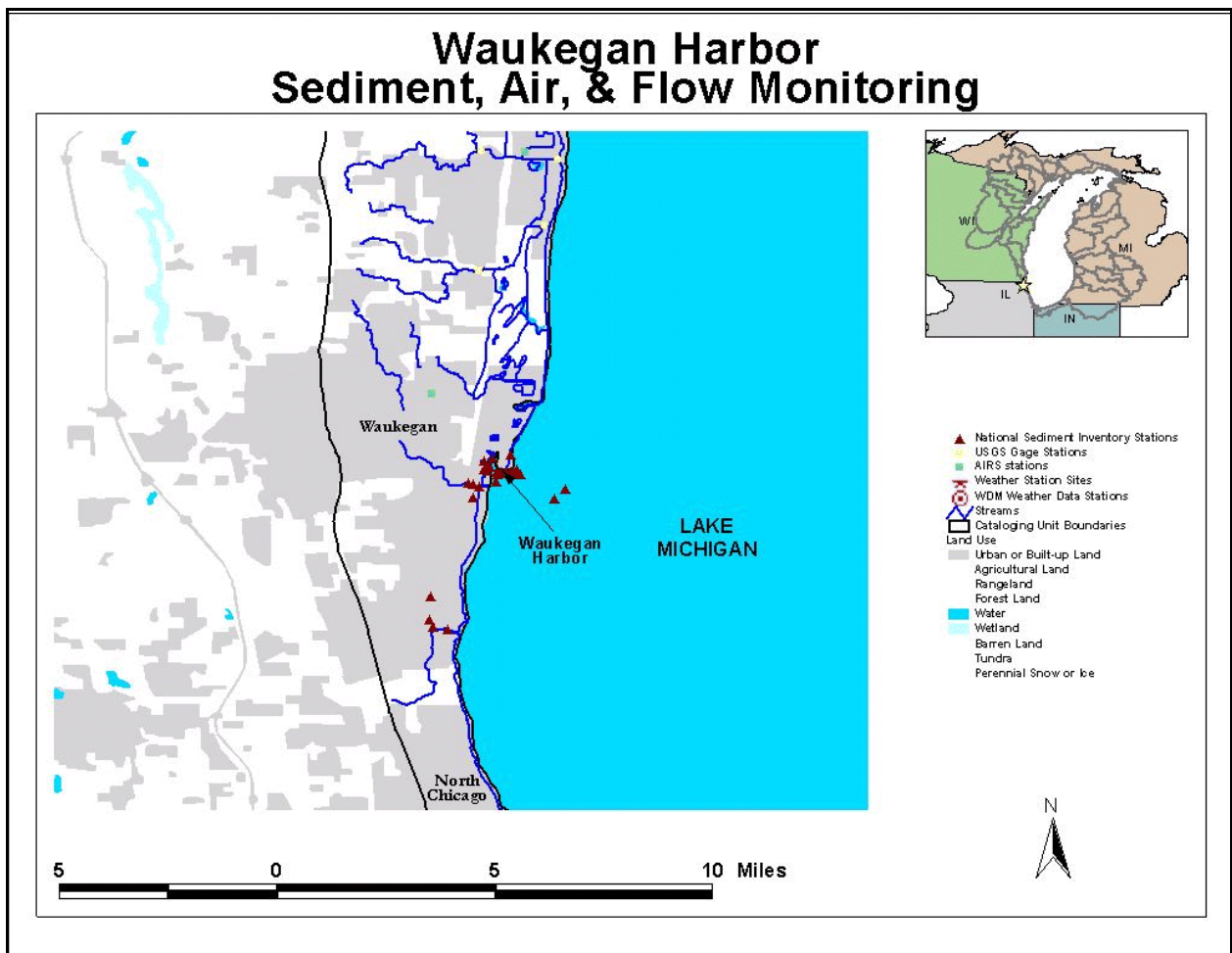


Figure 36. Waukegan Harbor AOC with National Sediment Inventory stations, USGS gage stations, U.S. EPA's Aerometric Information Retrieval System (AIRS) stations, and NOAA weather stations indicated.

more extensive. IEPA maintains 16 stations around Waukegan Harbor and along the Waukegan River that track this bacteria. In addition, the North Shore Sanitary District conducts bacteria counts at locations along Waukegan's beaches, and the Lake County Health Department monitors fecal coliform at several locations along Illinois beaches and along several unspecified rivers.

