



# Water Quality Activities Report

July 2004 – June 2005

Prepared by

 **northeastern illinois planning commission**  
Environment and Natural Resources Group



## Highlights for 2004 - 2005

- ◆ Initiated the second capacity building phase of a multi-state effort to engage regional planning councils in the Lake Michigan watershed in addressing water resource issues.
- ◆ Began coordinating over \$650,000 in the Upper Des Plaines River watershed and \$2 million in the Fox River watershed on projects 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.
- ◆ Completed the Salt Creek Watershed Map and Non-Point Source Management manuals.
- ◆ Completed the draft Thorn Creek Watershed-based Plan incorporating nine elements essential to qualify as a state recognized watershed-based plan.
- ◆ Completed Beyond Brownfields: Sustainable Redevelopment stakeholder workshop and charrette for a reach of the downtown Aurora riverfront.
- ◆ Provided technical assistance to numerous watersheds including: Upper and Lower Des Plaines River; Fox River; Salt Creek; North Branch of the Chicago River; Nippersink Creek; Thorn Creek; Poplar Creek; Tyler Creek; Kishwaukee River; Aux Sable Creek; and the Little Calumet River.
- ◆ Awarded contracts to local watershed planning groups to upgrade seven watershed plans. NIPC will work with these groups over the next year to upgrade these plans to qualify as state-recognized watershed-based plans.
- ◆ Began the development of a watershed-based planning guide for the State of Illinois.
- ◆ Coordinated the Illinois Volunteer Lake Monitoring Program for 76 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.
- ◆ Completed development of the Kane County Advanced Identification study for wetlands and streams.
- ◆ Completed *Lake Notes* fact sheets on "Waterborne Pathogens."
- ◆ Completed a Chicago Wilderness and IEPA funded inventory of stream restoration projects to assess the success of restoration techniques.
- ◆ Completed a Chicago Wilderness funded project to develop a wetlands conservation strategy by modeling and mapping critical wetland resources using geographic information systems.
- ◆ Reviewed 56 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, the Northeastern Illinois Regional Groundwater Protection Planning Committee and the state's Groundwater Advisory Committee.
- ◆ Continued to provide outreach on techniques for protecting natural resources and biodiversity to local government officials, staff, and the public.
- ◆ Facilitated meetings of the *Upper Des Plaines River Study Advisory Committee*.
- ◆ Created and publicized the online Ecological Planning and Design Directory: Resources for Developers, Local Officials and Stakeholders.

*For more information on topics discussed in this report, please call NIPC (312.454.0400). The individuals who worked on these projects:*

**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**, Principal 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.

Cover photos and credits (from left): northern water snake (Holly Hudson, NIPC); Great Basin, Chicago Botanic Garden (Irene Hogstrom, NIPC); volunteer lake monitor, Grass Lake (Holly Hudson, NIPC); mallard ducks (Irene Hogstrom, NIPC).

## Working within the Lake Michigan Watershed

This year was full of activity for addressing Lake Michigan issues, and the Northeastern Illinois Planning Commission (NIPC) is participating in several ongoing efforts. The U.S. Environmental Protection Agency (US EPA) formed a new initiative, the Great Lakes Regional Collaboration (GLRC), created by presidential executive order. This is a major national effort allowing the Commission to build on existing work with its Tri-State Accord partners, the Lake Michigan Academy Program, and the National Association of Regional Councils network.

The GLRC was launched in Chicago during December 2004 with an event hosted by Mayor Richard M. Daley and Governor Rod Blagojevich. In addition to regional planning agencies, the GLRC includes the federal Great Lakes Interagency Task Force, the Council of Great Lakes Governors, the Great Lakes Cities Initiative, the Great Lakes Tribes, and the Great Lakes Congressional Task Force. The framework calls for these parties to design a strategy to restore and protect the Great Lakes now and in the future. NIPC is participating in four of the eight groups that address the issues of habitat/species, indicators and information, persistent bio-accumulative toxics reduction, invasive species, sustainable development, coastal health, non-point source pollution, and restoration/sediments. I am co-chairing the sustainable development team. The full GLRC draft action plan is out for public comment until September 2005.

NIPC administers the Lake Michigan Academy, which is entering its second phase that brings together nine regional planning councils and councils of governments from four states, Illinois, Indiana, Michigan and Wisconsin. Phase Two has each agency addressing the individual needs that were raised in the workshops held last year. The Academy hopes to educate and influence policies and practices to benefit the lake and its resources, connecting the needs of local planners, managers, elected public officials, engineers, and environmentalists from private groups and public agencies.

