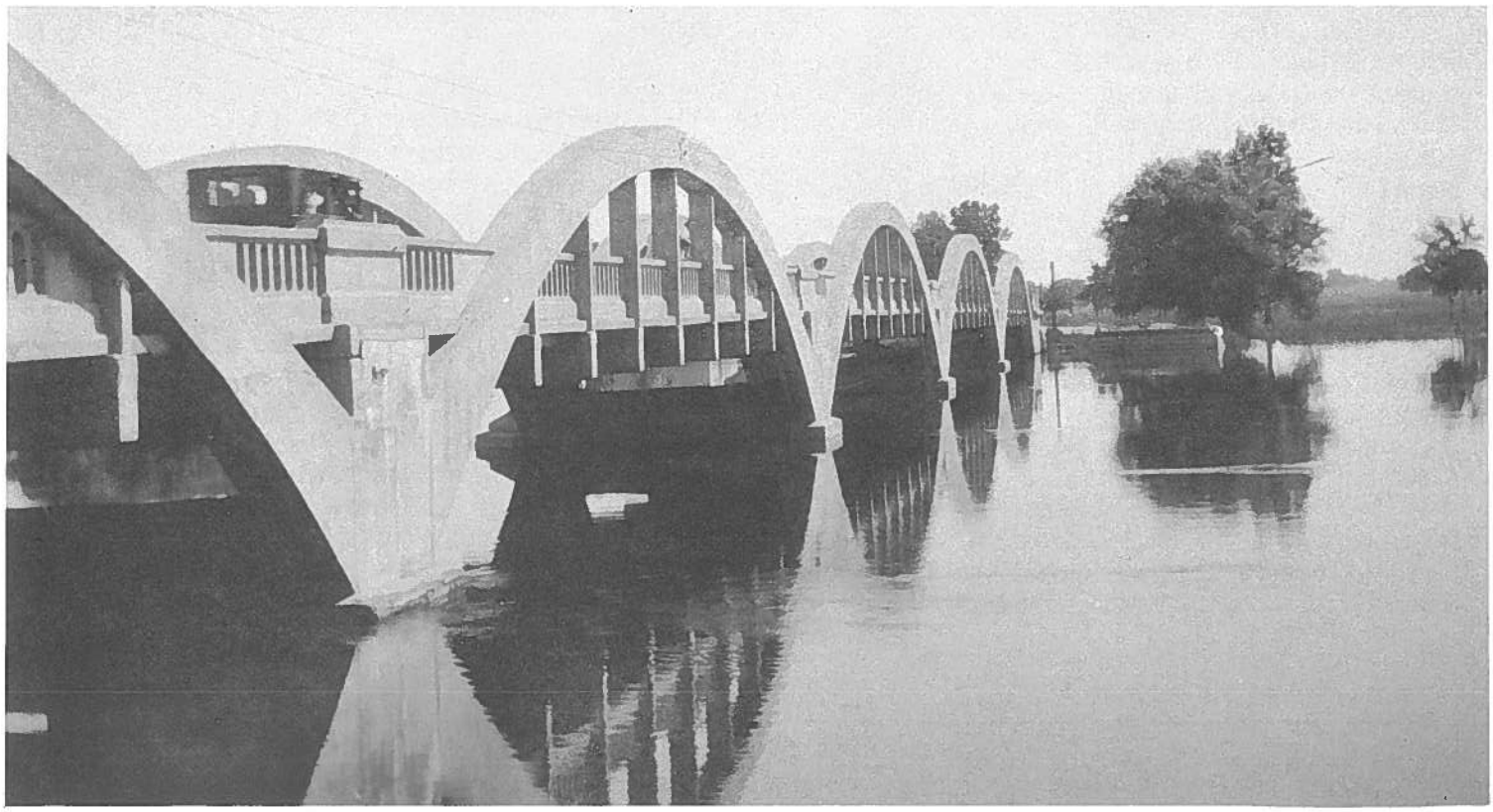
1987-88 WATER QUALITY REPORT

"Everything is related to everything else." This observation by Barry Commoner states simply the complex truth that actions in our natural or manmade environment have consequences which ripple outward in unintended or unexpected ways. The difference between wise and unwise public policy often lies in the extent to which these interrelationships are anticipated and dealt with.

Nowhere are these ripple effects more important than in addressing water quality issues. In the past twenty years, our major strategy for improving water quality has been to reduce the amount of improperly treated municipal and industrial sewage discharged into our waterways. This has been a costly process, but the problem has been obvious and the results dramatic. In the next ten years, our most important actions may come as we recognize and capitalize on the water quality benefits which can be achieved through well thought-out actions in areas such as flood control, land development regulations, and open space preservation. These benefits may be more difficult to assess on an individual basis, but their cumulative impact will be great.

This report focuses on steps being taken in northeastern Illinois during 1987 and 1988 to address some of these problems. Attention is devoted to nonpoint sources of pollution, which became a subject of major federal concern upon the passage of the Clean Water Amendments of 1987. The report also reviews progress in management of stream corridors and wetlands, regulation of stormwater discharges, and the system for coordinating local water quality and land use planning. All are areas in which the Commission has played and will continue to play a coordinating, catalyzing, and educating role.



Burton's Bridge on Fox River, photo by Robert Kingery, August 11, 1928.

SPECIAL PULL-OUT SECTION ON NONPOINT SOURCES

Nonpoint source pollution is the next great water quality challenge facing northeastern Illinois. To highlight this problem and some of the steps being taken to address it, this report contains a special section devoted exclusively to nonpoint source issues. In addition to reviewing the major sources of the problem and strategies for dealing with it, the section contains a perspective on implementation of the 1987 Clean Water Act amendments and a review of the Commission's recommendations on ranking nonpoint source problems.

Regulation of Stormwater Discharges

The Water Quality Amendments of 1987 include provisions which look toward the initiation of a permitting process for stormwater discharges. Urban storm sewer systems, which contribute substantial contaminants to lakes and streams, are not generally regulated at present. The 1987 law establishes a timetable which could lead to permits being required in some communities by 1992. Compliance with a permit system could require considerable investment by local governments. NIPC staff members talked with James Gallup, Environmental Specialist, Office of Water, United States Environmental Protection Agency (USEPA), to understand the steps involved in implementing the amendments and what local officials in the region can expect.

NIPC - The possibility the USEPA will require permitting of stormwater discharges is becoming an issue. Is our understanding correct, that if a community is not over 100,000 people and is not causing a water quality problem, it would not require a permit before 1992?

Gallup - That's correct. The statute is very convoluted. But basically, it says that you don't need to seek a permit unless one of several conditions applies. If one of them applies, you may have to seek a permit before 1992. The law identifies five groups of sources of stormwater subject to permit requirements: (1) discharges which have already been granted permits, (2) discharges associated with industrial activity, (3) municipal storm sewers serving 250,000 or more people, (4) municipal storm sewers serving between 100,000 and 250,000 people, and (5) discharges which contribute to violation of water quality standards or which are significant contributors of pollutants. We are now preparing application requirements for the three industrial and municipal categories.

