ANNUAL WATER QUALITY REPORT FOR 1985

Anglers at McHenry Dam on Fox River

The Region's Streams are Looking Better

The spotfin shiner is a little fish which would not be recognized by most people in northeastern Illinois. But its appearance in the DesPlaines River in 1983--along with the better known bluegill, largemouth bass, and black crappie--is an encouraging sign to people concerned about the quality of the region's surface waters.

The shiner was caught during a fish sampling program conducted by the Illinois Department of Conservation (IDOC) as part of an intensive survey of water quality in the DesPlaines River basin. Several thousand individual fish, representing 50 species, were taken by seining or electric shock. The numbers of individuals and species were found to have increased at many sampling stations over the numbers in a similar survey in 1974. More important, the diversity of the fish population--the number of species found together at particular places--had increased since the early survey. The IDOC report--*DesPlaines River Basin Fisheries Assessment,* authored by Bill Bertrand--identified diversity as an important indicator of recovery in a stream in which the fishery has been extensively degraded.

(Continued on page 2)

northeastern illinois planning commission

(Continued from page 1 - Streems are looking better)

The importance of the survey findings does not lie solely in the presence of the fish themselves. Equally important is what their presence indicates about the quality of the water and the stream habitat. The improving fish population is one indicator that the waterways are becoming not only *cleaner* from a chemical standpoint but more *enjoyable* from recreational and aesthetic standpoints. This is the real test of the region's efforts to improve the quality of its waters.

Data published by the Illinois Environmental Protection Agency (IEPA) tend to confirm that the improved fishery is evidence of improved water quality. In 1984, the IEPA reported sampling data for the period 1978-83 which indicate the number of violations of various water quality standard in the DesPlaines, Fox, and other river basins in the state. During the five-year period, violations of ammonia standards decreased in both basins. Violations of the dissolved oxygen standard declined in the Fox but not in the DesPlaines. Fecal coliform, a pollutant associated with wastewater treatment plant discharges, remained a problem in both basins. Among the metals, lead declined as a problem in the DesPlaines, as did copper in both basins. Standards for other metals were seldom violated in either basin.

The IEPA report concluded that, between 1972 and 1982, portions of the DuPage River, Hickory Creek, the Upper DesPlaines River, the Skokie River, and the Fox River moved from "moderate" or "severe" water quality conditions to "intermediate or minor" conditions. Overall conditions in major portions of the DesPlaines River basin remained "severe." A more detailed assessment of the IEPA data would be necessary to pinpoint areas in which significant effort is still required.

The IDOC and IEPA reports are parts of a more extensive examination of stream quality in the region, much of which has not yet been published.

The IEPA report did not assess in detail the reasons for the limited improvements in the region's waterways. It seems likely that much is attributable to the continuing efforts of municipalities, counties, and sanitary districts to upgrade and expand their treatment facilities to meet federal and state effluent standards. Federally-funded improvement projects which were reviewed by the Commission during 1985 are listed in this report. These efforts were given an added boost when the Governor and the General Assembly jointly included funds in the Build Illinois program for waste treatment management projects. These funds will augment the construction grant funds allocated to the state and awarded to local agencies under the federal Clean Water Act. The prospects for continued federal funding of improvements is assessed below.

LAKES AND GROUNDWATER REQUIRE FURTHER MONITORING

While the status of the region's streams appears to be improving, the picture for lakes and groundwater is unclear due to a lack of data upon which to base an evaluation. Volunteer Lake Monitoring Program results show generally stable water clarity over the past several years (article page 8). More monitoring over a longer period for more water quality indicators is needed, however, to accurately assess whether the trend for the region's lakes is improving or declining.

The situation for groundwater is even more confusing. Traditionally, groundwater quality data have been gathered only for inorganic constituents like hardness which are unrelated to public health. Data for hazardous substances is so scarce that the IEPA concluded in its *Plan for Protecting Illinois Groundwater* (article page 6) that an "assessment...is not possible given the level of information currently available." Clearly, a more expansive and aggressive monitoring effort is needed by the State of Illinois in the lake and groundwater areas.

MSD Focus Report

TUNNEL AND RESERVOIR PROGRAM MAINSTREAM INAUGRATION

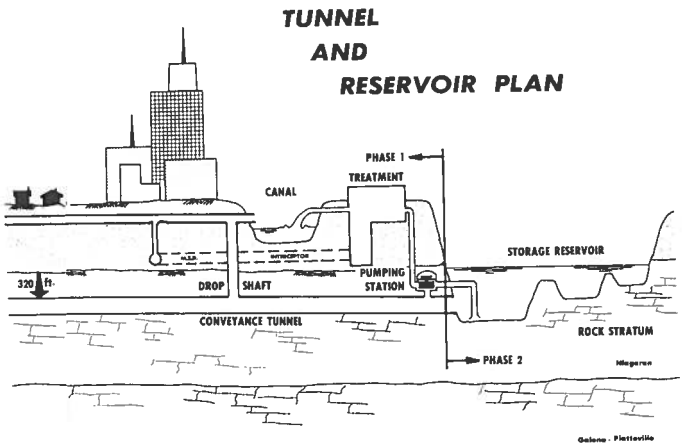
During 1985, a major segment of the Metropolitan Sanitary District's Tunnel and Reservoir Program (TARP) was brought into operation. The TARP system, which has been in planning and development for two decades, represents the most ambitious water pollution control program ever undertaken in the United States, approached only by the reversal of the Chicago River a century ago.

The TARP system was designed to address what the Commission, in its 1979 water quality management plan, called "the most significant water quality problem in the region": overflow from combined sewers. The City of Chicago and many older suburbs are served by sewers which receive both sanitary wastes and stormwater. During dry periods, the entire

(Continued on page 3)

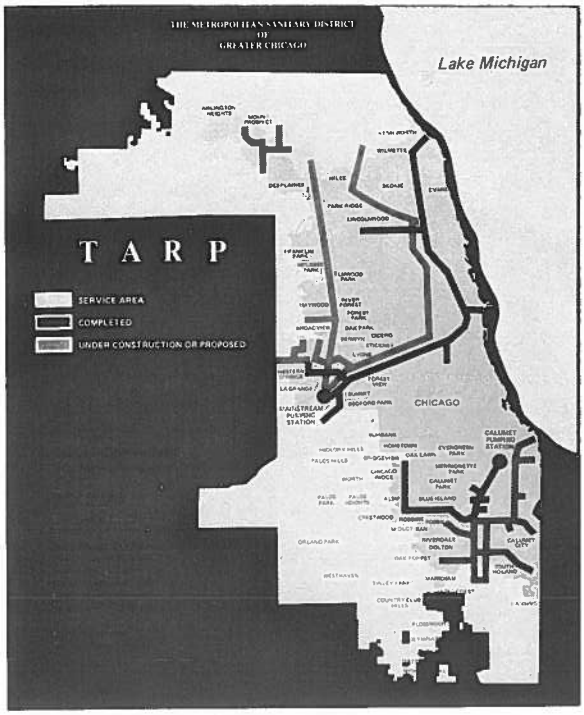
(Continued from page 2 - Tunnel and reservoir program)

flow from these sewers is treated at the Sanitary District's treatment plants and discharged into the waterway system. During heavy rains, however, the combined flow becomes too large for the plants to handle, and a portion must be discharged into the waterways without treatment. This happens on an average of 100 times each year. During particularly heavy storms, the waterways themselves may become overloaded, and untreated wastes are discharged into Lake Michigan.



