Our Community and Flooding

A Report on the Status of Floodwater Management in the Chicago Metropolitan Area, June, 1991

Prepared by the Resource Coordination Policy Committee

June 1991

Preface

We have a problem in the Chicago Metropolitan Area — flooding.

For years, we have covered the earth with pavement and buildings. Water originally held by the earth was directed by our technical skills to streams which were never designed by nature to carry such volumes. The water directed so cleverly to these outlets rushed over the stream banks and caused the very problem that our technology was supposed to stop — flooding.

In recent years, our community leaders and organizations have worked together to stop existing flood damages and prevent future flood damages from occurring. The original "Our Community and Flooding" prepared in 1975 summarized the watershed plans developed as part of this collective effort.

The purpose of this report is to measure our progress to date and to summarize what remains to be done. Since the rains will continue to come and our communities will continue to grow, the progress of our floodwater management plans is essential to assure that we have communities safe and secure from the hazards of flooding.

The Resource Coordination Policy Committee

The Resource Coordination Policy Committee is composed of floodwater management and related agencies working together to solve our flooding problems. It receives direction and guidance from the Chicago Metro Area Council of Watershed Steering Committees which represents communities and local leaders of each watershed. The agencies include:

Soil and Water Conservation Districts of North Cook, Lake, DuPage, Kane, South Cook and Will Counties

Illinois Division of Water Resources

Metropolitan Water Reclamation District of Greater Chicago

U.S. Department of Agriculture Soil Conservation Service

U.S. Army Corps of Engineers

Stormwater Management Committees of DuPage, Kane and Lake Counties.

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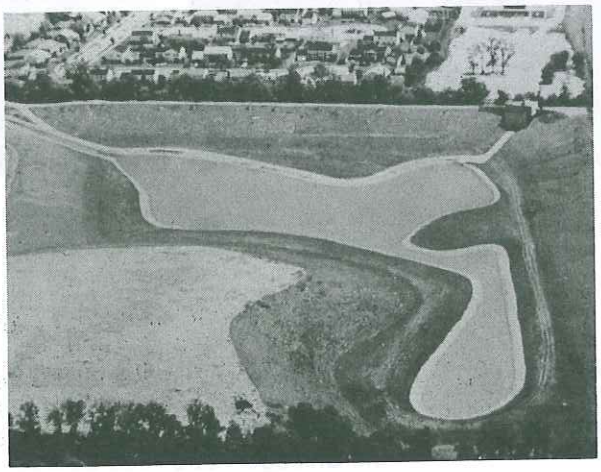


PART I – FLOODWATER MANAGEMENT PERSPECTIVE

How Our Flood Problems Developed

Flooding and related problems have been a part of the history of the Chicago area since its earliest days. History records that Marquette and Joliet who first explored this area in 1673 were forced to move their camp because of flooding.

The Chicago Metropolitan Area's location on the southwest shore of Lake Michigan has helped to make it a major national transportation and business center. But the geological features of this location also cause major flood problems.

Glaciation left our area quite flat, particularly the area nearest Lake Michigan which was covered by Glacial Lake Chicago. As a result, stream systems are poorly developed. Undrained areas in the form of wetlands are common and floodplains vary greatly in width. The flatness of our region often means that floodwaters cover large areas. Watersheds draining the area include the Chicago River, North Branch Chicago River, Des Plaines River in Illinois, Little Calumet River in Illinois, Calumet Sag Channel, Poplar Creek, Hickory Creek, Salt Creek, DuPage River and the Fox River in Illinois.

The rapid population growth since the 1950's caused many municipalities to urbanize areas that are natural floodplains, i.e. those areas next to our streams that flood when their banks overflow. Urbanization of these areas at that time was considered sound economic and political reasoning. It was orderly growth within areas containing public services and utilities.

The result of this urbanization has been estimated to cost $28.7 million in average annual floodwater damages affecting 200 communities in the Metropolitan ara (See table on page 18). This does not include damages within the Central Basin Watershed, which may approach $151 million. It is estimated that a major flood occurrence damages over 18,000 residential buildings and approximately 550 commercial buildings. Also affected are 10 major transportation arteries and 43 secondary traffic routes. Direct damage to highways and bridges is not usually large but major economic losses do occur in the form of associated damages when traffic is disrupted and homes and businesses become inaccessible due to floodwaters.

Many important physical factors serve to increase the frequency and impact of our flooding problem. Poor management of our natural resources is one of these factors. Erosion from areas under development produces sediment which obstructs drainage facilities and reduces the capacity of our streams to convey water. Development of wetland areas also adds to our problem. The natural floodwater storage of these wetlands is lost through filling and the development often drains into storm sewers which speed the runoff to downstream floodplains. The practice of filling floodplains to insure that planned improvements are above past record flood depths is another factor. Filling causes the storm runoff to find other areas to flood, often to the distress of neighbors.

In addition, alterations to stream channels have contributed to the flooding problem. While uncontrolled stream modification may provide flood protection to adjacent areas, the downstream effects have commonly been detrimental. Inadequate bridge openings have also produced adverse effects by restricting the flow of water and causing it to back up. Flooding also occurs because of poor stream maintenance. Heavy vegetation growth and debris accumulations reduce the ability of streams to convey water. Poorly planned development in the floodway and flood fringe areas of a floodplain also creates additional problems.

The area-wide complex flood problem cannot be solved by one agency alone. The solution lies in a coordinated effort throughout the Chicago Metropolitan Area.

