



Chicago Metropolitan
Agency for Planning

233 S. Wacker Drive, Suite 800
Chicago, IL 60606

www.cmap.illinois.gov

voice 312-454-0400
fax 312-454-0411

Water Quality Activities Report

July 2007 - June 2008



Highlights for 2007 - 2008

- ◆ Continued to coordinate with the Lake County Health Department-Lakes Management Unit on the Lake Biodiversity Recovery and Protection Plan Development Pilot Project.
- ◆ Convened the Lake Michigan Watershed Academy conference to engage regional planning councils in the Lake Michigan watershed in addressing water resource issues.
- ◆ Facilitated the Poplar Creek Watershed Coalition and produced the Illinois EPA funded *Poplar Creek Watershed Action Plan*.
- ◆ In cooperation with the Kishwaukee River Ecosystem Partnership, began the Illinois EPA funded watershed plans for Beaver Creek, the Upper Kishwaukee River, and Lawrence Creek — all subwatersheds of the Kishwaukee River Basin.
- ◆ Continued to provide outreach to local government officials, staff, and the public on techniques for protecting natural resources and biodiversity.
- ◆ Upgraded seven watershed plans to qualify as Illinois EPA watershed-based plans. Watersheds were: Indian Creek; Fish Lake Drain; Bull Cree/Bull's Brook; North Branch Chicago River; Nippersink Creek; Tyler Creek; and the Upper DuPage River
- ◆ Continued implementation of an Illinois Clean Lakes Program Phase 2 Rehabilitation and Protection Project at the Forest Preserve District of Cook County's Maple Lake.
- ◆ As required by Senate Bill 1201, CMAP's board formed a Wastewater Committee with the responsibility of reviewing amendments to the Illinois Water Quality Management Plan and making recommendations to the Illinois EPA.
- ◆ Coordinated the Illinois Volunteer Lake Monitoring Program for more than 68 lakes in northeastern Illinois involving more than 130 volunteers.
- ◆ Continued to lead and facilitate the work of the Regional Water Supply Planning Group (RWSPG). The group has adopted 14 water-use conservation measures for the regional plan.
- ◆ Reviewed Illinois Water Quality Management Plan amendment requests which includes Facility Planning Area boundary changes, wastewater land treatment areas, construction of new treatment plants and treatment plant expansions.

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

David Clark, *Senior GIS Analyst*: population projection reviews, FPA map design and production.

Jesse Elam, AICP, *Associate Planner*: watershed planning, water supply, geographic information systems, open space planning, biodiversity protection.

Holly Hudson, *Senior Aquatic Biologist*: lake and watershed monitoring and management, volunteer lake monitoring, nonpoint source pollution control project management.

Kerry Leigh, ASLA, *Senior Environmental Planner (former staff)*: water quality, watershed planning and management, conservation design, stream and wetland management and monitoring, natural resource planning.

Timothy Loftus, Ph.D., *Senior Environmental Scientist*: water resources, watershed planning, water supply planning.

Dawn Thompson, *Associate Planner*: Facility Planning Area program, geographic information systems, FPA map design and production, Project Review Program.

This report was prepared in September 2008 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 (from left): white water buttercup at Highwood Lake in McHenry County; kids on the lookout for aquatic critters at White's Creek in Geneva; White's Creek during BMP construction; green frog at Buffalo Creek in Wheeling (photos by H. Hudson, CMAP).

Water-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. In order to be eligible for Clean Water Act Section 319 funding to help support development of watershed plans, these plans must follow new elements and include certain information as required by the United States Environmental Protection Agency (USEPA). The goal of these “nine minimum elements” for a watershed-based plan is to ensure that implementation projects are effective in restoring waters that are impaired by nonpoint source pollution.

Kishwaukee Basin

CMAP and collaborating members (i.e., Boone County Soil and Water Conservation District, Openlands Project, and The Land Conservancy of McHenry County) of the Kishwaukee River Ecosystem Partnership (KREP) have been working since spring 2007 on watershed plans for Beaver Creek, the Upper Kishwaukee River, and Lawrence Creek, all subwatersheds of the Kishwaukee River basin. Funding is being provided by Illinois EPA through the Clean Water Act Section 319(h) grant program; the plans are due to Illinois EPA by the end of September 2008. Illinois EPA conditioned the award on CMAP’s agreement to make the plans consistent with USEPA watershed plan guidance, the *Illinois EPA’s Guidance for Developing Watershed Action Plans in Illinois*, any total maximum daily load implementation plan requirements, and Illinois EPA’s *Framework for a Basinwide Planning and Protection Pilot*¹ (Framework), a document that expresses the recommendations of the Basinwide Management Advisory Group (B-MAG) on the fate of the Facility Planning Area (FPA) review process. In brief, the B-MAG called for the FPA process to continue while Illinois EPA tests a basinwide management approach through a pilot program to:

(Recommendation 1): “Develop a subwatershed plan through a stakeholder process led by local units of government or an authorized agent and to present the plan to local government units for adoption and implementation, subject to a 5–7 year review and update”;

(Recommendation 5): “Address certain elements beyond the “Nine Minimum Elements”² required of Section 319 funded watershed plans as discussed below and in the appendix”;

(Recommendation 14): “Test a more effective mechanism for local governments to settle disputes over issues of growth and development;” and *(Recommendation 17):* “Test the redundancy (or lack thereof) in the FPA program.”

