

**1994–1995
Water Quality
Activities**



NORTHEASTERN ILLINOIS PLANNING COMMISSION

Water Resource Project Highlights ♦ 1994–1995

- ❖ Completed detention basin demonstration projects in the Villages of Flossmoor and Homewood
- ❖ Assisted the Village of Matteson and a commercial developer in designing and implementing stormwater BMPs
- ❖ Completed Sequoit Creek Watershed Project in Lake County
- ❖ Began coordination of a series of stream restoration and stormwater BMP projects in the Flint Creek watershed
- ❖ Assisted the Butterfield Creek Steering Committee in developing *A Vision for Butterfield Creek*
- ❖ Continued to assist the Chicago Botanic Garden in restoring a one-mile stretch of the Skokie River
- ❖ Assisted McHenry County Stormwater Committee in preparing a countywide stormwater plan
- ❖ Continued technical support of countywide and watershed stormwater management planning programs
- ❖ Initiated a wetlands advanced identification (ADID) project for McHenry County
- ❖ Coordinated the 1994-95 Volunteer Lake Monitoring Program for 43 lakes in northeastern Illinois
- ❖ Initiated a project with the Fox Waterway Agency to address nonpoint source pollution from bottom sediment resuspension in Grass Lake, Lake County
- ❖ Continued Phase I Clean Lakes Program Diagnostic/Feasibility Study for Lake George in Richton Park, Cook County; and initiated a diagnostic/feasibility study for Indian Lake at Brookfield Zoo in Cook County
- ❖ Continued Phase II Clean Lakes Program Implementation Programs at McCullom Lake in the City of McHenry, McHenry County, and Skokie Lagoons, Cook County; completed post-restoration water quality monitoring at Sherman Park Lagoon for the Chicago Park District, Cook County
- ❖ Initiated lake water quality assessments for six publicly-owned lakes in northeastern Illinois
- ❖ Initiated a review of water quality standards relating to dredging operations for the Illinois EPA
- ❖ Coordinated eighth annual "National Conference on Enhancing the States' Lake Management Programs," April 26–28, 1995
- ❖ Coordinated a national symposium "Using Ecological Restoration to Meet Clean Water Act Goals," March 13–16, 1995; and "2nd Annual Nonpoint Source Watershed Monitoring Conference," September 26–30, 1994
- ❖ Reviewed two Level I (FPA boundary changes with plant expansions) and 21 Level II Illinois Water Quality Management Plan amendment requests including 13 FPA boundary changes, three facility plan reviews, four plant expansions, and one application for a new treatment facility. Also reviewed 69 requests for reissue, issue, modification, or termination of NPDES permits.

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

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Cover Photo: Skokie River restoration in progress at the Chicago Botanic Garden.

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Applause for Conservation 2000

After several previous attempts, a welcome initiative was passed this year by the Illinois General Assembly. Known as Conservation 2000, this bill establishes a comprehensive program to better protect Illinois' natural resources. The bill's stated purposes are to:

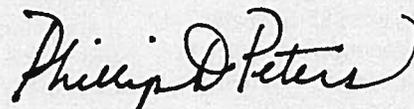
- foster sustainable agriculture practices and control soil erosion and sedimentation;
- establish and protect a series of ecosystems through conservation easements, incentives to private landowners, and land acquisition;
- develop a systematic and long-term program to effectively measure and monitor natural resource and ecologic conditions;
- initiate strategies to enhance, use, and maintain Illinois' inland lakes; and
- conduct an extensive review of existing Illinois water laws.

Conservation 2000 authorizes general revenue funding ranging from \$3.5 million in fiscal year 1996 to \$14 million in 2001.

Several of the approved initiatives are formally recommended in the Commission's *Strategic Plan for Land Resource Management*. From a water quality perspective, we are particularly pleased with the funding offered for lake protection activities. This funding will finally allow for implementation of the Illinois Lake Management Program Act which was passed by the legislature in 1989. It will support activities related to public education, technical assistance, monitoring and research, and financial incentives for lake management at the local level.

We also applaud the initiative to review existing water laws. The Commission has voiced past concerns over the seemingly inconsistent treatment of stream uses in Illinois regulations. For example, while water quality is protected at relatively high levels in streams to support diverse fish populations, these same streams are allowed to be channelized and modified in a manner which destroys critical fish habitat. Hopefully, review and eventual rewrite of existing water laws will eliminate this and other similar inconsistencies.

We congratulate the efforts and foresight of the Governor, the General Assembly, and agency officials to bring this important conservation program to fruition.



Phillip D. Peters
Executive Director

LESSONS LEARNED FROM INNOVATIVE STORMWATER DETENTION DESIGNS

Subtle changes are occurring in the developing landscapes of northeastern Illinois. New developments are beginning to "design with nature" and native wetland and prairie vegetation is finding a more prominent place in site designs. In particular, site plans are incorporating stormwater drainage and detention facilities designed as natural wetland/prairie systems.

These designs are partly in response to new stormwater ordinances which require extended ponding and improved filtration of runoff before it leaves the site. Municipalities and developers also are beginning to recognize advantages of reduced cost and maintenance needs, as well as improved aesthetics, associated with wetland detention basins.