Credit: MSDGC

Phase I of the TARP system consists of a series of tunnels drilled in bedrock, in which excess combined sewer flows can be stored until the treatment plants can handle them. When the system is complete, 110 miles of tunnels will receive overflows from the 375 square-mile area served by combined sewers. The estimated cost of the tunnels, pumping stations, and connecting structures is $2.2 billion, of which $1.2 billion is completed or under construction.

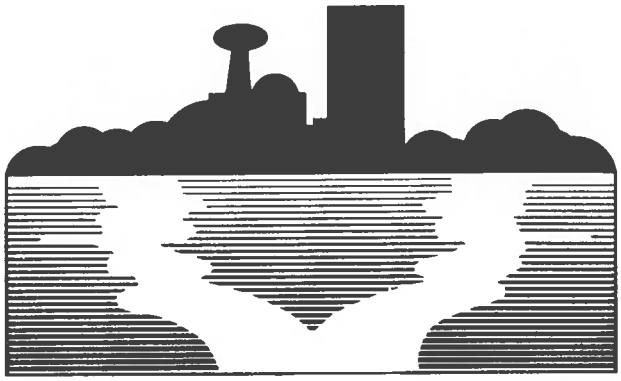


Credit: MSDGC

The Mainstream section of the TARP system was dedicated in May 1985, and became fully operational in October. The 31-mile tunnel generally follows the course of the North Shore Channel and the Chicago River from Wilmette to Hodgkins. Stormwater is introduced into the tunnel through vertical dropshafts which connect to the combined sewer system at regular intervals along the waterway. This stormwater is removed at a pumping station at Hodgkins and treated at the West-Southwest Treatment Plant. Other completed portions of Phase I include 6.6 miles of tunnels in the O'Hare area, which have been in operation since 1980, and 9.2 miles of tunnels in the Calumet system which will be placed in operation during 1986. The system has not been in operation long enough to allow an assessment of its impacts on water quality in the waterways. It is expected that when Phase I is completed, it will remove approximately 85% of pollution which is contributed to the waterways by the combined sewers.

Phase II of the TARP system is designed to provide flood control benefits by capturing and storing stormwater which does not now enter the combined sewer system immediately during a storm but remains in roads, yards, and basements. Large reservoirs excavated in bedrock and connected to the Phase I tunnels would permit the detention and subsequent treatment of this water. With Phase II in place, over 99 percent of the pollutants which enter the waterways would be removed, and untreated overflows would occur only four times every 25 years. The estimated cost of Phase II is $1.6 billion. This does not include the cost to Chicago and the suburbs of upgrading their storm sewers in order to move a larger volume of water to the TARP system. This cost was estimated at $1.4 billion in 1978.

Jurisdiction over Phase II has been assigned by Congress to the U.S. Army Corps of Engineers. The Phase II O'Hare system has been studied by the Corps. Funding for this reservoir is included in the current omnibus bill in the Congress. The study of the Calumet and Mainstream systems has recently been completed by the Corps' Chicago office.



RIVER EDGE RENAISSANCE

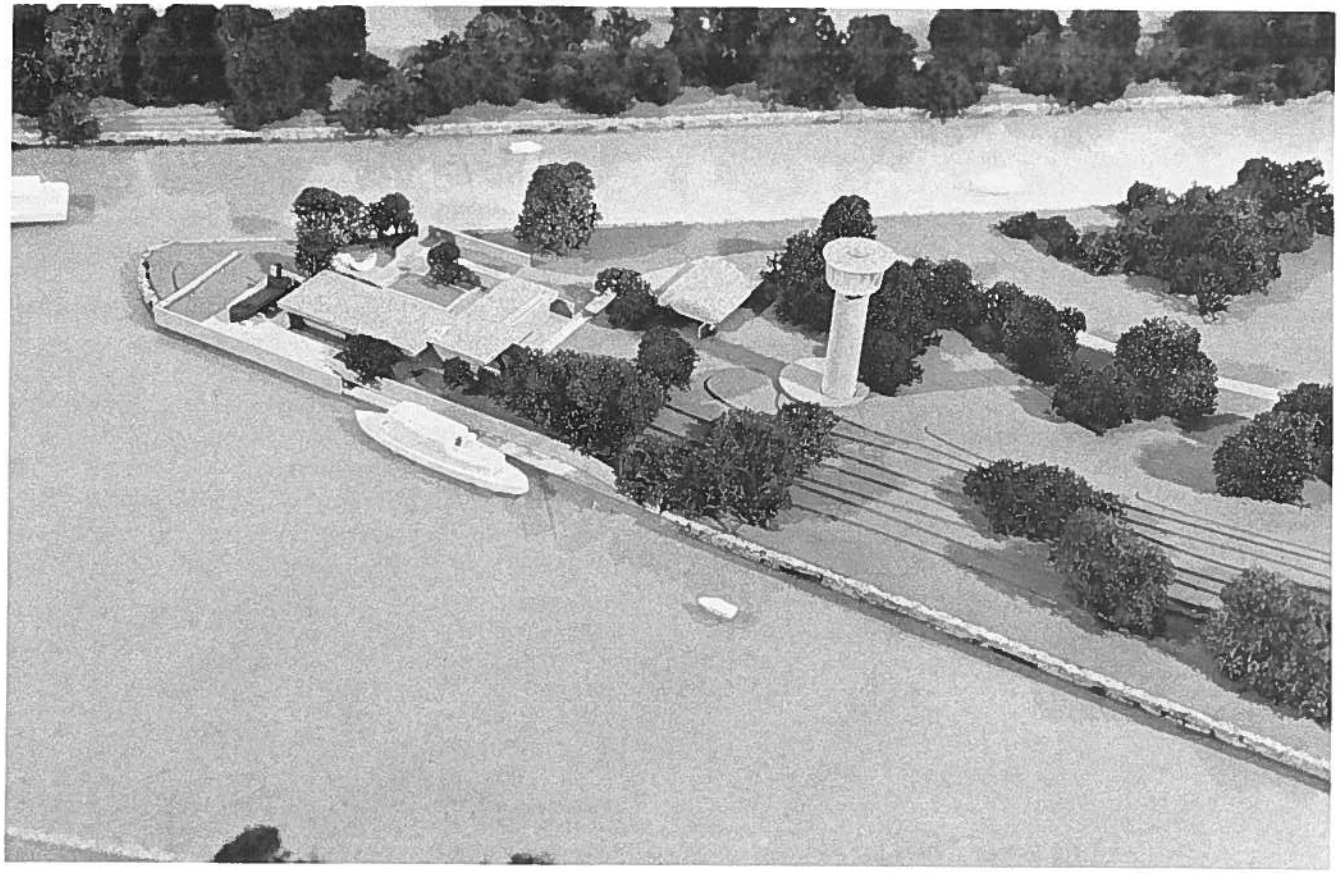
Credit: MSDGC

THE MSD WATERWAY LAND STRATEGY

The elimination of massive pollutant flows to Lake Michigan, accomplished through the reversal of the Chicago River, made the Chicago lakefront suitable for recreational uses which could not otherwise have been considered. The subsequent preservation of the lakefront through a combination of private and public initiatives represents a remarkable civic achievement. The completion of the TARP system may make a similar achievement possible along the region's inland waterways–the North Shore and Cal-Sag Channels and the mainstream of the Chicago River. Improved water quality will increase their potential recreational uses and make them more attractive amenities for waterside development. As the largest landowner along the waterways, the Metropolitan Sanitary District has taken the initiative in developing a strategy for seizing this opportunity.

A pilot study of the 16-mile Cal-Sag Channel has produced a conceptual plan–called River Edge Renaissance–for development of the channel bank lands with a mix of commercial, light industrial, residential, and recreational uses. The proposal recommends that District-owned lands be leased for development by local governments or private firms, with lease provisions that assure public access to the waterways. This would increase recreational opportunities, as well as the local property tax base. A study by a private appraisal firm has identified several prime parcels on which negotiation with developers has begun. One new recreational facility–a boat-launching area in Alsip–has been created.