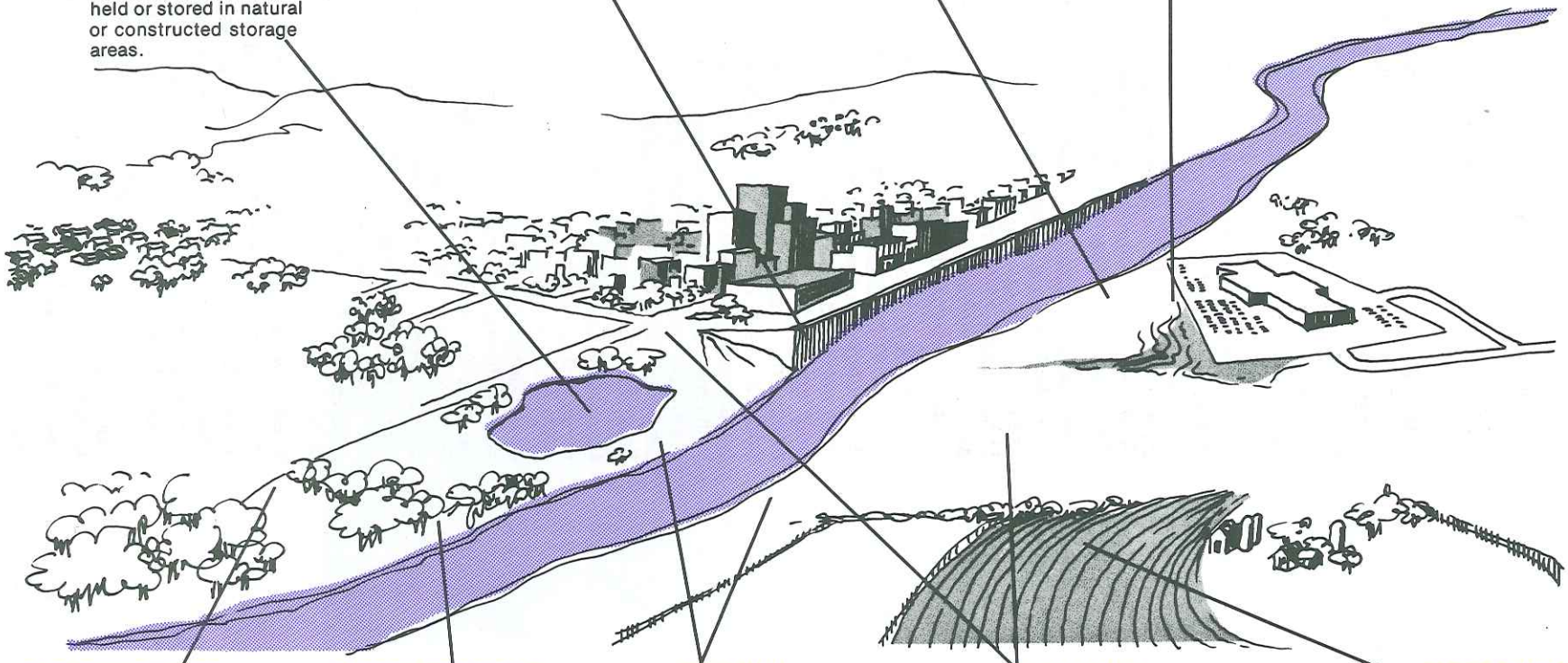
TERMS USED IN FLOODWATER MANAGEMENT

RESERVOIR
A natural or man-made site where water is collected and stored. Floodwater detention is a means of flood control whereby excessive flood flows are temporarily held or stored in natural or constructed storage areas.

CHANNEL IMPROVEMENT
Any means by which the capability of a stream or channel to contain and convey flood flows is increased.

FLOOD PRONE OR FLOOD HAZARD AREA
Those floodplains which have not been protected from flooding either by structural or non-structural means.

FLOOD PROOFING
A means of eliminating future flood losses by installing devices or otherwise modifying buildings which are subject to flooding.



FLOODWAY FRINGE
Those portions of the flood hazard areas lying outside the floodway.

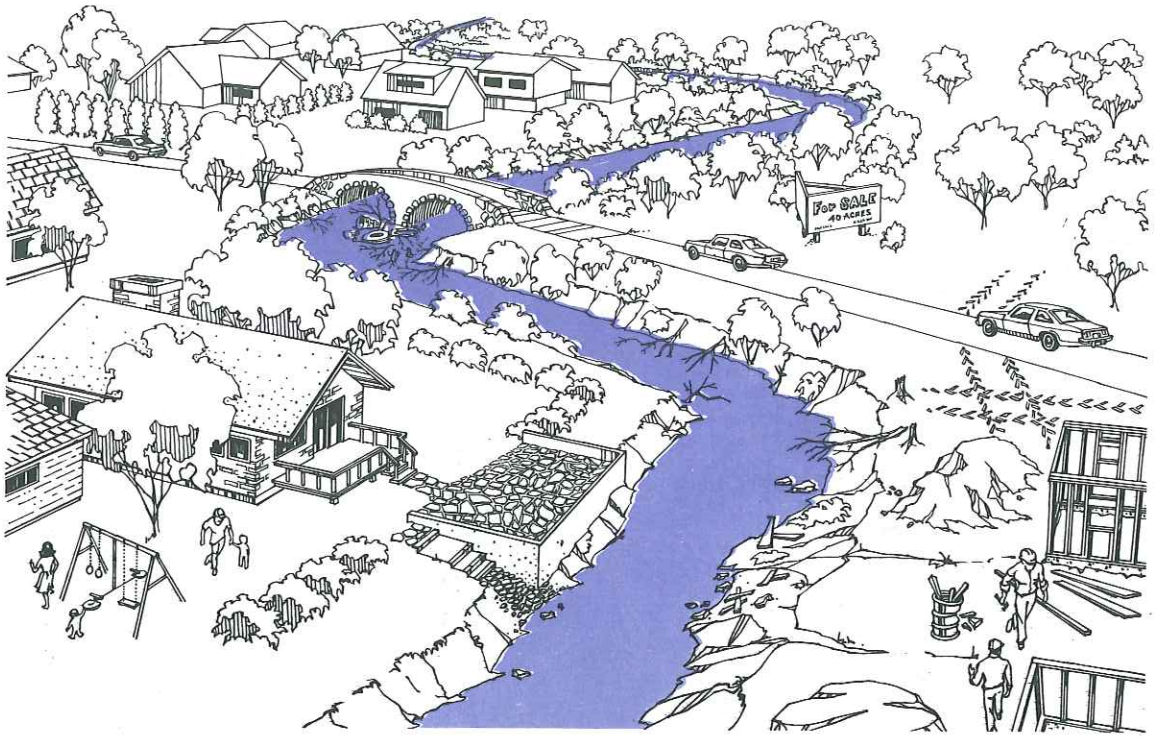
FLOODWAY PRESERVE
The designation and retention of an area subject to flooding in a natural and unimproved condition so it will continue to flood but with no harmful effects.

FLOODWAY
The channel of a river or stream and those portions of the floodplain adjoining the channel, which are reasonably required to efficiently carry and discharge the peak flood flow of the regional flood of any river or stream.

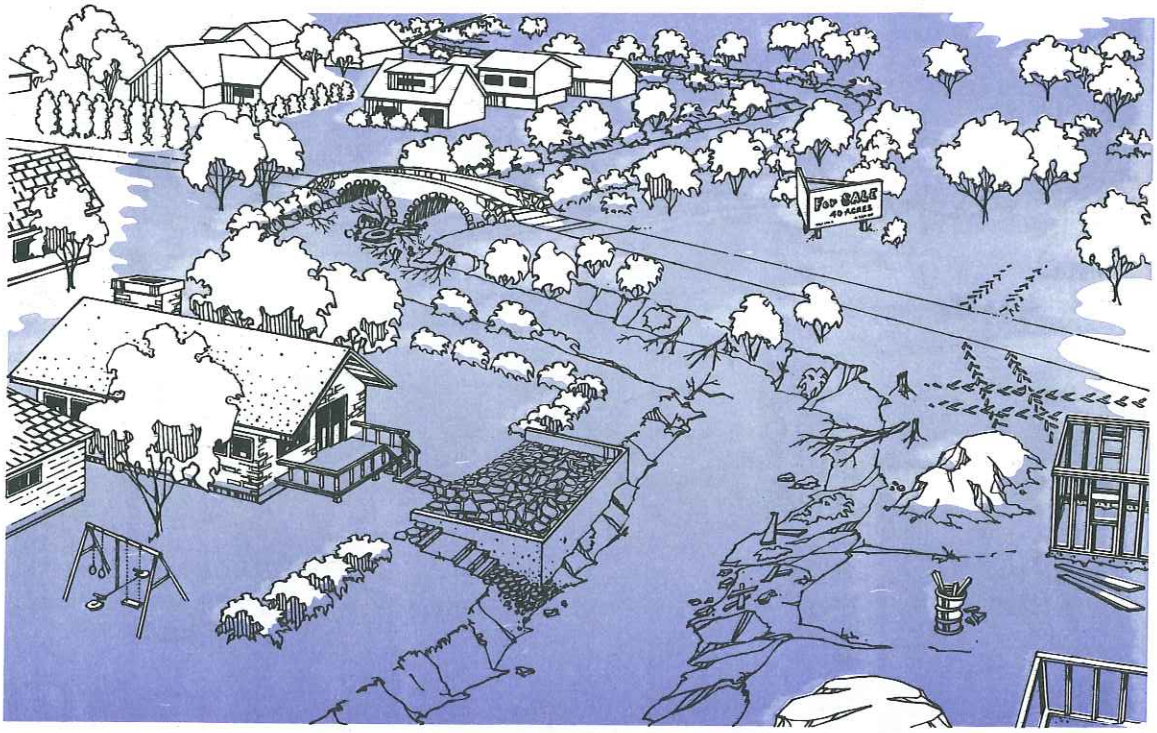
FLOODPLAIN
The Area adjoining a river, stream or lake which has been or may hereafter be covered by floodwater.