Over the last several years, NIPC staff have worked with three south Cook County communities to design and observe the implementation of several innovative detention systems. Project highlights and some important lessons are presented below.



New wetland-fringed detention basin in Matteson.

Flossmoor Retrofit

In the Village of Flossmoor, NIPC staff helped design the retrofit of an older detention basin that was experiencing maintenance and operational problems. The retrofit design included creating several open water pollutant settling zones, replanting the basin bottom and side slopes in wetland and prairie vegetation, and constructing a new multi-orifice outlet structure to control both large flood events as well as small storms. The design of this basin was based on assessments using hydrologic and water quality models which predicted basin pollutant removal performance and water level fluctuations under different flow control scenarios.

With funding from the U.S. Environmental Protection Agency (EPA) and the support of the Illinois EPA, grading and initial planting of the basin was completed in the spring of 1994. Site inspection in May 1995 indicated that the basin was generally functioning as designed but that some replanting would be needed, particularly for prairie side slopes. A report documenting project design and maintenance will be available through NIPC.

Matteson Commerce Center

A multi-phased commerce center including both retail and light industrial uses is being developed in the Village of Matteson. NIPC was retained by the

Village, which will assume long-term maintenance responsibility for the site's stormwater system, to assist the developer's consultants in generating alternative BMP designs for three detention basins and the stormwater conveyance system. Designs for two of the detention basins were already well underway and, consequently, only minor landscaping revisions were possible. The resultant design called for planting basin side slopes with prairie plants and planting a border of wetland vegetation at the normal pool elevation. The third (and largest) basin was designed to resemble a wetland system, with very flat side slopes (approximately 10:1) and an extensive shelf of wetland vegetation extending well into the basin's permanent pool.

Grading and planting of the three basins were completed by the early summer of 1994. These basins are functioning well and native wetland and prairie vegetation is prospering, particularly in the largest basin.

Homewood/Washington Park

The former Washington Park Racetrack property in Homewood is being redeveloped for commercial, office, and light industrial uses. The site's developers, with the support of the Village, decided to incorporate stormwater BMPs into the site design to

protect water quality in an existing lake. This initiative was partially funded by U.S. EPA as a demonstration project. NIPC staff helped develop a design plan that included excavating an upstream settling basin, creating a large wetland biofilter, restoring the lake to include a variable wetland buffer, and planting of upland areas with prairie vegetation. (The project design is documented in the report: *Homewood Prairie Lakes Stormwater Wetland Biofilter for the Control of Sediment Pollution*.)

Construction and initial planting of the wetland biofilter and lake restoration were completed in the spring of 1994. Subsequent inspection indicated a need for some replanting and additional protective measures to reduce predation by waterfowl.

Lessons Learned

- Private developers and local government officials are beginning to appreciate the merits of non-traditional detention basin designs that incorporate native vegetation. The advantages include lower construction and maintenance costs and improved removal of pollutants from stormwater runoff.

- Wetland basins that provide extended detention are far superior to dry basins in removing pollutants from stormwater—typically by a factor of two or more.

SKOKIE RIVER RESTORATION TECHNIQUES SHOWING PROMISE

(DETENTION DESIGNS *continued*)

- The acceptability of designs that rely on native vegetation often will depend on the aesthetic quality of the completed project. To minimize local concerns, it is critical that vegetative cover be well established early in the process.

- The initial success of native vegetation plantings may be somewhat variable due to factors such as grazing by waterfowl and climatic conditions. To ensure good short-term success, measures to control waterfowl predation and irrigation during dry conditions should be considered in the project design. The possible need for replanting also should be incorporated into landscaping contracts.

- Consultants and designers should work closely with construction contractors to explain and interpret atypical design components and to inspect preliminary and final grading, particularly in sensitive areas such as shoreline zones.

A demonstration project was initiated last summer to restore a nearly one-mile reach of the Skokie River at the Chicago Botanic Garden in Glencoe. The purposes of the project were to stabilize eroding channel banks in a cost-effective and environmentally sensitive manner; enhance aquatic habitat in the river channel and wildlife habitat in the adjacent "riparian" corridor; and improve the ability of the river corridor to filter pollutants running off adjacent lands. NIPC is serving as a technical advisor to the Botanic Garden. Partial funding is being provided by the U.S. EPA through the Illinois EPA under Section 319 of the Clean Water Act.

The project purposes are being accomplished by the following activities:

- Deep-rooted prairie grasses, willows, and shrubs are being planted on eroding banks along a nearly one-mile stretch of channel. Much of this work is being accomplished by Garden staff and volunteers. Several techniques including "brush layering" and "fiber rolls" require the guidance of outside consultants during initial installation. These techniques appear to be working

well so far, although extensive flooding during April and May 1995 caused additional erosion along several streambank sections.

- A 12-acre area paralleling the river is being transformed into a native vegetation buffer zone. Nearly 11-acres of prairie were planted using a low-cost "no-till drill" and a seed mix of eight native prairie plants. Vegetative cover is now well-established in this zone, but follow-up maintenance and some replanting may be necessary to establish a functional native prairie system. In addition, five distinct wetland zones totaling about one acre were excavated along the river channel and hand-planted with dozens of native wetland plants. Plant cover is excellent in these wetlands and frequent ponding indicates that initial hydrologic design assumptions were accurate.