The legislative history is silent on the meaning of "municipality." We are inviting comment on definitions based on cities and several other options. The area covered by a permit will be defined geographically. Then there will be a decision on what entity is to be the permittee. This might be a city, county, sanitary district. In California, flood control districts may be used.

NIPC - Illinois law authorizes the formation of stormwater planning committees with some regulatory authority inside municipalities. Could something like that potentially be subject to a permit if its aggregate population exceeded 100,000?

Gallup - It could under one option, which would define a county as a "municipality" but not under our preferred option. It makes sense to work within that kind of countywide framework as part of permitting process, but you'll have to incorporate the local cities. The permit might cover an entire county and identify the major cities as co-permittees with their responsibilities identified in the permit. A county can have some authorities given by the state but not all. You have to find a way to bring all the necessary authorities together.

NIPC - What about areas which are not included in the five priority categories?

Gallup - We must report by October, 1988, on the nature and extent of problems not included in the five categories, and by October, 1989, on available means of addressing those problems. By October, 1992, we must prepare a regulatory program and priorities for addressing those problems. If a community is experiencing development, it is going to be a good candidate for permitting under the current regulations or those due in 1992. With respect to rural areas, we might ask the state to develop a stormwater management program to cover those areas. But understand that all of this is speculative because we're still in the drafting process before we propose regulations.

NIPC - Then even communities of less than 100,000 may find themselves in a permitting situation?

Gallup - Yes, particularly in urban areas. In the counties around Chicago where people live, in a basically urban environment, you'll see entire areas needing to have permits. It could be that we would issue county and municipal co-permits, or that permits would be issued to individual cities. The advantage of a co-permit approach is that everybody is working on the same schedule. Ultimately, I think they'll all have to be covered.

NIPC - The state is now preparing its non-point source assessment. If they find surface runoff to be a problem on a particular stream reach, is that sufficient to require permits or will the trigger have to be more definitive?

Gallup - There is confusion as to what is a point source and what is non-point. Urban runoff is considered a non-point source. Each urban storm outfall is a point source, but because overall they are a diffuse source - a whole bunch of different outfalls - they are called non-point. Legally, each of those diffuse sources is a point source subject to permitting, but the states are addressing them as non-point sources because the permitting program hasn't gotten around to them.

In the years ahead, I think you'll see a transition toward thinking of urban storm as a point source problem. It is going to be difficult to make an National Pollutant Discharge Elimination System (NPDES) permit approach applicable to them. We'll have to deal with them programmatically, applying Best Management Practices (BMPs), finding ways to identify illicit connections rather than applying an effluent standard. Municipalities will probably have to impose restrictions on contributing activities, such as phosphorus use, rather than relying on treatment, which you can do with a combined systems. So we're looking at using a point source regulatory mechanism in ways that incorporate non-point kinds of controls.

Another thing we are considering, which would affect developing communities, is to define construction activities which disturb more than an acre of land as "industrial." We are inviting comment on this category.

NIPC - Construction activity which disturbed one acre of land would impact a lot of towns. Is this something which is on the immediate horizon?

Gallup - There are two ways of dealing with this. If there is a construction activity which discharges into a municipal separate sewer system, and if the city has a satisfactory ordinance dealing with erosion and sedimentation, then you probably wouldn't require a separate permit. A permit from the state would be necessary if the discharge is into waters of the state. The state could develop a general permit for construction activities. These would be easier to administer and less burdensome on the developer.

FPA Boundaries

To a boater or fisherman on the Fox River, it may not seem to matter much whether the Red Gate subdivision receives its sewer service from the City of St. Charles or the Elgin Sanitary District, as long as the sewage gets treated. But to the operators of the two systems, the choice is significant. When the Red Gate developers chose to annex to St. Charles, a process was initiated between the two jurisdictions and NIPC concerning a line which the average boater or fisherman probably never heard of - the FPA boundary.

FPA stands for Facilities Planning Area. It identifies the area in which a particular local government - county, city, village, or sanitary district - has responsibility for providing wastewater treatment. Each such entity must be sure that it has enough capacity to provide adequate treatment to sewage brought to it. This is not a decision which can be made each time a new development is proposed, Rather, each treatment agency must attempt to predict what the demand for service will be and to provide for it through advance planning. If a developer chooses to be served by an agency which has not anticipated the development, a shortage of capacity may exist in one area and a surplus in the other.

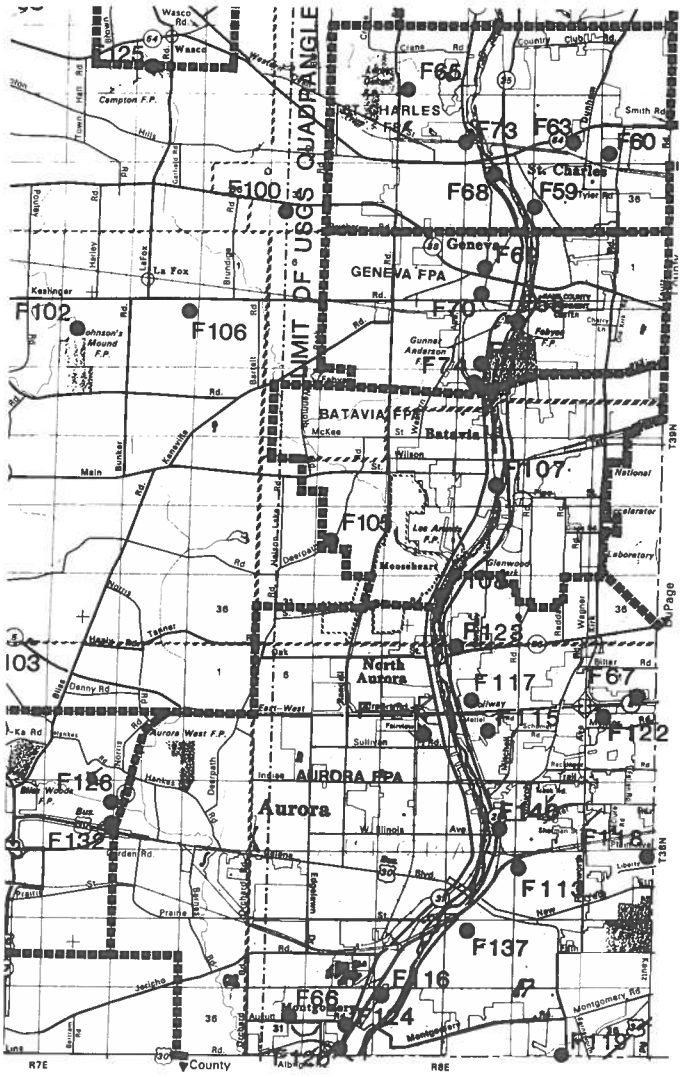
In order to assure that this planning was not frustrated in the development process, the Illinois Environmental Protection Agency (IEPA) ruled that no treatment agency could extend sewer service outside of its FPA. Such a policy was called for by federal rules under the Clean Water Act. If such an extension was proposed, the state plan would have to be amended to authorize such service before IEPA would issue the necessary permits. It was this regulation which brought St. Charles and the Elgin Sanitary District to NIPC.

