



Water Quality Activities Report

2003 - 2004

Prepared by



northeastern illinois planning commission
Environment and Natural Resources Group



Highlights for 2003 - 2004

- ◆ Completed the coordination of the first phase of a multi-state effort to engage regional planning councils in the Lake Michigan watershed in addressing water resource issues.
- ◆ Completed coordination of over \$600,000 in the Upper Des Plaines River watershed, and continued to manage \$1.5 million in projects in the Salt Creek watershed, and \$2 million in projects in the Fox River watershed to control non-point source pollution.
- ◆ Continued implementation of 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.
- ◆ Coordinated the Volunteer Lake Monitoring Program for 79 lakes in northeastern Illinois.
- ◆ Continued an Illinois Clean Lakes Program Phase 2 Rehabilitation and Protection Project at the Forest Preserve District of Cook County's Maple Lake.
- ◆ Produced and distributed the Building Sustainable Communities factsheets to Illinois local governments.
- ◆ Continued development of the Kane County Advanced Identification study for wetlands and streams, including field reconnaissance.
- ◆ Completed *Lake Notes* fact sheets on "Zebra Mussels" and "Artificial Fish Structures."
- ◆ Continued a Chicago Wilderness and IEPA funded inventory of stream restoration projects to assess the success of restoration techniques.
- ◆ Continued a Chicago Wilderness funded project to develop a wetlands conservation strategy by modeling and mapping critical wetland resources using geographic information systems.
- ◆ Reviewed 39 Illinois Water Quality Management Plan amendment requests including Facility Planning Area boundary changes, wastewater land treatment areas, and treatment plant expansions.
- ◆ Provided technical support to groundwater planning and management efforts with the McHenry County Groundwater Resources Management Plan Steering Committee and the Northeastern Illinois Regional Groundwater Protection Planning Committee.
- ◆ Continued to provide outreach on techniques for protecting natural resources and biodiversity to local government officials, staff, and the public.
- ◆ Produced and disseminated the *Conservation Design Resource Manual* for municipal audiences.
- ◆ Ongoing involvement with the *Upper Des Plaines River Phase 2 Study*.

For more information on topics discussed in this report, please contact the following individuals at NIPC (312.454.0400).

Kerry Leigh, ASLA, Director of Environment and Natural Resources Group and staff secretary to the Water Resources Committee: water quality, watershed planning and management, conservation design, stream and wetland management and monitoring, and natural resource planning.

Jeff Wickenkamp, PE, Principal Water Resources Engineer: water quality protection, watershed management, sustainable development, stream and wetland management, and water supply planning.

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

Jason Navota, Sustainable Development Program Manager and Principal Environmental Planner: watershed planning and management, land use, natural resource policy and planning, and sustainable development.

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

Irene Hogstrom, ASLA, Senior Planner: natural landscaping, open space planning, sustainable development, and preserving and enhancing biodiversity.

Dawn Thompson, Associate Planner: Facility Planning Area program.

Jennifer Welch, GIS Analyst: geographic information systems and green infrastructure mapping.

Tina Garrett, Planning Technician: Water Resources Committee.

This report was prepared in June 2004 using federal Water Pollution Control Act Section 604(b) funds from the Illinois Environmental Protection Agency. The findings and recommendations contained herein are not necessarily those of the funding agency.

Cover photos and credits (from left): Painted Turtle at Indian Lake (Holly Hudson, NIPC); White Pelicans at Grass Lake (Marietta Kappel); Volunteer lake monitor at Cedar Lake (Holly Hudson, NIPC); Stream in Kane County (Laura Barghusen, NIPC).

Addressing Change and Continuing with our Mission

This is an innovative and encouraging time for water quality management in the State of Illinois. The Commission is actively participating in the Basin-wide Management Advisory Group (B-MAG), created in 2003 by Illinois Environmental Protection Agency (IEPA) to address the current Facility Planning Area (FPA) process. For years, NIPC has been a part of the review process for managing wastewater and stormwater in the six-county region. Working with B-MAG, the process is being reevaluated to become more integrated with watershed planning.

The Commission is at the forefront in the Chicago region with helping communities create watershed plans, and will be working to upgrade existing watershed plans to meet any new IEPA criteria. Under Section 319 of the Clean Water Act, grants received by NIPC were passed through to local entities for watershed planning. NIPC provides technical and coordination assistance to help local governments and other organizations to address stormwater runoff and other non-point sources of pollution within the Fox River, Des Plaines River and Salt Creek watersheds.