In addition to these activities, the Alliance for Great Lakes (formerly Lake Michigan Federation) is preparing a Lake Michigan Action Plan for biodiversity recovery. NIPC is participating in an advisory role and will lead the Alliance in a public hearing process in the fall of this year. At the same time, the City of Highland Park is leading the north shore mayors in an initiative to work together on Lake Michigan issues, such as beach closings and erosion.

In November 2004, Governor Blagojevich announced the state's involvement in the Coastal Management Program (CMP) administered through the National Oceanic and Atmospheric Administration (NOAA). Illinois is the last of 30 states to join this program, and NIPC is working with the Illinois Department of Natural Resources in the process, which will include participation on the Technical Advisory Groups, and later, facilitating the public hearing process on the CMP.

The diversity of projects in this report 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. All of this work contributes to implementing our recently completed 2040 Regional Framework Plan, an ongoing process by which NIPC engages municipalities and residents to foster effective land-use planning that helps create more "livable" 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 and surrounding Lake Michigan.



Ronald L. Thomas, AICP, Executive Director

**Speaking engagements** this year included: Tree Cities USA Annual Meetings, American Association of Botanical Gardens and Arboreta Annual Conference, National Association of Regional Councils, Habitat Plainfield, Chicago Wilderness: Public Sector Approaches to Sustainable Development, Chicago Wilderness: Linking Watersheds Conference, Sustainable Development Principles for Protecting Nature in Kendall County, Lake Michigan Monitoring Coordination Council, Illinois Soil and Water Conservation Society Annual Meeting, Center for Humans and Nature Water Resources Meeting, Indiana Planning Association Spring Meeting, DuPage Mayors and Managers Conference, Illinois Lake Management Association, and Chicago Wilderness: Making the Connection, Plants and Hydrology Symposium.

This report was prepared in June 2005 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.

## 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. Watershed-based plans incorporate nine minimum elements identified by the US EPA. The goal of these nine minimum elements is to ensure that federally funded projects are effective in restoring (or protecting) waters impaired by non-point source pollution.

### Thorn Creek and Poplar Creek

In 2003, the Commission, with the support of the Illinois Environmental Protection Agency (IEPA), embarked on two important watershed planning pilot projects, one in the Thorn Creek watershed and the other in the Poplar Creek watershed. These pilot projects are following a consistent planning methodology used by many 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, and (7) implement plan and monitor success. The goal of this planning methodology is to produce a Watershed-based plan (WBP).

The Thorn Creek Watershed-based Plan, currently in draft form, is being reviewed by watershed stakeholders. A final draft should be complete in August of 2005. 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).

Development of the Poplar Creek watershed plan was put on hold through the first half of 2005, while the Fox River Study Group and the Illinois State Water Survey developed a water quality model for Poplar Creek. Work on the plan will resume in the second half of 2005 and will incorporate the results of the modeling effort.

### Watershed-Based Plan Upgrades

NIPC (through a grant from the IEPA) is offering financial and technical assistance to improve existing watershed-based plans in northeastern Illinois. In late 2004, NIPC requested proposals from watershed planning groups that wished to upgrade their plans. Funding was awarded to seven watersheds and the work to upgrade these plans is currently underway. Watersheds receiving funding are: Nippersink Creek, Tyler Creek, East and West Branches of the DuPage River, North Branch Chicago River, Bull Creek/Bull's Brook, Fish Lake Drain, and Indian Creek.

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.

## 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 table of this fiscal year's review actions involving FPA boundary changes and new or expanded treatment facilities is presented below. A total of 56 requests were reviewed. The Commission's Water Resources Committee recommended support for approximately 43,728 acres of land transfer from non-FPA to FPA or from one FPA to another. One land treatment system, 10 plant expansions, and one new plant are pending or deferred.

One of the municipalities, the Village of Frankfort, requested an amendment of state and areawide water

quality management plans to reflect an expansion of its existing Wastewater Treatment Plant from 0.75 mgd to 3.0 mgd. The increased capacity is required to provide new and expanding development within the region's wastewater treatment plant facility area. NIPC commended the Village of Frankfort for its effort to commit to install phosphorus removal and to accept more restrictive permit limits for carbonaceous biochemical demand (CBED's), total suspended solids, and higher effluent dissolved oxygen levels. In addition, the Village worked effortlessly with the Sierra Club and the Prairie Streams Network to consider measures that protect and restore Hickory Creek.