The FPAs were first designated by the IEPA in the early 1970s, when substantial grants were being made for wastewater treatment planning. The boundaries were subsequently reviewed and affirmed by communities as they prepared their wastewater facilities plans. The results of these so-called Section 201 plans, and the FPA boundaries, were included in the *Areawide Water Quality Management* ("208") *Plan* adopted by NIPC in 1979 and incorporated into the state water quality management plan in 1982. Since that time, a number of revisions in FPA boundaries have been made, notably to divide those which included more than one treatment agency.

In some cases, the original FPAs reflected municipal boundaries, projected growth areas, and natural watersheds. In other cases, they were simply rectangles drawn around an isolated community along the section lines. At the time the lines were drawn, most of the FPAs included substantial undeveloped land for which capacity had to be planned. However, as development has proceeded

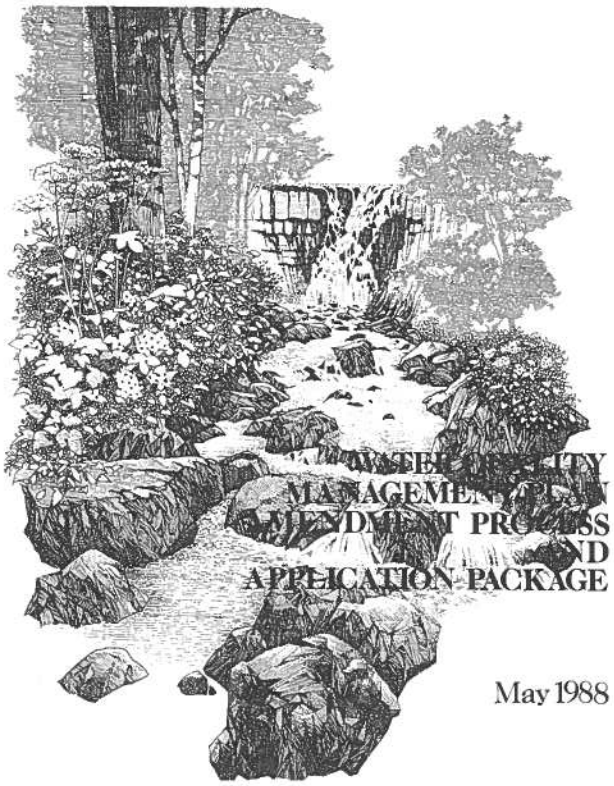
and undeveloped areas adjacent to existing communities have been filled in, more and more communities or sanitary districts have come up against their FPA boundaries and have had to consider revisions to those boundaries.

In some cases, these changes have become the focus for intercommunity conflicts over the nature and pace of urbanization. Officials concerned about the impact of a neighboring development on their citizens have used the FPA boundary amendment proceedings as a forum in which to argue against provision of sewer service on which the development depended. Even where no such conflict exists, however, the growing demand to adjust FPA boundaries points to a broader problem. Many local water quality plans are now almost twenty years old, and have been largely implemented. Meanwhile, development has not necessarily occurred as was anticipated in the early 1970s. Comprehensive reviews of plans and boundaries, perhaps in conjunction with the development of broader intermunicipal development boundary agreements, may be appropriate in many parts of the metropolitan area.



The Amendment Process

The area of the Red Gate subdivision was within the Elgin Facilities Planning Area (FPA), although the Sanitary District did not have sewers close enough to service the property. When Red Gate sought to annex to St. Charles in order to receive sewer and other urban services, an amendment of the FPA boundary was required. The process was initiated by the City of St. Charles, which requested that the NIPC Areawide Water Quality Steering Committee (AWQSC) approve an amendment. A summary of the amendment was distributed to other interested agencies, including Elgin Sanitary District (ESD), for review. ESD concurred in the revision, the AWQSC endorsed the change and forwarded its recommendation to the Illinois Environmental Protection Agency (IEPA) for formal amendment of the state plan. Had ESD objected to the change, the AWQSC would have recommended that the two parties seek an agreed solution. Had the Committee endorsed the amendment over ESD's objection, the District could have asked IEPA to convene a formal conflict-resolution proceeding. Copies of plan amendment requirements and background information are available from NIPC.



NONPOINT SOURCE FOCUS SECTION

We would not ordinarily think of rainwater as a contributor to water quality problems. Most of the rainfall in the Chicago area is relatively free of acids and other contaminants. However, as it flows across paved surfaces, suburban lawns, construction areas, and farm fields, it picks up a variety of pollutants and nutrients. As it carries these into the streams and lakes of the region, it contributes to a problem of growing significance: nonpoint source pollution.

"Nonpoint sources" are simply those sources of pollution like runoff from roads and fields which do not enter lakes or streams at individual, identifiable points but at many places along their banks. They are distinguished from "point" sources such as the outfall pipes from sewage treatment plants.

It is not certain how severe the problem of nonpoint source pollution is in northeastern Illinois. An Illinois Environmental Protection Agency study, reported below, found that most stream segments and lakes in the region show some measurable impacts. Those in densely urbanized areas—where paved surfaces retain little rainwater and where oil, rubber residue, lawn chemicals and a variety of other contaminants are abundant—are most heavily affected.

What is certain is that because sources of nonpoint source pollution are diffuse, solving the problem requires a lot of small solutions rather than a few big ones. Structural approaches such as sewage treatment plants are less appropriate than changes in the ways construction sites are managed, detention basins designed, and streamside vegetation preserved. These approaches may be less expensive to implement but are often more complicated administratively.

Nonpoint sources are not a newly-discovered problem. The ***Areawide Water Quality Management*** *("208")* ***Plan*** *adopted in 1979, identified urban stormwater runoff as a significant problem. Studies conducted by NIPC and other agencies under the Nationwide Urban Runoff Program identified the constituents of that pollution in greater detail and identified measures which might be effective in solving it.*

However, neither financial nor regulatory inducements were provided by the federal government to encourage implementation of those solutions. Such federal participation has been critical to the progress in controlling point sources. The 1987 amendments to the Water Quality Act represent a significant shift in the focus of federal attention.