The subwatershed plans CMAP and KREP are developing the first in this pilot program. It is our understanding that Illinois EPA may incorporate the subwatershed plans into the Illinois Water Quality Management Plan, after which Illinois EPA actions — NPDES permit issuance, facility plans, State Revolving Fund loans, etc. — must be consistent with the subwatershed plans. According to the Framework, Illinois EPA “will make a final determination of

what constitutes consistency with an approved Watershed Plan for the purposes of that consistency being considered in a regulatory or loan review” (p. 40).

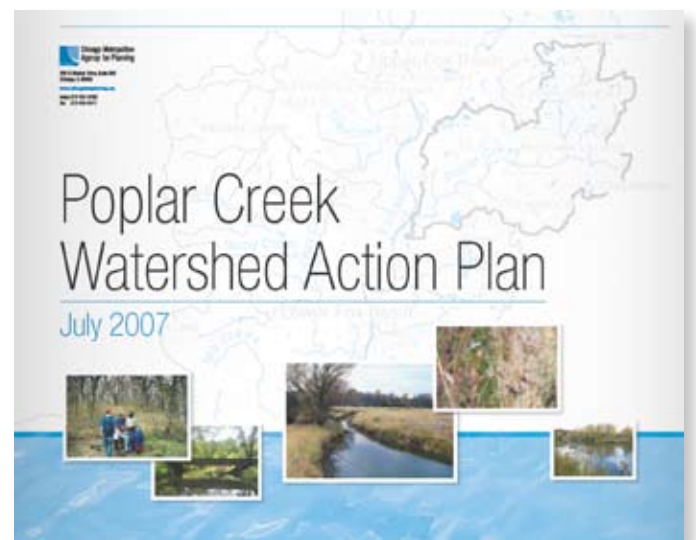
Draft plans have been completed for each of the subwatersheds and are under review by stakeholders. Once final drafts are complete, it is expected that Illinois EPA will hold a public comment period on the plans. After these comments are incorporated, CMAP will ask local governments to adopt the plans formally, and Illinois EPA will work towards incorporating these plans as amendments to the Illinois Water Quality Management Plan.

Jackson Creek

A Section 319-funded watershed-based plan is also being developed for the Jackson Creek watershed in east-central Will County. The 42 miles of stream in the hydrologic unit code (HUC) 0712000409 drain 52.6 square miles of land, most of which is in row crops, into the Des Plaines River. CMAP is acting as watershed coordinator, while the Will County Stormwater Management and Planning Committee is the project sponsor. The plan will comply with the nine minimum elements prescribed by USEPA. More information about this plan can be found on the Will County website, <http://willcountylanduse.com/SubEng/JacksonCrWAC.html>.

Poplar Creek

The previous *Water Quality Activities Report* noted that the Poplar Creek watershed planning process being conducted by NIPC/CMAP with Section 319 funding had produced a draft plan. Since then, in July 2007, the final *Poplar Creek Watershed Action Plan* was published. The Plan was also posted on the website of the Chicago Metropolitan Agency for Planning (CMAP) (www.cmap.illinois.gov).

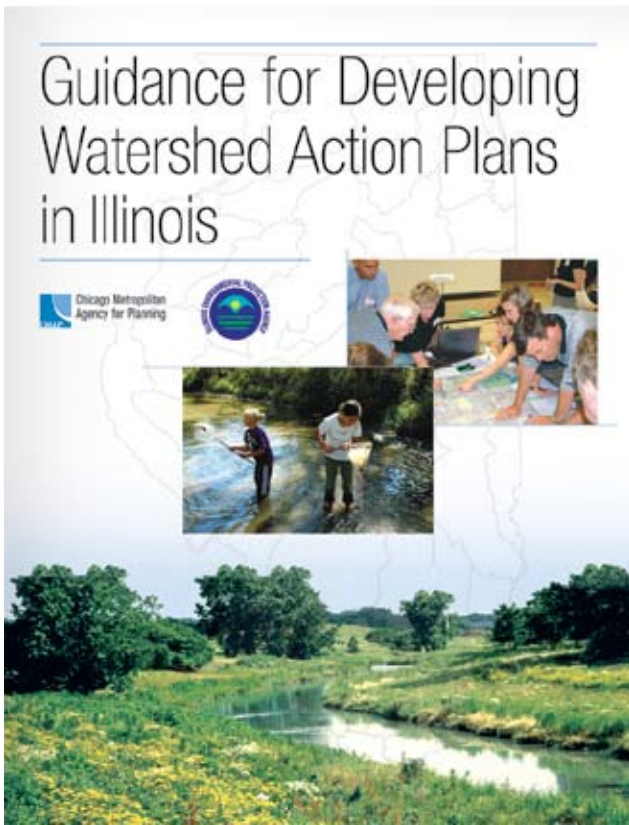


¹ <http://www.epa.state.il.us/water/watershed/facility-planning/basinwide-framework.pdf>