**Level I Water Quality Plan Amendment Actions**

Review #	Applicant	Request	NIPC Recommendation	IEPA Decision
03-WQ-095	City of Elgin	FPA Boundary Change	Support	Approved 6,375 acres
03-WQ-092	Village of Hampshire	FPA Boundary Change	Support for 5,292 acres	Approved 6,589 acres
03-WQ-092	Village of Hampshire	WWTP Expansion	Support	Deferred
03-WQ-091	Village of Huntley	FPA Boundary Change	Support for 716 acres	Support for 716 acres
03-WQ-094	Village of Pingree Grove	FPA Boundary Change	Support	Approved
03-WQ-094	Village of Pingree Grove	WWTP Construction	Support	Deferred
04-WQ-033	Village of Huntley	FPA Boundary Change	Support	Approved
04-WQ-045	City of Wilmington	FPA Boundary Change	Support	Pending
04-WQ-086	Mill Creek WRD	FPA Boundary Change	Support	Pending
04-WQ-071	Village of Lakewood	FPA Boundary Change	Support	Pending
04-WQ-071	Village of Lakewood	WWTP Expansion	Support	Pending
04-WQ-079	Village of Manhattan	FPA Boundary Change	Support	Pending
04-WQ-108	City of Joliet	FPA Boundary Change	Support for 2,720 acres	Pending
04-WQ-110	Village of Elwood	FPA Boundary Change	Support	Pending
05-WQ-007	Village of Beecher	FPA Boundary Change	Support	Pending
05-WQ-008	Village of Wonder Lake	FPA Boundary Change	Support	Pending
05-WQ-111	Lakes Region San. Dist.	FPA Boundary Change	Support	Pending

**Level II Water Quality Plan Amendment Actions**

03-WQ-014	Village of Lakemoor	WWTP Construction	Support	Pending
03-WQ-048	Village of Beecher	FPA Boundary Change	Support	Support
03-WQ-049	City of Joliet	FPA Boundary Change	Support	Approved
03-WQ-050	City of Joliet	FPA Boundary Change	Support	Approved
03-WQ-096	Village of Matteson	FPA Boundary Change	Support	Pending
03-WQ-097	Village of Diamond	FPA Boundary Change	Support	Pending
03-WQ-098	City of Joliet	FPA Boundary Change	Support	Pending
03-WQ-100	City of Joliet	FPA Boundary Change	Support	Approved
03-WQ-102	Village of East Dundee	WWTP Expansion	Support	Deferred
03-WQ-103	Village of Beach Park	FPA Boundary Change	Support	Approved
03-WQ-099	Village of Plainfield	FPA Boundary Change	Support for 3,233 acres	Support
03-WQ-104	City of Joliet	FPA Boundary Change	Support	Approved
04-WQ-008	Village of Frankfort	Plant Expansion	Support	Pending
04-WQ-009	Village of Frankfort	FPA Boundary Change	Support	Approved
04-WQ-010	Village of Frankfort	FPA Boundary Change	Support	Approved
04-WQ-011	City of Crest Hill	WWTP Expansion	Support	Deferred
04-WQ-012	Lake in the Hills San. Dist.	WWTP Expansion	Support	Deferred
04-WQ-013	Village of Huntley	FPA Boundary Change	Non-support	Declined
04-WQ-030	Village of Zion	FPA Boundary Change	Support	Approved
04-WQ-031	Village of Deer Park	FPA Boundary Change	Support	Approved
04-WQ-032	Village of Hoffman Estates	Land Treatment System	Pending	Pending
04-WQ-034	Village of Wonder Lake	Aerated activ. sludge pl.	Support	Deferred
04-WQ-036	Village of Diamond	WWTP Expansion	Support	Deferred
04-WQ-037	City of St. Charles	FPA Boundary Change	Support	Approved
04-WQ-039	Village of Tinley Park	Map Correction	Support	Approved
04-WQ-043	Village of East Dundee	FPA Boundary Change	Support	Approved
04-WQ-044	Mill Creek Water Rec. Dist.	FPA Boundary Change	Pending	Pending
04-WQ-048	Otter Cr. Water Rec. Dist.	FPA Boundary Change	Support	Approved
04-WQ-049	Otter Cr. Water Rec. Dist.	FPA Boundary Change	Support	Approved
04-WQ-072	Fox Metro Water Rec. Dist.	FPA Boundary Change	Support	Approved
04-WQ-080	Village of Elwood	FPA Boundary Change	Support	Approved
04-WQ-094	City of Joliet	FPA Boundary Change	Support	Approved
04-WQ-095	Village of Shorewood	FPA Boundary Change	Support	Approved
04-WQ-102	Village of Matteson	FPA Boundary Change	Support	Approved
04-WQ-109	City of Geneva	FPA Boundary Change	Support	Approved
04-WQ-111	Northern Moraine WRD	WWTP Expansion	Support	Pending
05-WQ-009	Village of Bolingbrook	FPA Boundary Change	Support	Pending
05-WQ-110	Fox Metro Water Rec. Dist.	FPA Boundary Change	Support	Pending
05-WQ-112	Wheaton Bible Church	FPA Boundary Change	Pending	Pending
05-WQ-122	Fox Metro Water Rec. Dist.	FPA Boundary Change	Support	Pending
05-WQ-128	City of McHenry	FPA Boundary Change	Pending	Pending
05-WQ-129	City of St. Charles	FPA Boundary Change	Support	Pending

## Non-point Source Pollution Control Project

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. In 2004, a new round of funding was provided to NIPC to support approximately \$660 thousand of additional projects in the Upper Des Plaines River watershed and over \$2 million of projects in the Fox River 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 advisor for the projects highlighted.