- Degraded habitat in the river channel is being enhanced using several techniques. Existing riffles are being augmented with the placement of rocks ranging from six inches to three feet in diameter. Meanders are being restored to a short section of straightened channel and wetland vegetation is being planted in several backwater areas. These techniques should improve fish habitat as well as water quality conditions; however it is still too early to assess the success of these activities.

This project will continue through the summer of 1995. To maximize the project's exposure to the surrounding region, a public education component has been developed. It includes seminars, field trips, and a video to convey information to land planners, landscape architects, engineers, and the general public. After the project is completed, the Garden also is considering the establishment of a series of education stations to inform visitors about stream corridor ecology and restoration techniques. For more information, readers may contact Dennis Dreher at NIPC (312/454-0400). Readers also may contact project manager Cynthia Baker at the Chicago Botanic Garden (708/835-8300), particularly regarding volunteer opportunities.



Demonstration of bank stabilization techniques on the Skokie River.

STATUS OF CLEAN LAKES PROJECTS

McCullom Lake Milfoil Mystery Solved?

As reported in the 1993-94 *Water Quality Activities* report, the City of McHenry has received a Phase II grant under the U.S. EPA's Clean Lakes Program to restore the lake's recreational uses and provide for its long-term ecological protection. NIPC is serving as technical coordinator for the project, while the Illinois EPA is administering the federal grant.

An important component of the lake project is to re-establish a balanced community of native plant species within the lake and along the shoreline edge. A particularly troublesome plant at McCullom Lake, from both an ecological and recreational perspective, is the non-native Eurasian watermilfoil. It grows rapidly in the early spring to form a dense mat-like canopy near the water surface, thereby limiting sunlight for other just-germinating native species on the lake bottom. In 1993, the milfoil was found in about 10 percent of the lake, but by summer 1994 it had spread to nearly 70 percent.

A herbicide treatment program had been planned for spring 1995 to curtail the plant's infestation to an amount that could be managed by "manual" removal methods in the future (i.e., hand-pulling of newly-emerging stands). However, when the ice went out at McCullom Lake on March 15, 1995, only a few strands of the pesky milfoil could be found. And, in the weeks to come... still hardly any milfoil! Similar declines in Eurasian watermilfoil have occurred in other parts of the country. A weevil insect native to North America, *Euhrychiopsis lecontei*, as well as a particular strain of fungi, have contributed to some of these declines. In some cases, though, no causal factor was ever determined.

The potential factors contributing to McCullom Lake's milfoil decline became more clear when on June 3, 1995, NIPC staff and a local lake resident discovered several small strands of milfoil with more than 15 hungry weevils attached! This is believed to be the first sighting in Illinois of the weevil in the presence of a significant Eurasian watermilfoil decline. It is especially exciting because there have been only a handful of other similar occurrences in the Midwest.



McCullom Lake.

Note: As this report went to press, NIPC staff together with staff from the Lake County Health Department have confirmed the presence of the Eurasian watermilfoil weevil in several other lakes in the region. Though the weevil's impacts on milfoil are not as pronounced at these lakes compared to McCullom Lake, it is most encouraging to see that this insect has taken up residence in a number of the region's lakes.

Scientists studying this phenomenon across the country are thrilled by the news from McCullom Lake. Because the weevil feeds exclusively on milfoil species, it has the potential to be an excellent "biological control." (In laboratory experiments, the weevils starved to death before damaging other non-milfoil plant species.) This is important, because a goal of most comprehensive lake management programs is to maintain a balanced community of native plants. It is hoped that a research effort can be initiated here to more fully understand the role this remarkable insect might have in managing nuisance levels of aquatic plant growth.

Sherman Park Lagoon

NIPC staff monitored water quality at the Chicago Park District's Sherman Park Lagoon in 1994-95 to document the effects of the lagoon's lake

restoration program. During 1992-94, the lagoon's organic sediment deposits were removed, the lake was made deeper, and aquatic plantings were made on the lake bed and along the shoreline. The objective of this restoration is to improve the ecological and aesthetic qualities of this heavily-used urban recreational resource. Ongoing fish stocking is being carried out under the Urban Fishing Program partnership between the Chicago Park District and the Illinois Department of Conservation.

Skokie Lagoons

Ongoing since 1984, the Skokie Lagoons Lake Restoration and Protection Program is now drawing to a close. After removing over 1 million cubic yards of sediment material, diversion of wastewater treatment plant effluent, fisheries rehabilitation, and other ecological enhancements, the "post-project" monitoring phase was begun this year to document the project's water quality and aquatic habitat impacts. Biologists from NIPC and Illinois EPA have been conducting comprehensive monitoring at the lagoons since 1980. The data currently are being compiled and analyzed, and they will be assembled into a report that will be available in early 1996.

During 1994, the Forest Preserve District of Cook County also initiated a

(CLEAN LAKES *continued*)

shoreline erosion control demonstration project at the Skokie Lagoons. With the assistance of NIPC, the District will be implementing shoreline stabilization methods along 2.5 miles of the Lagoons' 15.5-mile shoreline. The stabilization practices will emphasize "bioengineering" techniques that utilize native vegetation and other natural materials to dissipate erosive wave energy. The project schedule calls for final design during 1995, with a spring 1996 installation.