² *Nonpoint Source Program and Grants Guidelines for States and Territories* (Federal Register V. 68, No. 205, October 23, 2003)

Watershed-Based Planning Guidance

The new *Guidance for Developing Watershed Action Plans in Illinois* was published in May 2007, but the grant was not completed until two seminars were conducted: one held in Chicago in late June 2007 and another in Springfield in July 2007. The seminars, designed to “animate” the new guidance document, featured a number of speakers and attracted nearly 100 attendees. Printed copies of *Guidance for Developing Watershed Action Plans in Illinois* are available from both Illinois EPA and CMAP, as well as via the CMAP website at <http://www.cmap.illinois.gov/watershed/default.aspx>.



Watershed-Based Plan Upgrades

Seven watershed plans were upgraded to conform with USEPA guidelines for states’ implementation of nonpoint source management programs under Section 319 of the Clean Water Act and for the award of Section 319 grants to states to implement those programs.

The planning processes funded here were designed to address the nine minimum elements of a watershed-based plan as described by USEPA guidance. While the planning approach varied from one organization to another and from one plan to another, all plans ultimately include the information called for in the guidance.

The original grant agreement with Illinois EPA, executed in July 2004, required two extensions. Thus, the project required three years and nine months to complete; much longer than was imagined during the grant proposal stage and a reflection of the challenges that were unanticipated, yet ultimately met.

The watershed-based plans and the organizations responsible for their development are as follows

Watershed	Responsible Organization / Agency
Indian Creek	Lake County Stormwater Management Commission
Fish Lake Drain	Lake County Stormwater Management Commission
Bull Creek/Bull’s Brook	Lake County Stormwater Management Commission
North Branch Chicago River	Lake County Stormwater Management Commission
Nippersink Creek	McHenry County Defenders
Tyler Creek	The Conservation Foundation
Upper DuPage River	The Conservation Foundation

Wastewater Quality Planning and Management Activity

Under a contract with the Illinois EPA to implement the Northeastern Illinois Water Quality Management Plan, CMAP reviewed 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 23 requests were reviewed during this 1-year period. CMAP's Wastewater Committee recommended support for approximately 10,050.96 acres of land transfer from non-FPA to FPA or from one FPA to another FPA, one land treatment system, two plant expansions, and one new wastewater treatment plant.

CMAP would like to highlight the efforts of the City of Woodstock, a community that has taken a proactive approach to protecting water quality. In anticipation of requesting approval of expanding the capacity and service area of its southern WWTF. The City has tentatively agreed to reduce its requested service area from 8,935

to 3,874 acres. This dramatic reduction of 5,061 acres will promote managed growth and development, protecting both water quality and agricultural uses in the area. The City, after analyzing the impacts of discharging greater volume and concentration of effluent into the Lower Kishwaukee River, also is considering more stringent effluent limits to protect this valuable natural resource. This includes nitrogen removal and construction of an enhanced wetland. In addition, as part of a pilot watershed planning effort, the City has agreed to conduct a stream characterization (monitoring) study and dedicate funding to restore certain reaches the river. These early efforts at the planning stages are exemplary of how the FPA process can make a tremendous difference in engineering proactive solutions to safeguard our waterways and guide smart growth in the region.

Level I Water Quality Amendment Table

WQ Review Number	Applicant	Type of Request	Acreage Requested	CMAP Recommendation	Acreage CMAP Supported	IEPA Decision	Acreage IEPA Approved
07-WQ-039	Village of Elwood	FPA Boundary Change	5050	Partial Support	3770	Pending	N/A
07-WQ-040	Village of Beecher	FPA Boundary Change	2390	Partial Support	1222	Pending	N/A
07-WQ-041	Village of Beecher	FPA Boundary Change	334	Support	334	Approved	334
07-WQ-045	City of Wilmington	FPA Boundary Change	3,875	Support	3,875	Approved	3,875
07-WQ-046	Village of Crete	FPA Boundary Change	2,405	Support	2,405	Approved	2,405
07-WQ-053	Thorn Creek Basin S.D.	FPA Boundary Change	1,400	Partial Support	232	Partially Approved	232; 1,168 acres deferred
07-WQ-081	Village of Elburn	FPA Boundary Change	1,145	Support	1,145	Approved	1,145
07-WQ-099	City of McHenry	FPA Boundary Change	1,408.26	Support	1,408.26	Approved	1,408.26
07-WQ-120	Village of Hebron	FPA Boundary Change	360	Support	360	Pending	N/A
07-WQ-140	Village of Hampshire	FPA Boundary Change	352	Support	352	Approved	352
07-WQ-141	Village of Pingree Grove	FPA Boundary Change	133	Support	133	Approved	133
08-WQ-003	Village of Spring Grove	FPA Boundary Change	3,311	Pending	N/A	Pending	N/A
08-WQ-015	City of Marengo	FPA Boundary Change	1,196	Pending	N/A	Pending	N/A
08-WQ-037	City of Sandwich	FPA Boundary Change	563	Pending	N/A	Pending	N/A
08-WQ-048	Village of Pingree Grove	FPA Boundary Change	175	Pending	N/A	Pending	N/A
08-WQ-072	Village of Beecher	FPA Boundary Change	160	Pending	N/A	Pending	N/A
08-WQ-081	City of Woodstock	FPA Boundary Change & Plant Expansion from 1.75 to 3.5 mgd	3,874	Pending	N/A	Pending	N/A
TOTAL			28,131.26		14,136.26		9,550.26