This report's section on Related Natural Resource Activities highlights NIPC projects that address water resource issues in the region, including water quality and water supply. The diversity of projects is indicative of the Commission's crucial role in responding to and initiating dialog, engaging community involvement, working with state and local partners, addressing issues, and providing outreach to our diverse constituency. NIPC continues to be an active participant in Chicago Wilderness through team and task force involvement, and working on projects that help fulfill the mission of the consortium.

In addition to changes in the FPA process, NIPC has also undergone an organizational transformation that includes the Environment and Natural Resources Group. New staff members have replaced several who departed, with a high level of continuity that has upheld the group's tradition of excellence. Under the leadership of new leader Kerry Leigh, NIPC's environmental activities are poised for even better things.

I would like to conclude with this thought. The concept of wisdom, or cultural understanding, through practice and through close attention to systems being restored is explored by William Jordan III in his book "The Sunflower Forest." We must take that wisdom to heart as we seek to bring to our "waters" an opportunity to recover some of their life processes. We do this through the process of engagement, which transforms not just our waters, but ourselves and our communities.

We look forward to continuing our involvement in this crucial work, and the Commission remains dedicated to working with our partners across the region.



Ronald L. Thomas, AICP, Executive Director

Changes during 2003 and 2004

After 27 years at NIPC, Dennis Dreher, Senior Environmental Engineer and former department head, took advantage of his early retirement option. Dennis' leadership in water resource management has set national standards and continues to have a positive impact on the region. Sarah Nerenberg, Director of Natural Resources, relocated to Indiana with her family, but continues to work with NIPC on key projects.

The Natural Resources Department was reorganized as the Environment and Natural Resources Group. Kerry Leigh, ASLA, is the new director for the department. Jeff Wickenkamp, PE, has joined Kerry's group as NIPC's Principal Water Resources Engineer. Additional new departmental staff members include Irene Hogstrom, Dawn Thompson and Jennifer Welch, who were current employees of NIPC in other departments. The department has also added a new sustainable development program to include such areas as high performance buildings, brownfield redevelopment, and urban adaptive reuse.

Speaking engagements this year included, but were not limited to: Illinois Brownfields Conference; MPC Sustainable Development Roundtable; Partners in Planning Conference; US Forest Service Midwest Tour; Kane County Advanced Identification of Aquatic Resources Public Meeting; 19th Annual Conference of the Illinois Lake Management Association; Joint Meeting of BACOG, Barrington League of Women Voters, and Citizens for Conservation; Corporate Natural Landscaping Workshop; National Association of Regional Councils; Urban Sustainability Seminar at DePaul University; Du Page County BMP Workshop; McHenry County Conservation Development Workshop; and several Lake Michigan Watershed Academy conferences held in states surrounding Lake Michigan.

Emerging Issues in Water Quality, Facility Planning Areas and Watershed Planning

Water quality management continues to be an important issue for urban and rural areas alike. Communities are working to reclaim degraded rivers and lakes to allow families to safely explore the wonders our Illinois waters offer. Rivers may no longer burn, but wastewater and stormwater discharges continue to impose stressful impacts on our water resources and the habitats dependent on them. The Clean Water Act established Facility Planning Areas (FPA's) to centralize the treatment of wastewater. In Illinois, many of the state's lakes and streams are subject to municipal wastewater discharges and urban stormwater runoff with subsequent degradation of their structural and habitat qualities. The Facilities Planning process itself plays a crucial role in protecting Illinois' water resources. NIPC has been the designated agency tasked by the Illinois Environmental Protection Agency (IEPA) to review and provide recommendations for FPA amendment applications within the six county region.

In October, 2001, Openlands Project published a study of the state's FPA process titled Protecting Illinois' Environment through a Stronger Facility Planning Area Process. The primary findings of the report indicate that the current FPA process does not fully satisfy the goals of the Clean Water Act, has done little to slow the conversion of agricultural lands, and notes that a substantial number of FPA amendments involve a degree of conflict.

To address long held concerns within the IEPA and partly as a response to this study, the IEPA created a Basin-wide Management Advisory Group (B-MAG) in 2003 to assess the states' water quality management on a basin wide level. The charge for the B-MAG included an analysis of the FPA program as it currently exists within the context of a broader structure of isolated and separate state programs designed to manage water quality, and to propose a more holistic and interconnected watershed planning and protection framework. The draft report of the B-MAG will be available on completion of review from the IEPA.