### Upper Des Plaines River Watershed Projects

Following on the successful first round of five Section 319 projects, the Upper Des Plaines River watershed was again the beneficiary of significant Section 319 funding (a total of \$659,023 of which \$395,406 is federal and \$263,617 is local sponsor funding) secured and managed by the Northeastern Illinois Planning Commission. The current projects, which are in the design and construction phases, are highlighted below.

The Village of Lincolnshire is implementing the *Indian Creek Restoration Project* to stabilize and buffer an approximately 2,200 foot section of Indian Creek with vegetation management and bioengineering techniques. The project also will convert an existing detention basin into a stormwater wetland system (including settling ponds and a vegetated swale) designed to remove suspended and soluble non-point source pollutants, enhance habitat and aesthetics, and improve water retention and other beneficial hydrologic functions while preserving existing flood control benefits. Educational components include a public educational brochure, a public education meeting, and educational signage to explain the project and benefits.

Lake County Forest Preserve District's *Ryerson Conservation Area Visitor Center Project* will include 40,033 square feet of a porous pavement parking lot with underground storage, bioinfiltration swales or vegetated filter strips, a rain garden, and two cisterns to treat and infiltrate runoff from the site before it discharges to the Des Plaines River in southeast Lake County. The treatment system will be designed so as to retain smaller rain events within the voids of the porous paving

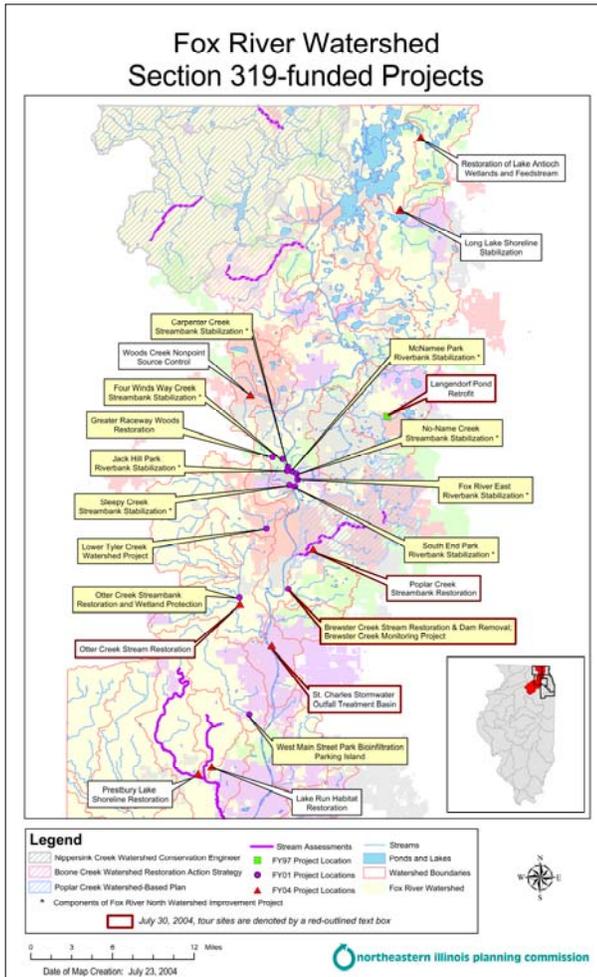
drainage layer and evaporate over time. During larger events that saturate the drainage layer, excess runoff from both the drainage layer and the surface of the paving will drain to the bioinfiltration swales. An educational brochure also will be produced for distribution to the public.

*The Ravinia Park and Indian Creek Park Project*, sponsored by the Sylvan Lake Homeowners Association in conjunction with the Freemont Township Highway Department, will construct a stormwater wetland in Ravinia Park designed to improve pollutant removal before discharging stormwater into Sylvan Lake in south central Lake County. Techniques used in constructing the stormwater wetland will include disabling drain tiles, installing a sedimentation basin, and planting native wetland vegetation. A spillway discharging from Sylvan Lake to Indian Creek Park will be replaced, the stream bank will be stabilized using bioengineering techniques, and riffle structures will be installed to eliminate erosion and reduce streamflow velocity and bank erosion while oxygenating the water. A 0.40 acre bottomland floodplain will be restored through vegetation management. A system of interpretive signage will be installed at the project site that describes the project.

