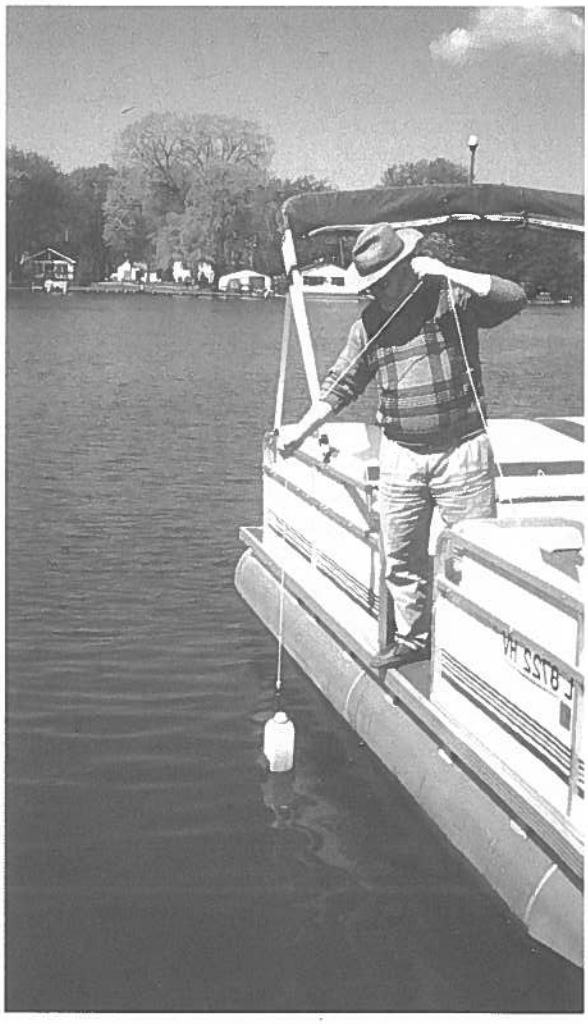
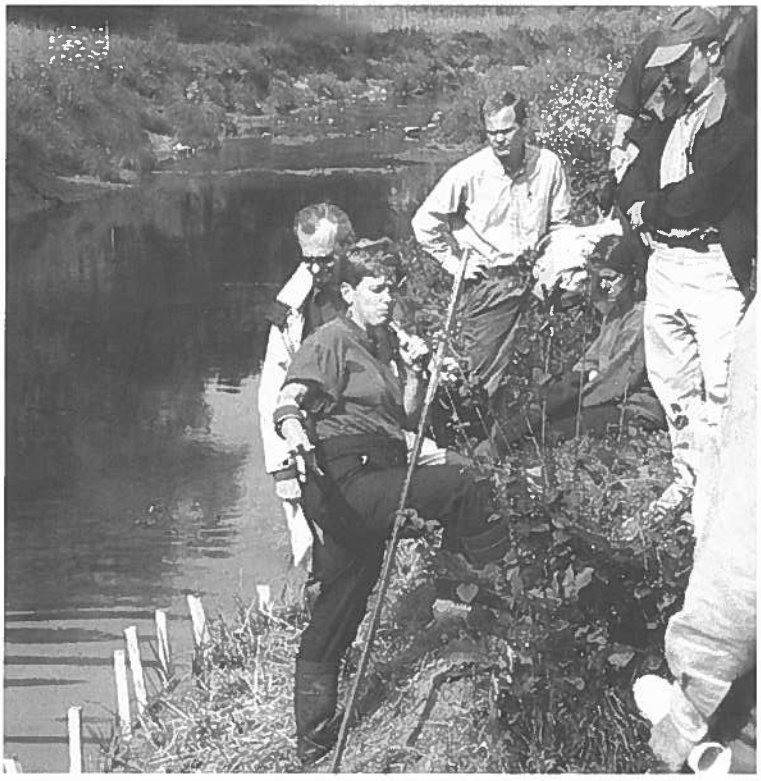
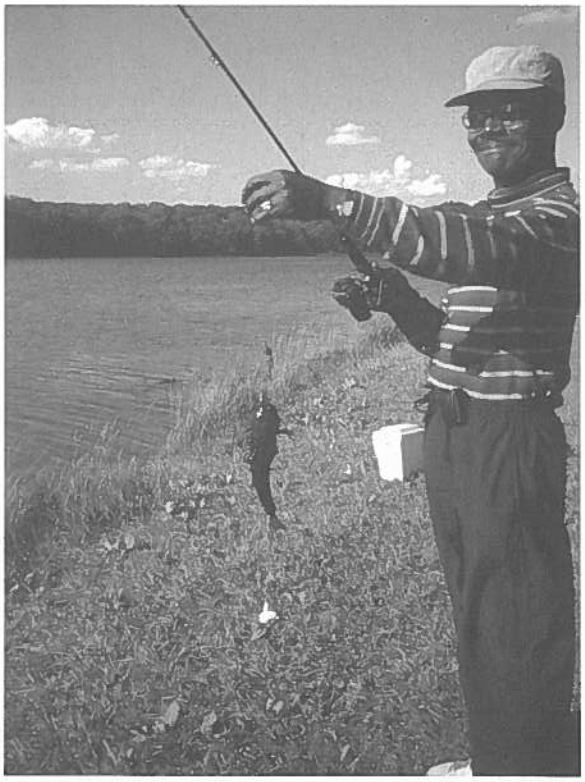