EROSION AND SEDIMENT CONTROL
Means by which excessive soil loss and resultant deposition can be prevented or reduced; the term is used to apply to both the regulations and the engineering and agronomic means by which this is achieved.

What Floodwater Management is About

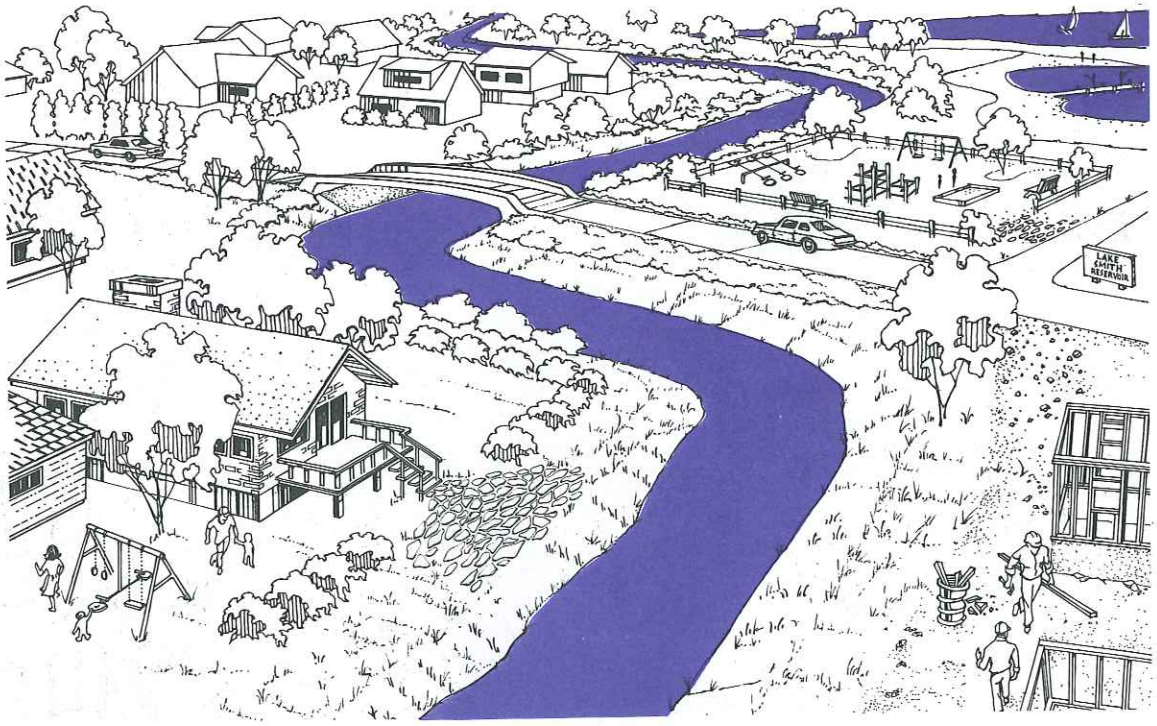


A Floodwater management is achieved by learning what impacts a flood will have, what causes those impacts and how they can be minimized, if not eliminated. The scene above typifies the kinds of things that worsen a flood's damaging effects: projection into the stream; erosion and sedimentation from developing areas; poor maintenance; debris; improper use of land in the floodplain.

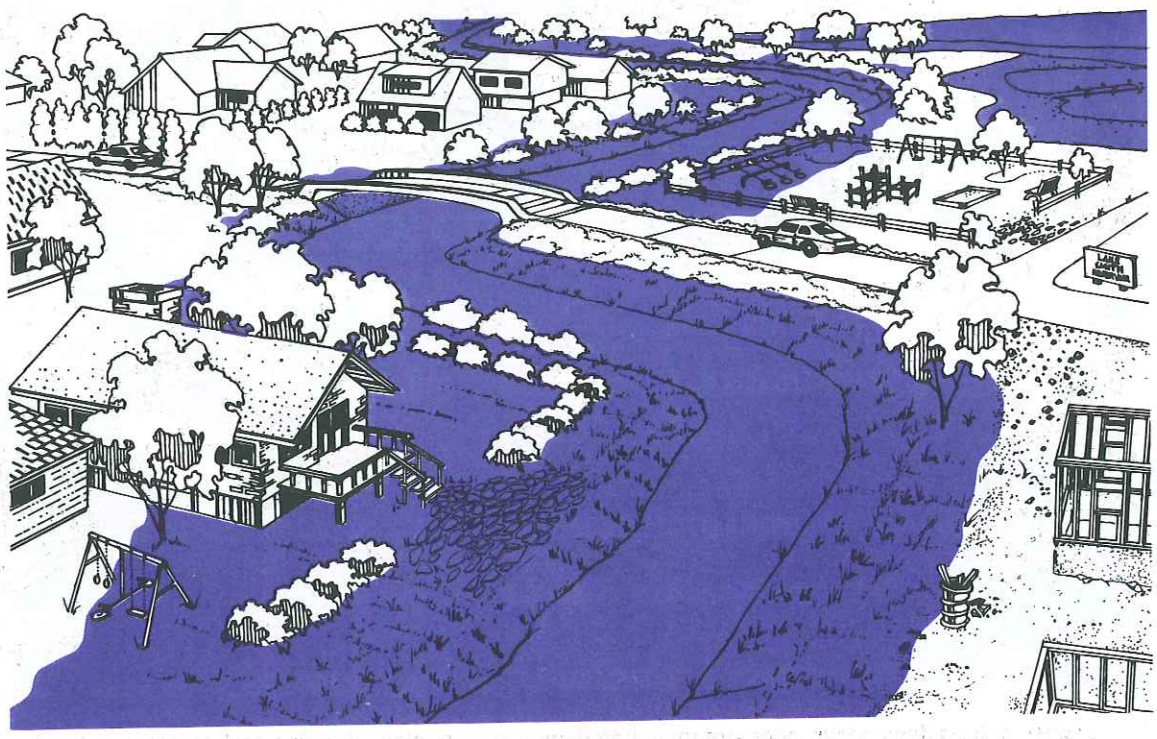


B When a flood does occur, poor stream maintenance, construction, planning and development can result in considerable property damage and other negative impacts.

What Floodwater Management is About



C The same scene is shown here, but with some alterations and additions: a house can be flood-proofed by raising the floor level above flood elevation; the absence of a projection into the stream; a well maintained construction site, stream and stream bank; an elevated roadway and new bridge; a multi-purpose flood control reservoir.



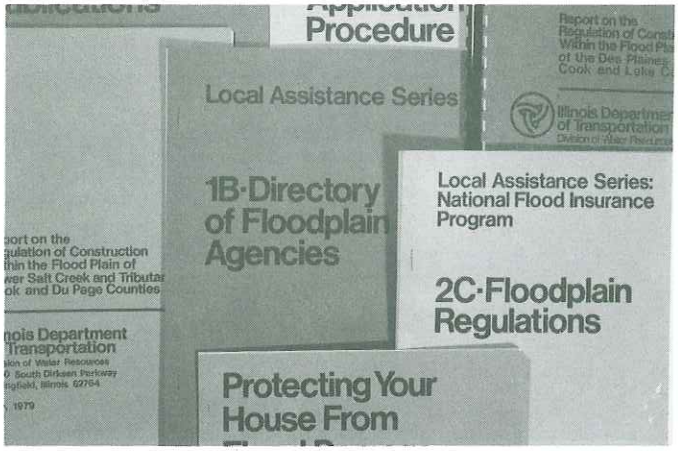
D Again, the flood occurs. It's important to understand that floodwater management does not stop flooding. However, by comparison to the scene on the left, it does reduce damage significantly.