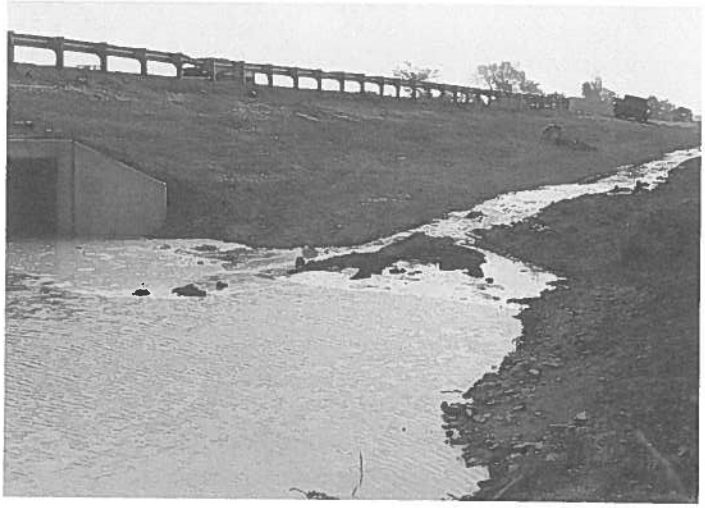
The Act requires that each state take two major planning steps. An assessment of nonpoint source problems was to be completed by April, 1988, and a management program was due in August. The Illinois assessment report has been released for review by interested agencies prior to its transmittal to the United States Environmental Protection Agency. The management program, when approved, will become the basis on which implementation funds will be allocated if they are appropriated by Congress. Equally important, the management planning process is expected to provide the opportunity for the state and its local governments to think together about the most effective way of addressing nonpoint source issues.

WHAT ARE NONPOINT SOURCES?

Nonpoint source pollution is really a very simple thing to comprehend. As water from rainfall and snowmelt moves across the land surface toward streams and lakes, it picks up a variety of contaminants deposited by human activity and natural processes. When these occur in sufficient concentrations, they can disrupt the hydrological and biological balances in the receiving waters.

This is not solely an urban problem. Significant quantities of nutrients, chemical pollutants, and sediment are transported by stormwater runoff and wind from cultivated fields, feedlots, and other agricultural areas. Judging by IEPA water quality ratings, however, there are few if any stream segments in northeastern Illinois which are limited in their usefulness solely by virtue of agricultural pollution. It is likely, therefore, that most of the region's effort and resources will be devoted to addressing urban conditions.

Three principal sources of nonpoint pollution are associated with the process of urbanization: (1) sediment eroding from developing areas, (2) urban runoff transporting pollutants washed from developed areas, and (3) hydrographic modifications due to increased flow volumes resulting from watershed development and/or channel modification. Each of these sources contributes particular contaminants to streams and wetlands and is amenable to particular control strategies.



Erosion from highway construction.

Sedimentation From Developing Areas

The first step in the construction of homes, shopping centers, or roads is to clear and regrade the land to its intended contours. The removal of vegetation exposes the soil to the full force of rainfall. Depending on the season, the slope of the land, and other factors, great quantities of soil (in some cases, the equivalent of 100 tons per acre per year) are dislodged and carried into wetlands, streams and lakes by the runoff.

This sediment is itself a serious pollutant. Suspended in the water, it restricts the activity of sight-feeding fish (generally the more desirable species), restricts the sunlight needed by aquatic plants, and renders the water visually unattractive. As it settles to the bottom, it may clog gravel spawning beds and suffocate bottom-dwelling organisms which lie at the base of the food chain. In sufficient quantities (as it is in the Skokie Lagoons), sediment reduces the flood storage capacity of waterways. It may also serve as a transport for other contaminants. Metals and other chemical pollutants adhere to soil particles and are deposited in the receiving waters.

Erosion from residential construction.

Runoff From Developed Areas

An inevitable consequence of development is to increase the amount of impervious surface in a watershed, as roofs, parking lots, and compacted soil replace permeable soil and natural vegetation. Less and less rainfall is absorbed where it lands, and more and more flows directly overland into lakes and streams or into those receiving waters through the storm drainage system.

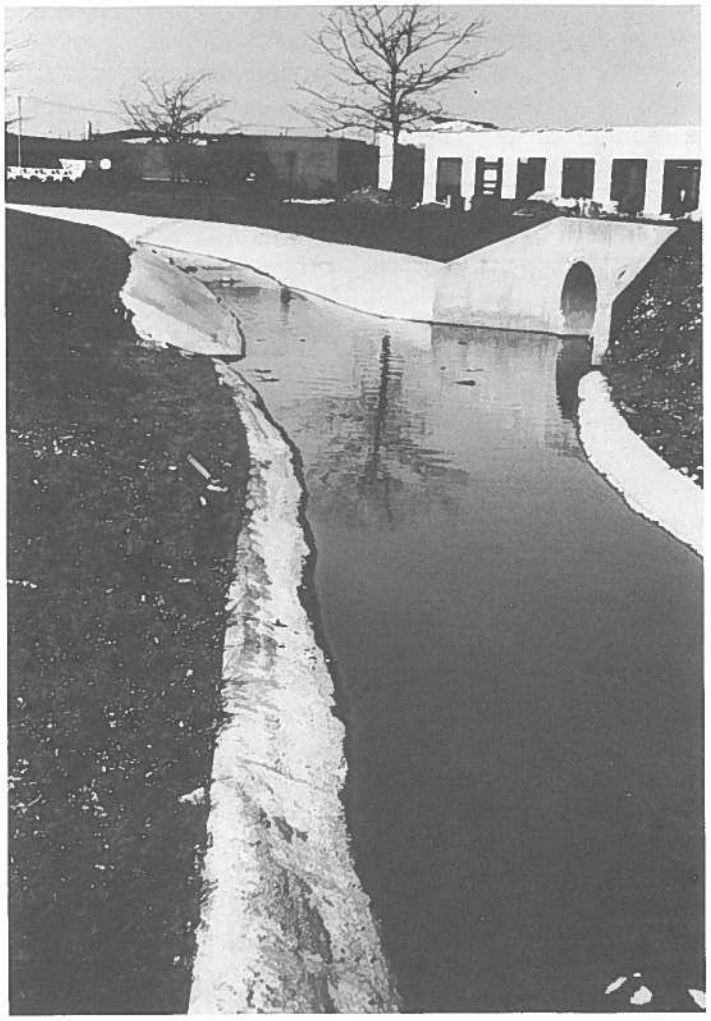
These waters carry with them a wide variety of pollutants in dissolved and particulate form. Fertilized lawns and gardens yield nutrients which contribute to the excess growth of algae in stagnant or slow-moving waters. Vegetative debris and pet droppings consume oxygen as they decompose, thus depleting the dissolved oxygen required by aquatic life. Oils and trace metals deposited by automobiles or released by the corrosion of any number of ordinary materials are often toxic to aquatic life, even in low concentrations.

Traffic sources of urban runoff pollutants.

Hydrographic Modifications

Urbanization, it was noted above, tends to increase the percentage of rainfall which enters waterways directly rather than being absorbed into the ground where it falls. It also increases peak runoff flows so that discharges which occurred only once a year on average before development may occur two or three times each year. These increased flows, in turn, may alter the physical cross-section of the receiving stream by eroding away the banks and widening the channel. The stream thus adjusts itself to provide more capacity. Large quantities of sediment are released in this process. This material has the same effects as those discussed above; clogging of stream bottoms, reduced light penetration, and diminished channel capacity. As this erosion undercuts trees and other vegetation, their stabilizing effect is lost and the erosion cycle persists.

Hydrographic modification also occurs as riparian landowners fill floodplain and wetland areas or replace natural stream reaches with straight incised channels. Such activities immediately destroy existing aquatic habitat and can result in increased stream velocities which increase streambank erosion downstream.



