



Water Quality Activities Report 2002 - 2003



HIGHLIGHTS for 2002-2003

- ◆ Coordinated nine regional planning councils from four states, the U.S.EPA Great Lakes National Program Office, and Western Michigan University to convene the Lake Michigan Academy Leadership Training Workshop in Kalamazoo, Michigan.
- ◆ Continued coordinating over \$600,000 in the Upper Des Plaines River watershed, \$1.5 million in the Salt Creek watershed, and \$4 million in the Fox River watershed to control non point source pollution.
- ◆ Began developing an Educational Work Strategy to inform municipalities, residents, and businesses within the Salt Creek watershed about non-point source pollution and reduction practices.
- ◆ Provided technical assistance to numerous watersheds including: 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.
- ◆ In cooperation with Openlands Project and DuPage County, completed and printed the Salt Creek Greenway Master Plan for the Forest Preserve District of DuPage County.
- ◆ Coordinated the Volunteer Lake Monitoring Program for 73 lakes in northeastern Illinois.
- ◆ Completed an Ambient Lake Monitoring Program at 8 lakes in northeastern Illinois.
- ◆ Continued an Illinois Clean Lakes Program Phase 2 Restoration and Protection Project at Lake George in the Village of Richton Park.
- ◆ Began an Illinois Clean Lakes Program Phase 2 Rehabilitation and Protection Project at the Forest Preserve District of Cook County's Maple Lake.
- ◆ Continued involvement with the *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 sheet on "Zebra Mussels" and drafts of "Artificial Fish Structures," "Shoreland Habitat," "Designing a More Natural Shoreline," "Bathing Beach Design and Operation," and "Waterborne Pathogens."
- ◆ Continued a Chicago Wilderness funded inventory of stream restoration projects to assess restoration techniques, success rates, and cost effectiveness.
- ◆ Began a Chicago Wilderness funded project to develop a wetlands conservation strategy by modeling and mapping critical wetland resources using geographic information systems.
- ◆ Reviewed 36 Illinois Water Quality Management Plan amendment requests including Facility Planning Area boundary changes, land treatment areas, and plant expansions.
- ◆ 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 the public.
- ◆ Produced the *Conservation Design Resource Manual* for municipal audiences.
- ◆ Coordinated the Small Site Stormwater Best Management Practice workshops in the Butterfield Creek Watershed.

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

Sarah Nerenberg, Director of Natural Resources Department: water quality, watershed, and water supply planning and conservation design.

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

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Cover photos and credits (clockwise from upper left): Great Egret (Louise Clemency, US Fish and Wildlife Service), Southern Redbelly Dace (IDNR), Wood Duck, Green Frog (The Nature Conservancy), Rainbow Darter (IDNR), River Otter (McHenry County Conservation District).

THE VALUE OF WATERSHED PLANNING AND MANAGEMENT

There was a time when rivers burned. In 1969, for example, oils and debris in the Cuyahoga River in northeastern Ohio caught fire and national attention. Three years later, in response to public outcry, Congress passed the Clean Water Act *to restore and maintain the chemical, physical, and biological integrity of the nation's waters*. Since then, the quality of many of our water bodies has improved, largely due to better municipal and industrial wastewater treatment methods mandated by the act. These types of wastewater discharges, where the point of input to the receiving water body can be specifically located and traced back to its origin, are known as *point sources*, and improving them has proven to be the easy part of the water pollution problem.

Another source of water contamination—non-point source pollution—has proven much more difficult to locate, let alone control. Nonpoint source (NPS) pollution, unlike pollution from industrial and municipal treatment plants, comes from many diffuse sources across the landscape. NPS pollution is caused by rainfall or snowmelt moving over and through the ground, picking up and carrying natural and human-made pollutants, and depositing them into lakes, rivers, wetlands and even underground sources of drinking water. NPS pollutants include, but are not limited to, fertilizers, pesticides, oils, grease and other materials resulting from a wide variety of human activities on the land. Each of us contributes to the problem without even realizing it.

How does one reduce pollution that comes from everywhere *without* regulating everything and everyone? The answer lies in watershed management. The watershed, all of the land area that drains to a single body of water, has become the management unit of choice for many water resource issues. With a watershed approach, water quality impairments that are found inside specific watershed boundaries can be confidently linked to sources within that watershed. Communities can then work collaboratively to identify and manage sources of pollutants before government regulations force remedial action. For example, if high nutrient levels are impairing stream health then watershed managers can look within the watershed boundaries for the source of those nutrients, possibly excessive lawn fertilization or failing septic systems, and implement educational or other programs to help responsible parties correct the problem. Watershed planning, a complimentary process to watershed management, is the assessment of watershed conditions and the development of a future course of action that will protect the resources and water quality within the watershed boundaries. These approaches hold high potential for improving our region's water resources.