Problem

Solution

Widespread residential flood damages (left) can be reduced or eliminated by structural measures such as floodwater storage reservoirs (right).

Flood damages to business and industry (left) affect the economic well-being of an entire community. Channel improvements (right) can significantly reduce those damages.



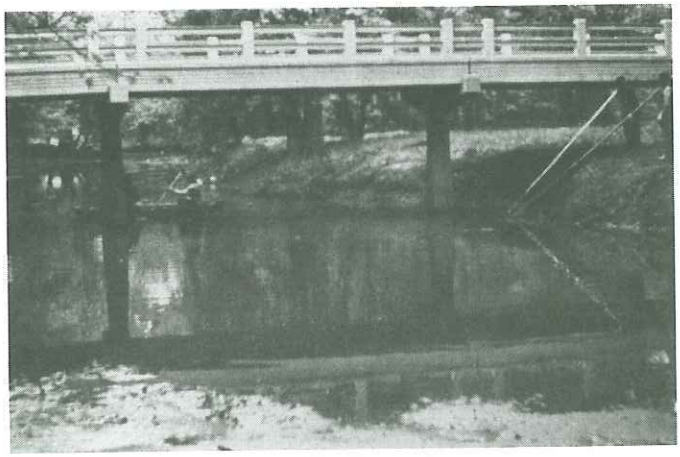
Uncontrolled development in flood-prone areas (left) often causes extensive economic losses affecting an entire community. Non-structural, regulatory actions (right) can greatly reduce these effects.

Solutions to the Problem

Problem

Solution

Besides the loss of valuable top-soil, lack of proper erosion protection measures during and after any construction work will produce sediment (left), a major factor in increased flood levels. Techniques like the sediment trap shown (right) will reduce or eliminate this unnecessary condition.



Man-made and natural debris (left) decreases the ability of a stream to carry water, especially during a flood. Proper maintenance (right) insures efficient floodwater conveyance.

Moving from a flood-prone area is not economically feasible for many who experience periodic flood damage (left). Floodproofing techniques, such as the berm shown (right) can provide protection from floodwaters.

Existing Services and Programs

Many local, state and federal agencies are working together to solve flooding problems in the Chicago Metropolitan area.

Efforts have been made to coordinate activities when appropriate to take advantage of the economies of regional planning. The Chicago Metropolitan Area River Basin Study is an example of such a planning effort.

The study was begun in 1971 when the Metropolitan Water Reclamation District entered into a cooperative agreement with the Soil Conservation Service to prepare River Basin Plans under authority of Section 6 of Public Law 566, 83rd Congress, as amended — the Watershed Protection and Flood Prevention Act.

Concerned citizens joined local, state and federal agencies to investigate flooding problems in the Des Plaines, North Branch Chicago River, Little Calumet, Poplar Creek, Calumet-Sag and Salt Creek Watersheds. Working under federal guidelines, every aspect of the flooding problem was investigated.

The primary goal of the study was to develop comprehensive plans to reduce existing floodwater damages. The problems and needs in each of the watersheds were considered. As a result, programs and projects were developed which are now being implemented.

Similar studies have been conducted by the Corps of Engineers in the Fox River and DuPage River Watersheds.

Federal Programs-Soil Conservation Service

The Watershed Protection and Flood Prevention Act (P.L. 566) authorizes the Soil Conservation Service (SCS) to cooperate with local organizations to carry out, maintain, and operate works of improvement for flood prevention, multiple purpose water resource development, and protection of soil resources. Under this authority, floodwater management plans for the six watersheds referenced earlier in the discussion have been developed in cooperation with agencies and steering committees in each watershed. Steering committees are groups of concerned citizens who serve on a voluntary basis. They represent the social, economic, and environmental setting prevalent in their area and have joined together to seek solutions to the flooding problems that confront their communities.

The following goals and assumptions were universally adopted by these committees during preparation of the floodwater management plans:

1. Protect against the flood which has a one-percent chance of occuring in any given year.
2. Project flooding conditions with urbanization at the year 2,000.
3. Emphasize floodplain and stormwater management.
4. Limit analysis to flood damages associated with overbank flooding.
5. Assume that the Metropolitan Water Reclamation District's Tunnel and Reservoir Plan for the combined sewer areas is in place.
6. Assume that flood control measures which have been authorized and funded are in place.

The final plans developed are a combination of structural and non-structural measures to correct existing flood problems and prevent future problems from occurring. They include reservoirs, channel improvements, dikes, land protection, floodplain regulations, channel maintenance programs, floodproofing and wetland and open space acquisition.

Other SCS Programs

The Soil Conservation Service (SCS) provides technical assistance through Soil and Water Conservation Districts to individual landowners, groups of landowners and communities in programs involving soil, water and related natural resource needs. Summarized, these programs are:

URBAN SOIL EROSION AND SEDIMENTATION CONTROL PROGRAM: Assists governmental units in developing, implementing and maintaining soil erosion and sedimentation control programs in urbanizing areas. This includes training, assistance in adopting and enforcing soil erosion and sedimentation control ordinances, site development erosion control plans and "onside" field assistance communities developer and consultants.

SOIL SURVEYS: The soil survey provides information about soils and their limitation and potential for housing, recreation, septic filter fields, agriculture and many other uses.

WETLAND INVENTORY: SCS along with the Illinois Department of Conservation and the U.S. Fish and Wildlife Service has prepared an inventory of the wetlands areas for the Food and Security Act of 1985.

ASSISTANCE TO RURAL LAND OWNERS AND OPERATORS: SCS helps farm owners and operators in planning resource management systems and applying conservation practices to the land. These practices include conservation tillage, contour farming, terraces, structures, grass waterways, pasture planting and management, and woodland planting and management.

Federal Programs-U.S. Army Corps of Engineers

House Public Works and Transportation Committee and Senate Environment and Public Works Committee resolutions and specific legislation provide basic authorization for survey investigations and other feasibility studies by the Corps of Engineers. Generally, water resource developments recommended to Congress in response to study authorities may not be implemented without being specifically adopted into law. The majority of the Corps' water resource projects or programs fall into that category. However, Section 201 of the 1965 Flood Control Act, as amended, delegated to the Secretary of the Army the right to administratively authorize water resource developments for which the estimated Federal cost is less than $15 million. Approval by the Public Works Committees is required prior to project implementation. Additionally, subject to specific limits on the allowable Federal expenditures, Congress has delegated continuing authority to the Secretary of the Army acting through the Chief of Engineers for study, adoption and construction of small projects for navigation, flood control, beach erosion control and shore protection as summarized in Table 1. Criteria for design, evaluation and local cooperation (with the added requirement that local interests bear all project costs in excess of the Federal limit, are the same for these projects as for projects specifically authorized by Congress.

Table 1

Continuing Authority Projects

Authority	Type of Projects for Which Used	Limit of Federal Costs Per Project
Section 3, 1945 River & Harbor Act	Snagging and Clearing for Navigation	(1)
Section 14, 1946 Flood Control Act	Streambank and Shore Protection for Facilities	$ 500,000
Section 103, 1962 R & H Act	Small Beach Erosion Control Projects	2,000,000
Section 107, 1960 R & H Act	Small Navigation Projects	4,000,000
Section 205, 1948 FC Act	Small Flood Control Projects	5,000,000
Section 208, 1954 FC Act	Snagging and Clearing For Flood Control	500,000

(1) A limit per project is not specified; however, in any given year a maximum of $100,000 may be used nationwide.