A group of communities in the eastern portion of the Cal-Sag area have established an Enterprise Zone to add to the benefits which developers can attain by locating in the Renaissance area. Another idea being considered is some sharing among communities of tax revenues derived from waterway land development. This would help to compensate those communities which provide public recreational facilities along the waterways while neighboring communities receive new taxable development.



Architects Model of Completed Section of River Edge Renaissance

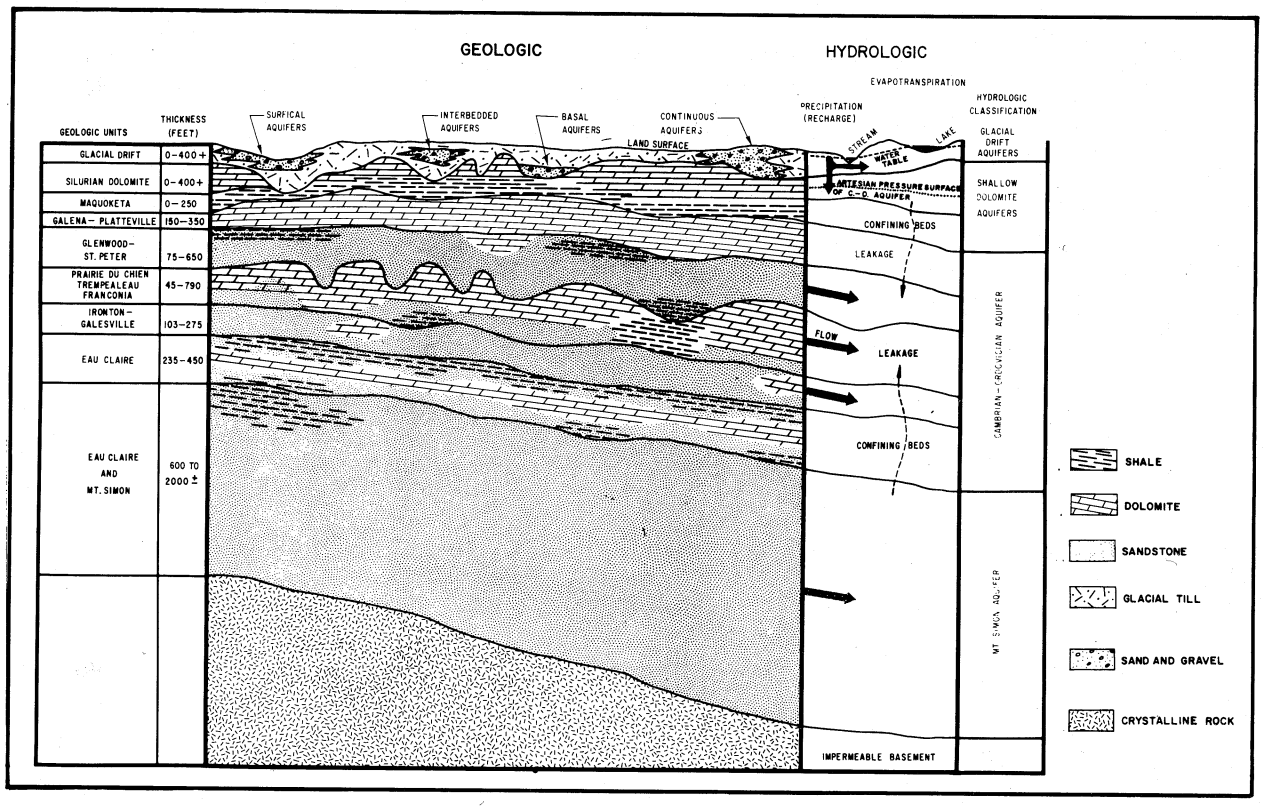
Groundwater Protection

The Areawide Water Quality Management Plan adopted by the Commission in 1979 focused almost entirely on the region's surface waters--its rivers, streams, and lakes. This emphasis reflected the visibility of surface water problems, the existence of well understood technology such as sewage treatment for dealing with them, and the availability of federal and state financial assistance. In the past few years, however, there has been a growing awareness of threats to the quality of our groundwater and the impact these may have on the quality of life in the region.

At the present time, about 2 million people (nearly 30 percent of the region's population) are dependent on wells for their source of water. Even when all of the current allocations of Lake Michigan water are made available, nearly 1 million people will draw their water from wells. In addition, numerous industrial and recreational facilities will continue to depend on their own wells or on groundwater supplied through local governments. These users incur the greatest risk from groundwater contamination. However, groundwater quality also impacts surface water, since groundwater seeps into and becomes part of the flow of rivers and lakes.

Groundwater pollution occurs in several ways. Rainfall soaking into the ground may carry materials such as road salt, agricultural chemicals, or animal wastes with it. Rainfall may also soak through sanitary landfills and carry dissolved materials–called leachate–through leaks in the bottom liner. These problems are particularly severe in the so-called prime recharge areas where the water-bearing underground layers have direct connection with the land surface. Underground pipelines, storage tanks, and well shafts may leak their contents into the soil. These contaminants may be relatively innocuous, such as salts or iron, or they may be highly hazardous synthetic organic compounds which are difficult to detect and whose effects on human health are not fully understood.

While a source of contamination such as a landfill may be highly localized, the effects of contamination are likely to be diffuse. Groundwater and the contaminants it contains do not move in well-defined channels but spread out through porous layers. Because water moves slowly beneath the ground--seldom more than several feet per day in the most porous layers--the effects of contamination may linger for years. For the same reason, the effects may occur at a considerable distance from the source. All of these factors, and the fact that the problem may be deep beneath the ground, make groundwater pollution problems extremely difficult to correct once they have occurred. Planning and implementation activities have been directed at improved methods of preventing initial contamination and at the identification of potential sources of pollution before they endanger public health and safety or the integrity of the environment. Several major initiatives were taken in these areas in the past year.



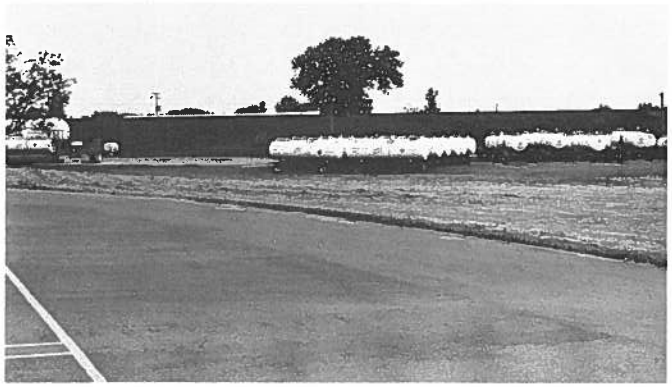
The Groundwater Resource in Northeastern Illinois