Lake George Study Continues

A Clean Lakes Program Phase I Diagnostic/Feasibility Study continued at Lake George in south suburban Richton Park. A year of lake water quality monitoring was completed in November 1994; stream water quality monitoring will continue through June 1995. Daily records of rainfall, lake water level, and stream water levels will continue to be kept through September 1995 to support an analysis of the lake's hydrology. Interpretation of the lake and stream data along with data gathered on lake morphology, hydrology, waterfowl use, and watershed land cover and management practices will help identify the causes and sources (along with their magnitude) of pollution affecting the lake. This will guide the development of a management plan designed to improve lake quality and provide for long-term protection.

Indian Lake Study Initiated

A lake diagnostic/feasibility study began at the Brookfield Zoo's Indian Lake in June 1995 with the initiation of water quality sampling. This two-year study is being conducted by NIPC's Natural Resources Department and Brookfield Zoo staff in cooperation with the U.S. EPA and the Illinois EPA. The study will identify and quantify existing water quality problems and provide recommendations for restoring and enhancing the lake's environmental qualities and aesthetic attributes.



OTHER LAKE MANAGEMENT ACTIVITIES

Dredging Standards

Illinois' current water quality regulations as they pertain to sediment dredging will be evaluated during 1995. Presently, effluent from settling basins associated with hydraulic dredging operations must meet Illinois' water quality standards applicable to conventional wastewater treatment plants. However, some previous dredging projects have experienced difficulty meeting these requirements because background conditions at times exceed the standards. At the prompting of the Fox Waterway Agency and the Illinois EPA, NIPC staff will be reviewing dredging regulations from other states to determine what other regulatory approaches might be possible, after which alternative strategies for water quality regulations will be developed. It is envisioned that the results of this study will be presented to the Illinois Pollution Control Board for their consideration.

Grass Lake Nonpoint Source Pollution Control Project

The Fox Waterway Agency has received a Section 319 grant from the U.S. EPA (via the Illinois EPA) to develop and implement a Grass Lake Nonpoint Source Pollution Control Project. With the assistance of NIPC, the project will assess alternative methods for reducing bottom sediment resuspension and thereby improve water quality and aquatic habitat in Grass Lake.

Sediment resuspension, and resultant turbidity, causes several problems in lakes:

- It limits sunlight penetration to the lake bottom, thereby reducing or eliminating the growth of rooted aquatic plants.
- It limits the ability of sight-feeding game fish to find food.
- It impairs overall aesthetic value and recreational use.

The causes of bottom sediment resuspension, notably recreational boating activities and wind-generated waves, will be investigated. Then, a number of strategies to reduce sediment resuspension in Grass Lake will be evaluated. These include:

- **Boat traffic consolidation:** Consolidating boat traffic (within appropriate safety parameters) to designated channels could minimize

the areal extent of sediment resuspension; the concentration of boating activity might also act to "self-dredge" some zones of the lake.

- **Dredging:** Sediment resuspension in boating lanes and/or larger lake areas could be reduced by dredging to a minimum depth of 6 to 8 feet.

- **Restricted Areas:** Some areas of Grass Lake could have special use restrictions or designations which could specify or limit boat speed, boat types, boat horsepower, or recreational activity (e.g., fishing, waterskiing, sailing, hunting, etc.). Any of these restrictions/designations also could be applied on a seasonal basis or by time of day.

- **Wave Breaks:** Establishing wave breaks within Grass Lake might dissipate wave energy created by boats and/or wind (e.g., "geotube" islands, tire barriers, fabric curtains, etc. placed parallel to the prevailing wind fetch).

- **Public Education:** Programs and activities can be initiated to explain the impacts recreational boating can have on bottom sediment resuspension. Operational approaches for motorboats that minimize bottom sediment resuspension can be encouraged.

During 1995, input from all types of lake users will be sought by the Fox Waterway Agency to help guide development of a workable lake management approach.

Volunteer Lake Monitoring Program

Illinois' Volunteer Lake Monitoring Program (VLMP) continued with its 14th season in 1994. The Illinois EPA initiated the VLMP in 1981 as a result of growing public interest in lakes and the need to expand the state's lake water quality data base. This self-help program provides effective public education in lake ecology and management, and also facilitates local lake and watershed management decision-making.

NIPC continues to serve as program coordinator for the six county north-eastern Illinois region providing volunteer training, technical assistance, educational materials, and annual report preparation. Of the 131 lakes participating in the VLMP statewide, 43 were in the northeastern Illinois region involving 69 volunteers.

VLMP participants are trained to measure water clarity (transparency) with a Secchi disc (an eight-inch metal disc painted black and white in alternate quadrants, attached to a calibrated rope). The disc is lowered into the water and the depth to which it is visible is recorded. This measurement is used to document changes in water clarity during the monitoring season, as well as from year to year. Typically, three sites are monitored in each lake twice per month from May through October. The volunteers also record a series of field observations including water color, aquatic plants, and weather conditions. Other lake or watershed activities which could impact the lake also are documented.