Both the specifically authorized and the Continuing Authorities Program studies are conducted in two phases: reconnaissance and feasibility. The reconnaissance phase is conducted as full Federal expense while the feasibility phase is cost-shared 50-50 with a non-Federal local sponsor. A Continuing Authority reconnaissance study may be initiatd by a letter of request to the District Engineer, Chicago District.

Other Corps of Engineers Programs

Section 22 of Public Law 93-251 authorized cooperation with states in the preparation of comprehensive plans for the development, utilization and conservation of the water and related resources of drainage basins located within the boundaries of the state and to submit to Congress reports and recommendations with respect to appropriate Federal participation in carrying the plan. Expenditures in any one state can not exceed $200,000 in any one year.

Corps input to the state planning program is on an effort or service sharing basis in lieu of an outright grant. The program is cost-shared with the respective states.

The Corps is authorized by Section 206 of the Flood Control Act of 1960; as amended, to provide information, technical planning assistance, and guidance upon request to both Federal and non-Federal entities in identifying the magnitude and extent of the flood hazard and in planning wise use of the flood plains. Direct response and assistance of this kind are provided through the Floodplain Management Services Program at District offices. Fees charged for requests by non-governmental entitles (i.e., individual homeowners, etc.) Non-Federal governmental requests are not charged. The Corps also administers studies which provide basic hydrologic and hydraulic information to the Federal Emergency Management Agency on a reimbursable basis under interagency agreement.

Specific Corps Projects

a. In March 1975, the Corps initiated a specifically authorized study of overbank flooding of the Chicago-South End of Lake Michigan drainage basin. At the request of the Illinois Division of Water Resources a reconnaissance study of the flooding along the Des Plaines River was conducted in 1989 under this authority. The feasibility study was initiated in April 1990 in cooperation with the IDWR, MWRDCG, and Lake County. The study is investigating the flood problems along the Des Plaines River upstream of Hoffman Dam in Riverside to the Wisconsin-Illinois State line and the tributaries of Crystal Creek and Prairie-Farmer Creek.

b. An interim study conducted also under the C-Selm authority on the I&M Canal recommended reconstruction of a levee along the Des Plaines River in McCook, Il. This project is continuing under the Section 205 program with the feasibility study to be initiated in 1991 with the MWRDCG as the prospective local sponsor.

c. Reconnaissance studies were completed also on the flood problems at the unincorporated residential development of Valley View in DuPage County along the East Branch DuPage River. A feasibility study is being initiated in 1991 under the Section 205 program in cooperation with DuPage County.

d. A Section 205 reconnaissance study is underway at the request of the city of Chicago on the flood problems along the North Branch Chicago River in the vicinity of N. Monticello Avenue.

e. The Illinois Division of Water Resources has requested a Section 205 reconnaissance study on the flood problems along Tinley Creek in south Cook County. Previous studies were undertaken by the SCS which formulated a flood damage reduction plan. The Corps will utilize the SCS data. Initiation of the study is pending receipt of funds.

f. The 1976 Water Resources Development Act authorized a Phase 1 General Design Memorandum (GDM) Study for the North Branch Chicago River Watershed to be performed by the Corps of Engineers. The study investigated the main features of the plan prepared by the Soil Cconservation Service in

October 1974. The Phase 1 GDM report contains an evaluation of the federal interest in, and the feasibility of, constructing the reservoirs identified in the Plan. The Water Resources Development Act of 1986 authorizes construction of three reservoirs which were recommended in the Phase I GDM. See page 22 for details.

g. A study report for the Little Calumet River in Indiana was completed in December 1973. The Water Resources Development Act of 1976 authorized a Phase I advanced engineering design study which directed the Corps to determine the feasibility of implementing a flood damage reduction, outdoor recreation and recreation navigation project along the Little Calumet River in Indiana. The Phase I study recommends flood damages reduction improvements along the Little Calumet River between the Illinois-Indiana state line and the Penn Central Railroad bridge in Gary. These improvements in Indiana will be compatible with the authorized flood damage reduction improvements in Illinois planned by the Soil Conservation Service. The Water Resources Development Act of 1986 authorized the recommended plan. The preconstruction engineering and design is underway, construction initiate in September 1990.

h. A Section 205 study of the flood problems along the Fox River in Kane and McHenry Counties and the Fox Chain of Lakes is underway. The Detailed Project Report is to be completed in the Spring of 1991. The project is to consist of adding additional gate capacity at McHenry Dam and a control gate at the Algonquin Dam. Structures are to be floodproofed in Kane County. The cost of the project is estimated to be $1.8 million.

i. The Illinois Division of Water Resources has requested a Section 205 reconnaissance study to investigate ice related flooding along the Fox River in the vicinity of East Dundee. The study is underway.

j. A Section 205 feasibility study will be inspected in 1991 with the Metropolitan Water Reclamation District on the levee rehabilitation of the McCook levee along the Des Plaines River in McCook, Illinois. The cost of the project is estimated to be 2.1 million.

k. The Corps, with the Metropolitan Water Reclamation District of Greater Chicago as a local sponsor, has for a number of years conducted a clean-up program on the North Branch Chicago River and the Little Calumet River between the Cal-Sag Channel and the Illinois-Indiana state line. Debris, trash and vegetation are removed from designated areas along the North Branch Chicago River each year. Debris was removed from the Little Calumet River in 1976. The scope for silt removal from the Little Calumet River has been formulated but at the request of the MWRDGC the project is being deferred until completion of the TARP Phase I Calumet System. The Water Resource Development Act of 1986 specified future work of the clean-up program on the North Branch and Little Calumet Rivers to be cost shared 50 percent Federal and 50 percent local. The Corps of Engineers is also authorized to participate in future maintenance of the Little Calumet River in Illinois.

l. The 1976 Water Resources Development Act authorized a Phase I GDM study of the Phase II TARP project. Known as the Chicagoland Underflow Plan, details are provided on pages 44 and 45.

Other Federal Programs

The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 created a flood insurance program administered by the Flood Insurance Administration of the Federal Emergency Management Agency.

The 1968 Act made federally subsidized insurance available to citizens in communities that adopt regulations controlling floodplain development.

The 1973 Act makes flood insurance mandatory as a condition for federally related financial assistance to communities or individuals acquiring or refinancing property or building within the flood hazard area as defined by the program established in 1968.

Federal agencies provide assistance following flood disasters in the form of grants, direct assistance or low interest loans. Participation in the flood insurance program by communities with identified flood hazards assures continued flood relief assistance.

State of Illinois, Department of Transportation
Division of Water Resources

Flood Control Planning

The Flood Control Act of July 1945, Ill. Rev. Stat., Ch. 19, Par. 126, a-h, gives the Division of Water Resources legal authority to participate in the improvement of the rivers of the State for the purpose of regulating and controlling flood and low water flows. Criteria followed by the Division relating to flood control planning include:

1. Assurance that the most severely damaged areas receive priority consideration and assistance from State and federal sources.
2. State water resource projects be designed to maximize economic efficiency at minimal environmental impact.
3. State expenditures result in the maximum benefits for the least possible cost.
4. Local interest and investment of funds be required as evidence of involvement in any project.

The Division of Water Resources, in cooperation with local governments, has provided over 5350 acre feet of floodwater storage in eleven reservoirs, as well as improved channels at numerous locations throughout the metropolitan area.