northeastern illinois planning commission THE WATER RESOURCE/PLANNING ITS USE

The Ground-Water Reservoir in Northeastern Illinois

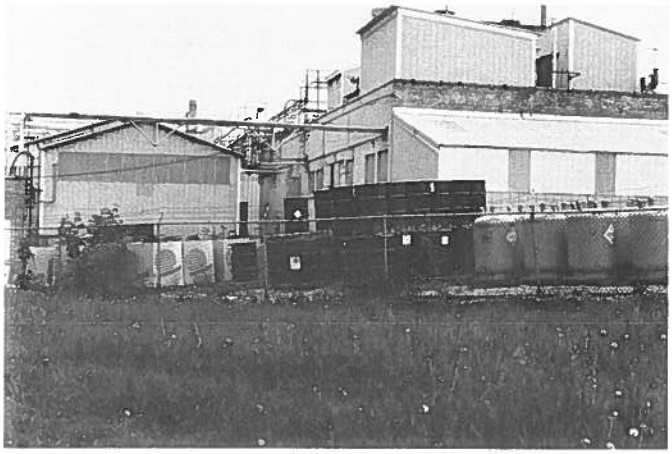
ILLINOIS GROUNDWATER PROTECTION PLAN

In January 1986, the Illinois Environmental Protection Agency (IEPA) released a draft groundwater protection plan for review by the General Assembly, the Pollution Control Board, and the general public. The plan was prepared under the provisions of Public Act 83-1268, which was enacted in 1984. The Act also called for an assessment of the current quality of groundwater in the state and for the establishment of a statewide monitoring network. The survey, conducted by the Illinois State Water Survey, found that as many as one-third of the 3,427 public wells in the state--from which 5 million people derive their potable water--are vulnerable to chemical pollution. It also found that well records and other existing data generally do not identify some of the more exotic chemical pollutants which may be highly hazardous even in very small concentrations. The proposed monitoring network will concentrate on these contaminants.



Agri-chemicals Awaiting Spreading

Tank Farm for Chemical Storage



Industrial Chemical Storage

The proposed five-year plan contains five general recommendations:

1. The state's goals and objectives for groundwater protection should be clarified to remove ambiguities concerning standards applicable to in-ground and in-use water.
2. IEPA and the Department of Energy and Natural Resources (DENR) should continue their groundwater monitoring programs to establish a baseline of data for the state, collect additional data on organic chemical substances, and carry out targeted area-specific studies in areas of high risk.
3. Cleanup of known groundwater contamination problems and assessment of suspected problems should be continued, using Superfund and Clean Illinois funds.
4. Technology-based programs for land pollution control should be implemented. Recommended measures include encouragement of alternatives to landfilling; continued implementation of RCRA requirements including hazardous waste bans and regulation of underground storage tanks; enhanced landfill inspection and enforcement; and expansion of the Industrial Materials Exchange Service.
5. A statewide program of groundwater source protection should be established. Recommendations include the designation of potential contamination sources; legislation to authorize the establishment of minimum setbacks around water supply wells; legislation to direct the preparation of local recharge area protection plans; notification to IEPA prior to the siting of any new source of contamination; and required assurances of alternative sources of water supply where existing supplies are threatened by some other use.

The last of these recommendations represents a radical departure from past state policy. It is based on an understanding which the Commission has advocated for many years: that some environmental problems can be solved only by controlling the land uses which cause or contribute to them. In introducing the draft plan, the Director of the IEPA stated that it may be necessary to restrict the location of such uses as industrial plants which present a high risk of chemical spills or other contamination of groundwater. The potential impact of such a policy on the allocation of development, and of the employment and tax revenues which accompany it, will make the preparation of such plans extraordinarily difficult. Significant state incentives, including financial compensation to landowners who are prohibited from certain uses of their property, may be required.

GROUNDWATER PROTECTION AT LANDFILLS

Sanitary landfills are considered to be potentially dangerous sources of groundwater contamination. As the refuse in a landfill decomposes with the assistance of percolated rainwater, a highly contaminated leachate may be formed. When a sufficient quantity of leachate has accumulated above a landfill's liner, leakage may begin to occur. While some contaminants in the leakage will be attenuated, or filtered out, by a clay liner, some may escape into the groundwater, particularly if there are any permeable seams present in the liner. This leakage is diffuse in nature, and may not occur for many years after a landfill is closed. Contamination is not easily detected, and once detected it may be difficult to stop. Pollution of a groundwater aquifer poses a risk of long-term use impairment due to the confined nature and very slow movement of groundwater.

There is considerable debate over the adequacy of existing landfill controls in protecting the environment. The IEPA proposed in 1984 that new, more stringent landfill requirements be incorporated in the rules and regulations of the Illinois Pollution Control Board (IPCB). As part of their proposal, the IEPA called for minimum liner thickness and leachate collection and removal systems. A requirement for leachate collection is based on the assumption that it is difficult if not impossible to assure, with traditional liner controls, that a landfill will never leak and contaminate ground or surface water resources. The IEPA proposal is still under review. The Commission's draft regional solid waste management plan includes a recommendation that the IEPA proposal be adopted.

RADIUM CONTAMINATION OF GROUNDWATER

Not all problems with groundwater quality are caused by human carelessness in the disposal of wastes or the development of recharge areas. In some areas, naturally-occurring contaminants in groundwater may pose threats to public health. One such contaminant which the U.S. Environmental Protection Agency (USEPA) considers a significant problem in northeastern Illinois is radium.

Radium occurs naturally in unusually high concentrations in the deep sandstone aquifer underlying much of the region. Because excessive radium concentrations in the body have been associated with certain cancers, maximum permissable concentrations in drinking water were promulgated by the USEPA under the Safe Drinking Water Act.

Responsibility for enforcement of the Act in Illinois has been delegated by USEPA to the Illinois Environmental Protection Agency. In 1984, the IEPA notified 20 water supply operators in northeastern Illinois, and 36 others in the remainder of the state, that analysis of their water supplies indicated radium concentrations in excess of permissible limits. Under IEPA rules, the communities were to be placed on the Restricted Status list. This would mean that permits for the extension of water mains or other expansion of their systems to serve new development would be prohibited until the standard was met.

On petition of the communities, and in consultation with IEPA, the Pollution Control Board granted variances from the standard to a number of communities. The effect was to provide a period of time–generally 4 to 5 years–during which time the communities could implement measures to reduce the radium concentrations. In the meantime, they could continue to extend service to new customers. Some of these communities are to receive Lake Michigan water, and radium concentrations will fall as these supplies are brought into use. Other communities will find it necessary to develop shallow wells which draw water from the sand and gravel aquifers near the surface where radium contamination does not occur. This water may be "blended" with water from the deep sandstone aquifers in order to dilute the radium to below prohibited levels.

In late 1985, the USEPA informed the IEPA that it considered the issuance of the variances to have been improper, and it scheduled public hearings prior to an action to revoke the variances. The USEPA contended that variances from maximum contaminant levels cannot be issued unless corrective measures using generally available technology have been implemented and standards have still not been attained. In place of variances, USEPA said, IEPA must enter into enforceable compliance agreements which spell out the techniques and time schedules by which water supplies will be brought up to the standard.

The USEPA made it clear in its statements that it does not consider the radium levels in the subject water supplies an immediate risk to public health, but that there is concern about lifetime exposure to them. There has been some debate among public health specialists as to whether the standard was set at a reasonable level. The standard is currently under routine review as called for by the Act. In the meantime, a number of communities in the region face the prospect of major expenditures to develop alternative sources of potable water.

New Initiatives in Lake Management

The thousands of lakes and ponds in northeastern Illinois are important environmental, social, and economic resources. The region contains nearly all of the state's relatively high-quality "natural" glacial lakes. It also contains many lakes which are in serious trouble. Nearly half of the northeastern Illinois lakes monitored last year have nuisance growth of aquatic weeds and algae, turbidity, and/or sedimentation which moderately or severely impair their use. A unique coalition of public agencies and private volunteers has set out to give these lakes the special attention they must have if their recreational and cultural values are to be restored and preserved.

VOLUNTEER LAKE MONITORING PROGRAM

Spring came about a month early to northeastern Illinois during 1985, with the last freeze recorded at O'Hare Airport on April 10th. Not only did many garden flowers make an early appearance, but so did many "plants" in the region's lakes. Some lakes experienced dense growth of aquatic weeds and algae blooms during May. Such conditions are not usually encountered until later in summer.