Water Quality Activities Report 2001 - 2002





northeastern illinois planning commission

HIGHLIGHTS for 2001-2002

- Adopted the region's first *Strategic Plan for Water Resource Management.*
- Continued coordinating over $4 million in nonpoint source pollution control projects and began another funding application round in the Upper Des Plaines River watershed.
- Began coordinating approximately $1.5 million in nonpoint source pollution control projects in the Salt Creek watershed.
- Coordinated the Volunteer Lake Monitoring Program for 63 lakes in northeastern Illinois.
- Began an Ambient Lake Monitoring Program at 8 lakes in northeastern Illinois.
- Completed an Illinois Clean Lakes Program Phase 2 Restoration and Protection Project at Indian Lake in the Brookfield Zoo.
- Continued an Illinois Clean Lakes Program Phase 2 Restoration and Protection Project at Lake George in the Village of Richton Park.
- Provided technical assistance to the following watersheds: Upper and Lower Des Plaines River; Fox River; DuPage River; Salt Creek; Indian Creek; Boone Creek; North Branch of the Chicago River; Butterfield Creek; Nippersink Creek; Blackberry Creek; Thorn Creek; Sequoit Creek; Poplar Creek; and the Little Calumet River.
- Continued involvement with *Upper Des Plaines River Phase 2 Study.*
- Continued development of the Kane County Advanced Identification study for wetlands and streams, including field reconnaissance.
- Completed *Lake Notes* fact sheets on "Illinois Lakeshore Birds" and "The Milfoil Weevil" and began work on "Zebra Mussels."
- Began a Chicago Wilderness funded inventory of stream restoration projects in the region to assess selection of restoration techniques, success rates, and cost effectiveness.
- Began work on a Chicago Wilderness funded project to model and map critical wetland resources in the region using existing Geographic Information Systems data to develop a wetlands conservation strategy.
- Completed a report for South Suburban Mayors and Managers Association that identifies and prioritizes areas in the Little Calumet River, Calumet-Sag, and Hickory Creek watersheds for updated floodplain mapping.
- Reviewed 19 Illinois Water Quality Management Plan amendment requests including 14 Facility Planning Area boundary changes, 1 land treatment area, and 4 plant expansions. Also reviewed 70 requests for reissue, issue, modification, or termination of NPDES permits, facility plan amendments, and map corrections.
- Held five study sessions on the facility planning area process. Topics include the cost of wastewater services, improving environmental conditions, agricultural preservation, facility planning within the context of comprehensive planning, and a summary of the water quality amendment process from 1981 to 2001.
- Participated in a statewide user group comprised of sanitary districts, wastewater agencies, environmental groups, local and regional planning agencies, and municipalities to examine the facility planning area process in Illinois.
- Provided technical support to groundwater planning and management efforts with the McHenry County Groundwater Resources Management Plan Steering Committee.
- Continued to provide outreach on techniques for protecting natural resources and biodiversity to local government officials, staff, and public.

For more information on topics discussed in this report, please contact the following individuals at NIPC (312/454-0400).

Dennis Dreher, Director of Natural Resources/Chicago Wilderness Smith Family Fellow: water quality protection, watershed management, and stream/wetland management.

Holly Hudson, Principal Environmental Planner: lake and watershed monitoring and management, and volunteer lake monitoring.

Sarah Nerenberg, Senior Water Resources Engineer: water quality, watershed, and wetland planning.

Jason Navota, Senior Environmental Planner: watershed planning and management, land use, natural resource policy and planning, and sustainable development.

Laura Barghusen, Associate Environmental Planner: geographic information systems, stream restoration inventory, and wetland identification, modeling, and mapping.

Tina Garrett, Planning Technician.

This report was produced in July 2002.

Cover photo credits: L. Clemency, U.S. Fish and Wildlife Service (top left); Dennis Dreher (bottom left); Holly Hudson (top right and bottom right).

This report was prepared using federal Water Pollution Control Act Section 205j funds from the Illinois Environmental Protection Agency. The findings and recommendations contained herein are not necessarily those of the funding agency.

northeastern illinois planning commission

How Much is Enough?

Our region is blessed by seemingly endless sources of fresh water for our personal and industrial needs. Consumptive (i.e., non-cooling) demand for fresh water in 1998 amounted to approximately 1,390 million gallons per day, and an additional demand of 194 million gallons per day is projected for 2020. Much of the region's water comes from Lake Michigan, but below ground aquifers and major rivers like the Fox are increasingly tapped for the region's water needs. However, some of these water resources are being drawn down at a rate faster than natural hydrologic processes can replenish them.

One might assume that water we use eventually makes its way back into Lake Michigan and is thus available for re-use. Yet the majority of that water is piped into sewer systems, treated at a plant, and discharged to our streams and rivers, few of which drain to Lake Michigan. Most of the water we use in our homes and businesses is routed to either the Des Plaines or Fox River system, down the Mississippi River, through the New Orleans delta, and into the Gulf of Mexico, taking an abundance of our topsoil, pesticides, and other pollutants with it. Even the majority of rainwater, which once helped recharge Lake Michigan and groundwater supplies, is collected in pipes and sent south via our surface water system.

The net export of our water resources is only one component of the water supply issue. Another facet, the focus of this report, is the quality of the water we use. Imagine a region with such attention to its land use, stormwater and wastewater management policies that the cost of treating our water supply is greatly reduced. Imagine being able, like Lewis and Clark two centuries ago, to fish and swim in our rivers and streams without fear of contamination. The Commission is committed to helping our communities realize this vision, because keeping water clean is almost always cheaper than cleaning it up later.

These regional realities and ideals hold important implications for planning to protect and ensure that our water resources, and likewise our economic viability, are sustained into the future. To help achieve a sustainable future, the Commission is involved in a number of initiatives:

- The Commission's Common Ground process is engaging the region in a discussion of issues and concerns that will ultimately lead to a new regional comprehensive plan;
- Last year the Commission adopted the *Strategic Plan for Water Resource Management* addressing the region's water quality, stormwater and flooding, and water supply issues and concerns;
- The Commission recently joined the Southeast Wisconsin Regional Planning Commission and the Northwest Indiana Regional Planning Commission in signing *The Wingspread Accord*, a multi-state agreement to cooperate in planning for the future of the tri-state region;
- The Commission will be involved in helping its constituents implement the National Pollutant Discharge Elimination System (NPDES) Phase 2 permitting program designed to improve the streams and rivers that receive our wastewater;
- Communities around Lake Michigan, including the City of Chicago, are beginning to discuss the lake and its habitats in an effort to draw greater attention to this wonderful resource.