The Division participates in federal programs within the legal authority of State Statutes. The Division is an active sponsor, along with other regional and local agencies, of floodwater management plans developed with SCS assistance. Responsibilities include land acquisition needed for the structural measures and implementation of various non-structural programs.

Stream Preservation Program

The Division assumed responsibility for the development of a stream preservation program as a part of the non-structural program of the Chicago Metropolitan River Basin Plans.

It include's the following goals and objectives:

1. Keep debris, sediment and unwanted vegetation out of the rivers and streams.
2. Safe conveyance of floodwater through each community.
3. Assure that flood control structural measures will perform as planned by maintaining unobstructed inflows and outflows.
4. Provide for annual inspection and maintenance of the key rivers and streams in each watershed.
5. Encourage each community to assume responsibility for the stream portion within its jurisdiction.
6. Provide assistance and advice to communities, when needed, by the Division and other regional agencies.

The program has been implemented and coordinated through each respective watershed steering committee.

State Floodplain Regulations

The Rivers, Lakes, and Streams Act of June, 1911, Ill. Rev. Stat., Ch. 19, gives the Division of Water Resources the authority to regulate construction activities within the floodway. The floodway is that portion of the floodplain required to store and convey floodwater. A permit is required to construct within the floodway. Construction is prohibited that significantly raises the stage or velocity of the 100 year projected flood in the floodway. Only appropriate uses are allowed.

The Division has compiled an official list of designated regulatory floodway maps. Information is available from the Division or from the local community.

Floodproofing and Flood Insurance Programs

The Division's Floodplain Management Section is the State Coordinating Agency for the National Flood Insurance Program. This section provides advice and information concerning the flood insurance program as well as technical assistance.

Flood Mitigation Program

Illinois Revised Statutes, Chapter 19, para. 126d. gives the Division of Water Resources the authority to acquire floodplain property to convert to public uses. This authority is used to acquire properties that cannot be protected by flood control structures, or where structural flood control measures are not practical or justifiable. Efforts have been concentrated in communities that have had acquisitions made through the National Flood Insurance Program (Section 1362). Several projects, done in cooperation with local communities, are underway or have been completed outside the Chicago Metropolitan area. Four projects within the Salt Creek Watershed in DuPage County are currently underway, with other projects being considered for the Little Calumet, DesPlaines and Fox River Watersheds.

The Division of Water Resources also provides technical assistance to properties owners of mitigation and floodproof/retrofitting measures through brochures and manuals available free of charge.

Metropolitan Water Reclamation District of Greater Chicago

The first modification of the natural drainage system in the Chicago Metropolitan area was done by the Metropolitan Water Reclamation District in the late 1880's. A series of canals were constructed to reverse the flow of the Chicago River and carry waste away from Lake Michigan.

The existing canal systems (Sanitary and Ship Canal, North Shore Channel, and Calumet-Sag Channel) provide a substantial volume of flood control storage. The water level in the waterways can be lowered in anticipation of a storm to provide bank storage of up to 4,600 acre-feet of additional capacity above normal operating water levels.

Flood Control Program

While the Metropolitan Water Reclamation District of Greater Chicago does not have a specific statutory responsibility in the area of flood control, its involvement and expertise in the areas of water pollution control and drainage has lead the Water Reclamation District to assume a flood control leadership role in the metropolitan area.

By the mid-1960's, the Water Reclamation District was involved in the design and construction of many flood control storage reservoirs and stream improvement facilities. Melvina Ditch Retention Reservoir, completed early in 1967, was the first reservoir constructed. To date, with MWRDGC participation, 28 reservoirs have been completed and two more are under construction. These reservoirs range in capacity from 24 to 1,076 acre-feet of stormwater detention and provide relief to thousands of people. All of the reservoirs designed by the Water Reclamation District will accommodate the largest storm which has a one-percent of occuring in any given year.

The maintenance and operation responsibility of approximately one-half of the existing reservoirs has been fully undertaken by the local municipality, while in the remaining reservoirs, the Water Reclamation District shares this responsibility with a local public entity.

The Water Reclamation District has sought Federal, State and local participation in its flood control efforts. Today, the Water Reclamation District is one of the principal sponsors of the floodwater management plans developed by the Soil Conservation Service. These plans address flood control on a regional basis.

The Water Reclamation District, as a local sponsor of the SCS watershed projects, is generally responsible for the acquisition of land rights and contract administration. Since the inception of this program, the Water Reclamation District has expended more than $10,000,000 in land rights acquisition for five reser-

voirs (Structures 2, 3, 4, 5, and 6) in the Upper Salt Creek Watershed, and more than $15,000,000 for three reservoirs (Structures 32, 53, and 143) in the Little Calumet River Watershed, and more than $2,000,000 for two reservoirs (Structures 86 and 102) in the lower Des Plaines Watershed. As contracting agent, the Water Reclamation District has constructed ten reservoirs with SCS funding.

In 1974, the Water Reclamation District adopted the "Flood Control Program Guidelines" (amended January 1981) which established certain criteria for the Water Reclamation District's participation in proposed local flood control reservoir projects (projects not addressed in the regional SCS program). These criteria included such items as the requirement for a local sponsor to share the costs of reservoir implementation, a requirement that the proposed reservoir be of at least 100 acre-feet capacity, that the flooding problem be of long standing, and that the project have a favorable benefit/cost ratio. The January 1981 amendment requires a "Strategic Planning Study for Flood Control" to be conducted by the Illinois Division of Water Resources. This State study is required for possible State funding of the project and will be used to define a cost effective project. The cost of a State study is to be borne equally by the local sponsor and the Water Reclamation District. The Flood Control Program Guidelines ensure that public funds are expended only in situations where serious flooding problems exist and adequate justification of expenditures is made.

Sewer Permit Programs

Since 1972, detention of stormwater runoff has been a requirement of the sewer permits within the service area of the Metropolitan Water Reclamation District. This area includes most of Cook County. Lake and DuPage Counties have also developed similar ordinances based on the MWRDGC regulations.

The intent of the regulations is to require local governments and developers to jointly provide detention storage. This eliminates excessive runoff during heavy storm periods and promotes comprehensive community wide programs for flood control. The MWRDGC ordinance requires that the release rate of stormwater runoff from all developments of a certain size not exceed stormwater runoff from the area in its natural undeveloped stage

Tunnel and Reservoir Plan (TARP)

The Chicago Metropolitan area has two different methods for collecting sewage. Flood problems in areas serviced by these two systems must be resolved differently. In all areas except the central basin, sewage and storm water are collected separately. These areas are commonly called "separate sewer" areas. Surface flood retention reservoirs, mentioned previously, are provided only in separate sewered areas. In the central basin, sewage and stormwater are collected in the same sewer and the areas served are called "combined sewer" areas. Combined sewer areas comprise 375 square miles of the total 872 square mile area under the jurisdiction of the Water Reclamation District. Flood and pollution problems in these areas will be served by the Tunnel and Reservoir Plan (TARP). The TARP service area includes the City of Chicago and 51 suburban municipalities.

TARP consists of two phases. Phase I of the Plan is primarily a water pollution control project. Phase II is associated primarily with urban flood control.

Virtually all excess combined sewage will be captured by the ultimate tunnel-reservoir system. In addition, waterway stages will be controlled, eliminating overbank flooding, basement flooding, and the bypassing of raw sewage.