Lake residents and users will remember this "natural" phenomenon for years to come. But on over 40 lakes in northeastern Illinois, the folklore will be supported by scientific data collected by volunteers participating in the Volunteer Lake Monitoring Program (VLMP).

The VLMP was initiated by Illinois EPA in 1981. The Agency saw a need for a comprehensive data base on the state's lake resources, but it did not have the funds necessary for such a large data collection effort. The solution: use citizen volunteers to collect simple yet meaningful data on hundreds of lakes throughout the state.

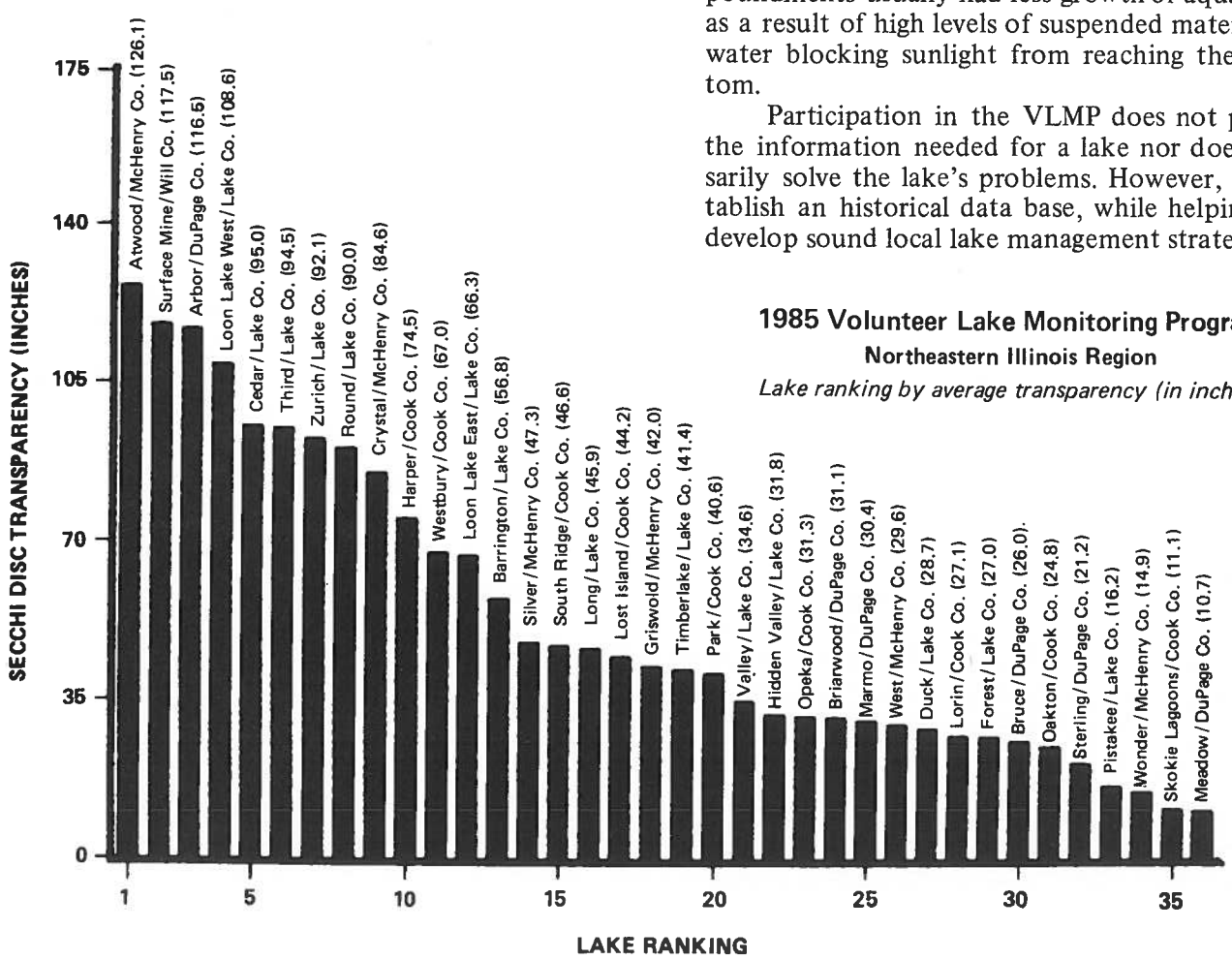
The monitoring data collected by the 52 northeastern Illinois volunteers in the 1985 VLMP is being analyzed by lake scientists ("limnologists"). In general, aquatic weed and algae growth was heavier and earlier than in previous years. However, the average water clarity of the northeastern Illinois lakes in the 1985 VLMP was nearly identical to the average for the 1984 monitoring season. Natural (glacial) lakes, as a group, exhibited the best transparency. Artificial impoundments usually had less growth of aquatic weeds, as a result of high levels of suspended materials in the water blocking sunlight from reaching the lake bottom.

Participation in the VLMP does not provide all the information needed for a lake nor does it necessarily solve the lake's problems. However, it does establish an historical data base, while helping citizens develop sound local lake management strategies.

1985 Volunteer Lake Monitoring Program

Northeastern Illinois Region

Lake ranking by average transparency (in inches)



PARK LAKE VLMP

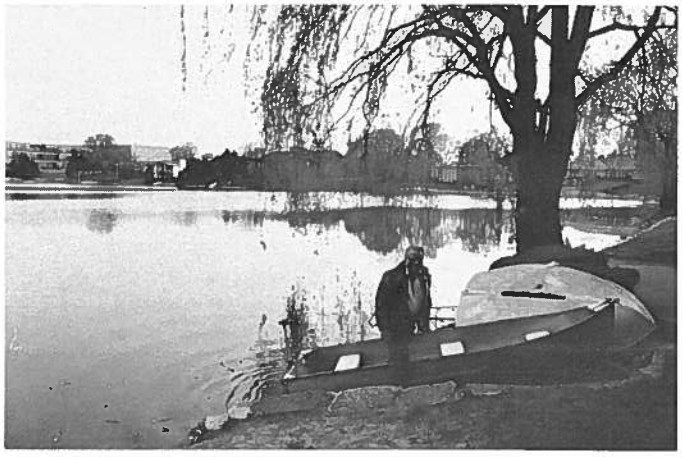
Something is happening at Park Lake. The water is not as clear as it used to be, and dense blooms of algae occur during the summer. In the spring of 1985, the lake experienced its first fishkill.

What's causing these problems at the 7½-acre residential lake in Park Ridge? "We're not really sure," says Jerry Feit, Environmental Director of the Park Lake Association. "Until recently, we almost always could see the lake bottom" (the lake's maximum water depth is about 6½ feet). "Now, green clumps of algae are more common. We're all very concerned."