### Fox River Watershed Projects

Work was completed on the nine projects funded under the FY2001 funding cycle. Details on those projects are in the 2003-2004 Water Quality Activities Report. Eight new projects were initiated in the second half of 2004.

Kane County is implementing the *Lake Run Habitat Restoration Project*, utilizing various stream restoration techniques along an approximately 3,600 foot section of this tributary to Blackberry Creek. Techniques include excavation to reconnect the stream with the floodplain, re-grading streambanks, pre-vegetated coir fiber roll for toe stabilization, erosion control blanket, selective tree removal for increased light penetration, clearing invasive and controlling exotic plant species by cutting and herbiciding, seeding, and installing rock bars and riffles. The project will implement wetland restoration and enhancement techniques including diverting stormwater from roads to wetland, reconnecting the floodplain to the stream channel, crushing existing field tiles to restore wetland hydrology, excavating topsoil and re-spreading spoil on adjacent high ground, wetland seeding, burn management and herbiciding, and floodplain terracing to restore and enhance the wetlands. These techniques will be designed to reduce erosion, enhance infiltration, reduce runoff volume and velocity, improve water quality, and enhance aquatic habitat.



This map, prepared for a tour of Fox River projects, shows the location of the eight new projects described here, in addition to those mentioned in previous Water Quality Activity reports.

The **Otter Creek Stream Restoration Project**, locally sponsored by the St. Charles Park District, will implement selected management practices on a segment of Otter Creek, a tributary of Ferson Creek and the Fox River in Kane County, to stabilize the eroding streambanks and streambed. The selected management practices include the stabilization of 3,140 feet of eroding streambanks using techniques such as “toe-tuck” revetments of undercut and collapsing banks, revetment build-outs in over-widened sections of the channel, streambank layback or regrading, selective tree removal, native vegetation planting, and erosion control blankets. The project will also include the stabilization of the streambed through the implementation of three cross-riffle grade control structures and raising an existing footbridge to reduce the build up of debris caught by the bridge and associated scouring of the channel bottom. The management practices will improve water quality, remove suspended and soluble non-point source pollutants, enhance habitat and aesthetics, and improve other beneficial hydrologic functions.

The City of St. Charles is conducting the **St. Charles Stormwater Outfall Treatment Basin Project** to construct a stormwater wetland to receive and treat runoff from a stormwater channel before discharging to 7th Avenue Creek, a Fox River tributary. The excavated stormwater wetland will be planted with deep-rooted native forbs and other native wetland vegetation. A new inflow structure will allow flows in the stormwater channel to soak into the stormwater wetland. The wetland will improve water quality, remove suspended and soluble non-point source pollutants, enhance habitat and aesthetics, and provide water retention and other beneficial hydrologic functions.

The **Poplar Creek Streambank Restoration Project**, sponsored by the Izaak Walton League Home Corporation-Elgin Chapter, will stabilize 200 feet of eroding streambanks along Poplar Creek, a tributary of the Fox River in Cook County. The project will arrest streambank erosion and reduce non-point source pollution through the installation of environmentally sound practices (including regrading, native vegetation planting, and stone toe protection) while protecting or enhancing habitat, ameliorating damage from peak flows, reducing peak flow velocities, and enhancing aesthetic qualities.

The **Restoration of Lake Antioch Wetlands & Feedstream Project**, led by the Friends of Lake Antioch Association, will implement wetland restoration and streambank stabilization techniques along on unnamed stream in northwest Lake County. A stone filter check fence will be designed and installed to retain water and restore wetlands, improve water quality, remove suspended and soluble non-point source pollutants, enhance habitat and aesthetics, and provide water retention. Additionally, streambank stabilization techniques including regrading, stone, A-jacks, native vegetation planting, erosion control blankets, and riffles will be applied along 520 feet of eroding stream channel to arrest streambank erosion and reduce non-point source pollution.

The **Prestbury Lake Shoreline Restoration Project**, sponsored by the Prestbury Citizen’s Association, will stabilize 925 feet of severely eroding shoreline on Prestbury Lake, located in the Blackberry Creek watershed in Kane County. This project will arrest shoreline erosion and reduce non-point source pollution through the installation of environmentally sound practices such as A-jacks and vegetated geogrids while protecting or enhancing habitat and aesthetic qualities.