Countywide Stormwater Management Committees

After historic floods in both 1986 and 1987 in the Metropolitan Area, the Illinois General Assembly and Governor Thompson enacted Public Act 85-905 which authorized DuPage, Kane, Lake, McHenry and Will Counties to prepare and fund stormwater management plans. Under the legislation, stormwater management planning committees, under the county board but made up of equal municipal and

county representatives, can be formed. The purpose of the cooperative municipal/county effort is to consolidate existing stormwater management frameworks into a unified county wide structure, to set minimum county wide standads for floodplain and stormwater management, and to prepare a county stormwater management plan. The participating counties have the authority to tax up to 0.20% equalized assessed value for plan implementation.

DuPage County Stormwater Management Committee

In 1987 the DuPage County Stormwater Management Committee was formed. The Committee directed the completion of the DuPage County Stormwater Management Plan which was enacted in September 1989 by the DuPage County Board.

The Stormwater Management Plan recognizes the critical need to limit the reoccurrence of extensive flood damages. The Plan recognizes the integrated nature of the watershed system and the need to consider stormwater management planning on a watershed basis. The Plan objectives include: reducing potential for stormwater damage; control future increases in stormwater damage; protect and enhance the quality and quantity of water resources; preserve and enhance aquatic and riparian environments; control sediment and erosion; and promote equitable, acceptable and legal stormwater measures.

County-wide regulations are being prepared which will reduce the potential for flood and stormwater damages to increase in the future. Regulations will address flood plain management, site runoff, water quality, sediment control, erosion control and wetland protection.

Watershed Plans are being developed for all basins in the County. The Watershed Plan will define and map protected areas such as depression storage, floodplains, wetlands and will provide plans for remedial projects to alleviate existing damages and specific guidance to prevent development which would be subject to future damages.

Lake County Stormwater Management Committee

The Lake County Stormwater Management Planning Committee (SMPC) was formed in December of 1987. It was to carry on (under the newly passed Public Act 85-905) the county's work toward a countywide, stormwater management program. The Lake County Stormwater Management Plan was passed by the SMPC and adopted by the Lake County Board in June of 1990.

The plan sets goals and objectives and outlines an extensive overall program composed of a number of separate but interrelated components. The countywide program involves:

- An administrative and management program (legislative activity, financing, staffing, committee and subcommittee structuring and public information).
- A planning and engineering program (detailed watershed and basin planning, modeling, design, floodplain and floodway mapping, strategic planning)
- A maintenance and operations program (stream maintenance, scheduled facility maintenance and upkeep and repair)
- A regulatory program (countywide stormwater management ordinance and an enforcement program)
- A capital improvements program (centralized/regional detention, bonding and grants)

Presently, the SMPC is preparing a countywide ordinance for the management of stormwater, floodplains and natural areas. For FY91 the SMPC will be focusing attention on beginning its stream maintenance work, basin planning and staffing. The basin plans will identify remedial and preventive projects as well as define more precise strategies for the protection of floodplain areas and depressional storage.

Kane County Stormwater Management Committee

The Kane County Stormwater Management Committee was formed in November 1989 with municipal members selected in March of 1990. The Committee will prepare a Stormwater Management Plan similar to DuPage and Lake Counties' plans in some aspects, because the State legislation is similar, but different in others, because of the degree that Kane County has been developed.

The Kane County Stormwater Management Plan will stress a preventative rather than a reactive approach to the stormwater issues facing Kane County. The central and western townships of the County are mostly rural with low density rural subdivisions beginning to be developed in the eastern portions of these townships. Most of the floodplains in these areas have not been encroached upon by urbanization. One goal of the Committee will be to accurately model and map the floodways and floodplains on the streams throughout the County based on future land use conditions and to prevent the encroachment of buildings in the floodway and limit building in the floodplain.

The Kane County plan will also stress the preservation of the environment through the preservation and creation of wetlands. These will have multi-use functions in that they will improve water quality, provide natural habitats for native plants and wildlife, provide for recreation and serve as regional flood control facilities.

There are areas in Kane County that do have reoccurring flooding problems and these will be addressed through regionwide stormwater management problems. The programs will include cooperative planning between the County and the Municipalities regional regulations of floodplains, regional construction of flood control projects and mitigation.

Watershed plans will be developed throughout the County. These plans will stress the cooperative effort between the Municipalities and the County in the creation and promotion of the plans.

Cook County Stormwater Management Committee

P.A. 86-1463, which was enacted in November 1990, authorized the creation of eight Storm Management Planning Councils—one for each of the seven established watersheds of the Chicago Metropolitan Area, and one for the combined sewer areas of Cook Coounty. It also authorized the creation, by intergovernmental agreement, of a county-wide Stormwater Management Planning Committee, and placed the responsibility for the coordination of these activities on the Northwest Municipal Conference, The South Suburban Mayors and Managers Association, and the West Central Municipal Conference.

The purpose of the legislation is to improve stormwater and floodplain management in Cook County by setting minimum standards for floodplain and stormwater management and by preparing plans for the management of floodplains and stormwater runoff.

The principal duties of the Councils shall be to develop stormwater management plans for the watersheds. The principal duty of the county-wide committee shall be to coordinate the watershed plans and to coordinate the planning process with adjoining counties to "ensure that recommended stormwater projects will have no significant adverse impact on the levels of flows of stormwater in the inter-county watershed or on the capacity of existing and planned stormwater retention facilities."

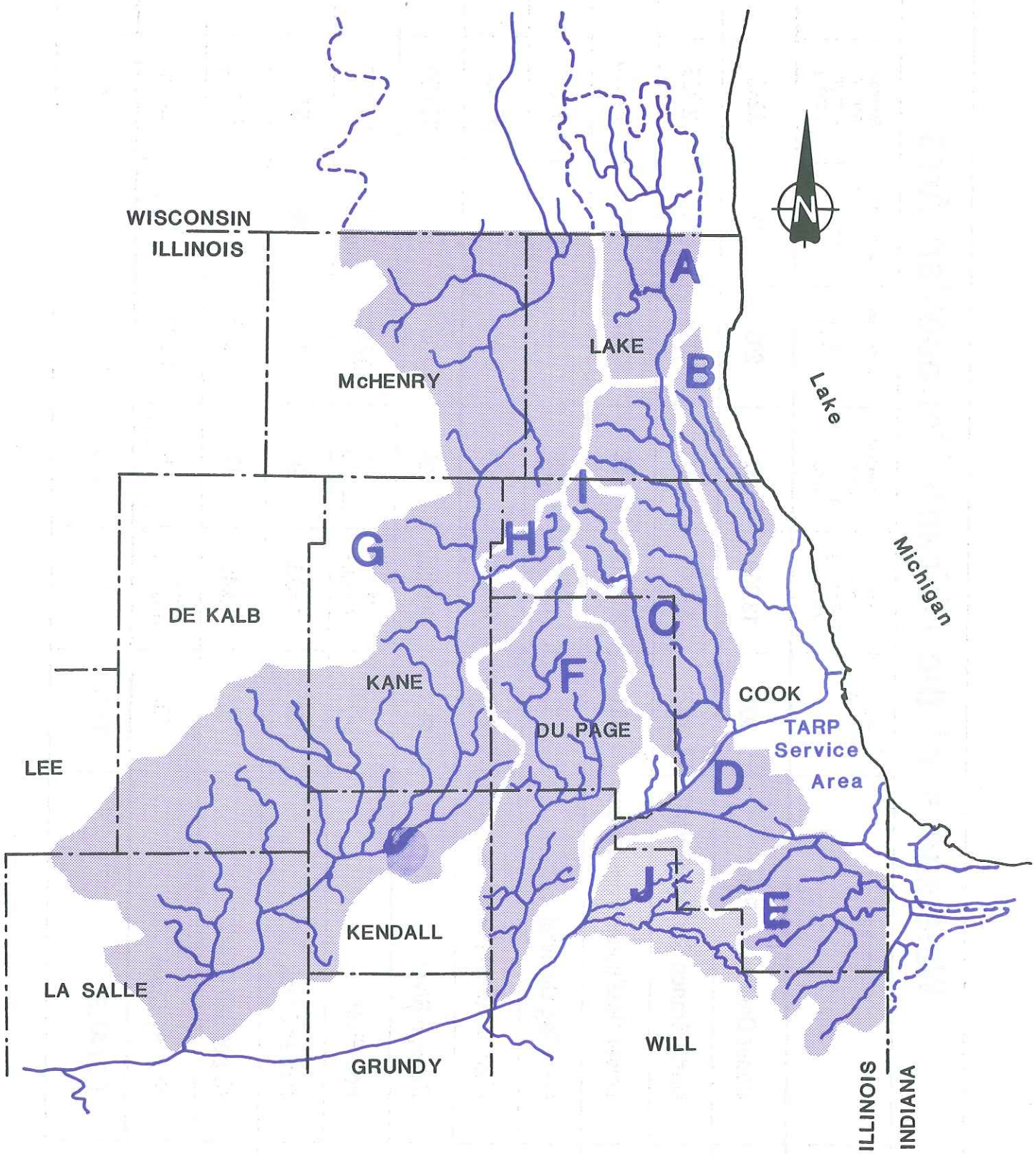
The county-wide Committee shall submit the coordinated watershed plans to the Illinois Division of Water Resources, to the Department of Conservation and to the Northeastern Illinois Planning Commission for review and recommendations.