The United States and Illinois Environmental Protection Agencies recognize the benefit and potential of watershed planning and management to help meet the mandate of the Clean Water Act. To that end, new guidelines for watershed-based planning have been issued that will help improve water quality and help organizations meet agency requirements. By following these guidelines there will be greater opportunities for funding to improve water resources. These new guidelines are described in this report.

The Commission has been working with state and local partners to implement watershed planning and management activities within northeastern Illinois. Commission staff provides watershed technical assistance, including GIS and mapping services, to local watershed organizations and ecosystem partnerships to assure that plans and projects meet high quality standards and are adequate to achieve the intended result. We work to secure state and federal funding for local organizations to improve water resources through projects such as streambank stabilization, stream and wetland creation and restoration, and stormwater best management practice retrofit and installation. We also are working to implement the Commission-adopted *Strategic Plan for Water Resource Management* to help manage and enhance the region's water quality, water supply, and stormwater management practices.

The Chicago Wilderness *Biodiversity Recovery Plan* invites us to *imagine a region where children splash and play in clean creeks, and peer below the surface of the water at fish and other aquatic creatures*. The Commission is dedicated to working with our partners across the region to realize this vision.

Ronald L. Thomas, AICP, Executive Director



WATERSHED PLANNING

Northeastern Illinois has embraced watershed planning as an effective means of protecting and enhancing water quality. Successful watershed plans broadly engage local stakeholders and identify comprehensive solutions to water resource issues. Good plans also are an effective means to secure funding for watershed projects. (See article on ongoing nonpoint source pollution control projects.)

Watershed planning initiatives to address water quality issues is ongoing in nearly every corner of the region (see accompanying table.) In most of these locations, watershed planners have adopted a consistent planning methodology in which most or all of the following steps were followed:

1. Identify stakeholders.
2. Establish goals and objectives.
3. Inventory watershed resources and conditions.
4. Assess waterbody and watershed problems.
5. Recommend management practices for prevention and remediation.
6. Develop an effective action plan.
7. Implement plan and monitor success.

Though significant progress has been made in the region, the U.S. Environmental Protection Agency (EPA) is enacting new requirements to ensure that federally funded projects are effective in restoring waters impaired by nonpoint source pollution. New guidelines require implementers to quantify identified problems, measure success, and monitor plan implementation. New guidelines also call for watershed planning at a smaller scale, because water quality improvements resulting from remediation and restoration projects are more quantifiable in smaller watersheds (e.g., 10-20 square miles) than in larger watersheds.

New U.S. EPA guidance was developed specifically for watershed entities interested in securing Section 319 funding to help implement watershed plans. The guidance can be found in the *Supplemental Guidelines for the Award of Section 319 Nonpoint Source Grants to States and Territories in FY 2003* (www.epa.gov/owow/nps/Section319/319guide03.html.)

Plans following new guidelines will be called *watershed-based plans* (WBPs). The new plans, while they should generally follow the seven-step process described above, must include the nine elements listed below.

1. Identification of causes and sources or groups of similar sources of pollution that will need to be controlled to achieve pollutant load reductions estimated in this watershed-based plan.
2. Estimate of pollutant load reductions expected following implementation of management measures described under number 3 below.
3. Description of nonpoint source management measures that will need to be implemented to achieve load reductions estimated under number 2 above and identification (using a map or a description) of critical areas in which those measures will be needed to implement this plan.

4. Estimate of amounts of technical and financial assistance needed, associated costs, and/or sources and authorities that will be relied upon, to implement this plan.
5. Public information/education component designed to change behavior.
6. Plan implementation schedule.
7. Description of interim, measurable milestones.
8. Set of criteria that can be used to determine whether pollutant loading reductions are being achieved over time.
9. Monitoring component to evaluate the effectiveness of the implementation efforts over time.

Many existing watershed plans conform to previous U.S. EPA or Illinois EPA guidance or other state or federal agency guidance. The challenge now is to determine how to update and expand these plans to meet new guidelines. To this end, NIPC intends to work closely with Illinois EPA to develop new state guidelines that conform to the U.S. EPA guidelines. We also are contacting the many watershed planning entities in the region to determine needs for upgrading existing plans.

Watershed and Natural Resource Technical Assistance Available

Commission staff continues to offer technical assistance on various water and natural resource topics to local governments and related organizations. Common topics include watershed planning, stormwater management, flood mitigation, sustainable development, and stream, lake, and wetland protection.

Assistance is available in a number of ways:

- Publications such as brochures, guidebooks, model ordinances, and videos.
- Presentations to elected officials, staff, professional associations, and watershed groups.
- Hands-on technical assistance for specific local issues or development concerns.
- Mapping and GIS assistance such as developing maps of natural resource information.
- Participation on advisory committees such as watershed groups.
- Assistance by telephone.