Level II Water Quality Amendment Table

WQ Review Number	Applicant	Type of Request	Acreage Requested	CMAP Recommendation	Acreage CMAP Supported	IEPA Decision	Acreage IEPA Approved
07-WQ-062	Village of Grayslake	FPA Boundary Change	39.7	Supported	39.7	Approved	39.7
07-WQ-079	Village of Crete	FPA Boundary Change	101	Supported	101	Approved	101
07-WQ-001	Village of Itasca	Relocate the Itasca WWTP & increase from 2.6 to 3.2 mgd.	N/A	Supported	N/A	Deferred	N/A
07-WQ-002	Forest Pres. Dist of Cook County	New Treatment Plant 0.0056 mgd	N/A	Supported	N/A	Deferred	N/A
07-WQ-014	Village of Big Rock	Installation of a Land application system on a 245.6 acre site	N/A	Pending	N/A	Pending	N/A
07-WQ-053	Newark Sanitary District	WWTP Expansion from 0.122 mgd to 0.285	N/A	Supported	N/A	Deferred	N/A
TOTAL			140.7		140.7		140.7

Facility Planning Area Map Updates

Under a contract with Illinois EPA, CMAP prepares Facility Planning Area base maps and point source tabular accounts for amendments to the Illinois Water Quality Management Plan.

During the program year of 2007, CMAP completed revisions to the Facility Planning Area (FPA) maps that incorporated all of the recent FPA boundary amendments. In addition to FPA boundaries, these new maps also include the location of NPDES permits for municipal dischargers as well as a tabular description of each municipal discharge. These new maps will provide more information to municipal units of government, planners, engineers, and the general public.

Wastewater Committee

Effective July 1, 2007, the Chicago Metropolitan Agency for Planning (CMAP) assumed NIPC's former responsibility for the Facility Planning Area (FPA) process. As required by Senate Bill 1201, the CMAP Board formed a Wastewater Committee with the responsibility of recommending directly to the Illinois Environmental Protection Agency (Illinois EPA) the appropriateness of proposed requests for modifications and amendments to the established boundaries of wastewater facility planning areas, requests for expansions of wastewater treatment facilities, and other amendments to the State of Illinois Water Quality Management Plan required under the federal Clean Water Act.

The new CMAP Wastewater Committee consists of the following members:

- ◆ three members of the CMAP Board;
- ◆ one member appointed by the President of the Metropolitan Water Reclamation District of Greater Chicago;
- ◆ one member appointed by the President of the largest statewide association of wastewater agencies.

The prior FPA review process and procedures are in place and continue to be followed.

Nonpoint Source Pollution Control Projects – Section 319, Clean Water Act

The Illinois EPA receives federal funds through Section 319(h) of the Clean Water Act to help implement Illinois' Nonpoint Source (NPS) Management Program (Program). The purpose of the Program is to work cooperatively with local units of government and other organizations toward the goal of protecting the quality of Illinois' waters by controlling NPS pollution. The Program supports several types of activities including implementation of cost-effective corrective and preventive best management practices (BMPs) on a watershed scale; implementation of demonstrative new and innovative BMPs on a non-watershed scale; NPS pollution control information, education, and outreach programs; NPS pollution control research and monitoring projects; and development of watershed-based plans.

For more than ten years, CMAP and its predecessor the Northeastern Illinois Planning Commission have assisted numerous local municipalities, agencies, and organizations in implementing projects designed to reduce NPS pollution to the region's rivers, streams, lakes, and wetlands. This assistance has typically included grant application development as well as project coordination, administration, and technical review of design plans, BMP installations, and education and outreach products.