Loss of aquatic habitat due to stream channel straightening and stabilization.

Nonpoint Source Control Strategies

A variety of relatively simple techniques are available to control nonpoint pollution in urban areas. These approaches tend to rely on natural processes of settling, filtration, biological uptake, and bacterial decomposition rather than on complex mechanical or chemical processes typical of point source pollution control. Further they tend to provide multiple benefits. Good nonpoint source control is often also good stormwater control, wildlife habitat management, and urban aesthetic improvement.

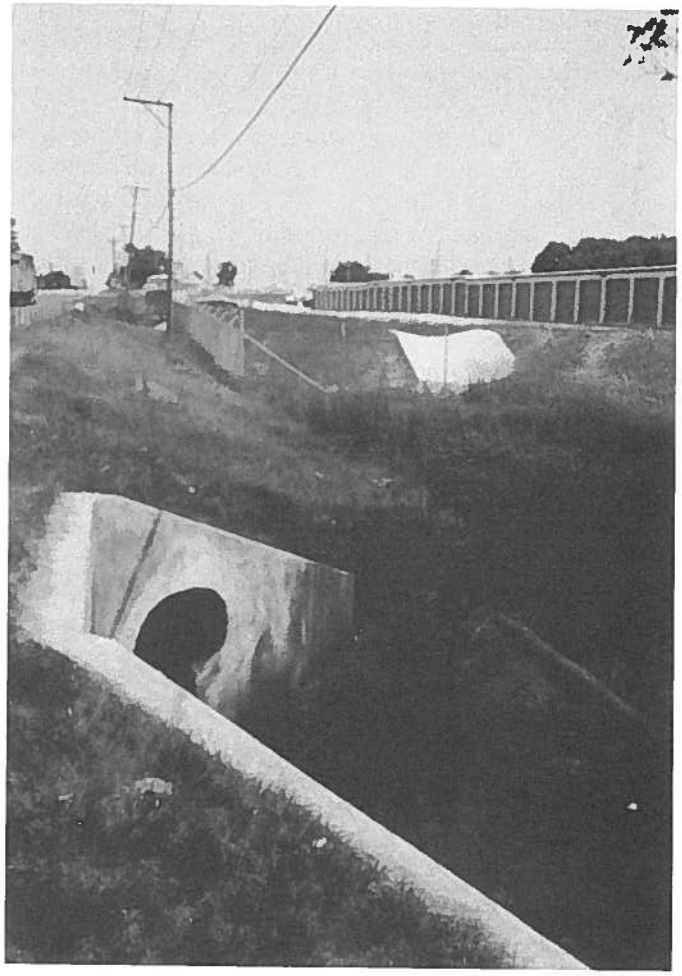
Extended Detention Research by NIPC and other agencies has shown that detaining stormwater in a basin for as few as 24 hours has substantial effects on pollution. Sediment and contaminants which adhere to it have a chance to settle out of the water. Where the basin contains permanent water, aquatic plants absorb nutrients and bacteria break down organic debris. Properly maintained, such basins can also provide local recreational and aesthetic benefits. During development, such basins can be designed to trap and hold sediment which is eroded from the construction site. They can then be dredged and planted as permanent detention basins.

The cost of providing extended detention is only slightly higher than that of providing flood storage, which is required in new developments in almost all communities.

Infiltration Areas Stormwater may also be held in an area which allows it to percolate into the ground. This has the effect of reducing flood flows while soil adsorption and biologic uptake remove soluble nutrients and metals from the water. Gravel-filled trenches placed around the perimeter of parking lots or in highway median strips can treat stormwater running off paved surfaces. Porous asphalt pavement can have the same effect. Basins underlain with permeable soils can receive stormwater from residential and other areas. It is essential that heavy sediment loads be excluded from these facilities to prevent their becoming clogged.

Vegetative Filters Simply passing stormwater through a sufficient expanse of grass or other vegetation can permit mechanical removal of sediment, biological uptake of nutrients, and infiltration of other pollutants. Areas left undisturbed around the edge of a development or planted with appropriate fast-growing cover can limit the amount of eroded soil leaving the site. Grassed swales and wooded strips can add to the amenity of a residential area as well as filtering stormwater. The borders of retention basins can be planted or shallow marshes can be developed as part of the basins to augment pollutant removal by extended storage.

The cost and complexity of these methods lies in the fact that most are highly localized in their effect. Numerous individual facilities are thus required in an urbanized area in order to intercept contamination at its source. Some of these can be installed in parks and other publicly-owned land. However, an effective non-point source control program requires that they be incorporated into private development as well. Land use plans and development regulations thus become essential tools for water quality management. One objective of these programs must be to assure that detention ponds and other practices are designed and installed to fit the particular site topography, soil conditions, and surrounding land uses in a particular area. The Commission's technical report on stream and wetland preservation contains more extensive information on these practices.



Storm sewer outfall.

Stream Management and Nonpoint Source Control

There is a growing recognition that nature provides a variety of stormwater management and pollution control mechanisms which may, in some situations, be less expensive and more effective than engineered solutions. Streams and wetlands, left in their natural state, have a remarkable capacity to remove silt, nutrients, and other contaminants from surface runoff and to moderate flood events by storing stormwater. Add to these benefits the preservation of wildlife habitat and recreational opportunities, and stream and wetland maintenance become highly cost-effective programs.

The Commission has completed a major technical report on techniques for preserving and managing natural streams and wetlands. The report includes a discussion of existing statutory authority and programs, a review of programs which have been effective in other metropolitan areas, and an explanation of a variety of preservation approaches, including regulation of private development, public acquisition of critical areas, and public education.

The report is accompanied by a model stream protection ordinance. During 1988, NIPC is working with communities in two stream corridors to assess the applicability of this model to their particular local conditions. On Butterfield Creek, the Commission staff is working with the Village of Matteson. While much of the basin is developed, there are upland wetland areas which have potential for management as stormwater detention areas. On Mill Creek, the participating agencies are the villages of Old Mill Creek, Wadsworth, Third Lake, and Lindenhurst, and Lake County. In each case, the study team will review existing and planned land uses in the study area, existing regulatory programs, and water quality conditions. Recommended revisions in the model ordinance responsive to these local conditions will then be prepared.

The results of the study will be made available to other communities interested in adopting a stream corridor management program. The Commission can also provide floodplain and wetland maps, which are valuable tools in identifying areas requiring protection or management.

Local efforts to preserve wetlands for ecological, stormwater management, and water quality benefits have received significant support from several recent federal actions. In April, the United States Army Corps of Engineers released a draft wetland protection plan for the Lake Calumet area. With intensive industrial development, waste disposal facilities, and high quality natural areas in close proximity to each other, this region presents some of the most complex environmental and economic development issues in the metropolitan area. The Corps plan would allow the issuance of permits for development in lower-quality wetlands while preserving the highest-quality natural areas.