The accompanying graph presents lake ranking by average annual transparency for the 1994 monitoring season. Grove Lake in DuPage County exhibited the greatest average Secchi disc transparency of 129 inches. Round Lake in Lake County was next with an average transparency of 123 inches. Druce and Cedar lakes in Lake County, Wolf Lake in Cook County, and Crystal Lake in McHenry County also exhibited average transparencies greater than 100 inches. The lowest annual average transparency of 17 inches was at Kollar Pond in Cook County (due to substantial suspended sediment).

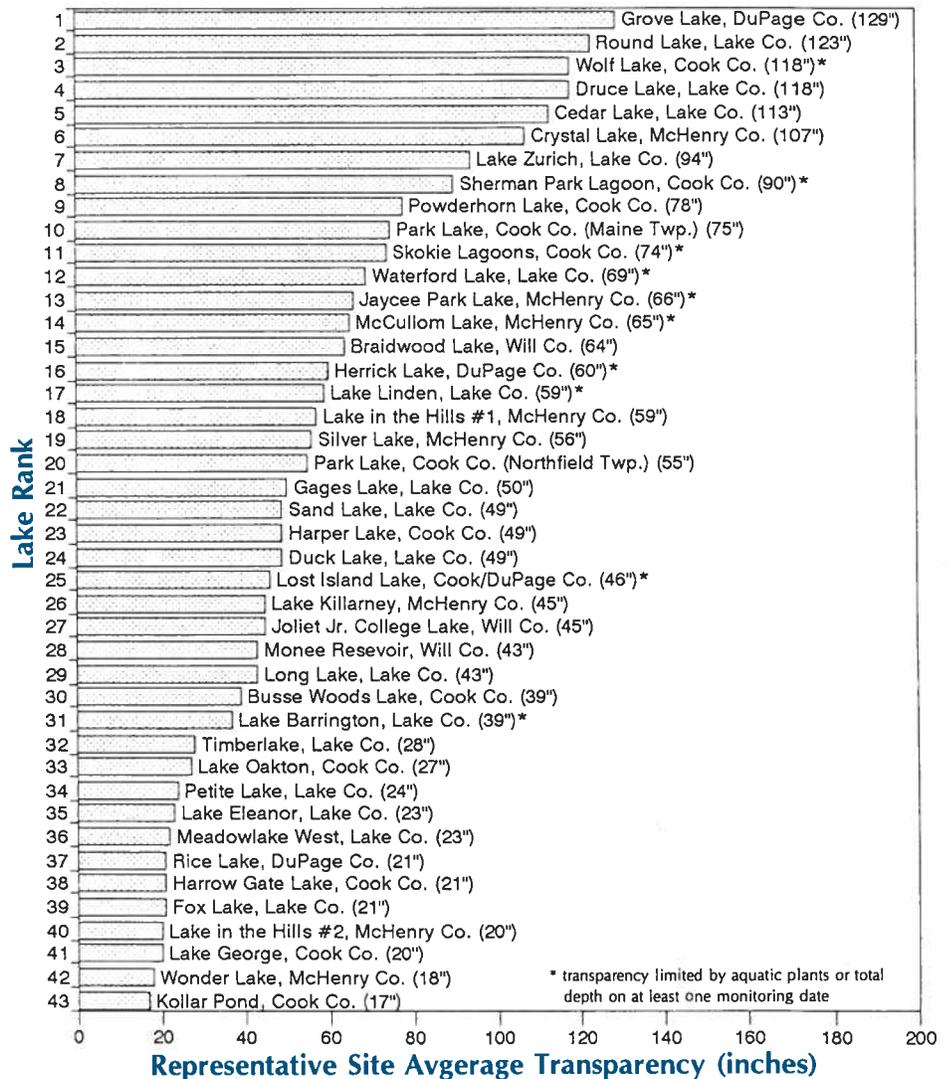
Compared to other VLMP lakes statewide, Grove Lake ranked fourth, Round Lake sixth, and Druce, Wolf, Cedar, and Crystal tenth through thirteenth, respectively. Lincoln Lake in Grundy County near Coal City exhibited the greatest average transparency of 201 inches. Twelve of the top 30 lakes in the state (average transparency of at least 67 inches) were in the northeastern Illinois region. Eight lakes in northeastern Illinois were among the 29 lakes with lowest average transparency (22 inches or less).

More information on the VLMP, as well as copies of the annual reports, are available from NIPC's Natural Resources Department.