Transitioning the states' water quality management from isolated state programs (including the FPA process) to occur within a watershed planning and protection framework would be consensus based and implies a degree of community based initiatives in developing these comprehensive watershed plans. The B-MAG recommended two pilot projects to test the efficacy of the concept. The FPA process as it currently exists is likely to

remain until these pilots are determined to provide the water quality protections envisioned in the Clean Water Act.

Concurrent to the B-MAG process, IEPA is working to comply with P.A. 93-0313, the FPA Rules Act directing the IEPA to propose rules for the FPA process that "take into account findings and recommendations related to: non-point source pollution management, construction site runoff, urban runoff, consistency with anti-degradation regulations, alternatives analysis, interagency coordination, alternative dispute resolution, and consistency with local, county, and regional land use plans and resource protection plans."

For more information:

A copy of Openlands Project FPA report is available at <http://www.openlands.org/reports/FPA%20Report.pdf>

A copy of the B-MAG report is available at http://www.growingsensibly.org/cmapdfs/Framework_Final.pdf

Recent and approaching changes in watershed planning, water quality management, wastewater service provision, and resource protection present multiple challenges and opportunities to significantly improve management of the region's water resources. The Commission, with its long institutional history and vast experience with water resource management issues, is uniquely positioned and committed to ensuring that these emerging changes result in enhanced resource management throughout the region. Our strong relationships with state agencies, local government, and other stakeholders enable our facilitation and coordination capabilities, one of our primary services to the region. NIPC can bring people together to identify and shape emerging regional issues that lead to innovative policy and planning programs. The breadth of expertise and perspectives that NIPC brings to the table, from engineering to biology to planning and design, would enhance any discussion about the future trajectory of water resources management.

Wastewater Quality Planning and Management Activity

Under a contract with the IEPA, the Commission reviews requested amendments to wastewater Facility Planning Areas (FPA). A summary of this fiscal year's review actions involving FPA boundary changes and new or expanded treatment facilities is presented below. A total of 39 requests were reviewed. The Water Resources Committee recommended support for approximately 18,444 acres of transfer of land from non-FPA to FPA or from one FPA to another. Three land treatment systems are supported or pending and eight plant expansions and one new plant were recommended for support.

Level I Water Quality Plan Amendment Actions

WQ Review Number	Applicant	Request	NIPC Recommendation	IEPA Decision
02-WQ-030	Village of Gilberts	3,402 acre transfer increase in plant capacity	Deferred	Pending
03-WQ-091	Village of Huntley	800 acre transfer	Partial Support	Pending
03-WQ-092	Village of Hampshire	7,011 acre transfer increase in plant capacity	Partial Support	Pending
03-WQ-094	Village of Pingree Grove	3,875 acre transfer land treatment system	Partial Support	Pending
03-WQ-095	City of Elgin	8,435 acre transfer	Support	Pending
04-WQ-033	Village of Huntley	2,860 acre transfer	Support	Pending

Level II Water Quality Plan Amendment Actions

WQ Review Number	Applicant	Request	NIPC Recommendation	IEPA Decision
03-WQ-013	Village of Minooka	3,627 acre transfer Increase in plant capacity	Support	Support
03-WQ-014	Village of Lakemoor	Construct new STP	Support	Defer
03-WQ-022	Village of Bannockburn	32.3 acre transfer	Support	Support
03-WQ-041	Village of Matteson	224.6 acre transfer	Support	Support
03-WQ-042	Village of Fox River Grove	10.3 acre transfer	Support	Pending
03-WQ-043	City of Lockport	92.3 acre transfer	Support	Accepts
03-WQ-048	Village of Beecher	80 acre transfer	Support	Support
03-WQ-049	City of Joliet	90.6 acre transfer	Support	Support
03-WQ-050	City of Joliet	78.2 acre transfer	Support	Support
03-WQ-059	City of Braidwood	20 acre transfer	Support	Support
03-WQ-060	Village of Frankfort	320 acre transfer	Non-support	Non-support
03-WQ-060	Village of Frankfort- modified	96 acre transfer	Support	Pending
03-WQ-096	Village of Matteson	141.17 acre transfer	Support	Pending
03-WQ-097	Village of Diamond	102 acre transfer	Support	Support
03-WQ-098	City of Joliet	320 acre transfer	Support	Pending
03-WQ-099	Village of Plainfield	4,131 acre transfer	Pending	Pending
03-WQ-100	City of Joliet	540 acre transfer	Support	Support
03-WQ-101	Kennedy Properties-Algonquin	Land Treatment System	Pending	Pending
03-WQ-102	Village of East Dundee	Phase II Plant expansion	Support	Defer
03-WQ-103	Village of Beach Park	68.5 acre transfer	Support	Pending
03-WQ-104	City of Joliet	240 acre transfer	Support	Support
04-WQ-008	Village of Frankfort	Plant expansion	Pending	Pending
04-WQ-009	Village of Frankfort	117 acre transfer	Support	Pending
04-WQ-010	Village of Frankfort	72 acre transfer	Support	Pending
04-WQ-011	City of Crest Hill	Plant Expansion	Support	Defer
04-WQ-012	Lake in the Hills Sanitary Dist.	Plant Expansion	Support	Pending
04-WQ-013	Village of Huntley	165 acre transfer	Non-support	Pending
04-WQ-030	City of Zion	1,167 acre transfer	Support	Support
04-WQ-031	Village of Deer Park	28.51 acre transfer	Pending	Pending
04-WQ-032	Village of Hoffman Estates	21.94 acre transfer	Pending	Pending
04-WQ-034	Village of Wonder Lake	Land Treatment System	Pending	Pending
04-WQ-035	Village of Hoffman Estates	30 acre transfer	Support	Pending
04-WQ-036	Village of Diamond	Plant expansion	Support	Pending