We have been expanding our outreach and technical assistance capacity due to the generous support of several agencies whose funds extend our capabilities: Chicago Wilderness coalition, with funding from the U.S. Fish and Wildlife Service and U.S. Forest Service; Ecosystem Partnerships program, with funding from the Illinois DNR C2000 Program; watershed planning technical assistance with funding from Illinois EPA through Section 319 of the Clean Water Act; and U.S. EPA Region 5, Water Division

Contact the Natural Resources Department at 312.454.0400 to discuss assistance needs.

What makes a successful watershed plan?

Conventional guidance for developing watershed plans (described above) identifies important principles and steps for developing a plan. In addition, certain unstated elements often determine whether a planning process will be successful. Success in this context is measured by the ability of the plan to change behavior in the watershed and, ultimately, to protect and improve water resources through best management practice (BMP) implementation.

Top-down vs. Bottom-up Planning. One of the most important elements of a successful watershed planning process is the level of involvement and commitment of key individuals, or stakeholders, that reside or work in the watershed. In practice, some watershed processes are facilitated by outside agencies or organizations, a “top-down” approach. Experience suggests that this process may not produce a successful, *implementable* plan unless the outside agencies are able to actively engage local stakeholders and get “buy-in” to the plan goals and recommendations.

In contrast, a “bottom-up” or community-based plan process depends on interest and support originating among local landowners and local government officials. Local entities drive the process and bring in outside resource agencies for technical, coordination, and funding support. Early and ongoing involvement of local community members creates plans that are more likely to be implemented.

Planning Leadership. Another essential element of successful plans is strong leadership, particularly at the community level. In some cases, one or two key individuals can convey enthusiasm and knowledge to potential stakeholders and outside agencies. Continuity in leadership also is critical because planning and implementation can take many years. Without consistent internal support, the planning processes can lose momentum.

Watersheds with Planning Activity and Lead Entity

*North Branch Chicago River (Cook and Lake) — Friends of the Chicago River and Lake County Stormwater Management Commission
*Upper Des Plaines River (Lake, Cook, and DuPage) — Upper Des Plaines River Ecosystem Partnership
<i>*Indian Creek</i> (Lake) — Indian Creek Watershed Project
<i>Bull Creek</i> (Lake) — Lake County Stormwater Management Commission
<i>Mill Creek</i> (Lake) — Lake County Stormwater Management Commission
<i>Newport Drainage Ditch</i> — Lake County Stormwater Management Commission
*Lower Des Plaines River (Cook and Will) — Lower Des Plaines River Ecosystem Partnership
<i>Long Run Creek</i> (Cook and Will) — Long Run Creek Watershed Planning Committee
<i>Grant Creek</i> (Will) — Openlands Project and Midewin National Tallgrass Prairie
<i>Jackson Creek</i> (Will) — Openlands Project and Midewin National Tallgrass Prairie
<i>*Salt Creek</i> (Cook and DuPage) — Salt Creek Watershed Network and Forest Preserve District of DuPage County
*Upper DuPage River (DuPage and Will) — Ecosystem Partnership, DuPage River Coalition, and The Conservation Foundation
*Lower DuPage River (Will and Cook) — Ecosystem Partnership and The Conservation Foundation
*Fox River (Lake, McHenry, Kane, and Kendall) — Fox River Ecosystem Partnership
<i>*Nippersink Creek</i> (McHenry) — Nippersink Creek Watershed Planning Committee and The Nature Conservancy
<i>*Boone Creek</i> (McHenry) — Boone Creek Watershed Alliance
<i>Fish Lake Drain</i> (Lake) — Lake County Stormwater Management Commission
<i>Squaw Creek</i> (including Eagle Creek and Round Lake Drain)(Lake) — Lake County Stormwater Management Commission
<i>*Sequoit Creek</i> (Lake) — Lake County Stormwater Management Commission
<i>Mutton Creek</i> (Lake) — Lake County Stormwater Management Commission
<i>Flint Creek</i> (Lake) — Flint Creek Watershed Committee
<i>Tyler Creek</i> (Kane) — Fox Valley Land Foundation and Openlands Project
<i>*Poplar Creek</i> (Cook and Kane) — Poplar Creek Watershed Planning Committee
<i>*Waubansee Creek</i> (DuPage, Kane, and Kendall) — Waubansee Creek Watershed Planning Committee
<i>Ferson Creek</i> (Kane) — Natural Resource Conservation Service
<i>*Blackberry Creek</i> (Kane and Kendall) — Blackberry Creek Watershed Committee, Illinois DNR, and The Conservation Foundation
<i>Big Rock Creek</i> (DeKalb, Kane, and Kendall) — The Conservation Foundation
Kishwaukee River (McHenry, Boone, DeKalb, and Kane) — Kishwaukee River Ecosystem Partnership and Openlands Project
<i>*Thorn Creek</i> (Cook and Will) — Thorn Creek Ecosystem Partnership
<i>*Butterfield Creek</i> (Cook) — Butterfield Creek Steering Committee
Kankakee River (Will) — Alliance to Restore the Kankakee
<i>Prairie Creek</i> (Will) — Prairie Creek Preservation Group
*Lake Michigan (Lake) — Lake County Stormwater Management Commission
<i>Dead River</i> (Bull Creek)(Lake) — Lake County Stormwater Management Commission
<i>Kellogg Creek</i> (Lake) — Lake County Stormwater Management Commission
*Calumet River (tri-state) — NRCS and Little Calumet River Planning Committee
<i>*Lake Calumet</i> (Cook) — Lake Calumet Ecosystem Partnership