The United States Environmental Protection Agency (USEPA) has shown a new intensity in addressing potential threats to wetlands. The Water Quality Amendments of 1987 increased the authority of USEPA to proceed against violations of the law governing the filling or other alteration of wetlands. Under Section 404 of the Water Quality Act, fill may not be placed in any water of the United States - a term broadly defined in the law to include almost all wetlands - without a permit from the U.S. Army Corps of Engineers. In the 1987 amendments, criminal and civil penalties for violations of Section 404 are increased. Moreover, the USEPA Administrator and the Secretary of the Army are granted authority to impose administrative penalties for violations of the permit requirement or the terms of a permit. Acting under this authority, USEPA imposed penalties on two Chicago-area developers in March, 1988. Several other alleged violations of the law have been under investigation.

After

Before

Results of stream modification activities in northeastern Illinois.

NIPC Report on Nonpoint Source-Impacted Stream Reaches

As in most other areas of public life, the resources available to address non-point source problems are less than are needed to complete the task. Therefore, some means of setting priorities is essential. The state has long used a system for ranking wastewater treatment projects in terms of the seriousness of the problem and the breadth of positive impacts. In August, 1987, NIPC submitted recommendations to the Illinois Environmental Protection Agency (IEPA) on the components of a similar ranking system for non-point source management programs.

NIPC's proposed system would assign scores to individual stream reaches and lakes reflecting the desirability of controlling nonpoint sources of pollution and the likelihood that such controls would increase the beneficial uses of the water body. One of the lessons learned in the construction grants program is that even though substantial funds are spent to reduce pollutant discharge, the receiving water may still not be usable for recreational or other purposes. The Commission's nonpoint ranking system seeks to avoid this problem.

The starting point for this ranking is the assessment of nonpoint source problems prepared by the IEPA under Section 319 of the Water Quality Act. Under the Act, this report is to identify those navigable waters of the state which, without additional action to control nonpoint sources of pollution, cannot reasonably be expected to attain or maintain applicable water quality standards or the goals and requirements of this Act.

The IEPA report includes, for each stream reach or lake, the designated use of the waterbody; the degree to which the stream or lake is currently able to support that use; the causes of any limitation on use (e.g.,chemical pollutants, high nutrient levels, siltation); and the sources of those problems (urban runoff, agricultural runoff, landfill leachate, and so on).

The IEPA report identifies nine stream segments in six watersheds which manifest nonagricultural sediment problems, thirty-five reaches with use impairments related to urban runoff, and thirteen reaches with problems related to hydrographic modifications. The IEPA results showed a general correlation between the population density of a watershed and the degree of water quality impairment. The Commission identified five rural streams which are of high quality and which are projected to experience substantial future urbanization which may in turn lead to use impairments.

Using the IEPA assessment report, other water quality monitoring information, and its own population and other data, NIPC ranked these stream reaches according to the following six criteria:

1. The degree to which urban runoff contributes to or is expected to contribute to use impairment. This criteria would rule out those water bodies in which other problems would impair uses even after nonpoint problems were solved.
2. The nature and severity of use impairment. This is intended to assure that the most severe problems get first attention.
3. Ability to recover intended uses within a reasonable recovery time after nonpoint problems have been solved.
4. Amenability of the problem to affordable solutions. Higher ranking is given to waterbodies in which affordable and non-disruptive management techniques can be effective.
5. Population benefitting from solution of the problem.
6. Strength of local support for solution of the problem.

An explicit bias in favor of preventive action was built into the scoring system. The Commission reasoned that it is more cost-effective to prevent the deterioration of current uses than to try to recover uses which have been lost. The highest rankings thus went to waters which currently support a range of uses but which are threatened by urbanization. These include Waubonsee, Tyler, and Ferson creeks. Lower rankings were given to areas like Flag, Hickory, and Butterfield creeks, on which urbanization contributing to nonpoint source problems is already well advanced. The lowest ranks were given to streams - among them the Kishwaukee River and Spring Creek - which are of high quality and relatively unthreatened by urbanization. The scoring system, if adopted by the state, could be used in the same manner to rank the region's lakes as to the potential gains from non-point source management.

Implementation of the 1987 Water Quality Amendments

During 1988 and early 1989, the details of the nation's non-point source management strategy will be fleshed out as the states submit their assessment reports and management plans for approval by the United States Environmental Protection Agency (USEPA). The management plans, once approved, will provide the basis for any future federal funding of non-point source control programs. More importantly, they will define what is actually likely to be accomplished during the four-year program period established in the 1987 amendments. In order to understand USEPA's expectations concerning the state plan, members of the NIPC staff interviewed James Meek, Environmental Specialist, Office of Water, USEPA. Following are the highlights of that conversation:

NIPC – What are USEPA's expectations with respect to state assessment reports and plans? Are you looking for mandatory programs as opposed to voluntary?

Meek – The assessment will delineate the problems, identify the critical waters, and identify the best management practices appropriate to those problems. The management program will then determine how those issues are to be addressed. We expect each state, as it prepares the management program, to make a valiant effort to consult with a broad spectrum of groups and interests and to achieve a broad consensus on the problems being identified. These same people will then make the decisions as to what is to be done.

We expect the states to continue their voluntary efforts, where these are successful. But where a state finds that these aren't working, we expect them to look at possible regulatory approaches.

NIPC – Assuming that most states opt for a voluntary approach, what kind of timetable do you have for evaluating those programs? What if the results do not indicate improvements in water quality? Will you take a harder look at a regulatory approach?

Meek – Our experience shows that it is very difficult to show improvement in water quality in a period of only a few years. We will be looking to see how the voluntary programs work, what the levels of participation are, whether there is faithfulness in carrying out voluntary activities. Where we find reluctance or lack of participation, we will look at what the issues are behind that and then debate what approach ought to be taken.

We are hearing more and more interest in regulatory programs. Where farmers are doing their best with good stewardship principles, there is some resentment about other farmers who aren't or about urban areas in which little progress is being made. There is an equity issue here, and these farmers are talking about bringing everyone along. People are really concerned about what happens to their drinking water and to recreational waters. There is impetus for a gradual toughening up.

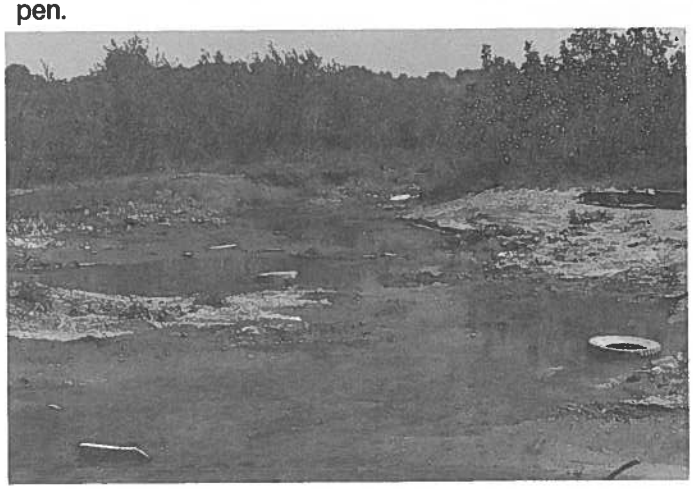
The Congress originally included a regulatory component in the legislation, but this was defeated. So Congress said, in effect, "Go ahead and see how it goes for four years. See what you can do with a voluntary approach, and then we'll see if it's successful and decide what we want to do." So the jury is out.