Watershed-Based 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.

Thorn Creek and Poplar Creek

The Commission, with the support of the IEPA, has embarked on two important watershed planning pilot projects, one in the Poplar Creek watershed and the other in the Thorn Creek watershed. These pilot projects are following a consistent planning methodology used by most watershed planners in the region:

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.

The goal of this planning methodology, and for Poplar and Thorn Creek, is to produce a Watershed-Based Plan (WBP). These WBP's will include the US EPA's new requirements to ensure that federally funded projects are effective in restoring (or protecting) waters impaired by non-point source pollution.

These two watershed planning projects are progressing on fairly parallel tracks and are currently at step five of the planning methodology: recommending management practices for prevention and remediation. While each of these watersheds has its own characteristics, the water quality problems are fairly common and are typical for urban streams: high fecal coliform levels, low dissolved oxygen during summer and fall months, elevated nutrient levels, and general problems associated with habitat and hydrology (water flow). Both WBPs are scheduled to be complete by the end of 2004.

Watershed-based Plan Upgrades

In the coming months, NIPC (through a grant from the IEPA) will be offering financial and technical assistance to improve existing watershed-based plans in northeastern Illinois. NIPC will develop a request for proposals from watershed planning groups that wish to receive this assistance. Groups may then apply for financial and technical assistance to upgrade and complete a watershed-based plan designed to improve water quality by controlling non-point source pollution.

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, conservation design, 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, 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 IEPA through Section 319 of the Clean Water Act; and US EPA Region 5, Water Division.

Contact the Environment and Natural Resources Group at 312.454.0400 to discuss assistance needs.

The upgraded plans will be consistent with the US EPA watershed-based plan guidance, total maximum daily load (TMDL) implementation plan requirements, and current watershed planning principles.

Watershed-Based Planning Guidance

NIPC is assisting the IEPA in preparing an update to the existing watershed planning guidance provided in "Guidance for Developing Watershed Implementation Plans in Illinois." The manual is being revised so that it is consistent with the US EPA watershed-based plan guidance, the total maximum daily load (TMDL) implementation plan, and current watershed planning principles. The updated manual will provide guidance to ensure that watershed planning efforts identify effective management practices and continue to meet the most recent requirements of the US EPA's Section 319 program.

Non-point Source Pollution Control Projects

Beginning in 2001, the IEPA awarded funding to NIPC in support of projects within the Upper Des Plaines River and Fox River watersheds. In 2002, the IEPA agreed to support additional projects in the Salt Creek watershed. These projects are part of the Non -point 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 non-point 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. The Commission continues to secure funding for northeastern Illinois communities and projects. In spring 2004, the IEPA awarded NIPC over \$2 million in projects in the Fox River watershed and approximately \$660 thousand in projects in the Upper Des Plaines River watershed. These projects will commence in the second half of 2004.