Fox and Des Plaines River Watershed Projects

Fox River Watershed Section 319 Projects

Project Name (FY02-cycle)	Local Sponsor
Long Lake Shoreline Stabilization Project	Round Lake Area Park District
Project Name (FY04-cycle)	Local Sponsor
Lake Run Habitat Restoration	Kane County
Otter Creek Stream Restoration Project	St. Charles Park District
St. Charles Outfall Treatment Basin Project	City of St. Charles
Poplar Creek Streambank Stabilization Project	Izaak Walton League Home Corporation, Elgin Chapter
Restoration of Lake Antioch Wetlands & Feedstream	Friends of Lake Antioch Association
Prestbury Lake Shoreline Restoration Project	Prestbury Citizen's Association
Woods Creek Nonpoint Source Control Project	Village of Lake in the Hills
Long Lake Shoreline Stabilization Project	Lake County Forest Preserve District

FY02- and FY04-cycle projects

Work was completed in summer 2007 on several Fox River watershed Section 319 projects: one funded under the FY02-cycle and eight funded under the FY04-cycle (see list at left). The final project reports are available as PDF documents upon request.

FY06-cycle projects

The four projects funded under the FY06 Section 319 grant cycle (total budget \$3,350,254 of which \$2,000,000 is federal and \$1,350,254 is local sponsor funding) continued implementation during the past year. Project highlights are provided below.

Kane County is working with Dundee Township to implement the **Dixie Briggs Fromm Stream Corridor Restoration Project**, located within the 151-acre Dixie Briggs Fromm (DBF) Open Space and Nature Preserve in Dundee Township in northeastern Kane County. Over the past year, design plans were finalized and construction was substantially completed to stabilize the approximately 1,850-foot long North-South Channel, a tributary to the Fox River. Streambank bioengineering practices

(including bank regrading, vegetated rock toe, fiber roll toe, vegetated geogrids, tree rootballs, and live brushlayers) were implemented along severely eroded banks. Several grade control structures (including rock riffles and stepped pool structures) were installed to arrest extensive channel downcutting. The riparian corridor was cleared of invasive woody species and reseeded with native plant species which will help reduce stormwater runoff generated from the site as well as increase pollutant filtration and groundwater infiltration. Over the coming year, the stream stabilization practices will be monitored and maintained, additional native plantings conducted, and educational signage developed.



A section of severely eroded streambank before (top) and after (right) BMP construction. Stabilization practices include fiber roll with reshaped slope, rock riffle, and rock toe with vegetated geogrid, (photos courtesy of Ted Gray, Living Waters Consultants).



The White's Creek Stabilization Project is being conducted by the Geneva Park District. A tributary to the Fox River, White's Creek is located in east central Kane County and drains about 1,100 acres of urban area in southeast Geneva and northeast Batavia, Illinois. This project is the final phase of a ½ mile long restoration/stabilization project on White's Creek. The project reach is approximately 1,350 feet long and located within the District's 9-acre Esping Park. During the past year, construction was completed that reestablished meanders in the existing low flow channel, created a wider natural stream buffer using native vegetation, excavated/created new floodplain terraces that are more accessible to stream flows (to reduce in-stream scouring forces), and installed channel grade control and instream habitat features including riffles, pools, and gravel substrate. Also during the past year, a ten-year operation and maintenance plan was drafted and a series of educational signs were designed. Over the next year, the District will continue monitoring and maintenance activities and install the educational signs along a walking path near the creek.

The City of Aurora is undertaking work in several interrelated efforts to implement its **Green Infrastructure Implementation Project**. The City will utilize best management practices (BMPs) within its riverfront tax increment financing districts, brownfield sites, and planned sewer decombination areas in order to provide more effective treatment of urban runoff before it enters the Fox River. Work will be focused within the area tributary to the proposed River's Edge Park being planned along the Fox River's eastern shore (i.e., the "Study Area"). Land uses within the Study Area are primarily commercial, mixed use, industrial, and residential with some parks and open spaces. The project includes the following components:

- ◆ construction of stormwater BMPs within the River's Edge Park to treat numerous pollutants typical of urban runoff;



- ◆ development of a naturalized stormwater management corridor plan (NSMCP) to extend naturalized stormwater conveyance and treatment elements throughout the Study Area and to serve as a tool for parcel prioritization for BMP implementation;
- ◆ construction of a pilot bio-filtration BMP feature within a Study Area neighborhood in one of the parcels identified in the NSMCP;
- ◆ incorporation of BMPs into pending sewer decombination projects, consistent with the NSMCP;
- ◆ development and distribution of a stormwater management toolkit to educate local government agencies, developers, contractors, and land owners about nonpoint source pollution, water quality protection, and stormwater BMP design; and
- ◆ development and implementation of several public education and outreach strategies in support of all project components.

During the past year, a naturalized stormwater corridor plan was drafted by the City's engineering consultant. This plan identified several potential sites for bio-filtration facilities and provided conceptual BMP layouts for two sites. The plan also presented a draft public education and outreach work strategy. Over the next year, the naturalized stormwater corridor plan and education work strategy will be finalized, and a stormwater management toolkit will be developed. Design plans and specifications also will be prepared for the River's Edge Park BMPs, bio-filtration facility, and decombination BMPs. CMAP will be submitting a request to Illinois EPA for a one-year project extension to accommodate construction, public education and outreach, and stormwater management toolkit distribution activities.