Major watersheds in bold, subwatersheds in italics. * Denotes watersheds assisted by NIPC technical assistance.

Boone Creek: A Case Study

Boone Creek, a small watershed (23 square miles) tributary to the Fox River in McHenry County, currently experiences relatively minor problems. Water quality is good, flood damage is minimal, and groundwater supplies are abundant and relatively clean. Inventories verified that the watershed has an amazing collection of state-designated natural areas and a hydrogeologic regime that produces consistent, cool baseflows year round. Upland and aquatic habitats support a unique diversity of plant and animal life, including several threatened and endangered species.

However, significant new development was moving into the watershed and invasive plant species were beginning to seriously degrade sensitive natural areas. The Boone Creek Watershed Alliance, a small group of watershed landowners and local agency representatives, realized that without planning and intervention, this valued resource could be lost.

After initial discussions with the Commission and several local government leaders and resource organizations, the Alliance endorsed a watershed planning process in early 2002. In one year, with valuable contributions from key resource agencies and non-governmental organizations and seed money from the Illinois EPA, a watershed plan was completed.

The success of this planning process can be linked directly to the "bottom-up" approach that was initiated by the Alliance and other stakeholders and to key local leaders who spearheaded the planning process and helped ensure participation of critical local stakeholders, namely, local elected officials and watershed landowners. Key individuals from the Alliance and the Illinois Department of Natural Resources provided essential motivation and expertise to make the plan a reality.

NONPOINT SOURCE POLLUTION CONTROL PROJECTS

In spring of 2001, the Illinois Environmental Protection Agency (Illinois 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 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 both proven 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 underway or complete. The Commission continues to work to secure Section 319 funding for northeastern Illinois communities and projects.

Upper Des Plaines River Watershed Projects

Work continues on the five 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 Preserve in Long Grove. Public meetings, educational road signs, and a website will all assist in the effort to educate residents about nonpoint source pollution.

The Maple Park Streambank Stabilization, Restoration, and Education Project in unincorporated Lake County is stabilizing the streambank and upland slopes, restoring bottomland floodplain and savanna woodland, redirecting an erosion-inducing culvert, and installing educational signage along a nearby trail.

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 land use analysis, a resource inventory, and stakeholder input to produce a watershed based plan 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, education and outreach to landowners, local governments and developers to address non-point source pollution, agricultural and urban impacts to water quality, as well as watershed-sensitive development.

The Lower Tyler Creek Watershed Project in Elgin will stabilize a high streambank preventing further erosion and sediment deposition. Bioengineering practices include 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 addresses streambank erosion, provides natural grade control, removes remnant spoil piles from past dredging projects, and protects the quality of an adjacent 40-acre wetland park. Management practices include stream channel restoration, bank stabilization, 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 a dam on Brewster Creek in Elgin. This grant is partially funding stabilization of the stream and banks and restoration of riparian wetlands. Water quality monitoring will be conducted to demonstrate the effectiveness of the stream restoration and dam removal techniques used.

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.

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 is being restored along the tributary reaches.

The *Greater Raceway Woods Restoration Project* will restore a stream and modify the existing outlet structure of an impoundment on a creek through Greater Raceway Woods in Carpentersville. Streambank and streambed stabilization techniques 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 fall 2002, the *Boone Creek Watershed Restoration Action Strategy (WRAS)* was added to this grant. The draft WRAS and watershed resource maps are complete.

In cooperation with the Fox River Ecosystem Partnership (FREP), the Commission began work on a *Stream Assessment Project* to provide important information for the preparation of a Fox River Watershed Based Plan. The project will compile and evaluate resource inventory data, formulate water quality objectives, and select and prioritize nonpoint source control practices. Stream assessment inventories during the summer of 2002 began this process in six subwatersheds. Several stream attributes were documented including streambank and streambed conditions, channelization, turbidity, outfalls, and riparian land use. The next step is to work with at least one subwatershed group to develop a watershed-based plan.