Upper Des Plaines River Watershed Projects

The five projects highlighted in last year's report were successfully completed in 2003. These include the *Liberty Prairie Sedge Meadow Recovery and Monitoring Project* in Lake County, the *Indian Creek Watershed Restoration and Education Project* in Long Grove, the *Maple Park Streambank Stabilization, Restoration, and Education Project* in unincorporated Lake County, the *Rivershire Community Pond Bank Stabilization Project* in Lincolnshire, and the *Upper Des Plaines Watershed Implementation Plan (WIP) Development Project*. NIPC and the IEPA were pleased with the results of these projects, which will reduce non-point source pollution flowing to the Upper Des Plaines River. The Indian Creek Watershed Implementation Plan sets the trajectory for making watershed improvements over the short and long term, and similar plans for other subwatersheds of the Upper Des Plaines will help set priorities for funding and projects.

Fox River Watershed Projects

Work was completed on six projects and continues on another three projects highlighted in last year's report. A new project, the *Poplar Creek Watershed-Based Plan*, is described in the previous section on Watershed-Based Planning.

Completed projects:

The *Nippersink Creek Watershed Conservation Engineer* provided 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 stabilized 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 *Otter Creek Streambank Restoration and Wetland Protection Project* in St. Charles addressed streambank erosion, provided natural grade control, removed 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 *West Main Street Park Bioinfiltration Parking Island* in Batavia was installed to filter runoff from the parking lot before being routed to the site's detention basin, which in turn discharges to Blackberry Creek.

The *Greater Raceway Woods Restoration Project* restored a stream and modified the existing outlet structure of an impoundment on a creek through Greater Raceway Woods in Carpentersville. Streambank and streambed stabilization techniques were utilized along a nearly 2,000 foot segment of the stream. The new outlet structure allows manipulation of the rate and volume of water discharged to the creek and thereby helps reduce downstream erosion.

The *Boone Creek Watershed Restoration Action Strategy (WRAS)* was completed and an executive summary printed for distribution throughout the watershed. This WRAS focused on preventative measures to protect this high quality watershed in McHenry County.

Continuing projects:

The *Brewster Creek Stream Restoration and Dam Removal Project* in Elgin this year completed the dam removal part of the project. Plans for the stabilization of the stream and banks and restoration of riparian wetlands were developed and water quality monitoring was conducted to demonstrate the effectiveness of the stream restoration and dam removal techniques used.

The *Kane County Fox River North Watershed Improvement Project* is utilizing bioengineering measures to stabilize streambanks along two miles of the Fox River and several tributaries within Carpentersville, East Dundee, and West Dundee. Riparian buffer habitat is being restored along the tributary reaches.

In cooperation with the Fox River Ecosystem Partnership (FREP), the Commission continued work on a *Stream Assessment Project* to provide important information for the preparation of a Fox River Watershed-based Plan. Stream assessment inventories during the summer of 2002 began the process of compiling and evaluating resource inventory data in six subwatersheds. Several stream attributes were documented including streambank and streambed conditions, channelization, turbidity, outfalls, and riparian land use. This documentation is being converted into useful Geographical Information System (GIS) products for incorporation into subwatershed plans.

Salt Creek Watershed Projects

Four projects are completed or still underway.

The *Salt Creek Streambank Stabilization Project* in Elk Grove Village stabilized streambanks and upland slopes along a 12,000 foot segment of Salt Creek to reduce streambank erosion while protecting or enhancing habitat. A short segment will be completed in 2004.

The *Salt Creek Headwater Recovery Project* in Westchester restored streambanks, wetlands, and upland buffers along the Middle Fork of Salt Creek and Harrier Marsh. These practices stabilized eroding streambanks, established a vegetative riparian buffer, and enhanced 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 installed a biofiltration facility 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.

Related Natural Resource Activities

Chicago Wilderness Activities

The consortium now includes over 170 organizations, and staff members continue to work within the organization, and on projects funded by Chicago Wilderness. NIPC staff members are active in several Chicago Wilderness groups and currently serve as co-Chair and as Coordinator for the Sustainability Team. Other staff members are active on the newly formed Aquatics Task Force.

Chicago Wilderness Wetland Conservation Strategy Model Development

Many high quality and restorable wetlands still exist in the region. This project is developing maps and models to identify important wetland habitat in the region. This information will be used by Chicago Wilderness to create a wetland conservation strategy to target wetland areas for acquisition, restoration and management. We have recently finished a model to identify wetlands that make up important habitat for reptiles and amphibians and are currently working on maps to highlight wetlands associated with threatened and endangered plant community types, and a model to identify areas with high wetland restoration potential.