Northeastern Illinois 1994 VLMP Lake Rankings

(lakes monitored four or more times)



Lake Water Quality Assessment Program

NIPC's Natural Resources Department, in cooperation with the Illinois EPA, recently began an assessment of six publicly-owned/public access lakes in the northeastern Illinois region. Information gathered on lake morphology, hydrology, water and sediment quality, watershed and shoreline land use, and lake and watershed management will be used to identify the sources and causes of pollutants as well as the extent of recreational and biological use impairment. The lakes being monitored are Bangs Lake in Lake County, Lily and Griswold Lakes in McHenry County, Lake Opeka in Cook County, Silver Lake in DuPage County, and Jericho Lake in Kane County. Each lake will be monitored five times between

May 1 and October 31, 1995. Water samples will be analyzed for basic constituents including total and volatile suspended solids, total and dissolved phosphorus, nitrate and nitrite nitrogen, ammonia nitrogen, total Kjeldahl nitrogen, chlorophyll a, and phytoplankton. Measurements of Secchi disc transparency, pH, conductivity, and dissolved oxygen/temperature profiles also will be made. Sediment samples will be analyzed for organics and metals. A report summarizing each lake's chemical (water and sediment), biological, physical, and lake assessment information will be available by late 1996. To request a copy of the summary report, call NIPC's Natural Resources Department. Summary reports for Lake Water Quality Assessment Program lakes sampled during 1989, 1992, and 1993 also are available.

WATERSHED PLANNING INITIATIVES

A New Vision for Butterfield Creek

The Butterfield Creek Steering Committee has developed *A Vision for Butterfield Creek*. This plan presents an integrated concept for flood management, environmental restoration and stewardship, and recreational development. The Steering Committee was assisted in this venture by NIPC and a private consultant with funding from the Illinois Department of Conservation.

This plan is notable for several reasons. It represents a unique cooperative approach to watershed management involving the voluntary participation of eight watershed communities and several federal, state, and regional agencies. It also represents the culmination of a series of previous efforts including a flood mitigation plan, a watershed nonpoint source management plan, and a comprehensive floodplain and stormwater management ordinance. Most importantly, the plan does not limit itself to solving traditional stream-oriented *problems* but describes a vision for enhancing and capitalizing on the *aesthetic and recreational amenities* of a restored stream-based ecosystem.

The plan proposes to accomplish its objectives via four principal strategies: *managing old and new development in upland areas, enhancing wetlands and floodwater storage areas, enhancing and restoring stream channels, and developing recreational opportunities*. Copies of this plan, which is presented in a poster format, are available from NIPC or the Village of Flossmoor (708/798-2300).

Flint Creek Restoration Projects Begin

NIPC, the Villages of Barrington and Lake Zurich, and the Lake County Forest Preserve District have been awarded a grant from the Illinois EPA for watershed restoration demonstration projects in the Flint Creek watershed. The grant will partially fund three stream channel restoration projects, a shoreline stabilization project on Lake Zurich, the installation of sand filters for direct discharges of urban runoff to Lake Zurich, and a number of other nonpoint source control activities.

These projects are recommended elements of the *Flint Creek Watershed Management Plan* prepared by the Lake County Stormwater Management Commission and NIPC under a separate grant.

The streambank and shoreline restoration projects will utilize "bioengineering" techniques that rely in part on deep-rooted native vegetation to stabilize eroding soils. In cases of more extreme erosion and steep, high banks, structural measures may be needed to stabilize the toe of the slope. Such measures, including lunker structures, "A-Jacks," and fiber rolls will be utilized in conjunction with native vegetation. Measures such as lunker structures, which are similar to wooden pallets buried into the toe of the slope, also create excellent habitat for fish.

Sand filters will be installed in strategic locations to address direct discharges of urban runoff to Lake Zurich. The sand filters will be used to filter sediments, heavy metals, hydrocarbons, and oil and grease prevalent in runoff from parking lots and roads. The sand filters will include two chambers. The first chamber (filled with water) will trap heavier sediments and attached pollutants. The second chamber (filled with sand) will filter out finer sediments and many other pollutants found in urban runoff.

Design for the projects will be completed during summer 1995. Construction and planting will occur in fall 1995 through summer 1996.

Sequoit Creek Watershed Project Completed

In cooperation with several Lake County agencies including the Health Department, the Stormwater Management Commission, and the Soil and Water Conservation District, NIPC recently completed a watershed management project for Sequoit Creek. This study was funded by U.S. EPA through the Illinois EPA to accomplish the following tasks: prepare a nonpoint source analysis, prepare a nonpoint source management plan to address identified problems, provide technical assistance to local governments in reviewing soil erosion and sediment control plans, and monitor water quality in watershed lakes.

The Sequoit Creek watershed

includes the Villages of Antioch and Lake Villa as well as portions of unincorporated Lake County. The creek itself is somewhat degraded due to channelization, and its uses are constrained by its relatively small size. However, the watershed also contains numerous lakes and wetlands, some of which are of very high quality. The watershed is experiencing imminent development pressures, and local communities appear to recognize that existing problems are the result of inadequately controlled development in the past. Therefore, it was easy to justify the need for improved local standards for new development.

It was fortunate that the Lake County Stormwater Management Commission had recently developed a countywide *Watershed Development Ordinance* that addressed many concerns related to stormwater runoff, construction site erosion, and floodplain development. While the watershed communities had endorsed this ordinance, there was a recognition that certain implementation mechanisms needed further attention. Project efforts were directed, in particular, to needed improvements in soil erosion and sediment control procedures. These improvements included more explicit design standards and more effective site inspection and maintenance programs.

The management plan also identified several important remediation and restoration needs. These included retrofitting existing detention basins to improve stormwater pollution control, stabilizing and restoring eroding lake shores and streambanks, and identifying and repairing malfunctioning septic systems. While significant improvements were made through this project, much work remains to be done. Watershed communities, with the assistance of local, state, and federal resource agencies, agreed to continue to assess watershed accomplishments and needs into the future.