NIPC – At one time, USEPA was promoting use-based water quality standards. Is it likely that you might return to this approach, so that as the costs of attaining standards become just too high you might downgrade the intended uses for some streams?

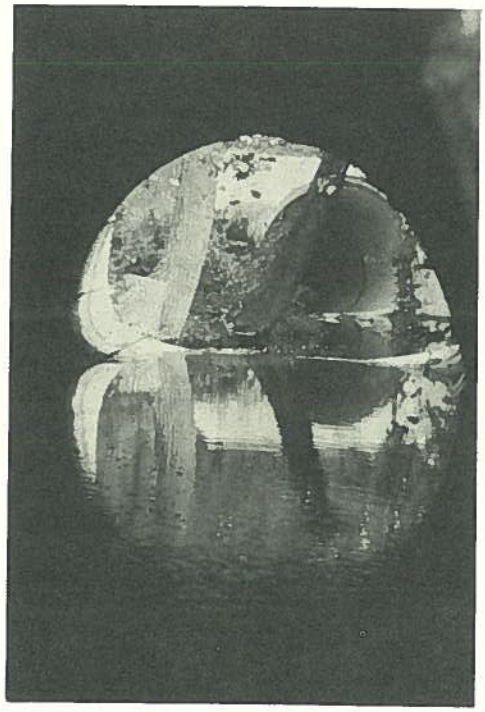
Meek – This is possible under the Clean Water Act, but it has been resisted because it involves the loss of a resource. We recognize that in urban areas, retrofitting solutions is difficult and costly. But you have to look at the whole area, at all the contributions and the sources and what the control possibilities are. In urban areas, there is a lot of interest in protecting water quality for recreational and aesthetic values. This is where you have to bring the public to bear, to encourage them to decide as a body politic where they want to go. Public education and involvement are critical to this process.

There seem to be four basic points to a good program. The state and the communities need to take ownership of the problem, they need to have reasonable solutions, they need to have some incentive money, and they need to have backup regulatory programs.

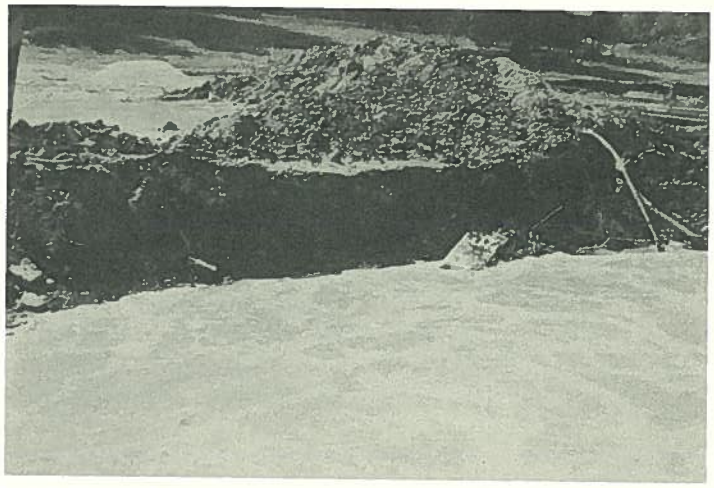
When you begin to think of all these things, all the ways people will have to change their lives – the way they keep their lawns, the way they dispose of wastes – it becomes a little overwhelming. This nonpoint source thing is like having a gorilla in the closet. People are really afraid of what they're going to have to do. And that's why the point about ownership is so critical. Where people don't say, "We're responsible for this," nothing is going to happen.



Residential Construction Water Quality Impacts



Urban Storm Sewer Discharge



Construction Erosion Impacts

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

Amendment Application	NIPC Review No.	Date AWQSC Consideration	Amendment Description	AWQSC Recommendation
Illinois Division of Water Resources	87-WQ-001	1-28-87	Section 404 request to dredge 9,000 feet of Salt Creek	Conditional Support
Village of Lake Villa	87-WQ-005	2-11-87	Reissuance of NPDES permit	Conditional Support
Parker Hannifin Corp.	87-WQ-013	5-6-87	New NPDES permit for industrial discharge to an unnamed tributary to Tyler Creek	Consistent
Eagle Plastics	87-WQ-014	5-6-87	New NPDES permit for industrial discharge to an unnamed tributary to the Fox River	Consistent
W.R. Meadows	87-WQ-015	5-6-87	New NPDES permit for industrial discharge to the Fox River	Consistent
Coated Film Company	87-WQ-019	5-6-87	New NPDES permit for industrial discharge to tributary to Thorn Creek	Consistent
Signode Corporation	87-WQ-024	5-19-87	New NPDES permit for industrial discharge to tributary to the West Fork North Branch Chicago River	Consistent
Island Lake Sanitary District	87-WQ-038	8-5-87	Request for FPA boundary amendment to reflect the transfer of two areas of land from a currently non-FPA area into the Island Lake FPA	Conditional Support
City of Crystal Lake	87-WQ-041	8-5-87	Request for FPA boundary amendment to reflect the transfer of approximately 1940 acres from the Cary FPA into the Crystal Lake FPA	Nonsupport[1]
Village of Lake Villa	87-WQ-042	7-1-87	Request to amend WQ plan to reflect the expansion of the Lake Villa treatment plant to double its size	Conditional Support
City of Crystal Lake	87-WQ-043	12-5-87	Request for FPA boundary amendment to reflect the transfer of approximately 830 acres from the Lake in the Hills FPA into the Crystal Lake FPA	Nonsupport[2]
Wheaton Sanitary District	87-WQ-049	1-6-88	Request to amend WQ plan to reflect an FPA change involving transfer of land from the West Chicago FPA into the Wheaton FPA	Nonsupport[3]
Truck Stops of America	87-WQ-055	11-4-87	Request for construction of a 60,000 gpd treatment plant	Conditional Support
Willow Creek Church	87-WQ-061	11-4-87	Request to amend WQ plan to reflect a wastewater treatment agreement between Village of Hoffman Estates and MSDGC for service to the Willow Creek Church	Consistent
City of Joliet	87-WQ-063	2-3-88	Request for WQ plan amendment to reflect the transfer of a 60-acre lot from the New Lenox FPA into the Joliet FPA	Consistent
DuPage Department of Public Works	87-WQ-064	1-8-88	Request for WQ plan amendment to reflect FPA boundary agreement with the Hinsdale S.D.	Consistent
Village of Hainesville	87-WQ-065	7-6-88	Request for FPA boundary amendment to reflect the transfer of 200 acres from the Northwest Lake FPA into the Northeast Central Lake FPA	Consistent
Huntington Developers	87-WQ-066	1-6-88	Request to amend WQ plan to reflect the service area of a proposed east-west interceptor in the Southeast Central Lake/ Mundelein FPA	Withdrawn
DuPage Department of Public Works	87-WQ-067	4-6-88	Request to amend WQ plan to reflect wastewater services to an area in the Glendale Hghts. FPA through a connection to the Glen Ellyn Hgts./Glenbard FPA system	Consistent

[1]The Village of Cary submitted information indicating ability to provide wastewater services.