Green Infrastructure Vision

NIPC recently completed the Green Infrastructure Vision project which defined areas where opportunities for protection, expansion, restoration and connection exist at the regional scale. These opportunities follow the

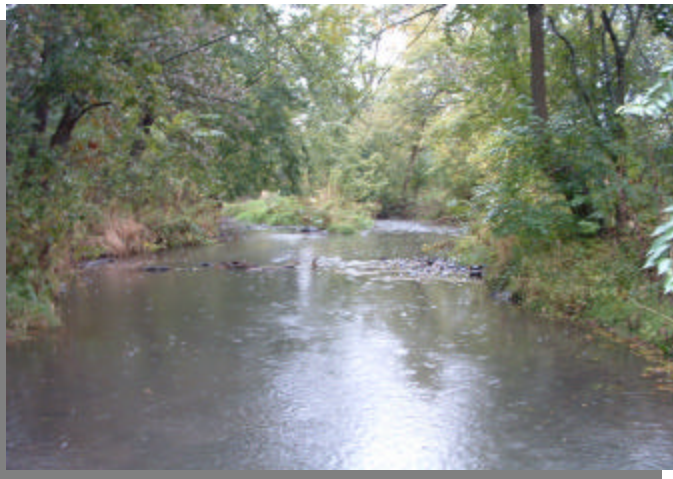
Biodiversity Recovery Plan's recommendations for preservation and enhancement of the region's green infrastructure defined as the interconnected network of land and water that supports biodiversity and provides habitat for diverse communities of native flora and fauna. This infrastructure includes both terrestrial and aquatic habitats such as high quality streams and lakes, wetlands and riparian corridors. The Green Infrastructure Vision received an Honorable Mention Award from the Illinois Chapter of the American Planning Association last May.

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. Draft ADID results indicate that there are 27,306 acres of wetland in Kane County, with 5,847 acres qualifying as high habitat value and an additional 10,088 acres qualifying as high functional value, indicating that they perform important water quality and storm water storage functions. Final mapping and preparation for the dissemination of ADID results is currently underway.

Stream Restoration Inventory, Phase 3

Many techniques have been implemented over the last decade to restore ecological value to streams. Examples include bioengineering techniques that use plants as part of the bank stabilization process and in-stream restoration practices that strive to enhance aquatic habitat. This study evaluates bank stabilization and restoration methods that have potential to enhance stream biodiversity in order to highlight the techniques have been most successful and what lessons can be learned from their implementation. The project began with a survey of agencies, groups, and firms that have done stream restoration work in the region to discover what techniques have been used, where they have been used, and how successful they have been in meeting restoration goals. Field visits to projects followed in order to assess project condition. In-depth analysis of field data was then done to evaluate the trends observed and situations that lead to failure or success of the project. A workshop to disseminate project results will be held in July 2004.



This Kane County stream has stabilizing wetland vegetation along its banks.

Natural Landscaping

Natural landscaping has long been identified as a tool to help reduce stormwater runoff and to improve water quality by reducing the need for herbicides and fertilizers. This year, we have updated "Natural Landscaping for Local Officials: A Source Book", and are near completion on an installation and maintenance guide. Both of these publications assist local officials to use natural landscaping on their own properties and to encourage residents and businesses in this method of landscaping as well.

Conservation Design Technical Assistance and Outreach

Based upon the Conservation Design Resource Manual that was developed by NIPC last year, staff conducted outreach and provided assistance to communities to incorporate the conservation design methods described in the manual. Communities are encouraged to see water as a resource to be kept on-site, rather than a waste product that requires removal.

Lake Michigan Academy

The Commission completed the coordination of the first phase of 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, 2003 with a training session in Kalamazoo, Michigan, continued with regional workshops, technical assistance, and outreach, and concluded with a workshop held in Zion, Illinois in June, 2004.

Phase two will provide assistance to local watershed groups and municipalities working to improve water quality in streams and watersheds that drain to Lake Michigan. Both phases of this project are funded by the US EPA Great Lakes National Program Office.

Upper Des Plaines Phase 2

NIPC continues to coordinate the Upper Des Plaines River Advisory Committee for 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.

Building Sustainable Communities Series

NIPC released the first volume of Building Sustainable Communities, a set of 13 fact sheets designed to guide local and regional development emphasizing land use and development that ensures economic prosperity, environmental integrity, and community vibrancy. The fact sheets include: Agricultural Land Preservation, Air Quality Protection and Improvement, Building Green Infrastructure, Community Character and Historic Preservation, Conservation Development, Creating Livable Communities, Energy Efficiency and Green Buildings, Reusing Built Environments, Strengthening Local Economies, Sustainable Sites and Natural Landscapes, Transit-Oriented Development, Water Resource Protection, and Workforce Housing. The factsheets are available for download on the NIPC website (www.nipc.org) and they can be ordered from the Publications Department at 312.454.0400.