The Village of Lake in the Hills is implementing the **Woods Creek Non-point Source Control Project** which will convert several existing dry bottom detention basins into two constructed wetlands designed to improve

pollutant removal before discharging stormwater into Woods Creek, a tributary of Crystal Creek which drains to the Fox River in McHenry County. The stormwater wetlands will be designed to remove suspended and soluble non-point source pollutants, enhance habitat and aesthetics, and improve water retention and other beneficial hydrologic functions while preserving existing flood control benefits. Techniques used in converting the existing detention basins into stormwater wetlands will include planting emergent and wet mesic native wetland vegetation, re-routing storm sewers to maximize the flowpath lengths in the wetlands, excavation and grading, modifying outlet structures to retain low flows, and installing level spreaders to dissipate flows discharged from the wetlands. In addition, a storm drain stenciling project will be implemented in the community.

The Lake County Forest Preserve District is conducting the *Long Lake Shoreline Stabilization Project* which will stabilize 1,400 feet of severely eroding shoreline on this glacial lake in Lake County. Shoreline stabilization practices to be employed include excavation and regrading, gabion baskets, submerged shelf with rock wall and submergent-emergent plant zone, timber wall, sheet piling, boulder toe, clearing of non-native vegetation, erosion control blanket, and native vegetation planting.

#### Salt Creek Watershed Projects

Four projects and the preparation of educational outreach materials were completed in the last year.

The Salt Creek Watershed Network (SCWN) worked with NIPC to prepare a watershed map for Salt Creek, a BMP guide and a funding guide. SCWN also prepared and updated a website for the watershed at <http://www.saltcreekwatershed.org>.

Elk Grove Village implemented the *Salt Creek Streambank Stabilization Project* which stabilized streambanks and upland slopes along 12,000 feet of Salt Creek to reduce streambank erosion while protecting and enhancing habitat.

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 Village of Itasca conducted the *Spring Brook Creek Daylighting and Stabilization Project* at Spring Brook Nature Center. This project installed bioengineering streambank stabilization techniques along a 1,500 foot section of Spring Brook Creek. Additionally, erosion control measures and wetland plantings were established at a daylighted storm sewer and are controlling erosion and filtering stormwater before it discharges to the creek.

The *Parking Lot Runoff Pollution Prevention Project*, sponsored by the Village of Brookfield, installed a bioinfiltration facility and manufactured treatment system to receive and treat runoff from the municipal parking lot and roof of the village hall before it discharges to Salt Creek.

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## Related Natural Resource Activities

### Chicago Wilderness Activities

The consortium now includes over 180 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, including serving as co-Chair and as Coordinator for the Sustainability Team. Other staff members are active on the Aquatics Task Force and Science Team.

### Influencing Transportation Infrastructure: Incorporating Biodiversity into Design

In November 2004, NIPC held a half day workshop that focused on transportation infrastructure. The workshop included presentations, a roundtable discussion, and a charrette. The presentations featured projects that incorporated biodiversity into their designs. The roundtable discussion explored impacts of public infrastructure on regional biodiversity, both direct and indirect. The design charrette centered on local projects to develop design solutions that make biodiversity a

priority. Participants included staff from Chicago Wilderness organizations, as well as transportation professionals.



*Nancy Williamson, IDNR, shares the ideas of incorporating biodiversity into an urban transportation project at the Transportation Infrastructure Roundtable.*

## Natural Landscaping

Natural landscaping has long been identified as a tool to help reduce stormwater runoff and to improve water quality by reducing erosion and the need for herbicides and fertilizers. This year, with funding from Chicago Wilderness, NIPC completed "Natural Landscaping for Local Officials: Design and Management Guidelines." This is an accompaniment to "Natural Landscaping for Local Officials: A Source Book." Both of these publications assist local officials in using natural landscaping on their own properties and to encourage residents and businesses in this method of landscaping as well.



*The Design and Management Guidelines include information on burning as a management tool.*

## Ecological Planning and Design Directory

This webpage, <http://www.nipc.org/environment/sustainable/>, created and hosted by the Commission with funding from Chicago Wilderness, provides resources, tools, and techniques for developers, local officials, and stakeholders interested in creating sustainable communities. The Directory demonstrates how interests of the public and private sectors can intersect, with opportunities for development that is both environmentally sensitive and cost-effective. The Directory promotes innovative thinking and sound choices in the areas of biodiversity and natural habitats, conservation design, sustainable development, natural landscaping, and water resource protection. The resources presented convey approaches to issues such as how to write ordinances that preserve natural assets, how to manage stormwater at large and small scales, how to landscape naturally for environmental and aesthetic benefits, and many other important guidelines. Collectively, the documents convey a unified set of best practices that individuals, businesses, governments, and other organizations can implement to the benefit of their communities.