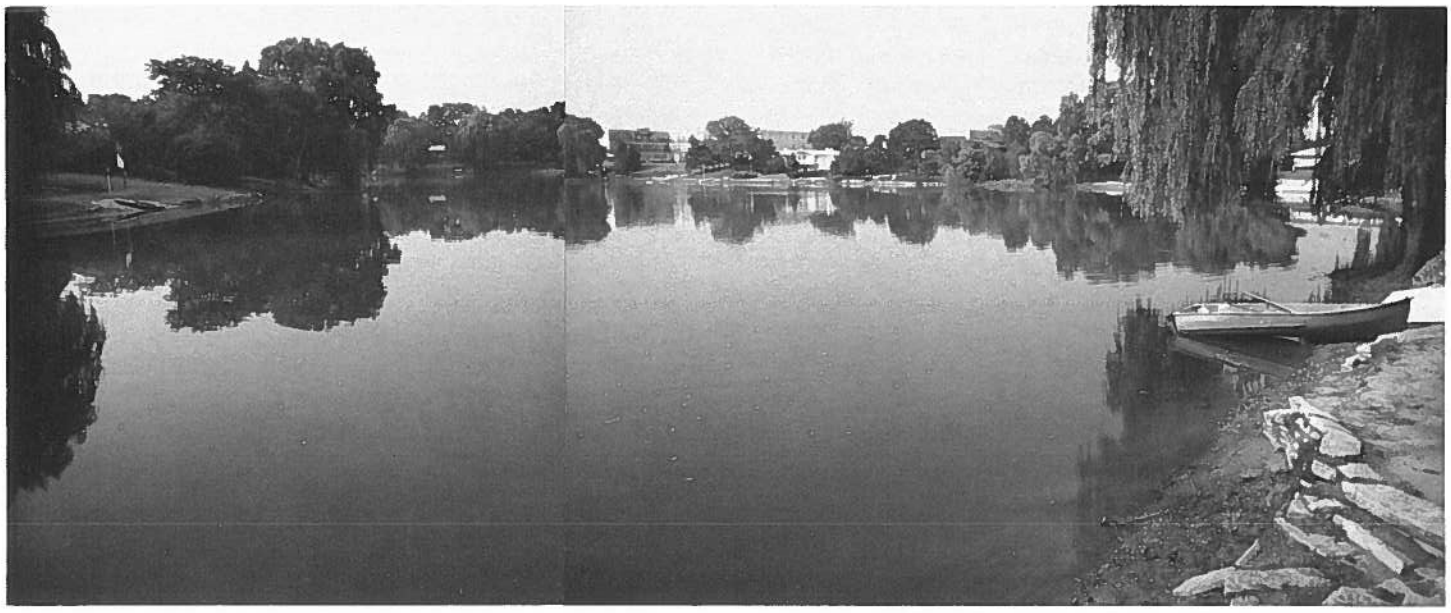
These new problems notwithstanding, Park Lake is fortunate in some ways. Back in early 1983, Jerry began monitoring the lake under the Volunteer Lake Monitoring Program (VLMP). His measurements of water transparency and other lake conditions distinctly show how the lake's quality took a turn for the worse in July of 1983. Shortly thereafter, two aerators were installed in the lake with the intent of increasing dissolved oxygen levels. One month later, the lake returned to its normal "clear" condition.

The recovery was short-lived, however. VLMP monitoring data collected in 1984 and again in 1985 document a further decline in water quality. According to Jerry, "the lake homeowners are upset when they look out and see green water. It's not so nice for swimming either." The Association has used chemical herbicides to combat the nuisance algae growth, but the effect lasts only for a short time. "We've got to find out what's causing the problem," says Jerry.

Because the problems at the lake appeared so quickly, it is possible that there could be a single cause. If that's the case, control measures could be much easier. Beginning in the spring of 1986, Jerry will initiate a more intensive VLMP monitoring program to determine some of the cause-and-effect relationships in the lake. "We're going to leave the aerators off at the beginning of this year to see if there is any change in the lake," remarked Jerry. The Association will also conduct other tests to more accurately define what the potential causes of the lake problems are. "Hopefully, we'll isolate the causes--then we can move in to correct them."



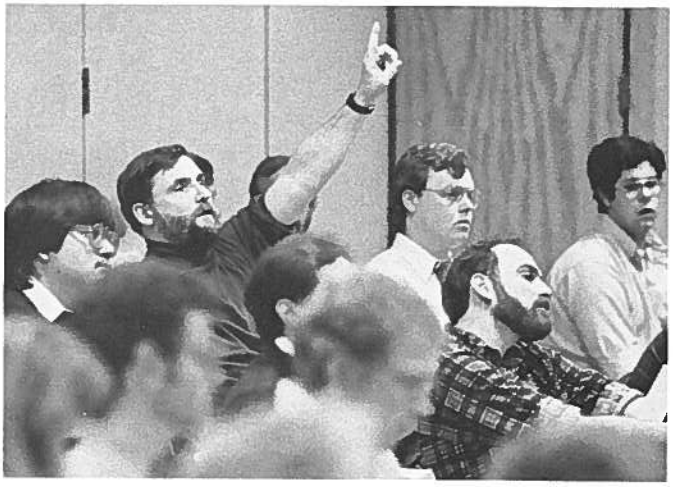
Jerry Feit discusses how the Volunteer Lake Monitoring Program is helping find the cause for recent problems at Park Lake.



ILLINOIS LAKE MANAGEMENT ASSOCIATION

With a purpose "to promote understanding and comprehensive management of lake and watershed ecosystems," the Illinois Lake Management Association (ILMA) was chartered on March 26, 1985. The non-profit organization has already attracted over 100 members including lake homeowners and managers, local public officials, and government agency staff.

The objectives of ILMA are to provide a forum for sharing of information and experiences on lake and watershed management, and to assist in the development of local lake restoration and protection programs. The Association will also encourage the development of governmental programs promoting lake and watershed management, and foster partnerships among organizations, units of government, and individuals concerned with lake and watershed improvement and protection. During the first year, ILMA has worked hard to achieve these objectives. The Association has distributed a quarterly newsletter on lake management issues, and it has developed several position statements on state and national legislation affecting lake management. ILMA worked with the Governor's Office to have April, 1986 proclaimed as *Lake and Watershed Management Month.* Its First Annual Conference, *Effective Management and Use of Our Lakes,* was attended by hundreds of lake enthusiasts.



Audience participation was stressed at the ILMA's First Annual Conference at Northern Illinois University.

For more information on ILMA, contact Bob Kirschner at the Commission, or write: ILMA, c/o Apple Canyon Lake POA, 14-A-57 Canyon Club Drive, Apple River, IL 61001.

LAKE MANAGEMENT CONFERENCE

Last fall, northeastern Illinois residents enjoyed a unique opportunity to participate in an international gathering of lake scientists, agency administrators, and management specialists. Sponsored by the North American Lake Management Society (NALMS), the *International Symposium on Applied Lake and Watershed Management* convened on November 13th at nearby Lake Geneva, Wisconsin.

The four-day conference focused on the practical application of lake management principles. Session topics covered a wide range of lake management issues, including toxic contaminants, aquatic plant control, fisheries management, and water quality monitoring programs. Exhibitors from all over the world displayed the latest in lake management services and equipment.

Set amidst glacial lakes and rolling moraines, nearby Lake Geneva, Wisconsin was the site for NALMS' 1985 International Symposium on Lake Management.

Lake homeowners and other "lay" public were treated to two days of special local-level workshops. Information was presented in a non-technical manner and included educational discussions on basic lake management principles. Special attention was given to problems which local lake associations frequently encounter, with successful fund raising programs emerging as a popular topic. Several sessions highlighted methods for transferring lake management knowledge from the lake researcher to the local lake manager. NIPC and Illinois EPA staff, serving as the conference's Program Co-chairs, emphasized Midwestern lake problems in the workshop agenda.

Northeastern Illinois was represented by a sizeable delegation among the more than 650 attendees. Although English was the common language, Canadian, British, Swedish, French, and even Australian accents were frequently heard in the crowd. One of the most frequently heard comments related to the importance of communication. In the words of one participant, "It's exciting to find out that we're not the only ones out there with these problems. I met several other people who have had similar experiences, and they showed us how they were able to restore and protect their lake at a reasonable cost."