It has been said that in the not-too-distant future nations will be at war over fresh water. Being adjacent to one of the largest bodies of fresh water in the world could put our region at a geographic focus of this potential conflict. Perhaps future events will make us think differently about the natural wealth we take for granted. Perhaps recognizing our common needs and interests will inspire us to act with a regional vision to sustain our natural capital into the future.

Ronald L. Thomas, AICP, Executive Director

NONPOINT SOURCE POLLUTION CONTROL PROJECTS

In spring of 2001, the Illinois Environmental Protection Agency (EPA) awarded the Commission funding to support over $4 million in projects within the Upper Des Plaines and Fox River watersheds. In spring 2002, the Illinois EPA agreed to support an additional $1.5 million in projects in the Salt Creek watershed. Local governments and organizations are the local project sponsors and serve as subcontractors to the Commission; they are contributing approximately 40 percent of the project costs. These projects are part of the Nonpoint Source Pollution Control Program, a component of Section 319 of the Clean Water Act. The program is intended to support three types of activities: watershed-wide nonpoint source pollution control efforts; information, education, and outreach projects; and demonstrative best management practices (BMP), research, and/or monitoring projects. The Commission serves as project coordinator and technical director for the projects highlighted below, which are or will soon be underway. The Commission is preparing another coordinated Section 319 application for the Upper Des Plaines River watershed this summer.

Upper Des Plaines River Watershed Projects

Work continues on the six projects highlighted in last year's report.

The *Liberty Prairie Sedge Meadow Recovery and Monitoring Project* in Lake County is restoring natural hydrology and reestablishing natural ecological communities as part of a larger recovery effort. Restoration of this site will help filter agricultural runoff from the surrounding landscape, and will provide valuable habitat. Vegetative transects and shallow well monitoring will help assess project success.

The *Indian Creek Watershed Restoration and Education Project* is restoring floodplain habitat and function in the high-quality Reed-Turner Woodland Illinois Nature Pre-serve in Long Grove. Public meetings, educational road signs, and a website will all assist in the effort to educate residents about nonpoint source pollution.

Indian Creek watershed boundary indicator signs.

In unincorporated Lake County, the *Maple Park Streambank Stabilization, Restoration, and Education Project* is stabilizing the streambank and upland slopes, restoring bottomland floodplain and savanna woodland, re-directing an erosion-inducing culvert, and installing educational signage along a nearby trail. The project will reduce erosion of the streambanks, as well as provide natural filtration of urban stormwater runoff.

The *Rivershire Community Pond Bank Stabilization Project* in Lincolnshire is retrofitting a detention pond to stabilize slopes, control erosion, reduce sedimentation, naturally infiltrate runoff, improve water quality, and enhance wildlife habitat.

The *Upper Des Plaines Watershed Implementation Plan (WIP) Development Project* is using a current and projected land use analysis, an inventory of natural and man-made resources within the watershed, and stakeholder input to produce a WIP for the Indian Creek subwatershed.

Fox River Watershed Projects

Work continues on the six projects highlighted in last year's report, and work began on two new projects.

The *Nippersink Creek Watershed Conservation Engineer* continues to provide direct technical assistance to landowners, local governments, and developers to ad-dress non-point source pollution throughout the water-shed. The engineer also is conducting education and outreach activities to help promote and implement projects that address agricultural and urban impacts to water quality, as well as watershed-sensitive development.

The *Lower Tyler Creek Watershed Project* in Elgin, one of the 26 restoration projects recommended in the Tyler Creek Management Plan, will stabilize a nearly vertical, 20-foot high cut in an outside streambank, thus preventing further erosion and sediment deposition. Bioengineering practices will be utilized including A-jacks, turf reinforcement mat over geoweb cells, coir fiber rolls, and stabilizing vegetation.

The *Streambank Repair and Restoration on Otter Creek Project* in St. Charles is addressing streambank erosion, providing natural grade control, removing remnant spoil piles from past dredging projects, and protecting the quality of an adjacent 40-acre wetland park. Management practices include stream channel restoration, bank stabilization, grade and flow control, establishment of a swale between the wetland and the creek, and removal of existing artificial berms.

The *Brewster Creek Stream Restoration and Dam Removal Project* is part of a larger effort to remove or modify a dam on Brewster Creek in Elgin. This grant is partially funding stabilization of the stream and banks, and enhancement and restoration of riparian wetlands. Water quality monitoring will be conducted to demonstrate the effectiveness of the stream restoration and dam removal techniques used. A video also will be developed explaining the stream restoration techniques and the resulting physical and biological enhancements.

The *West Main Street Park Bioinfiltration Parking Island* in Batavia has been installed. It is designed to filter runoff from the parking lot before being routed to the site's detention basin, which in turn discharges to Blackberry Creek. Educational signage explaining the bioinfiltration system is being developed and will be displayed at the park.

The *Kane County Fox River North Watershed Improvement Project* is utilizing bioengineering measures to stabilize streambanks along a ten-mile reach of the Fox River and several tributaries within Carpentersville, East Dundee, and West Dundee. Riparian buffer habitat also will be restored along the tributary reaches. A video will be produced explaining the restoration techniques and the resulting physical and biological enhancements.