RELATED NATURAL RESOURCE ACTIVITIES

Strategic Plan for Water Resource Management

In September 2001, the Commission adopted the *Strategic Plan for Water Resource Management (SPWRM)*, intended to guide the region in responding to interrelated water resources issues: water quality, stormwater and flooding, and water supply. In each of these areas, the plan recommends a series of strategies. Stakeholders throughout the region have been implementing the plan both during development and after adoption. NIPC was involved with many implementation projects over the past year, two of which are highlighted below.

In April 2003, the Commission cosponsored and developed a workshop in the Butterfield Creek Watershed on small site best management practices (BMPs). The workshop focused on utilizing stormwater as an on-site asset for small retail, service, and institutional sites. The Commission also worked with the City of Chicago Department of Environment to create a practical site design guide on BMPs for urban development applications, both residential and non-residential, that can effectively reduce the quantity and improve the quality of runoff.

As a result of the adoption of the SPWRM and signing of the Wingspread Accord multi-state planning coordination agreement, NIPC received Illinois-Indiana Sea Grant funding in January 2003 to fund a water supply strategic planning effort for the southern Lake Michigan basin. This effort is analyzing existing regional and local water supply programs

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 9000 foot segment of Salt Creek to reduce streambank erosion while protecting or enhancing habitat.

The *Salt Creek Headwater Recovery Project* in Westchester will restore 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, 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 small wetland established at a daylighted storm sewer will control erosion and filter stormwater before it discharges to the creek.

The *Parking Lot Runoff Pollution Prevention Project* in Brookfield will install a vegetated swale and 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.

and policies and provides a coordinating forum for gathering regional water supply data, seeking funding, and developing next steps for water supply planning.

Chicago Wilderness Wetland Conservation Strategy Model Development

Many high quality and restorable wetlands still exist in the region. This project is developing GIS models to identify important wetland habitat in the region. Information from the models will be used by Chicago Wilderness to create a wetland conservation strategy and to target wetland areas for acquisition, restoration, and management. Three models will be developed to identify wetlands important as habitat for reptiles and amphibians: one for ephemeral wetlands, another for more permanently flooded wetlands, and a third for riparian habitat along rivers and streams. Models to identify wetlands associated with threatened and endangered plant community types and areas with high wetland restoration potential also will be developed.

Kane County Advanced Identification of Wetlands (ADID) Study

Kane County is one of the fastest growing counties in Illinois, thus the protection and management of wetlands is critical in order to minimize the impact of urban development on important water resources. The purpose of this study is to inventory the location and quality of wetlands in Kane County

and to develop protection and management strategies for wetland sites. The Kane County ADID is a multi-agency and multi-phase effort that combines the use of geographic information systems (GIS) with field research to inventory and evaluate wetlands. Using GIS maps and data, wetlands and ponds were evaluated for habitat and function (water quality protection and flood control.) Site visits in 2002 revealed that 100 of 380 studied wetlands were of high habitat quality. GIS screening to select wetlands important to water quality or stormwater storage functions is now underway. Selected wetlands selected will be field evaluated during the summer and fall of 2003.

Stream Restoration Inventory Phase 2

In fall of 2002, the Commission, U.S. Fish and Wildlife Service, and Chicago Wilderness Streams Implementation Task Force inventoried stream restoration projects to create a set of recommended practices for stream restoration in the Chicago Wilderness region. Over 100 restoration projects were surveyed including bank stabilization, riparian buffer restoration, channel re-meandering, and dam modification and removal. Phase 2 of this project involves field visits to projects that have been installed for four or more years to evaluate practices in both urban and urbanizing watersheds and in a variety of geomorphic settings. Field work will be followed by a report on trends and situations that lead to success or failure. Guidelines can then be developed on where, when, and how to best use each practice. Partners for this project include the U.S. Fish and Wildlife Service, U.S. Geologic Survey, Openlands Project, the Illinois EPA, and Chicago Wilderness Streams Implementation Task Force.

Conservation Design Resource Manual

The Commission, with a grant from Chicago Wilderness, created a resource manual to guide communities in protecting natural resources in new and existing developments. This resource manual provides 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 offsite. Currently, many municipalities' zoning codes do not allow

developers to use conservation design elements. 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 developed this manual with a Technical Advisory Committee of regional experts on various aspects of the development process.

Lake Michigan Academy

The Commission has begun coordinating an important, multi-state effort to engage regional planning councils in the Lake Michigan watershed in addressing water resource issues. The effort began in March with a training session in Kalamazoo, Michigan and continues with regional workshops, technical assistance, and outreach.

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 Salt Creek Greenway Master Plan map, executive summary, and full plan document, produced by the Commission, DuPage County, and Openlands Project for the Forest Preserve District of DuPage County, were published and distributed in early 2003. Implementation of plan recommendations is underway.



Measuring stream depth with a staff gauge.