Congress and the Courts

REAUTHORIZATION OF THE CLEAN WATER ACT

During 1985, both the Senate and House of Representatives passed bills to amend and extend major portions of the Clean Water Act, on which the region's water quality management strategy is based. As of this writing, the two bills are awaiting resolution by a conference committee of the two houses, which is expected to begin its work in the spring of 1986. At the same time, the pervasive debate over federal deficit reduction is making the future of critical national programs highly uncertain.

Each bill (S. 1128, H.R. 8) would reauthorize the construction grants program at the current $2.4 billion level for three years. The House bill would add an additional two years at this level, while the Senate bill would extend the program for an additional two years at the $1.2 billion level. Both bills would also authorize the establishment in each state of a revolving loan fund. This would support the continuation of treatment plant improvements after the eventual expiration of the construction grants program.

Future funding levels are a matter of serious concern. The Administration's FY 87 budget proposes a reduction in construction grant funding to $1.8 billion, with further reductions of $600 million in each succeeding year. The program would be phased out by 1990.

Both bills authorize the initiation of a program for the management of nonpoint sources of pollution. Each state would be required to develop an inventory of waters which fail to meet national water quality standards because of nonpoint source problems, to specify the measures to be undertaken to reduce that pollution, and to identify state and federal programs whose practices would have to be altered in order to mitigate nonpoint source-related problems. Upon approval of the plan by the USEPA, the state would become eligible for matching grants to implement the plan. The House bill would provide a strong local role in the development of the state plan. The Senate bill would allow a portion of construction grants and the revolving loan fund to be used for nonpoint source control strategies.

Both bills would reauthorize the Clean Lakes program at its existing authorization level of $30 million. Actual appropriations in recent years, which have been opposed by the Administration, have been at the $5 million level or less. The Administration's FY 87 budget does not include funds for the program.

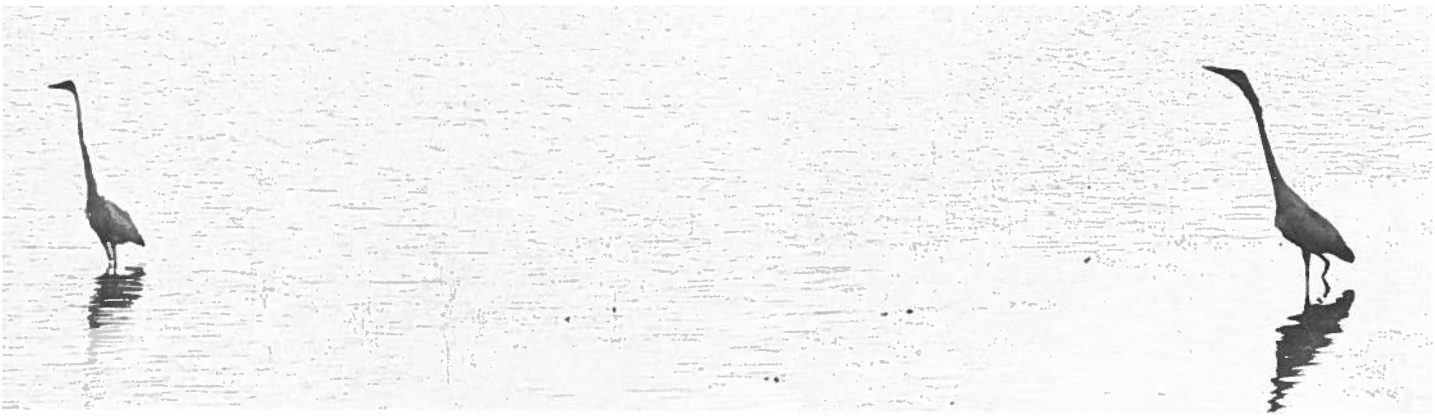
COURT FAVORS LAKE COUNTY UNITY VENTURES APPEALS

Judge Nicholas Bua recently ruled in favor of Lake County in a long standing suit with considerable importance to coordinated local planning of land use and sewer extensions. The case has now been appealed.

In 1984 a federal district court jury had ruled in favor of Unity Ventures and against Lake County and the Village of Grayslake (*Unity Ventures, et al. v. Lake County et al.*). The plaintiffs had charged that Lake County and Grayslake violated their civil rights and anti-trust laws in denying the development company access to an interceptor sewer. Through formal agreement between the County and the Village, a village treatment plant had been phased out, the county interceptor sewer financed, and the Village given the opportunity to review applications for connection to the interceptor. The Unity Ventures request for sewer service, subject to review by Grayslake, affected property that was subsequently annexed by the Village of Round Lake Park. Plaintiffs argued that failure to grant the sewer connection denied the property owner equal rights to those of other property owners that were given sewer access, and likewise represented an unlawful constraint of trade.

The Commission and three other organizations had filed a "friend of the court" brief, stressing the importance of intergovernmental agreements to the conduct of land use planning and sewer financing. Judge Bua upheld this position, noting that the county/village agreement clearly represented a legitimate public purpose as intended by state statutes.

Unity Ventures has appealed the ruling to the U.S. Seventh Circuit Court of Appeals.



NIPC Work in Progress

DRAINAGE MODIFICATION IMPACT PROJECT

The flat topography of the Chicago region subjects substantial areas to periodic flooding. Where development has occurred in low-lying areas, this flooding has been a serious problem and a major area of public policy concern. Local governments and developers have sought to solve this problem by straightening and paving the streams, turning them into drainage channels. The result has often been the destruction of natural habitat, streamside aesthetic qualities, recreational potential, and the natural ability of streams to absorb pollutants.

The Commission will soon complete a study documenting these impacts of drainage-way modification and recommending means of maintaining some of the natural values of wetlands, streams, and floodplains in urbanizing areas. The study will be addressed to municipal and county governments and will assess their existing legal authority to regulate streamside developments in order to preserve natural values. Model or sample ordinances will be presented for such approaches as required setbacks from stream banks, development restrictions near streams or wetlands designated as significant, or post-development restoration requirements. At the completion of the study, the Commission intends to provide direct technical assistance to local governments in adapting the models to their particular circumstances. Further information on the study can be secured from Dennis Dreher or Dick Mariner at NIPC.

Channelized Section of Agricultural Stream

Small Package Treatment Plant

LOCAL EFFORTS TO INCREASE WATER QUALITY MONITORING

Several counties in the region have expressed an interest in securing increased authority to monitor private treatment plant activities and to use the monitoring results in enforcement actions. These plants are currently subject to regulation by IEPA, which monitors the quality of their effluent and may order corrective measures if the standards in the permit are not met. However, the large number of plants to be inspected and the need to maintain close surveillance of larger dischargers has meant that even annual inspections of small plants are unusual. A plant may malfunction and inflict considerable damage on its receiving waters before operating problems have been detected.

In February 1986, NIPC convened representatives of county health and public works departments and the Metropolitan Sanitary District to consider the issue. Many of them expressed reluctance to undertake even voluntary monitoring without more explicit authority, or to enter into delegated authority agreements with IEPA which do not provide immunity from prosecution or permit the counties to charge fees to defray their costs.

The local representatives who met in February agreed to develop specifications for legislation to extend the state's immunity to local governments under delegation agreements and to authorize inspection fees sufficient to meet the costs of inspection. Several of the participants cautioned that such legislation should not be interpreted as encouraging the use of small treatment plants, which will never be as effective as larger facilities.

GUIDEBOOK ON STORMWATER DETENTION FOR WATER QUALITY BENEFITS

Almost all communities in the metropolitan area require flood detention basins in new residential developments. The design of many of these facilities permits water from small storms to pass directly through the basin and into the receiving stream without detention. Such small storms (which occur much more frequently than major events) account for the majority of contaminants carried into the streams by urban stormwater. The Commission's guidebook, "Stormwater Detention for Water Quality Benefits," released in February, 1986, identifies design characteristics of a stormwater basin which will maximize the cleansing effect of detention under stormflow conditions common to northeastern Illinois.