The same reach of White's Creek during (top) and after (bottom) BMP construction. Stabilization practices seen include bank regrading and vegetated buffer, gabion basket toe under vegetated geogrids, and rock riffles/pools (photos by H. Hudson, CMAP).



Even though Buffalo Creek is within an urban watershed, mussels can be seen in several sections and are likely a food source for muskrats and raccoons (photo by H. Hudson, CMAP).

One of the most severely eroded sections of Buffalo Creek is pictured here, revealing a 15 foot high bare bank (photo by H. Hudson, CMAP).



The **Buffalo Creek Streambank Stabilization Project** is being implemented by the Village of Wheeling. A tributary to the Des Plaines River, Buffalo Creek drains approximately 26.82 square miles in south central Lake County and north central Cook County, Illinois. This project is the first phase of a nearly five mile long, three-phase stabilization program proposed for Buffalo Creek within the Cook County portion of the Village. The most severely impacted reaches are located in the northern third of the program area and are the target of this Phase 1 stabilization project.

Approximately 6,200 linear feet of stream channel will be addressed, utilizing both structural and biotechnical techniques to stabilize and enhance the riparian corridor, reduce loss of real estate, and improve water quality and aquatic habitat in Buffalo Creek.

During the past year, final engineering design plans were completed and landowner agreements were achieved with private property owners along the stream corridor. Construction is expected to commence in fall 2008.

Lake Monitoring and Management

Volunteer Lake Monitoring Program

Illinois' Volunteer Lake Monitoring Program (VLMP) continued with its 27th season in 2007. Initiated by Illinois EPA in 1981, this popular program brings together citizens, state agency staff, and regional planning commissions to monitor and investigate the quality of Illinois' lakes. CMAP serves as program coordinator for the seven-county northeastern Illinois region. Staff provides volunteer training, technical assistance, educational materials, data management, fact sheet development, training manual updates, and assistance in annual report preparation.

Volunteer monitors 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). Another useful bit of information the Secchi measurement indicates is that about twice as deep as you can see the Secchi disk in the water is the sunlit, or "euphotic," zone of the lake. This means that within this zone there is generally enough sunlight for aquatic plants and algae to live and grow.

In addition to Secchi disk monitoring, a subset of the volunteers (on a rotating basis) also collect water samples that are analyzed at an Illinois EPA or Illinois EPA-certified laboratory. Water sample analyses include total phosphorus, nitrogen compounds, suspended solids, and chlorophyll

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, Illinois EPA uses VLMP data in its biennial assessment of the state's waters as required by the federal Clean Water Act.

Of the 142 lakes VLMP-monitored statewide at least once during 2007, 68 were in northeastern Illinois involving more than 130 volunteers. The accompanying chart presents the average annual Secchi disk transparency values for the 62 northeastern Illinois lakes that monitored during at least four of the twelve bi-monthly monitoring periods.

Volunteer Virginia Piekarski (Joliet Jr. College Lake, Will Co.) uses a Secchi disk to measure water transparency (photo by H. Hudson, CMAP).