The *Greater Raceway Woods Restoration Project* was added to this grant cycle in spring 2002. This project will restore a stream and modify the existing outlet structure of an impoundment on an unnamed tributary at the Greater Raceway Woods in Carpentersville. Streambank stabilization techniques (regrading, brush fascines, erosion control blanket, vegetation) and streambed stabilization techniques (rock riffles) will be utilized along a nearly 2,000-foot segment of the stream. The new outlet structure will allow manipulation of the rate and volume of water discharged to the creek and thereby help reduce downstream erosion.

In cooperation with the Fox River Ecosystem Partnership (FREP), the Commission began work on a *Stream Assessment Project,* which will provide important information for the preparation of a Fox River Watershed Implementation Plan (WIP). The scope of work calls for the compilation and evaluation of resource inventory data, formulation of water quality objectives, and selection and prioritization of nonpoint source control practices. To begin this process, two interns were hired to conduct stream assessment inventories during the summer of 2002. They are documenting several stream attributes including streambank and stream bed conditions (erosion, vegetation, substrate), channelization, turbidity, outfalls, and riparian land use. Following a prioritized list of streams developed by FREP's Water Quality Committee, it is hoped that more than 100 stream miles can be inventoried this summer. Blackberry, Boone, Nippersink, Poplar, and Welch Creeks are among this summer's inventory goals.

Interns surveying stream velocity on Blackberry Creek.

Salt Creek Watershed Projects

Four projects are underway.

The *Salt Creek Streambank Stabilization Project* in Elk Grove Village will stabilize streambanks and upland slopes along a 3,000-foot segment of Salt Creek. This will reduce streambank erosion and nonpoint source pollution through the installation of environmentally sound practices while protecting or enhancing habitat, ameliorating damage from peak flows, reducing velocity of peak flows, and enhancing aesthetic qualities. This project also will include extensive public education including workshops and newsletters.

The *Salt Creek Headwater Recovery Project* in Westchester, being implemented by the Save the Prairie Society, will include the restoration of streambanks, wetlands, and upland buffers along the Middle Fork of Salt Creek and Harrier Marsh. These practices will stabilize eroding streambanks, establish a vegetative riparian buffer to filter stormwater runoff entering the creek, reduce erosion, enhance infiltration, reduce runoff volume and velocity, improve water quality, and enhance aquatic habitat.

The *Spring Brook Creek Daylighting and Stabilization Project* at Spring Brook Nature Center in Itasca will implement bioengineering streambank stabilization techniques along a 1,500-foot section of Spring Brook Creek, a tributary of Salt Creek. These techniques will stabilize eroding streambanks and establish a riparian buffer of native vegetation to filter stormwater runoff entering the creek. Also, a storm sewer outfall will be repaired and stabilized and a small wetland established at the outfall to control erosion and filter stormwater before it discharges to the creek.

The *Parking Lot Runoff Pollution Prevention Project* in Brookfield will construct a vegetated swale and install a manufactured treatment system to receive and treat runoff from the municipal parking lot and the roof of the Village Hall before it discharges to Salt Creek. These practices will filter runoff to remove suspended sediment, heavy metals, oil and grease, nutrients, and volatile organic compounds.

NIPC Encourages Regional Approach to New Stormwater Permitting Program

In northeastern Illinois, as well as nationally, we have documented serious impacts of urban stormwater runoff on the water quality and ecologic integrity of streams, lakes, and wetlands. In response to these documented problems, the U.S. Environmental Protection Agency is implementing a congressionally mandated program to permit municipalities responsible for stormwater systems. The deadline for compliance with the new National Pollutant Discharge Elimination System stormwater permitting program is fast approaching.

This program will apply to nearly all municipalities and counties in northeastern Illinois, excepting a few very small communities in outlying areas. The Illinois EPA released a draft permit for *small municipal separate storm sewer systems* (MS4s) in February 2002 and anticipates adopting a final general permit this year. IEPA has indicated that it will require that communities submit notices of intent (NOIs) by March 2003. The NOIs require the identification of best management practices (BMPs) for six specified minimum control measures (see below), a timetable for implementation, and the persons responsible for implementation.

NIPC staff have been coordinating with several organizations in the six-county area to identify a possible regional approach to the new stormwater permit requirements. The agencies participating in these discussions include the DuPage County Department of Development and Environmental Concerns, Kane County Department of Environmental Management, Lake County Stormwater Management Commission, McHenry County Department of Planning and Development, Northwest Municipal Conference, West Central Municipal Conference, and Natural Resources Conservation Service (NRCS). Several points of general consensus have emerged from these conversations:

1. Stormwater pollution in the region is a serious concern.
2. A coordinated, regional approach would lead to more effective, regionally consistent solutions than simply following a state-driven program.
3. *Delegation* of appropriate permit program components to countywide stormwater management agencies would produce considerable cost savings and reduced administrative burdens for both local governments and IEPA. In Cook County, where there is no active countywide stormwater agency, NIPC could potentially assist the municipal conferences in coordinating a permit response.
4. The IEPA should provide the flexibility and, ideally, funding assistance, to enable this regional approach.

As mentioned, there are six elements, or *minimum control measures* specified in the draft state permit. A listing of these elements and possible approaches for coordination follow.

1. Public education and outreach on stormwater impacts and role of residents/landowners. More needs to be done to significantly change public awareness and behavior regarding urban stormwater pollution. NIPC and others could play a lead role in developing the message and materials, in cooperation with countywide stormwater and municipal councils of government (COGs).
2. Public involvement and participation. Permittees must incorporate opportunities for public involvement in the development of local programs. This is best handled by countywide stormwater agencies, COGs, and local governments.
3. Identification and elimination of illicit discharges to storm sewers. Learning from national experience, a model inspection/detection/elimination program could be developed at the regional and/or county level. A model ordinance for development and redevelopment also could be developed at the regional/county/COG level. Local governments would do most of the actual implementation work, with possible mapping assistance from county stormwater agencies.