Southern Lake Michigan Regional Water Supply Consortium

NIPC has been actively coordinating and facilitating meetings of the Southern Lake Michigan Regional Water Supply Consortium. In early 2003, regional water managers from the greater Chicago metropolitan area including Wisconsin, Illinois, and Indiana began organizing a regional water supply consortium. Attendees included representatives of county, state and local water management and planning agencies, private industry and consultants. The group worked to develop a mission statement for the consortium:

Promote a comprehensive regional approach to sustainable water supply planning and management in the greater Chicago metropolitan area including southeastern Wisconsin, northwestern Indiana and southwestern Michigan. We recognize that comprehensive planning and management must include all water resources, from Lake Michigan to inland surface waters to groundwater.

Initial funding for this effort was provided by the IL-IN Sea Grant program with additional funding provided by the Joyce Foundation. The Joyce Foundation is also supporting the development of a regional water supply conference that will be held in February 2005.

Lake Monitoring & Management

Volunteer Lake Monitoring Program

In 2003 the Illinois Volunteer Lake Monitoring Program (VLMP) marked its 23rd year. Initiated by IEPA, this popular program unites citizens, state agency staff, and regional planning commissions to monitor 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.

Volunteers measure lake water transparency (clarity) using a simple device 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 at which it is no longer visible is recorded. Monitoring is typically done twice a month from May through October at three in-lake locations. The Secchi measurements are used to document changes in water transparency during the monitoring season as well as from year to year. (Secchi transparency is affected by the color of the water and the amount of suspended sediment and algae in the lake.) A subset of the volunteers (on a rotating basis) also collects water samples for analysis at an IEPA laboratory.

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

Of the approximately 150 lakes VLMP-monitored statewide during at least four of the twelve monitoring periods during 2003, 61 were in northeastern Illinois

Who is a Secchi?

The roots of the Secchi disk can be traced back to the notes of the French scientist D. Francois Arago who mentioned that a Captain Bérard had observed a dish visible in a net at a depth of 40 meters (131 feet). Commander Cialdi, the head of the Papal Navy, was looking for a method to measure transparency in the Mediterranean Sea. After reading Arago's commentaries, Cialdi devised various disks of white clay and others of canvas stretched over a circular frame. He then obtained the assistance of Father Pietro Angelo Secchi, an astrophysicist and the scientific advisor to the Pope, to test the utility of the disks. The first "Secchi" disk was lowered from the papal steam yacht *l'Immacolata Concezione* (The Immaculate Conception) in the Mediterranean Sea on April 20, 1865.

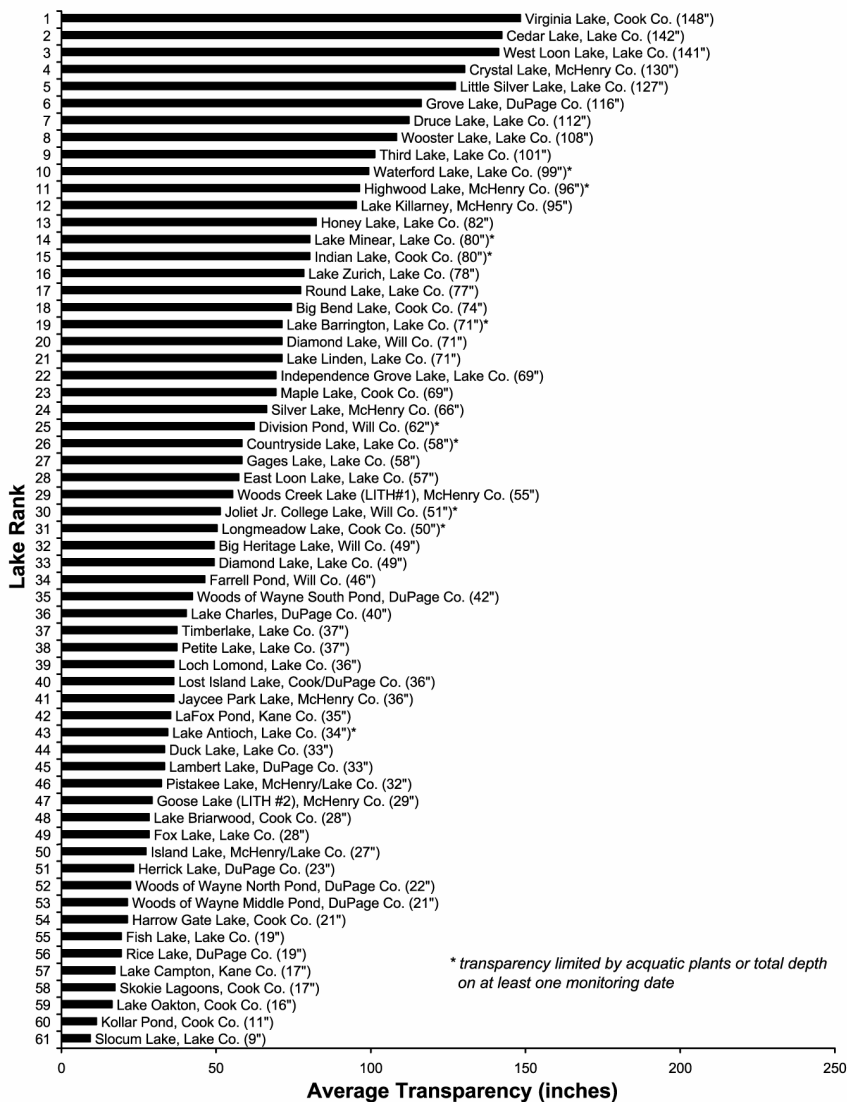
Fr. Pietro Angelo Secchi
(from Pohle, 1904).