CONFERENCE AND COURSE HIGHLIGHTS

On April 26-28, 1995, state agency lake program managers, together with leaders of statewide lake associations from across the country gathered in downtown Chicago to learn—and share—the latest in lake management. This **National Conference on Enhancing the States' Lake Management Programs** marked the eighth consecutive year in which NIPC and the U.S. EPA have cooperated to hold this event. Session topics included shoreland management, electronic networking opportunities, state-level funding programs, and biological control strategies for aquatic plants. Participants also learned from intensive workshops on recruiting volunteers, non-profit organization management, and running more effective public meetings. A special evening trip to the Brookfield Zoo introduced conference attendees to the Zoo's ecological preservation initiatives and the just-started study at Indian Lake. Many from Illinois attended, including representatives from the Illinois EPA and the Illinois Lake Management Association. Planning already is underway for the next conference scheduled for April 1996.

* * * *

In September 1994, over 200 nonpoint source practitioners from across the country gathered in Northbrook for the **2nd National Nonpoint Source Watershed Monitoring Conference**. The conference's first two days, "Rural and Urban Stream Restoration", was of

particular interest to water quality managers at the state and local levels with responsibilities for best management practice (BMP) implementation. Detailed classroom demonstrations were followed by hands-on installation in the field at a site along the Waukegan River. The following two days' "Nonpoint Source Monitoring Workshop" covered topics including biological monitoring, statistical techniques, instrumentation and sampling equipment, comprehensive watershed monitoring, and data analysis. The "Urban Watershed Management Training Course" was held the last day of the conference and featured Thomas Schueler of The Center for Watershed Protection. This innovative and informative conference evolved as a partnership between NIPC, Illinois EPA, Conservation Technology Information Center, U.S. EPA, Illinois State Water Survey, and North Carolina State and Oregon State universities.

* * * *

Management of our Nation's waters has typically concentrated on controlling negative environmental impacts—rather than creating positive ones. However, some organizations and agencies, including the U.S. EPA and NIPC, are interested in moving toward the creation of positive impacts by encouraging the use of ecological restoration.

If we are to achieve the goals of the Clean Water Act, there is a clear need

Watch for these Upcoming Conferences!

9th Annual National Conference on Enhancing the States' Lake Management Programs
April 1996; Chicago, Illinois

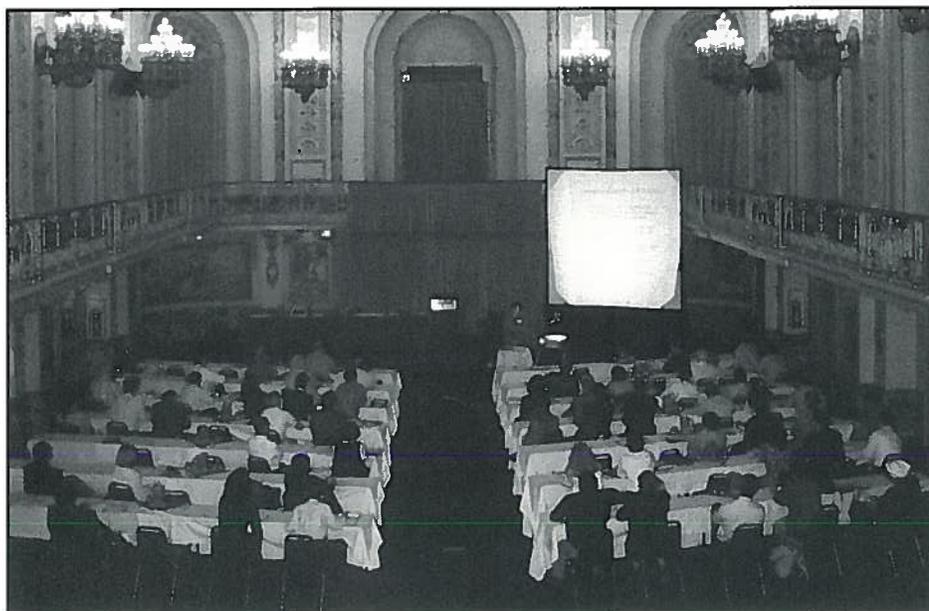
National Conference on Assessing and Mitigating the Cumulative Impacts of Watershed Development on Water Quality
March 1996; Chicago, Illinois

Contact NIPC's Natural Resources Department for more information on these and other meetings relating to water quality.

for resource managers to develop and implement restoration-based approaches that build upon existing pollution control efforts. The **National Symposium on Using Ecological Approaches to Meet Clean Water Act Goals** provided over 250 federal, state, and local resource managers with an appreciation for:

- the nature and regional characteristics of aquatic ecosystems and related uplands,
- the broad diversity of potential restoration strategies to address these systems, and
- the applicability of restoration to watershed protection, regulation, ecosystem management, and the attainment of chemical, physical, and biological integrity.