Runoff from paved surfaces, such as this parking lot, contributes to nonpoint source pollution.

4. Control of construction site runoff. Nearly all local governments and the five county stormwater agencies have (or soon will) regulatory requirements for erosion and sediment control, but most do not fully meet the USEPA general permit guidance and must be strengthened. NIPC could serve as a technical resource and forum for developing regionally consistent standards. County stormwater agencies could take the lead in implementing program elements into their countywide stormwater ordinance structures. Local governments would implement the requirements and inspection/enforcement for individual developments. NRCS and county soil and water conservation districts could play an active role in providing regional/local training opportunities and assisting in site inspection and enforcement.
5. Control of stormwater runoff from new development and redevelopment. Most county stormwater agencies and nearly all local governments have some level of regulatory control of stormwater runoff rates, but most do not fully meet the USEPA general permit guidance for water quality BMPs. NIPC, in cooperation with the county stormwater agencies, could serve as a technical resource and a forum for developing regionally consistent BMP standards, and for providing regional training opportunities.

6. Reduction/prevention of pollutant runoff from local government operations. Most local governments devote some effort to minimizing stormwater pollutants through *good housekeeping* measures. However, most are not compliant with the USEPA guidelines. Learning from national experience, a model pollution prevention/ reduction program could be developed at the regional and/or county stormwater agency level. Local governments would do most of the actual implementation work.

NIPC and some of the county stormwater agencies have conveyed many of these ideas for a regional approach to Illinois EPA. If communities are interested in discussing coordination opportunities, please contact staff of NIPC's Natural Resources Department (312/454-0400) or your county stormwater planning agency. For more information about the status of the IEPA general permit for municipalities or the timetable for implementation, contact Chuck Fellman at 217/782-0610.

STRATEGIC PLAN FOR WATER RESOURCE MANAGEMENT UPDATE

In September 2001, the Commission adopted the *Strategic Plan for Water Resource Management,* intended to guide the region in responding to its interrelated water resources issues: water quality, stormwater and flooding, and water supply. In each of these areas, the plan recommends a series of strategies and identifies the entities to implement them.

This plan is the result of a three-year strategic planning process to identify issues and strategies to address the complex and often interrelated water resource issues facing our region. This process, funded by a grant from the Illinois Department of Commerce and Community Affairs, involved a wide spectrum of public and private stakeholders within and adjacent to the six-county northeastern Illinois area. The goal was to develop a regional consensus to influence state policy on behalf of the region, to improve water resource management at the regional and local level, and to enhance public understanding of water issues.

A Water Resources Advisory Committee and three task forces worked with NIPC Commissioners and staff to identify a total of 34 issues and 133 associated strategies. Recommendations include new legislation, funding for research, changes in agency practices or funding allocations, and improved public education. It is the hope that the strategies identified in this plan will help direct future regional resources towards the common goals of improved regional water management.

Implementation of the plan is heavily dependent on future funding. Next steps include determining realistic priorities based on funding, practicality, cost-effectiveness, and staff availability for implementation. Leadership from agencies and organizations identified in the plan will be essential for plan implementation.

RELATED NATURAL RESOURCE ACTIVITIES

Chicago Wilderness Stream Restoration Inventory

Chicago Wilderness is funding a project to catalog and assess stream restoration practices that have taken place in the Chicago region including stream bank stabilization, riparian buffer restoration, in-stream or habitat restoration, channel re-meandering, and dam modification and removal. This effort addresses the need to evaluate the benefits of different restoration practices being applied in the Chicago area and will help improve the effectiveness of future projects. The study emphasizes the effect of different restoration techniques on natural communities. Information for this study is being collected through a detailed survey of agencies, organizations and firms that have done stream restoration work in the region. The survey is designed to collect information on the practices that have been used, lessons learned in implementing these practices, applicability under different conditions, and cost. The resulting database will be available on-line.

Chicago Wilderness Wetland Conservation Strategy Model Development

Many high quality, restorable wetlands exist in the region, particularly in Chicago's collar counties, which are experiencing intense development pressure. Identification of critical wetland habitat can assist citizen groups and governments in considering strategies to protect isolated wetlands, which is critically important in light of the recent Supreme Court finding that isolated wetlands are not under the regulatory jurisdiction of the federal government. This project is developing geographic information models to identify important wetland habitat in the Chicago Wilderness region. The project expands on a preliminary GIS model (the Basin Marsh Model) created by the Wetlands Initiative that identifies important basin marsh resources with an emphasis on wetland habitat for threatened and endangered birds. NIPC is creating three additional models: one to identify important habitat for reptiles and amphibians; another to identify wetlands associated with threatened and endangered plant communities; and a third to identify areas with high wetland restoration potential. Integrating the information

from each model will allow the development of a region-wide wetland conservation strategy that addresses the habitat requirements of many different species of concern. Strategies may include acquisition, restoration, and management.

Conservation Design Model Ordinance

The Commission recently received a grant from Chicago Wilderness to create a model ordinance to guide communities in protecting natural resources in new and existing developments. Recommended techniques may include buffers for wetlands and streams, minimizing impervious surfaces, and clustering home sites. This model ordinance will provide municipalities with language to incorporate or allow conservation design elements in current subdivision and zoning codes, which will ultimately lead to improved water quality on and off-site. Currently, many municipalities' zoning codes do not allow developers to use conservation design elements. Some examples include curb and gutter drainage requirements instead of natural swales, minimum setback requirements, minimum lot sizes that prohibit clustering, excessive road width requirements, and "weed ordinances" prohibiting natural landscaping. The Commission is working on this project with a Technical Advisory Committee of regional experts on various aspects of the development process.