A Well Designed Stormwater Detention Basin

The following are among the principal recommendations:

1. Ponds should be long and narrow, and basin outlets should be located as far as possible from inlets, in order to prevent "short-circuiting" (discharge of water immediately after entry);
2. Obstacles such as pervious dams or baffles should be placed between the inlet and the outlet, in order to slow water velocities and localize sediment deposition for easier maintenance;
3. Basin bank and shoreline slopes should be relatively flat and well stabilized with vegetation or riprap;

These features can be included in the design of new basins or added to existing ones. They are applicable to ponds with permanent water and to basins which contain water only immediately after a storm. Use of the Commission's recommended practices can secure important reductions in stormwater-related pollution at little or no additional construction cost and some additional maintenance cost to local governments or homeowners. Gary Schaefer of NIPC can provide further information.

LANDFILL MAPPING PROJECT

Under the terms of Public Act 83-1356, enacted by the General Assembly in 1985, the IEPA will provide free annual sampling of wells within one half-mile of an active or abandoned solid waste disposal site. In many cases, however, accurate records of old disposal sites are not available, and well owners may not be aware of their proximity to these sites. The Commission has received a grant from the Joyce Foundation to conduct a survey of abandoned disposal sites in five counties in the region. A survey is already under way in McHenry County. Public records and interviews with local residents will be relied on for information. Verification by three independent sources will be required in order to avoid incorrect identification of sites, which might have a negative effect on surrounding property values. Sites will be mapped and legal descriptions will be prepared. Maps will be distributed without cost to persons requesting them. Anyone with knowledge of a dump site abandoned prior to 1960 should contact Gary Schaefer at (312) 454-0400.

NON-POINT SOURCE MANAGEMENT PRIORITIES

Non-point sources of pollution, such as stormwater and agricultural runoff, cannot be adequately addressed through state or regionwide regulatory approaches. Rather, specific control strategies need to be developed for particular water bodies. These strategies must take into account patterns of land ownership in the watershed, governmental jurisdictions, and specific sources of contamination. The Commission has proposed to the IEPA that a listing of particular watersheds with demonstrated nonpoint source problems be developed. An initial analysis of the probable costs of cleanup and the potential economic benefits of cleaner water in these watersheds—for recreation, esthetic benefits to surrounding properties, and so on—would be carried out. This listing could be used as one basis for allocating funds under the Build Illinois program or under the federal Clean Water Act if its scope is expanded to include nonpoint source management.

AREAWIDE WATER QUALITY STEERING COMMITTEE (AWQSC) REVIEW ACTIONS DURING PRECEDING YEAR

Amendment Application	NIPC Review No.	Date of AWQSC Consideration	Amendment Description	AWQSC Recommendation
Village of Plainfield	84-WQ-042	1-9-85	Water quality review of the final facility plan for the Plainfield facility planning area (FPA).	Approval
New Life Convalescent Center	85-WQ-016	4-3-85	Amendment request for the construction and operation of a new 56,000 GPD extended aeration treatment system discharging to the Fox River. Proposed facility not in any FPA.	Not Approved
Village of Romeoville	85-WQ-028	9-4-85	Update of 201 facilities plan with the following amendment requests: expansion of Romeoville #1 plant to Year 2005 capacity of 4.1 MGD, use of Romeoville #2 plant as pumping station, and modification of FPA boundaries.	Approval
Buildex Division — Illinois Tool Works	85-WQ-029	6-5-85	Proposed new 0.004 mgd industrial wastewater discharge to Salt Creek (NPDES IL-0064630).	Approval
North Shore Sanitary District	85-WQ-030	6-5-85	Proposed reissuance of Clavey Road Plant NPDES permit including wet weather overflows to the Skokie River and Skokie Lagoons	Approval with Comments[1]
City of Crystal Lake	85-WQ-041	7-3-85	Request to add territory near Prairie Grove not currently in any FPA to the Crystal Lake FPA.	Approval
Village of Prairie Grove	85-WQ-042	7-3-85	Request to create a new Prairie Grove FPA.	Approval with Comments[2]
City of McHenry	85-WQ-048	8-7-85	Request to add territory southwest of McHenry not currently in any FPA to the McHenry FPA.	Approval
DuPage County Department of Public Works	85-WQ-052	10-2-85	Amendment request for the expansion of the Nordic Hills Treatment Plant from 0.21 MGD to 0.5 MDG, with phase out of plant still proposed when service from Itasca becomes available.	Approval
City of Crystal Lake	85-WQ-062	3-5-85	Request for modification of Crystal Lake FPA to incorporate additional area currently part of the northwest section of the Lake in the Hills FPA.	Approval[3]

[1] Because of their concern for the success of the Skokie Lagoons lake restoration project, the AWQSC suggested that IEPA require NSSD to prove that overflows from the Clavey Road plant would not harm the lagoons or require secondary treatment of such discharges and to monitor for phosphorous and nitrogen compounds.

[2] Prairie Grove was requested to carefully consider preservation of prime agricultural farmland as part of facility planning process.

[3] As part of the approval of this amendment request, the Areawide Water Quality Steering Committee recommended the transfer of land northeast of the Lake in the Hills Airport in the Village of Lake in the Hills from the Crystal Lake FPA to the Lake in the Hills Sanitary District FPA to balance service demands. The AWQSC also requested that Lake in the Hills cooperate in Crystal Lake's procurement of an easement for a relief sewer through this territory.

FY 87 WATER QUALITY MANAGEMENT FUNDED WORK PROGRAM OF THE NORTHEASTERN ILLINOIS PLANNING COMMISSION

- NIPC will continue to review facility plans and NPDES permit requests for consistency with the Illinois State Water Quality Management Plan (federal 205j funds through IEPA).
- NIPC will continue its role as mediator of conflicts between designated management agencies or private parties requesting amendment of the State Plan. The vehicle for mediation will be the county water quality coordinating committees where they exist or the Areawide Water Quality Steering Committee (205j).
- NIPC will again coordinate the Volunteer Lake Monitoring Program in northeastern Illinois. As part of this program NIPC will train citizen volunteers to sample lake quality on a semi-monthly basis, collect their data, write an annual report on sampling results, and provide technical management assistance (205j).
- As part of Phase II of the Skokie Lagoons Lake Restoration Project, NIPC will coordinate the selection and design of restoration measures for the lagoons (Cook County Forest Preserve District and USEPA funds through the IEPA).
- NIPC will continue to keep track of northeastern Illinois diversion of Lake Michigan water, using the Commission's computerized accounting system (Illinois Division of Water Resources).
- NIPC will be responsible for preparation of the next annual water quality report (205j).
- As part of the DesPlaines River Wetlands Demonstration Project, NIPC will act to coordinate collection and analysis of data for project water quality, hydrology, and meterology.

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Joanne H. Alter

Appointed by the Board of the Illinois Association of Park Districts

John P. Scotellaro

Appointed by the Board of the Chicago Park District

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Dr. William Ackermann, *representing the Water Resources Technical Advisory Committee*
Ms. Andrea Moore, *representing the Lake County Board*

*Commissioner Constance C. Zimmermann assumed chairmanship in June, 1985 from Virginia Hayter, who had served in that role since 1978.

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James Daugherty, *Manager Thorn Creek Drainage Basin Sanitary District*
Neil Fulton, *Chief Bureau of Resource Management Illinois Division of Water Resources*
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This annual water quality report was prepared in part using federal Water Pollution Control Act Section 205j funds from the Illinois Environmental Protection Agency and in part through voluntary contributions from local governments in the region.

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