Held in downtown Chicago on March 13-16, 1995, the target audience for this Symposium was environmental professionals involved with cooperative and interdisciplinary approaches for restoration, protection, and maintenance that incorporate natural ecological processes to meet Clean Water Act goals. Joining NIPC and U.S. EPA in sponsoring the symposium were the USDA-Natural Resources Conservation Service, U.S. Bureau of Reclamation, Conservation Technology Information Center, Illinois EPA, North American Lake Management Society, Society for Ecological Restoration, Illinois Association for Floodplain and Stormwater Management, and the Association of State Wetland Managers.



OTHER ACTIVITIES

NIPC Assists McHenry County in Preparing Stormwater Management Plan

Assisted by NIPC staff, McHenry County has nearly completed a countywide stormwater management plan. The plan is a blueprint for a countywide program to comprehensively manage stormwater. Preparation of the plan drew on the experiences of Lake and DuPage Counties which have already completed comprehensive, countywide programs.

McHenry County had the highest rate of population growth in the region during the decade from 1980 to 1990 (23.9 percent), and this rate of growth is expected to continue into the foreseeable future. Experience in other parts of the region as well the country indicate that continued urbanization and population growth will cause significant stormwater-related problems to develop. For example, although flooding presently is not a widespread problem in the county, urbanization can increase flood flows by over 100 percent. Also, the county has some of the highest quality rivers and streams in northeastern Illinois with respect to water quality, aquatic life, and recreational use potential. However, regional assessments have shown that past urbanization has, almost without exception, caused substantial degradation of stream and lake resources.

The draft plan is very comprehensive in nature, addressing not only flooding and drainage problems but also water quality and protection of aquatic habitat and recreational uses. The draft plan focuses heavily on a preventative program to minimize the stormwater-related impacts of development. As such, the first stages of implementation will focus on preparation and enforcement of a comprehensive, countywide watershed development ordinance. Preparation and enforcement of the ordinance will be through a partnership of county and municipal government to make the most efficient use of existing resources, while at the same time providing a consistent level of watershed protection throughout the county.

A draft stormwater management plan was completed in April 1995. After completing a revision and refinement process, the plan is scheduled for a 60-day public review by the fall of 1995.

Technical Assistance Provided to Local Governments

One of the important missions of NIPC is to provide technical assistance to local governments. The Natural Resources Department, with limited funding from the Illinois EPA and local government contributions, provides advice on a variety of water quality and water resource issues including urban stormwater management; nonpoint source control; stream, lake, and wetland protection; and groundwater protection.

This assistance is provided in several ways. Technical and policy

presentations are made at numerous seminars and conferences sponsored by groups such as the Illinois Association of Floodplain and Stormwater Management, the American Society of Civil Engineers, American Public Works Association, and American Planning Association. Presentations also are made to village boards, planning commissions, and advisory committees. Staff regularly attends meetings of countywide stormwater management agencies. In addition, staff responds to numerous telephone inquiries from local governments and their consultants. These inquiries typically focus on local development ordinances, water quality data, and other water quality protection issues.

A summary of available services and publications is provided in the 1995-96 NIPC Publications List. Telephone inquiries may be directed to the Natural Resources Department at (312) 454-0400.

WATER RESOURCES COMMITTEE REVIEW ACTIONS

Under contract with the Illinois EPA, the Commission reviews requested amendments to wastewater Facility Planning Areas (FPAs). A summary of review actions from July 1, 1994 through June 30, 1995 involving FPA boundary changes and/or new or expanded treatment facilities is presented below.

WQ	Applicant	Request	Finding
94-WQ-043	Village of Hainesville	FPA Amendment	Support
94-WQ-049	Village of Sugar Grove	Level I FPA Amendment	Cond. Support
94-WQ-056	Metro Utilities Company	FPA Amendment	Support
94-WQ-057	Consumer Illinois Water Company	FPA Amendment	Cond. support
94-WQ-058	Village of Hanover Park	Plant Expansion	Support
94-WQ-059	Citizens Utilities Company	Plant Expansion	Support
94-WQ-060	Countryside Homes	New Treatment Facility	Cond. Support
94-WQ-068	Village of South Barrington	FPA Amendment	Cond. support
94-WQ-069	City of Crystal Lake	FPA Amendment	Support
94-WQ-070	City of Elmhurst	FPA Amendment	Support
94-WQ-075	Village of Manhattan	FPA Amendment	Support
94-WQ-084	Village of Mundelein	Facility Plan Review	Support
94-WQ-085	Village of Mokena	Facility Plan Review	Support
94-WQ-086	City of Waukegan	FPA Amendment	Support
94-WQ-093	Village of Lake Villa	FPA Amendment	Support
94-WQ-094	Village of Bloomingdale	FPA Amendment	Support
95-WQ-001	City of Naperville	Plant Expansion	Support
95-WQ-002	Village of Beecher	Facility Plan Review	Cond. Support
95-WQ-003	Thorn Creek Basin S.D.	FPA Amendment	Support
95-WQ-005	Village of Manhattan	Level I FPA Amendment	Under Review
95-WQ-008	Village of Gurnee	FPA Amendment	Support
95-WQ-009	North Shore S.D.	Plant Expansion	Support
95-WQ-026	Village of Diamond	FPA Amendment	Cond. 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 7 million people, 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 the 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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