Kane County Advanced Identification of Wetlands Study (ADID)

This study will inventory the location and quality of wetlands in Kane County and develop protection and management strategies for these sites. Advisory committees composed of numerous local organizations and experts are guiding the process. To begin wetland evaluation, a preliminary GIS map of wetlands was created. The selection process involved overlaying the GIS map on aerial photographs and scoring wetlands on a variety of habitat characteristics interpreted from the photograph. Approximately 350 wetland sites were selected for field evaluation beginning in spring 2002, to be followed by evaluation of wetlands for water quality and stormwater control functions. The purpose of this effort is to help landowners, developers, and local governments make informed decisions about development and preservation, and to provide guidance on strategies for long-term protection and management of aquatic resources. The study also can help protect high quality resources or restore sites that have been degraded. The inventory and evaluations are scheduled to be completed by fall 2003, and the final report, including maps, will follow.

A typical ADID wetland in Kane County.

The Northeastern Illinois Water Trails Plan

The Regional Water Trail Council, convened and facilitated by NIPC, Openlands Project, the Illinois Paddling Council, the National Park Service and the Illinois Department of Natural Resources, is actively promoting awareness, coordination, and development of water trails designated in the Commission's adopted Northeastern Illinois Water Trails Plan. The Commission is represented on the steering committee of the Regional Council, which meets bimonthly to provide a forum for water trail committees and to plan trail implementation and related activities. This spring, the Council held a water trails celebration in conjunction with the region's major water trail events and stewardship activities. The Council also has developed a water trail website to help promote the trails and provide users with information. (www.openlands.org/watertrails.asp).

WATERSHED PLANNING AND MANAGEMENT

Ongoing Watershed-based Technical Assistance

The Commission continues to provide technical assistance to communities and organizations to assist them in watershed-based efforts. The Natural Resources Department has provided assistance to the following watersheds and groups: Upper and Lower Des Plaines River (Ecosystem Partnerships); Fox River (Ecosystem Partnership); DuPage River (Ecosystem Partnership); Salt Creek (Forest Preserve District of DuPage County and the Salt Creek Watershed Network); Indian Creek (Indian Creek Watershed Project); North Branch of the Chicago River (Friends of the Chicago River and Lake County Stormwater Management Commission); Butterfield Creek (Butterfield Creek Steering Committee); Nippersink Creek (The Nature Conservancy); Blackberry Creek (Illinois Department of Natural Resources and The Conservation Foundation); Sequoit Creek (Lake County Stormwater Management Commission); Little Calumet River watershed (NRCS lead Little Calumet River Watershed Planning Committee); and the South Suburban Mayors and Managers Association. Other watershed entities have received support in a less formal, ad hoc basis.

The Commission also has begun filling a niche that has been largely vacant in the region: providing watershed maps to watershed groups. Access to maps showing information such as land use and locations of streams, ponds and lakes helps facilitate watershed planning efforts.

Upper Des Plaines Phase 2

NIPC continues to coordinate the Upper Des Plaines River Advisory Committee and provide technical expertise to various subcommittees of the *Upper Des Plaines River Phase 2* study. This study is addressing flood damage reduction, environmental restoration and protection, water quality, and recreation on the Upper Des Plaines River and its tributaries.

Salt Creek Greenway Master Plan

The Forest Preserve District of DuPage County endorsed the *Salt Creek Greenway Master Plan* in May of 2002. The Commission, the County of DuPage, and Openlands Project created this plan for the Forest Preserve District of DuPage County. Progress in implementing the plan's recommendations continues. Completion of the plan and map is expected by December of 2002.

LAKE MONITORING AND MANAGEMENT

Volunteer Lake Monitoring Program

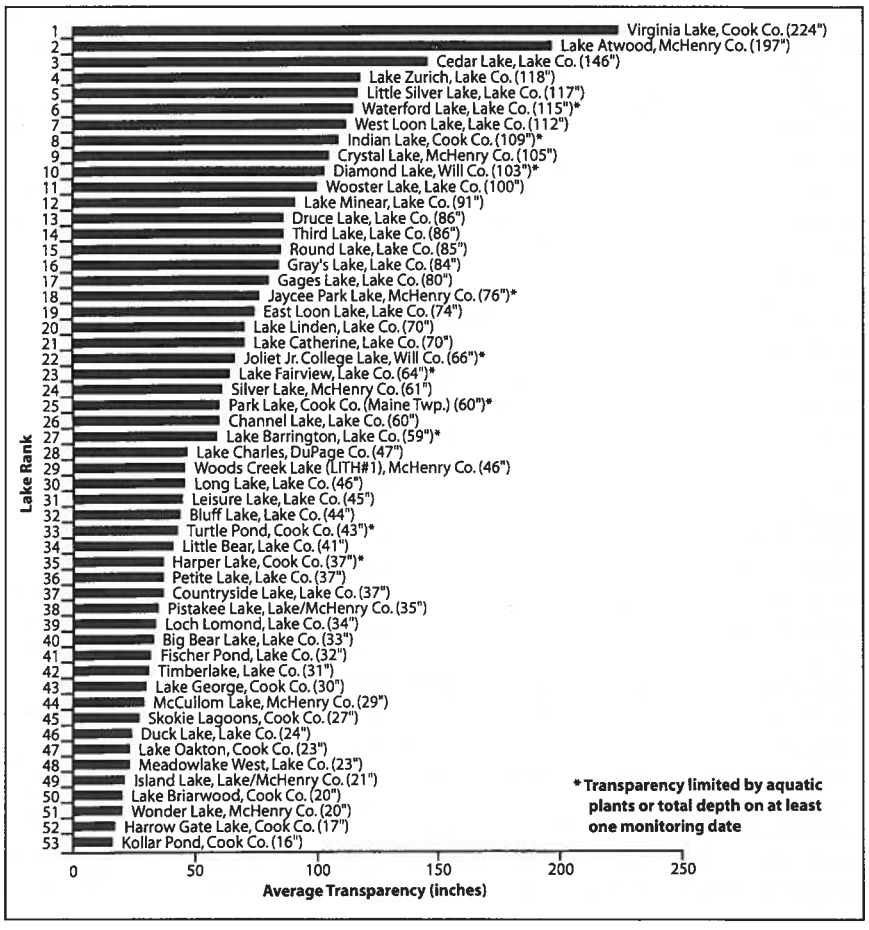
The year 2001 marked the twenty-first season of Illinois' Volunteer Lake Monitoring Program (VLMP). Initiated by Illinois EPA in 1981, this popular program brings together citizens, state agency staff, and regional planning commissions to monitor and investigate the quality of Illinois lakes. NIPC serves as program coordinator for the six-county northeastern Illinois region. Staff provides volunteer training, technical assistance, educational materials, data management, fact sheet development, and assistance with annual report preparation. Of the 112 lakes monitored statewide at least four times during 2001, 53 were in northeastern Illinois involving 115 volunteers.