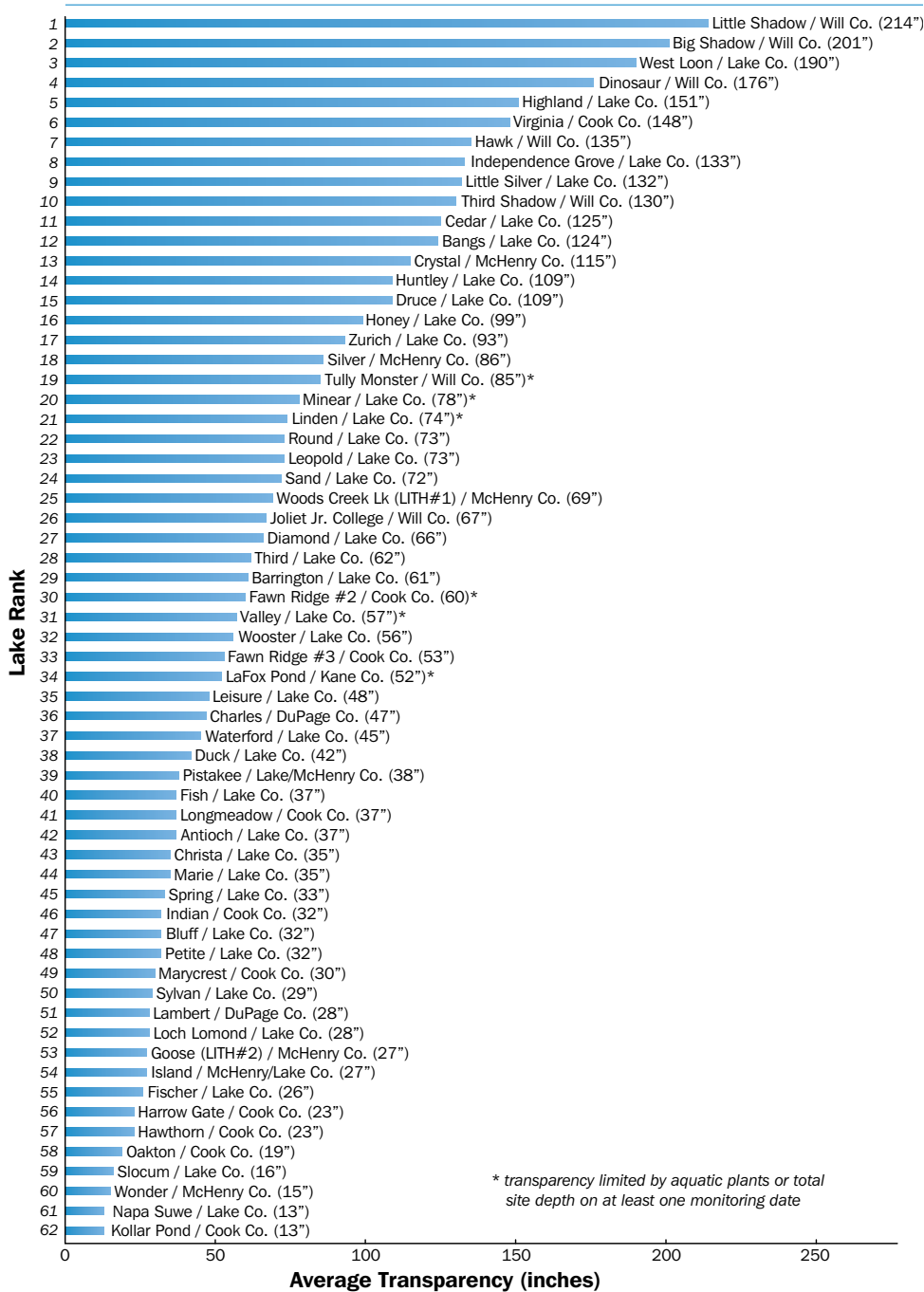
Volunteer Jim Golden (Lake Antioch, Lake Co.) fills a sample bottle with lake water for analysis at an Illinois EPA-certified laboratory (photo by H. Hudson, CMAP).

This season, two new lakes to the VLMP, Little Shadow Lake and Big Shadow Lake in Will County, exhibited the greatest average transparencies at 214 and 201 inches (nearly 18 and 17 feet), respectively. These are relatively deep, former gravel quarry lakes. The next greatest average clarity of 190 inches (almost 16 feet) was recorded at West Loon Lake, a glacial lake in Lake County. Twelve more glacial or former quarry lakes rounded out the top 15 with average transparencies between 109 and 176 inches (about 9 to almost 15 feet of clarity). Numerous other

lakes around the region recorded average Secchi readings between about 48 and 96 inches (4 to 8 feet, with 4 feet considered a minimum guideline for swimming safety). On the lower end of the spectrum, several lakes displayed low average transparency values of less than 24-36 inches (2 to 3 feet), generally due to high levels of suspended sediment and/or algae. More information on the VLMP is available from Northeastern Illinois VLMP Coordinator Holly Hudson at CMAP.

2007 VLMP Average Secchi Transparencies, Northeastern Illinois

Lakes monitored four or more periods



Lake Rehabilitation and Protection

For more than 25 years, CMAP and its predecessor the Northeastern Illinois Planning Commission have assisted numerous local municipalities and agencies in studying, protecting, and rehabilitating their lakes. This assistance typically involves developing grant

applications, monitoring lake conditions and diagnosing problems, formulating rehabilitation and protection plans, and assisting in the implementation of rehabilitation and protection strategies.

Maple Lake Rehabilitation and Protection Project

Implementation of an Illinois Clean Lakes Program Phase 2 rehabilitation and protection program at the Forest Preserve District of Cook County's Maple Lake continued. Supported by a Clean Lakes Program grant from Illinois EPA, the District is accomplishing several projects aimed at protecting the lake's water quality and improving aquatic habitat and recreational opportunities. CMAP is serving as technical project advisor to the District for the Phase 2 program.

During the past year, CMAP staff continued to monitor water quality and aquatic plant populations, assess the condition of the shoreline stabilization project completed in 2006 along the north and east shores, plan for a nearshore sediment removal effort, and consider various invasive aquatic plant management strategies. Also during the past year, the District's Fisheries staff continued to monitor the lake's fish community and conduct nearshore

nuisance aquatic plant control. Additionally, the District finished construction of several fishing "bump-outs" and wetland planting zones along the southwest shore which also serve to protect the shoreline from erosion.