**Meteorological and Flow Monitoring**

USGS maintains a number of gage stations in the area to measure flow rates and various other physical characteristics of streams (see Figure 36). However, none of these stations are located in the AOC.

IEPA monitors numerous physical properties of Waukegan Harbor and River. Properties measured include temperature, pH, alkalinity, dissolved oxygen, biological oxygen demand, suspended solids, hardness, and conductance. The Outboard Marine Corporation, EJ&E Railway Company, and the Illinois Ecowatch Network also monitor several of these characteristics at their locations.

There are no NOAA weather stations located in the Waukegan Harbor AOC.

## **Sediments**

There are 26 National Sediment Inventory sites located around Waukegan Harbor (see Figure 36). Most of these sites are administered by the COE, but some are also administered by IEPA, and U.S. EPA. All but one of the sites monitor sediment chemistry to assess human health and aquatic life impacts. The other site monitors benthic organism tissue, discussed below.

## **Fish Contaminants, Fish Health, and Aquatic Nuisance Species**

As discussed earlier, we have been unable to find specific locational information (such as sampling locations) for programs monitoring fish populations or their health. There are statewide programs in existence, but these are discussed in the overall findings discussion. The National Sediment Inventory lists one station that monitors fish tissue for bottom contamination in Waukegan Harbor. This station is administered by U.S. EPA. Two additional agencies monitor fish characteristics in the AOC. The Illinois Natural History Survey measures abundance of near shore fishes, and the Illinois Department of Natural Resources conducts the Waukegan River Fish Inventory.

A search of the Fish and Wildlife Advisory database on Waukegan Harbor and River, but no fish consumption advisories were listed. The Stage III RAP reports that fish advisories specific to Waukegan Harbor were lifted in February 1997. Fish consumption advisories are now no different than those for Lake Michigan as a whole. (See Stage III RAP, Section 2.1.1 for more details).

No programs we discovered claimed to be monitoring for aquatic nuisance species specifically within the Waukegan Harbor AOC. Refer to the overall discussion of Lake Michigan monitoring for a discussion about programs that cover multiple tributary watersheds.

## **Benthos Monitoring**

No specific locational information was discovered for state or national programs monitoring benthic organisms. Other organizations may be monitoring benthic organisms generally in the area. These are discussed in the overall discussion of Lake Michigan monitoring. The Stage III RAP lists a number of benthic studies conducted in the AOC from between 1972 through 1996. Please refer to Section 2.1.6 of that document for more information.

## **Air Monitoring**

Figure 36 depicts the single air monitoring station located in Waukegan, according to the U.S. EPA's AIRS database. That station monitors low-level ozone for the area. In addition, the Northeast Illinois Planning Commission (NIPC) studies the potential contributions of air contaminants to water pollution in the six county area of northeastern Illinois.

## **Wildlife Monitoring**

According to our surveys, one group conducts wildlife monitoring of some form in the watershed. Bird Studies Canada tracks Marsh Bird and Amphibian Communities in the Waukegan Harbor AOC. There are other organizations monitoring wildlife species in the state. These are discussed in the overall discussion of Lake Michigan monitoring.

## Land Use

The AOC is almost entirely composed of urbanized land. Parts of Waukegan Harbor existed as wetland in the past, however these were altered to form the current configuration of the harbor. Within the AOC, the Metropolitan Water Reclamation District conducts a land-use runoff sampling program. The Lake County Storm Water Management Commission (<http://www.co.lake.il.us/smc/>) conducts the Lake Michigan Watershed Assessment of Uses And Use Impairments. The Northeastern Illinois Planning Commission (NIPC — <http://www.nipc.cog.il.us>) conducts on-going land use studies of the surrounding region. Others studying land use in the Waukegan Harbor AOC include Sanborn Map and Publishing Co., Limited, Consoer, Townsend and Associates, Inc., the North Shore Sanitary District, the Lake County Storm Water Management Commission, and NIPC.

## Local Assessment

The above referenced items have been used in developing the RAP. The Waukegan RAP, Stages 1 and 2 referenced one monitoring program that is not reported in this document. That is the North Shore Sanitary District Investigation into the Source of Elevated Coliform Bacteria Counts at Waukegan Beaches which is now monitored by the Lake County Health Department.