Volunteers measure water clarity (transparency) in a lake of their choosing using a Secchi disk (an 8-inch diameter plate painted black and white in opposite quadrants, attached to a calibrated rope). Volunteers lower the disk into the water and record the depth to which it is visible. Monitoring is typically done twice a month from May through October at three locations in the lake. The Secchi measurements are used to document changes in water transparency during the monitoring season as well as from year to year. In addition to Secchi disk monitoring, a subset of volunteers collect water samples that are analyzed at an Illinois EPA laboratory.

Volunteers use VLMP data to learn about lake ecology and cause-and-effect relationships, and to assist in local lake and watershed management decision-making. Lake scientists, planners, and consultants also use the data. The Illinois EPA uses VLMP data in its biennial assessment of state waters as required by the federal Clean Water Act.

The accompanying figure presents average annual Secchi disk transparency values for northeastern Illinois lakes participating in the 2001 VLMP. For the fourth consecutive year, Virginia Lake in Cook County exhibited the greatest average transparency with an extraordinary 224 inches. Also impressive were Lake Atwood in McHenry County with an average water clarity of 197 inches and Cedar Lake in Lake County at 146 inches. Other lakes with average transparency of 100 inches or more were Lake Zurich and Little Silver, Waterford, West Loon, and Wooster Lakes in Lake County; Indian Lake in Cook County; Crystal Lake in McHenry County; and Diamond Lake in Will County. On the other end of the spectrum,

Northeastern Illinois 2001 VLMP Lake Rankings
(lakes monitored four or more times)



several lakes displayed low average transparency values of less than 24 inches, generally due to high levels of suspended sediment and/or algae. More information on the VLMP, as well as copies of the annual reports, is available from the Natural Resources Department.

Ambient Lake Monitoring Program

NIPC entered into an agreement with Illinois EPA in April 2002 to conduct Ambient Lake Monitoring Program (ALMP) work at eight lakes within the northeastern Illinois region. The lakes are Long and Round Lakes in Lake County; Deep Quarry and Mallard Lakes in DuPage County; and Bullfrog, Horsetail, Turtlehead, and Wampum Lakes in Cook County. Each lake was monitored in May and June, and each will be monitored monthly during July, August, and October 2002. Water samples and in-lake measurements are collected (including Secchi transparency and dissolved oxygen/temperature profiles) during each visit at two to three sites in each lake. Sediment samples will be collected at each lake in late summer. Aquatic plant community assessments will be done as time allows. The data will assist Illinois EPA in assessing lake conditions and in meeting Clean Water Act Section 314 reporting requirements.

Lake Rehabilitation and Protection

Indian Lake Rehabilitation Project Completed

Located in the Brookfield Zoo, Indian Lake has been the subject of an exciting Illinois Clean Lakes Program Phase 2 Restoration and Protection Program project. Completed in December 2001 (and ongoing since early 1998), the purpose of the project has been to protect and enhance the lake's environmental quality and cultural uses including aesthetics, wildlife observation, and public education opportunities. The Commission served as technical project advisor to the Brookfield Zoo, while Illinois EPA provided grant administration and laboratory analysis services.

Historically, Indian Lake had been plagued by algae, unpleasant odors, and fish kills. An Illinois Clean Lakes Program Phase 1 study (1995-97) identified high levels of plant nutrients and low levels of dissolved oxygen as primary causes for the degraded condition.

To correct these problems, a multi-faceted rehabilitation program was undertaken. In fall 1998, an aeration system was installed to circulate the lake water, raise oxygen levels, and reduce nutrient release from lake bottom sediments. Then aluminum sulfate was applied to remove phosphorus from the water and prevent release of phosphorus from the lakebed sediments. The combined application of these techniques is believed to be the first of its kind in northeastern Illinois. In spring 1999, another project focused on clearing the shoreline of invasive vegetation (primarily European buckthorn) and planting emergent wetland plants along the lakeshore to prevent erosion and provide additional habitat. Floating-leaved and submergent aquatic plant species also were introduced in shallow water areas. In order to provide even more habitat diversity, a shallow water wetland was constructed adjoining the lake and planted with wetland vegetation.

The impacts of these projects on the lake were impressive. Average water clarity increased from four feet to over eight feet, and dissolved oxygen concentrations were maintained throughout the water column at levels adequate to support fish and other aquatic life and to retard phosphorus release from the sediments. The improved water clarity and dissolved oxygen levels not only helped to directly improve habitat conditions for fish and other aquatic life, but also fostered an increase in the extent and variety of underwater aquatic plants (which in turn provide habitat and food for aquatic organisms). Furthermore, clear water and improved aesthetic qualities have been welcomed by Zoo visitors.