## Local Legacy

NIPC has received funding from the Illinois Department of Natural Resources (IDNR) to assist in the implementation of the Local Legacy Act. McHenry County was selected as a pilot area, and together with IDNR and the University of Illinois in Urbana-Champaign, NIPC is assisting the county with information on how to preserve its cultural, agricultural, and natural resources.

## Lake Michigan Academy

Last year, 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 second phase of this Lake Michigan Academy project will continue the efforts of Phase 1 by providing funding to each of the regional planning agencies to pursue individual needs for watershed management and planning that will improve the condition of Lake Michigan.

## Southern Lake Michigan Regional Water Supply Consortium

NIPC has been actively coordinating and facilitating meetings of the Southern Lake Michigan Regional Water Supply Consortium. This effort resulted in over 200 local and regional planners gathering in Chicago in February 2005 to discuss the water supply issues facing the region around Lake Michigan. "Straddling the Divide" fostered dialogue between over 200 engineers, planners, scientists, and politicians who have a common interest in maintaining the quantity and quality of water available for the region's communities. NIPC continues to facilitate meetings of the consortium and maintains its website at <http://www.nipc.org/environment/slmrWSC/mission.htm>

Initial funding for this effort was provided by the Illinois-Indiana Sea Grant program with additional funding provided by the Joyce Foundation.

### 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; natural landscaping; and stream, lake, and wetland protection.

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

# Lake Monitoring & Management

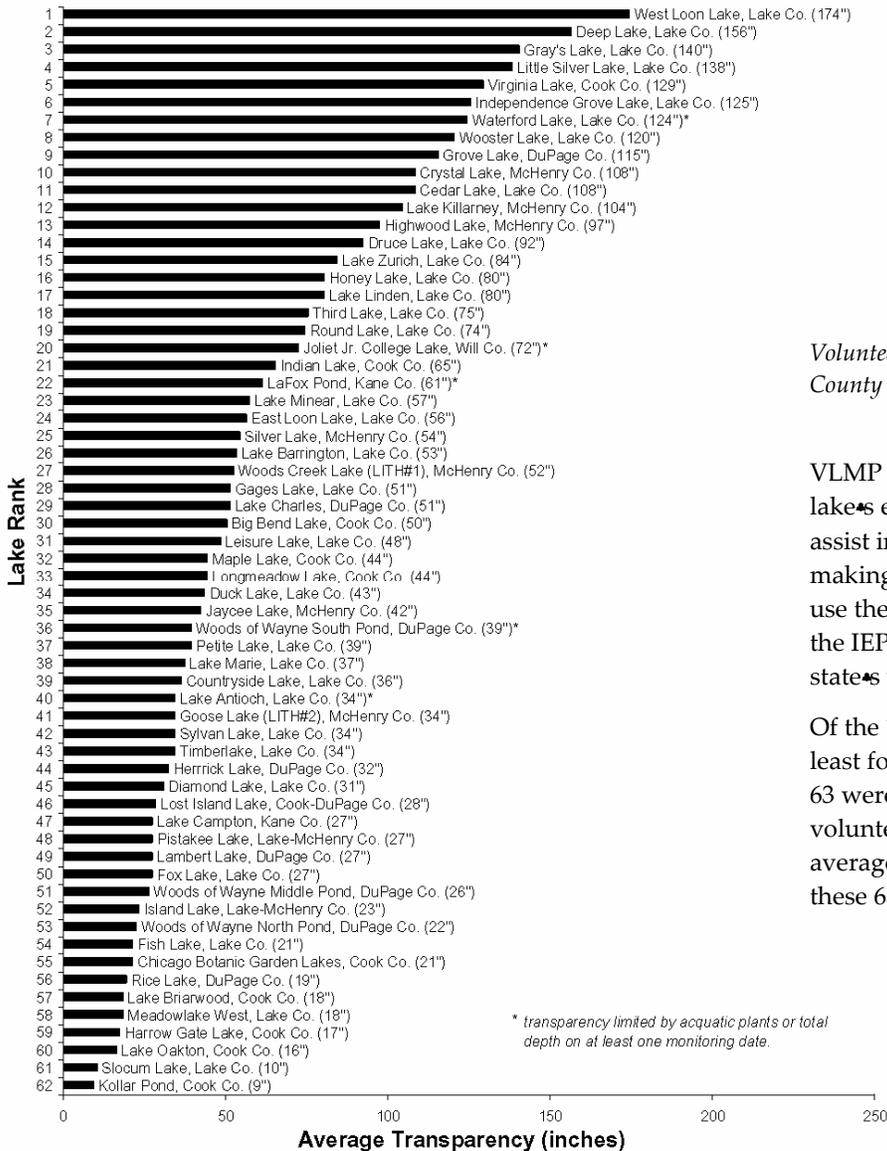
## Volunteer Lake Monitoring Program

Illinois' Volunteer Lake Monitoring Program (VLMP) continued with its 24<sup>th</sup> year in 2004. Initiated by IEPA in 1981, this popular program brings together citizens, state agency staff, and regional planning commissions to monitor and investigate the quality of Illinois lakes. NIPC serves as program coordinator for the six-county northeastern Illinois region. Staff provides volunteer training, technical assistance, educational materials, data management, fact sheet development, and assistance in annual report preparation.