Over the coming year CMAP will be working with the District to develop and implement comprehensive plans to control several invasive aquatic plant species including curlyleaf pondweed (*Potamogeton crispus*), Eurasian water milfoil (*Myriophyllum spicatum*), and flowering rush (*Butomus umbellatus*), as well as to diversify the native aquatic plant community. Plans for a nearshore accumulated sediment removal project also will be finalized, and investigations for other aquatic nuisance species including rusty crayfish (*Orconectes rusticus*) and round gobies (*Neogobius melanostromus*) will be conducted.



A newly installed wetland planting zone and flagstone fishing platforms ("bump-outs") are seen along the southwest shore of Maple Lake (photo by H. Hudson, CMAP).

Related Natural Resource Activities; Chicago Wilderness Activities

Lake Biodiversity Recovery and Protection Plan Development Pilot Project

The Illinois Department of Natural Resources (IDNR) awarded C2000 funding to CMAP in spring 2006 to support a Lake Biodiversity Recovery and Protection Plan Development Pilot Project. This is a joint undertaking of CMAP and the Lake County Health Department–Lakes Management Unit (LCHD-LMU). This project will produce two, lake-specific biodiversity protection and recovery plans, targeting one “exceptional” and either an “important” or “restorable” lake (as defined in the Chicago Region Biodiversity Council’s *Biodiversity Recovery Plan*) within Lake County, Illinois — the pilot project area.

Utilizing LCHD-LMU’s existing databases as a starting point, CMAP staff first identified and updated existing data available for Lake County lakes. Then numerous already existing but disparate lake data and information databases, spreadsheets, and documents were reconciled into several streamlined databases that could be linked and searched. CMAP staff then further combined these numerous databases into one “Master” Biodiversity Database consisting of several linked data tables. CMAP and LCHD-LMU defined criteria, with input by CW’s Aquatics Task Force, in order to query the database so that the lakes could be classified as “exceptional,” “important,” “restorable,” “refuge” (a new category), or “other.” LCHD-LMU will be conducting a lake use and management survey of lake owners and managers at the exceptional, important, restorable and refuge lakes in fall 2008. Then the work of facilitating and preparing two, lake-specific biodiversity protection and recovery plans, will commence with the stakeholder groups at each lake. The plans are intended to outline actions for native aquatic species protection and possible reintroduction of extirpated species. These pilot projects will also serve as models of the planning process and applied practices that may be utilized at other lakes in the Chicago Wilderness region.

Aquatic Data Gap Analysis

CMAP is participating in a project of CW’s Aquatics Task Force aimed at identifying sources and gaps of biological, physical, and chemical data pertaining to streams and lakes within the Chicago Wilderness region. Staff provided review and input to a report and metadata database prepared by the Task Force’s consultant. The Task Force will be preparing a final project report summarizing the existing data, identifying the gaps, and recommending priorities for additional field data collection.



The blackchin shiner (Notropis heterodon) is one of several threatened or endangered (E&T) fish species in Illinois. E&T fish species tend to be found in glacial lakes with clear water and good diversity of native aquatic plants. Interestingly, where E&T fish are found, E&T aquatic plant species tend to be present as well, indicating an important link (photo courtesy of The Native Fish Conservancy).

Water Supply Planning

CMAQ continued to lead and facilitate the work of the Regional Water Supply Planning Group (RWSPG) during the second of this three-year planning project. Meeting on a near-monthly basis, the RWSPG has adopted 14 water-use conservation measures for the nascent regional plan and began to explore other strategies including wastewater reuse. One of the more significant accomplishments during the past year was completion of a new water-demand study for the 11-county water supply planning region.

Available for download at <http://www.cmap.illinois.gov/WorkArea/showcontent.aspx?id=9338>, the project completion report features three future water-demand scenarios for five major user sectors. Scenarios were also developed to account for a variety of climate change scenarios. Absent any new policy and program intervention, a “more-resource intensive” scenario indicates that water demand could grow as much as 64% by the year 2050. While population served by public water supply systems explains most of the variability in total public-supply water withdrawals, price of water and median household income are other important explanatory variables. Work continues and it is expected that the region’s first water supply plan will be produced by July 1, 2009. For additional information visit CMAQ’s website at: (<http://www.cmap.illinois.gov/watersupply/default.aspx>)

Lake Michigan Academy

The program invites regional planning organizations to share their work and receive training on watershed issues so that they can conduct outreach to their constituents. CMAQ convened a conference, aimed at regional planning organizations around Lake Michigan but open to others as well, to deliver additional training and to consolidate the experience staff have had in working with their constituents on Lake Michigan issues over the past few years. Regional planning organizations will conduct implementation projects in their subwatersheds using techniques learned through the training.



Chicago Metropolitan
Agency for Planning

233 S. Wacker Drive, Suite 800
Chicago, IL 60606

www.cmap.illinois.gov

voice 312-454-0400
fax 312-454-0411