LAKE MONITORING AND MANAGEMENT

Volunteer Lake Monitoring Program

Illinois' Volunteer Lake Monitoring Program (VLMP) continued with its 22nd year in 2002. Initiated by Illinois EPA in 1981, this popular program brings together citizens, state agency staff, and regional planning commissions to monitor and assess 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 in annual report preparation. An additional activity this year was updating the VLMP Training Manual, first published in 1997.

Volunteers measure water transparency (clarity) in a lake of their choosing using a common instrument used by lake scientists called a Secchi disk, an 8-inch diameter plate painted black and white in opposite quadrants, attached to a calibrated rope or tape measure. The disk is lowered into the water and the depth to which it is no longer visible is recorded. Monitoring is typically done twice a month from May through October at three locations on 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 the volunteers (on a rotating basis) also collect water quality samples analyzed at the Illinois EPA laboratory.

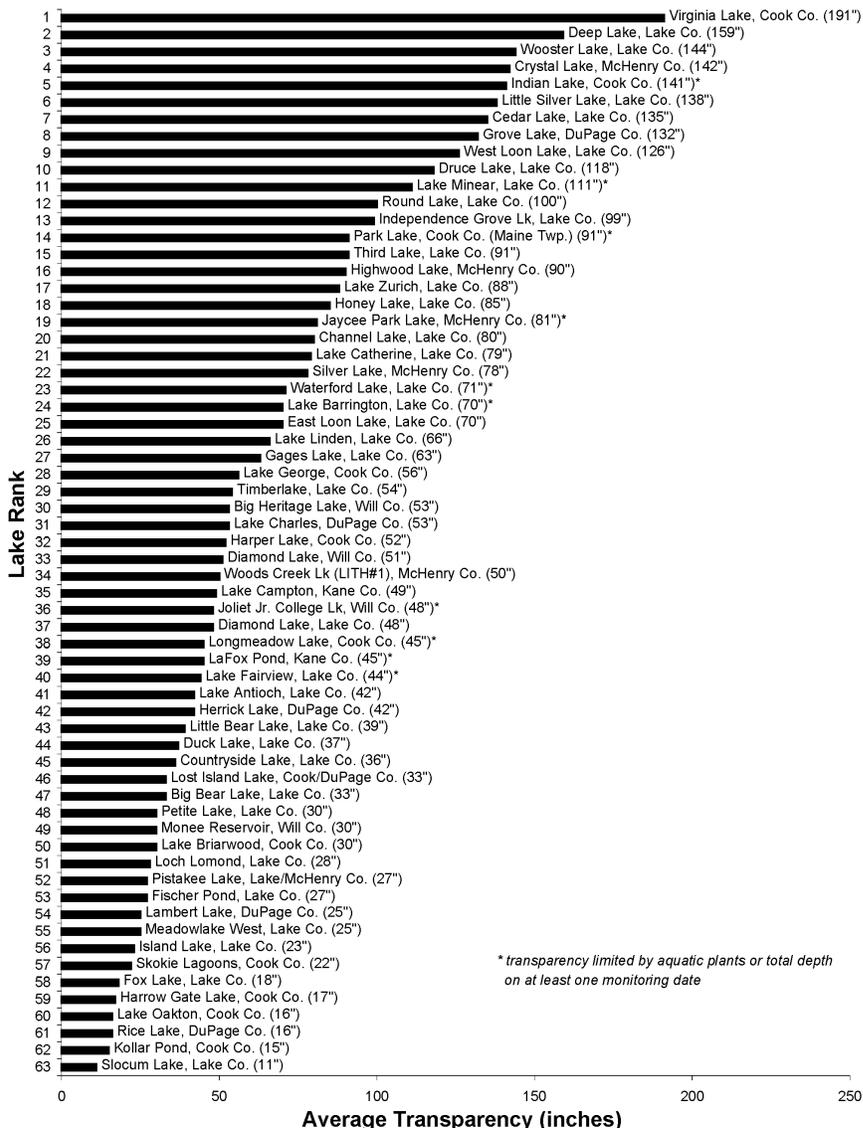
VLMP data is used by the volunteers to learn about their lake's ecology and cause-and-effect relationships and to assist in local lake and watershed management decision-making. Lake scientists, planners, and consultants also use the data for a wide variety of purposes. The Illinois EPA uses VLMP data in its biennial assessment of the state's waters as required by the federal Clean Water Act.