Volunteers measure water transparency (clarity) in a lake of their choosing 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 typically is 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). In addition to Secchi disk monitoring, a subset of the volunteers (on a rotating basis) also collect water samples that are analyzed at an IEPA laboratory.

### Northeastern Illinois 2004 VLMP Average Secchi Transparencies (Lakes monitored four or more periods)



Volunteer Jeremy Ford uses a Secchi disk at Grass Lake in Lake County to measure water transparency.

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. 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 131 lakes VLMP-monitored statewide during at least four of the twelve monitoring periods during 2004, 63 were in northeastern Illinois involving more than 140 volunteers. The accompanying figure presents the average annual Secchi disk transparency values for 62 of these 63 northeastern Illinois lakes.

West Loon Lake in Lake County exhibited the greatest average transparency this year with 174 inches. Not far behind were three more Lake County lakes: Deep Lake (156 inches), Gray's Lake (140 inches), and Little Silver Lake (138 inches). Other lakes with average transparency of 100 inches or more were Virginia Lake in Cook County; Grove Lake in DuPage County; Independence Grove, Waterford, Wooster, and Cedar Lakes in Lake County; and Crystal Lake and Lake Killarney in McHenry County. On the other end of the spectrum, several lakes displayed low average transparencies 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 NIPC's Environment and Natural Resources Group.

### Lake Rehabilitation and Protection

For more than 20 years, the Commission has assisted numerous local municipalities and agencies in studying, protecting, and rehabilitating 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*

An Illinois Clean Lakes Program Phase 2 rehabilitation and protection program at the Forest Preserve District of Cook County's Maple Lake continued into its second year of implementation. Several projects are aimed at maintaining the lake's water quality and improving aquatic habitat and recreational opportunities. The Commission is serving as technical project advisor to the District for the Phase 2 program.

During the past year, staff conducted detailed fall and spring surveys of the aquatic plant community, continued lake water quality sampling, provided input on engineering plans and permitting for a shoreline stabilization project, and assisted District staff with a sedimentation survey of the southwest and southeast bays. Construction of shoreline stabilization measures is expected to begin in summer 2005. The sedimentation survey was done in preparation for a potential, small-scale nearshore sediment removal project to improve fish habitat and angler access.

Of serious concern was the discovery of Eurasian water milfoil (*Myriophyllum spicatum*) in the lake in late summer

2004. Found in scattered patches within an approximate 3-acre area, this non-native, invasive species can become quite troublesome in lakes from both ecological and recreational perspectives. It grows rapidly in the early spring to form a dense, mat-like canopy near the water surface, thereby limiting sunlight for other, later-growing native aquatic plant species. The surface mats also interfere with boating and fishing and reduce the lake's aesthetic appeal. Eurasian water milfoil (EWM) can quickly expand its range and dominate the aquatic plant community, upsetting the lake's ecological balance including the fishery. Since one of the objectives of the Maple Lake rehabilitation and protection program is to diversify the aquatic plant community, the presence of EWM poses another challenge to reaching this goal. Hence, following notification and recommended action by Commission staff, the District's staff moved quickly to curtail the EWM's growth in fall 2004 and follow-up actions are planned for summer 2005.



Warner Brothers "lake house" movie set on Maple Lake.

On a lighter note, Maple Lake was recently in the spotlight as filming for a future Warner Brothers movie took place at the lake in spring 2005. The movie set constructed at the lake included a glass house set over the water. Following dismantling of the "lake house," the shoreline in that area will be stabilized with native vegetation and a fishing pier will be constructed.

In addition to IEPA, we would like to thank our NIPC contributors. The contributions that we receive from local governments, foundations, and individuals provide match dollars to the projects and work described in this report.



# northeastern illinois planning commission

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The Northeastern Illinois Planning Commission is the official comprehensive planning agency for six counties — Cook, DuPage, Kane, Lake, McHenry, and Will — that form the greater Chicago metropolitan area. NIPC works with local governments and others to promote sensible growth. The Commission was formed by act of the Illinois General Assembly in 1957, with a mandate to provide the region with comprehensive land-use planning and forecasts of population, employment, and other socio-economic indicators.

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