[2]Lake in the Hills S.D. submitted information indicating ability to service the proposed amendment area.

[3]Support conditioned upon a service agreement between Wheaton S.D., the Village of Winfield, and the City of West Chicago

FY 1989 WATER QUALITY MANAGEMENT FUNDED WORK PROGRAM OF THE NORTHEASTERN ILLINOIS PLANNING COMMISSION

- NIPC will prepare the 1988/89 annual water quality report.
- NIPC will provide technical assistance on stormwater management for water quality benefits to county stormwater management committees. It is hoped that county regulations for stormwater management will contain standards for achieving water quality benefits.
- NIPC will assist the IEPA in the development of a nonpoint source pollution management strategy for northeastern Illinois.
- NIPC will continue technical assistance and public education for local agencies and committees on stream preservation, stormwater detention for water quality benefits, and lake watershed management.
- NIPC will publish a report on the effectiveness of different stormwater detention strategies in reducing downstream flooding in northeastern Illinois.
- NIPC will continue to review facility plans and NPDES permit requests for consistency with the Illinois Water Quality Management plan.
- NIPC will continue its role as mediator of conflicts between designated management agencies or private parties requesting amendment of the Illinois Water Quality Management Plan. The vehicle for mediation will be the NIPC Areawide Water Quality Steering Committee.
- NIPC will again coordinate the Volunteer Lakes 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.
- NIPC will continue to keep track of northeastern Illinois diversion for Lake Michigan for water supply, using the Commission's computerized accounting system.
- NIPC will prepare a guidance manual for lake restoration/protection in Illinois with a working title of "Understanding Illinois Lake Management."
- NIPC will continue to coordinate Clean Lakes Program projects for the Skokie Lagoons (Forest Preserve District of Cook County) and four Chicago Park Lagoons (Chicago Park District).
- NIPC will again coordinate a national conference on the states' lake management programs during Spring, 1989.

Wastewater Facility Loan Bank Legislation

The Illinois General Assembly has passed legislation to permit the state's participation in the restructured federal wastewater facility grant program. The new law was made necessary by the federal Water Quality Amendments of 1987, which made a basic change in the way federal support for wastewater treatment plant improvements will be provided. In FY 1989 and 1990, one-half of federal funds will be provided as construction grants. The other half will be used to capitalize state revolving loan programs. The construction grants will be eliminated after FY 1990 and the loan program after FY 1994. In order to begin receiving capitalization funds, each state must establish a revolving loan program and provide matching funds equivalent to 20 percent of the federal fund allocation. Under the current allocation formula, Illinois would be required to contribute approximately $10 million in FY 1989 in order to receive $50 million.

The new measure, contained in Public Act 85-1135, establishs a Water Pollution Control Revolving Fund to be administered by the Illinois Environmental Protection Agency. Loans would be made from the Fund to local governments to construct wastewater treatment facilities or to refinance debts for certain facilities. The act also requires that IEPA prepare, by 1992, a survey of the need for additional treatment works in the state.

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Elizabeth L. Hollander
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Eleanor S. Rostron
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Dean C. Cunat
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Past Commission President

Lawrence B. Christmas
Executive Director

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Glenn P. Coburn *Member, Will County Board*

Donna P. Schiller *Executive Director, Project Merit Selection of Judges*

Charlie A. Thurston *Vice President, Northern Illinois Gas Company*

Edgar Vanneman Jr. *General Attorney and Assistant Secretary, Brunswick Corporation and Former Mayor, City of Evanston*

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David D. Orr *Alderman, 49th Ward, Chicago*

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Robert L. Anderson *Administrative Assistant to the Mayor, City of Chicago*

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Mary T. Latta *President Village of Plainfield*

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David L. Pierce *Mayor, City of Aurora*

Margaret P. Price *Mayor, City of Naperville*

Sheila H. Schultz *President, Village of Wheeling*

Edward P. Tomkowiak *President, Village of Wadsworth*

Appointed by the County Board Chairmen

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Cook County Board of Commissioners

Irene C. Hernandez
Cook County Board of Commissioners

Joseph P. Mathewson
Cook County Board of Commissioners

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Dean C. Cunat *Member, McHenry County Board*

Mary Ann Gearhart *Member, Will County Board*

Appointed by the Board of the Regional Transportation Authority

Kathleen K. Parker

Appointed by the Board of the Chicago Transit Authority

Appointment Pending

Appointed by the Board of Metra

Appointment Pending

Appointed by the Board of PACE

Appointment Pending

Appointed by the Board of the Metropolitan Sanitary District of Greater Chicago

Joanne H. Alter

Appointed by the Board of the Illinois Association of Park Districts

Ralph Cianchetti

Appointed by the Board of the Chicago Park District

Walter A. Netsch

Areawide Water Quality Steering Committee

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Commissioner **Joanne H. Alter**
Commissioner **Robert L. Anderson**
Commissioner **Robert G. Biesel**
Commissioner **Dean C. Cunat**
Commissioner **Nick P. Kerasiotis**
Commissioner **Margaret P. Price**
Commissioner **Eleanor S. Rostron**
Commissioner **Sheila H. Schultz**
Commissioner **Charlie A. Thurston**
Commissioner **Edgar Vanneman Jr.**
Mrs. Andrea Moore, *representing the Lake County Water Quality Committee*
Mr. Lloyd Renfro, *representing the DuPage County Water Quality Committee*

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.

William C. Ackermann

William C. Ackermann, chairman of the Commission's Water Resources Technical Advisory Committee from 1976 to 1987, died on June 9, 1988,at the age of 75. Dr. Ackermann served as chief of the Illinois State Water Survey for over twenty years. He was director of the first statewide water planning project, completed in 1967. Between 1980 and 1987, he directed the State Water Plan, which led to passage of the 1987 Groundwater Protection Act.

Dr. Ackermann was one of the first members of the Technical Advisory Committee, which was formed soon after the Commission's creation. In receiving Dr. Ackermann's resignation from the Committee in 1987, President Charlie Thurston said:

"Your guidance of this committee as chairman and your technical input as a member helped the Commission to formulate virtually all of the water resource policy positions adopted since NIPC's inception in 1957. Included on a list of achievements would be NIPC's *Areawide Water Quality Management Plan* and *Regional Water Supply Plan*, as well as numerous technical reports and guidance documents such as our model ordinances for flood damage prevention, stormwater detention, and soil erosion and sediment control. Your record of continuous service is unsurpassed."

In his letter of resignation, Dr. Ackermann said that his relationship with NIPC had "invariably been pleasant and productive," and that it was terminated with regret. The feeling was mutual.

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PLANNING COMMISSION
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1987-88 WATER QUALITY REPORT

Fox River, north of St. Charles, photo by Robert Kingery, August 11, 1928.