Of the approximately 140 lakes VLMP-monitored statewide at least four times during 2002, 63 were in northeastern Illinois involving 117 volunteers. The accompanying figure presents the average annual Secchi disk transparency values for these 63 northeastern Illinois lakes. For the fifth year in a row, Virginia Lake in Cook County exhibited the greatest average transparency with 191 inches (nearly 16 feet). Also impressive with average water clarity of at least 12 feet were Deep Lake and Wooster Lake in Lake County. Other lakes with average transparency of 100 inches or more were Crystal Lake in McHenry County; Indian Lake in Cook County; Little Silver, Cedar, West Loon, Druce, and Round Lakes and Lake Minear in Lake County; and Grove Lake in DuPage County. On the other end of the spectrum, several lakes displayed low average transparency values of less than 24–30 inches, generally due to high levels of suspended sediment and/or algae. More information on the VLMP is available from the Natural Resources Department.

Ambient Lake Monitoring Program

From May through October 2002, Natural Resources Department staff conducted Illinois EPA's Ambient Lake Monitoring Program (ALMP) work at eight lakes within the northeastern Illinois region: 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. Water samples were collected and in-lake measurements were made (including Secchi disk transparency and dissolved oxygen/ temperature profiles) on five dates at two to three sites in each lake. Sediment samples were collected once at each lake site in late summer. Observations of the aquatic plant community and shoreline conditions also were noted. The data will be used by the Illinois EPA in assessing lake water quality condition and in meeting Clean Water Act Section 305(b) reporting requirements. The data are available from the Natural Resources Department.

Northeastern Illinois 2002 VLMP Average Secchi Transparencies
(Lakes monitored four or more times)



Lake Rehabilitation and Protection

For more than 20 years, the Commission has assisted numerous local municipalities and agencies in studying, protecting, and rehabilitating lakes. This assistance typically involves applying for grant funds, monitoring lake conditions, diagnosing problems, formulating rehabilitation and protection plans, and assisting in the implementation of rehabilitation and protection strategies. Highlights of current projects follow.

Lake George Rehabilitation Project Nears Completion

Located in south suburban Richton Park, Lake George has been the subject of an Illinois Clean Lakes Program Phase 2 Restoration and Protection Program project since 1997. Slated to be completed in fall 2003, the purpose of the project is to improve the lake's water and habitat quality as well as recreational uses and provide for its long-term ecological protection. The Commission serves as technical project advisor to the Village of Richton Park. The Illinois EPA has provided matching grant funds to the Village, overall grant administration, and laboratory analysis services.



Assessing revegetation success on an island in Lake George.

Like many suburban lakes, Lake George was designed for both stormwater detention and as an amenity to the residential subdivisions around it. Similar to other lakes, it has been plagued by turbid (murky) water, sediment accumulation, an unbalanced fishery, and reduced aesthetics. An Illinois Clean Lakes Program Phase 1 study (1993-1996) identified high levels of suspended sediment, high concentrations of plant nutrients (which in turn supported high levels of algae), a low diversity of fish habitat including no aquatic plants, an overabundance of common carp and overwintering waterfowl, and eroding shorelines and streambanks.

To address these problems and their causes, a multi-faceted rehabilitation and protection program was undertaken. As reported in previous Water Quality Activities reports, several rehabilitation initiatives have been conducted including: streambank and shoreline stabilization using bioengineering techniques and native vegetation; removal of about 2000 cubic yards of accumulated sediment off a public park at the lake's south end; eradication of the lake's degraded fish population (mainly common carp and stunted panfish) followed by a balanced restocking of largemouth bass, bluegill, and channel catfish; and establishment of shoreline

and underwater aquatic plants. Lake protection activities include improved control of sediment and runoff from development activities in the watershed; cleaning and repair of storm sewer catch basins within the watershed; efforts to reduce the number of overwintering Canada geese at Lake George; and public education and awareness activities for lakeshore and watershed residents.

The impacts of these projects on the lake have been notable. Water clarity increased from a pre-project average of 19 inches in 1993-94 to an average of 36 inches in 1999, with the greatest clarities in September 2001 and 2002 (78-80 inches.) Eradication of the carp population and stabilization of streambanks and shorelines have contributed to overall water clarity improvement. Low water clarities still occur due to sediment-laden stormwater runoff from upstream agricultural fields and housing developments, and in association with occasional late summer algal blooms.

Residents have enthusiastically remarked about the increased number and variety of wading and other birds frequenting Lake George, including great blue herons, green herons, black-crowned night herons, great egrets, and kingfishers. This no doubt is related to improvement in the lake's overall ecology, in part through establishment of native shoreline and underwater vegetation, and improvement in the fish population through increased habitat diversity and improved water quality.

Activities remaining in 2003 include monitoring and maintenance of the shoreline stabilization areas and completion of the Phase 2 project report.

Maple Lake Rehabilitation and Protection Project Begins

A comprehensive lake rehabilitation and protection plan was completed for Maple Lake in 2001. Located in the Forest Preserve District of Cook County's Palos Preserve in southern Cook County, this popular destination for fishing, rowboating, and picnicking is in overall good condition but is exhibiting signs of degradation—eroding shorelines and an overabundance of invasive and exotic aquatic plants. Staff from the Commission and District studied the lake to determine the best approaches to safeguard lake quality and provide improved aquatic habitat and recreational opportunities.