involving 129 volunteers. The figure on the next page shows average annual Secchi disk transparency for these 61 northeastern Illinois lakes. For the sixth year in a row, Virginia Lake in Cook County had the greatest transparency, this year with 148 inches. Close behind were Cedar Lake (142 inches) and West Loon Lake (141 inches) in Lake County. Others averaging 100 inches or more were Crystal Lake in McHenry County; Little Silver, Druce, Wooster, and Third Lakes in Lake County; and Grove Lake in DuPage County. On the other end of the spectrum, several lakes had low transparency values of less than 24–30 inches, generally due to high levels of suspended sediment and/or algae.

Northeastern Illinois 2003 VLMP Average Secchi Transparencies

(Lakes monitored four or more periods)



Volunteer Bob Schmidt (Cedar Lake, Lake County) uses a Secchi disk to measure water transparency.



Aquatic plant sampling at Maple Lake is helping map the extent of curlyleaf pondweed, a non-native invasive species

Lake Rehabilitation and Protection

For more than 20 years, the Commission has helped numerous local municipalities and agencies study, protect, and rehabilitate their lakes. This assistance typically involves applying for grant funds, monitoring lake conditions and diagnosing problems, formulating rehabilitation and protection plans, and assisting in the implementation of rehabilitation and protection strategies. Contact NIPC's Environment and Natural Resources Group for more information.

Maple Lake Rehabilitation and Protection Project Continues

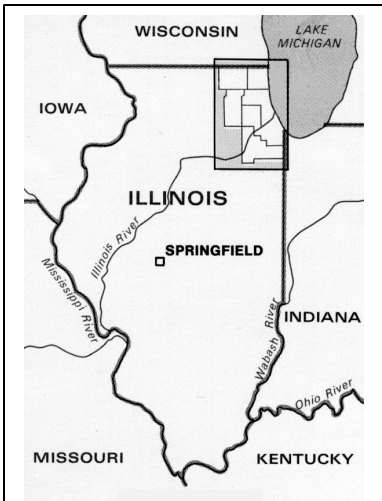
Maple Lake, located in the Forest Preserve District of Cook County's Palos Preserve in southern Cook County, is in the initial stages of a five year rehabilitation and protection program. Thanks in part to an Illinois Clean Lakes Program Phase 2 cost-share grant awarded to the

District by IEPA in fall 2002, several projects will be implemented to maintain the lake's water quality and provide improved aquatic habitat and recreational opportunities. The Commission is serving as technical advisor to the District for the Phase 2 program. Tasks to be completed over the next four years include shoreline stabilization, control of invasive and exotic aquatic plants, limited nearshore sediment removal, diversification of fish habitat and aquatic plant species, and implementation of school and public education and awareness programs. Over the past year, engineering plans for stabilizing eroding shorelines neared completion (the plans were prepared by a consulting firm and reviewed by Commission staff), detailed fall and spring surveys of the aquatic plant community were conducted, and lake water quality sampling continued.



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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6/2004

Northeastern Illinois Planning Commission
222 South Riverside Plaza, Suite 1800
Chicago, Illinois 60606



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