Maintenance of Indian Lake quality will require ongoing monitoring and remedial action. Zoo staff continue to monitor Indian Lake water chemistry and dissolved oxygen levels, and manage invasive shoreline vegetation. Commission staff will continue to be available to provide technical assistance and advice.

Maple Lake Study Finalized

A comprehensive Lake Rehabilitation and Protection Plan was completed for Maple Lake during 2001. Commission staff served as principal investigator and technical advisor to the Forest Preserve District of Cook County for this Illinois Clean Lakes Program Phase 1 Diagnostic/ Feasibility Study, which began in spring 1997. The Plan outlines strategies for diversifying native aquatic plant communities, controlling shoreline erosion, managing the lake's fishery, and implementing education programs to enhance public knowledge of lake ecosystems. In spring 2002, the Commission assisted the Forest Preserve District in preparing an application for a Phase 2 cost-share grant from the Illinois EPA Clean Lakes Program to implement the rehabilitation and protection plan.

Lake George Rehabilitation Project Nears End

Ongoing since 1997, the Lake George Restoration and Protection Program is nearing completion. The Village of Richton Park has been implementing this Illinois Clean Lakes Program Phase 2 cost-share grant from the Illinois EPA with technical project coordination provided by the Commission. The purposes of the Phase 2 program include improving lake water quality, aquatic habitat, and recreational uses, and providing for its long-term ecological health. As reported in past Water Quality Activities reports, several initiatives have been conducted including streambank and shoreline stabilization, fisheries rehabilitation, removal of nearshore accumulated sediments, waterfowl management, aquatic plant community reestablishment, and stormsewer system cleaning and repair. The post-project monitoring phase was completed this year to document water quality and aquatic habitat impacts. Data will be compiled, analyzed, and compared to pre-project (1993-94) data. A final Phase 2 report is due in December 2002.

WASTEWATER QUALITY MANAGEMENT

The Future of Wastewater Facility Planning

Over the next year, the Commission's Water Resources Committee will continue to examine and consider changes to the Water Quality Management Plan Amendment Process and Procedures, which were updated in June of 1996. The committee will build on the work done and information gathered over the past year to ensure that the current facility planning amendment process meets its goals. We also intend to review the structure of our fee legislation. As with all Commission activities, we will seek a wide range of viewpoints in this process.

Wastewater Planning Amendment Recommendations

Under a contract with the Illinois EPA, the Commission reviews requested amendments to wastewater Facility Planning Areas (FPAs). A summary of this fiscal year's review actions involving FPA boundary changes and new or expanded treatment facilities is presented below.

Water Quality Management Plan Amendments

WQ#	Applicant	Request	Recommendation
01-WQ-019	Village of Lincolnshire	FPA Amendment—215 Acres	Support
01-WQ-022	Village of Lindenhurst	FPA Amendment—4.89 Acres	Support
01-WQ-024	City of Joliet	FPA Amendment—77.92 Acres	Support
01-WQ-029	Village of Minooka	FPA Amendment—131 Acres	Support
01-WQ-030	Village of Frankfort	FPA Amendment—14 Acres	Support
01-WQ-030	Village of Mokena	FPA Amendment—99 Acres	Support
01-WQ-040	Village of Elburn	FPA Amendment—Level I; 530 Acres	Support
01-WQ-042	Village of Manhattan	Plant Expansion	Support
01-WQ-046	Village of Carol Stream	Plant Expansion	Support
01-WQ-049	Village of Gurnee	FPA Amendment—30.94 Acres	Support
01-WQ-051	City of Elgin	FPA Amendment—608 Acres	Support
01-WQ-079	Village of Matteson	FPA Amendment—79 Acres	Support
02-WQ-009	Village of Wauconda	FPA Amendment—46 Acres	Support
02-WQ-013	Lake County DPW	Plant Expansion	Support
02-WQ-018	City of Lockport	FPA Amendment—80 Acres	Support
02-WQ-026	Village of Wauconda	FPA Amendment—912 Acres Plant Expansion	Support
02-WQ-027	Village of Woodridge	FPA Amendment—52 Acres	Support
02-WQ-029	Toll IL HWCC, LP	Land Treatment Area—1,900 Acres	Non-support
02-WQ-036	City of Elgin	FPA Amendment—120 Acres	Non-support

northeastern illinois planning commission

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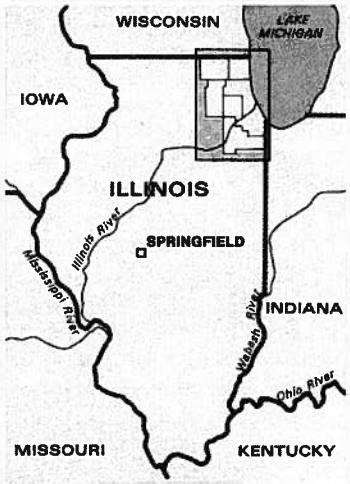

Northeastern Illinois is diverse in its land use and complex in its political structure. It has some of the most productive farms on earth-also one of the world's greatest cities. It contains 3,714 square miles of land and 38 square miles of water. It is home to 8.1 million people representing 65 percent of the total population of Illinois, and it is organized in more than 1,250 units of government.

In 1957, following a decade of rapid urbanization in the Chicago suburban area, the Illinois General Assembly created the Northeastern Illinois Planning Commission (NIPC) to conduct comprehensive planning for the six-county greater Chicago region.

The Commission has three statutory charges: conduct research and collect data for planning; assist local government; and prepare comprehendsive plans and policies to guide development of the counties of Cook, DuPage, Kane, Lake, McHenry, and Will.

By necessity, regional planning deals with general development policies, not local land use detail. NIPC supports and coordinates county and municipal planning. The Commission has advisory powers only and relies upon voluntary compliance with its plans and policies.

12/2002

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