Maple Lake boathouse.

In fall 2002, the District was awarded a Phase 2 cost-share grant from the Illinois Clean Lakes Program to implement the ambitious lake rehabilitation and protection plan. The tasks to be completed over the next five years include shoreline stabilization, control of invasive and exotic aquatic plants, limited nearshore sediment removal, diversification of fish habitat and aquatic plant species, and implementing school

and public education and awareness programs. Water quality and ecological monitoring during and after project implementation will be done to document the relative success of the rehabilitation and protection measures. In spring 2003, the District selected the Commission to serve as technical advisor for this project.

WASTEWATER QUALITY PLANNING AND MANAGEMENT ACTIVITY

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.

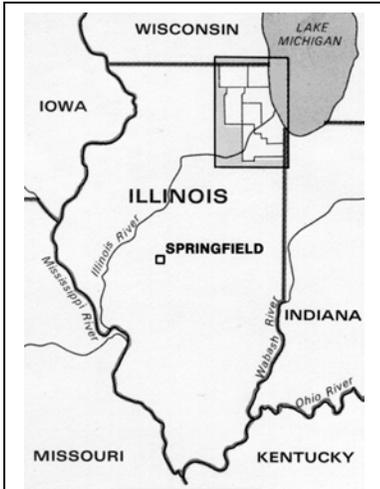
Water Quality Management Plan Amendments

WQ Review Number	Applicant	Request	NIPC Recommendation
02-WQ-035	City of St. Charles	FPA update	Support
02-WQ-037	Village of Hampshire	FPA Amendment – 728 acres Plant Expansion	Non-Support
02-WQ-040	Fox Metro Water Reclamation District	FPA Amendment – 5.5 acres	Support
02-WQ-044	Kankakee River Metropolitan Agency	FPA Amendment – 196 acres	Support
02-WQ-050	Village of Glenwood	FPA Amendment – 53 acres	Support
02-WQ-051	Fox Metro Water Reclamation District	FPA Amendment – 1.5 acres	Support
02-WQ-052	City of Waukegan	FPA Amendment – 20 acres	Support
02-WQ-054	Village of Hoffman Estates	FPA Amendment – 32 acres	Support
02-WQ-060	Fox Metro Water Reclamation District	FPA Amendment – 2,311 acres	Support
02-WQ-063	City of Joliet	FPA Amendment – 44.5 acres	Support
02-WQ-064	Village of Mundelein	FPA Amendment – 82.4 acres	Non-support
02-WQ-065	City of McHenry	FPA Amendment – 1,584 acres	Support
02-WQ-066	Blackstone Golf Course & Subdivision	Land Treatment Area – 233 acres	Non-support
02-WQ-068	Village of Addison	FPA Amendment – 1.4 acres	Support
02-WQ-082	City of Joliet	FPA Amendment – 1527 acres New Plant	Support
02-WQ-083	Village of Richton Park	FPA Amendment – 1470 acres	Support
02-WQ-084	Village of Matteson	FPA Amendment – 2246 acres	Pending
02-WQ-085	City of Wilmington	FPA Amendment – 1100 acres New Plant	Support
02-WQ-086	Village of Bartlett	FPA Amendment – 30.12 acres	Support
02-WQ-087	Village of Algonquin	FPA Amendment – 1017 acres	Support
02-WQ-088	Lauren Group/Sheaffer International	Land Treatment Area – 85 acres	Pending
02-WQ-089	Aml Property	Land Treatment Area – 575 acres	Pending
02-WQ-090	Fox Metro	FPA Amendment – 14 acres	Support
02-WQ-091	Fox Metro	FPA Amendment – 54 acres	Support
02-WQ-092	Crystal Lake	FPA Amendment – 1208 acres	Support
03-WQ-009	Village of Manhattan	Plant Expansion	Support
03-WQ-010	Shorewood	FPA Amendment- 537 acres	Support
03-WQ-011	Village of Bloomingdale	Plant Expansion	Pending
03-WQ-013	Village of Minooka	FPA Expansion Plant Expansion	Pending
03-WQ-014	Lakemoor	New STP	Pending
03-WQ-015	Fox Metro WRD	FPA Amendment – 83 acres	Pending
03-WQ-016	Fox River WRD	Plant Process Change	Pending
03-WQ-018	City of Joliet	FPA Expansion	Support
03-WQ-019	Fox Metro WRD	FPA boundary change	Pending
03-WQ-021	City of St. Charles	FPA Amendment – 4.9 acres	Pending
03-WQ-022	Village of Bannockburn		Pending



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 comprehensive 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.

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Wallace D. VanBuren



6/2003

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