As an overview, the IEPA and the USEPA developed site specific monitoring/testing programs to address problems in the Waukegan Harbor and River areas. Prior to 1990 there were few monitoring programs addressing problems in the AOC. The Northeastern Illinois Planning Commission (NIPC) formerly had several water quality and stormwater management assessments and evaluations. The starting point seems to be the U.S. Environmental Protection Agency (USEPA), 1977 Guidelines for the Pollution Classification of Great Lakes Harbor Sediments, U.S. Environmental Protection Agency, Region V, Chicago, IL April 1977. However, there were few consistent monitoring programs until the Waukegan RAP was initiated.

Federal and state monitoring programs have been adequate, timely (but often delayed, usually because of funding) and accessible because of the Waukegan RAP. The Plan agreed to by the IEPA, U.S. EPA and Corps of Engineers and the Waukegan Harbor CAG identified properties to be remediated along with the Harbor, and initiated a monitoring plan to work in solving AOC problems. The RAP focused the problems, and with the tenacity of the IEPA in a partnership with the Waukegan Harbor CAG methodically planned and coordinated the monitoring requirements.

Local monitoring programs have been ongoing (Lake County Health Department), but new initiatives are needed such as consistent Waukegan River water quality monitoring and bringing adjacent properties up to code for allowable discharges.

Delays in funding the monitoring programs have stretched the time to completion of studies and programs to restore impaired uses, though they have not delayed completion of the RAP documents. This has led to a considerable degree of frustration for the CAG, and resulted in the CAG initiating political action directed to responsible county, state and federal officials.

The monitoring information for the five Impaired Uses identified in the RAP has generally been available but sometimes delayed due to funding. The CAG, because of its close working relationship with the IEPA, is able to request updated monitoring information on specific Impaired Uses and receive it in a timely manner. Also, the state provides many reference documents such as the Stage III RAP.

Some of the unmet /upcoming needs for the Waukegan Harbor and River watershed are:

- A plan for future monitoring programs for restored AOC properties and the harbor.
- Increased Harbor and River wetland monitoring and restoration.
- Non-point pollution such as the potential coming from “peaker” power plants being proposed for various locations in Lake County and west.
- The above itemized monitoring responses indicate specific and different niches occupied by the various respondents. The need exists for integration of their federal and state EPA monitoring data with those currently being obtained by private organizations and other governmental entities.
- With the planned restoration of Waukegan Harbor and properties and with the proposed restoration of the downtown area, there are emerging issues that will require change in types of monitoring. Future monitoring programs will change from being reactive to a known problem to proactive or preventive. Monitoring results are the indicators that a neighborhood is safe and a strong economic incentive for future investors and developers. There may occur a new kind of support for watershed management if, for example, a local organization such as a school or environmental group actively participates in planning future restoration and new uses such as walkways and/or bike trails for the improvement of these community resources. “Ownership” of the solution by local residents could offer the best benefits to the groups’ interests. One of the purposes of the RAP is to include these local needs.

Monitoring information can be better utilized and disseminated if the information is included in links to many websites so that groups can see timely reporting of the results of their efforts and coordinate them in order to avoid duplication.

Coordination and expansion opportunities exist with the following organizations:

- **Lake County Stormwater Management Commission** has the professional staff, computer databases including GIS for watershed planning, training, and implementation of programs.
- **Shimer College, Waukegan, IL** Don Rose, President (expressed interest in college becoming involved in monitoring programs).
- **Waukegan High School, Waukegan, IL** Rob Allen, Science Chair (expressed interest in a high school monitoring program).

### **Other Comments**

Some of the information gathered from contacts through this project are as follows.

- 1) Bird Watchers consider Waukegan Harbor one of the best areas in the state for birding.
- 2) Two birdwatch contacts listed in the database have a significant amount of bird information regarding bird sightings in the harbor including the annual “Christmas Bird Count.” Unfortunately they did not respond to the survey request.
- 3) Waukegan Harbor’s sediment test sample information is stored in the basement of the Waukegan Harbor Port Authority.
- 4) According to Lake County Wetland Inventory there are 29.5 wetland acres in the Waukegan River watershed. The net amount of floodplains, wetlands, and greenways is 599 acres according to NIPC 1990 statistics.
- 5) One of the outreaches that should be considered is a speakers’ bureau which will consist of experts who will be available to present the Waukegan Harbor Success Story to the many groups in the area which are constantly seeking speakers for their programs.