Such review "shall consider those factors as impact on the level of flows in the rivers and streams and the cumulative effects of stormwater discharges on flood levels."

Membership on the watershed Council consists of one elected official from each municipality within the watershed and one elected official from Cook County, if unincorporated area is included in the watershed. Municipal representatives are appointed by the respective mayors, and county representatives are appointed by Cook County Board President.

In January 1991, the three regional municipal organizations named in the Act launched their effort to constitute the Waterhed Councils.

PART II - THE STATUS OF FLOODWATER MANAGEMENT

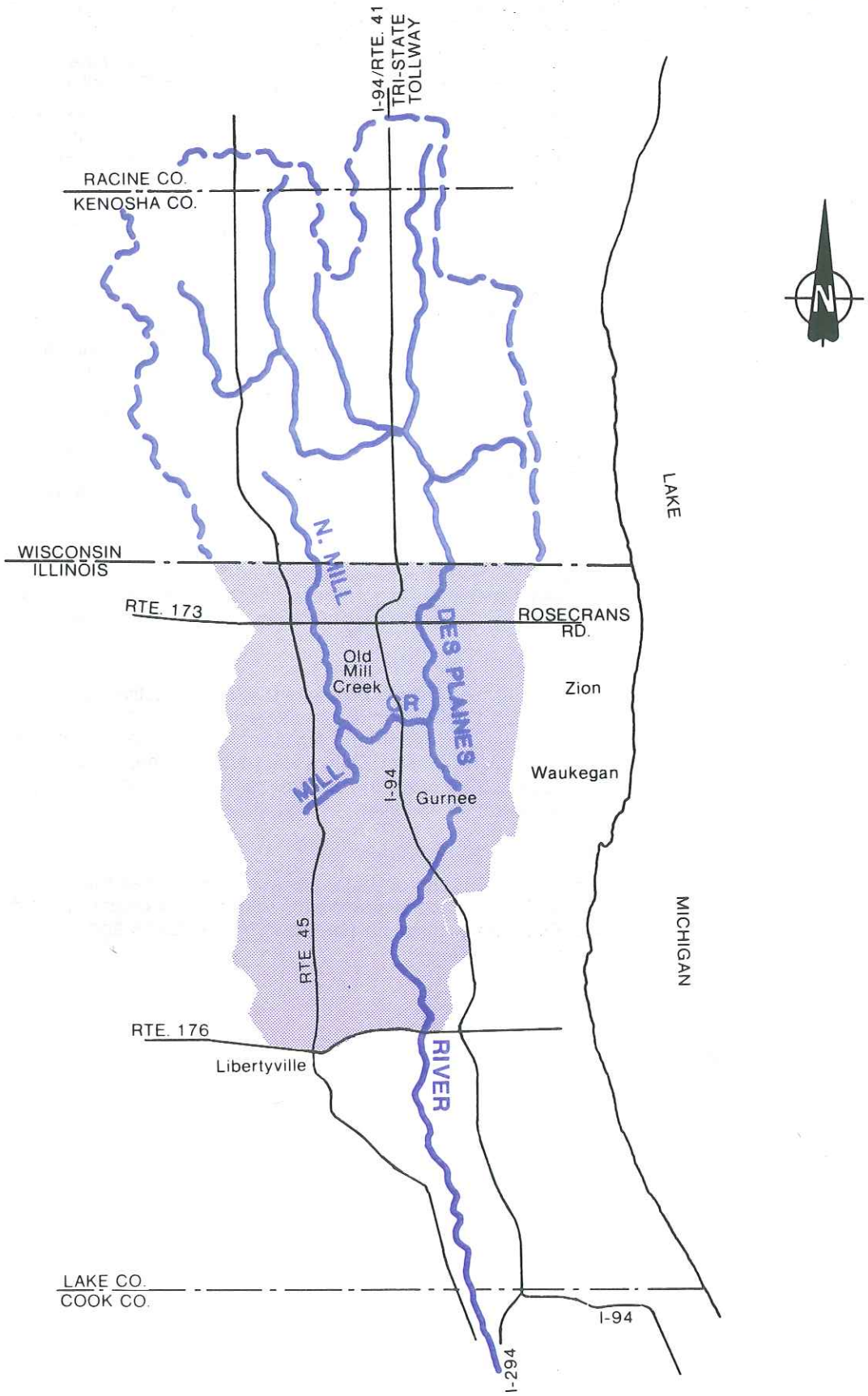


WATERSHEDS OF THE CHICAGO METROPOLITAN AREA

Watersheds of the Chicago Metropolitan Area

Map Key	Watershed	Area (Sq mi)	Area Subject To Flooding (Acres)	Length of Rivers and Tributaries (Miles)	Residences Damaged Annually (1,000's)	Businesses Dammaged Annually (1,000's)	Average Annual Damages (1,000's)	Page
A	Upper DesPlaines River	300	13,000	62	203	11	$283	17
B	North Branch Chicago River	102	5,500	57	1,030	20	$2,995	19
C	Lower DesPlaines Tributaries	381	20,900	188	2,497	200	$10,826	21
D	Cal - Sag Channel	117	1,050	25	175	--	$165	26
E	Little Calumet River	213	10,800	109	6,866	142	$5,835	28
F	Dupage River	353	8,623	129	130	25	$2,890	31
G	Fox River	1,720	NOT AVAILABLE	117 (MAIN STREAM)	3,880	NOT AVAILABLE	$2,700	33
H	Poplar Creek	40	1,525	26	184	28	$125	35
I	Upper Salt Creek	52	1,940	17	1200	2	$2,393	37
J	Hickory Creek	107	NOT AVAILABLE	35 (MAIN STREAM)	2,000	NOT AVAILABLE	$475	39
	TOTALS	3,874	64,438	765	18,195	428	$28,687	

Upper Des Plaines River Watershed



Program Status

The Upper Des Plaines River watershed is unique in the Chicago metropolitan area because it is largely rural in character. The floodwater management plan developed for it as part of the Chicago Metropolitan Area Floodwater Management Study focuses on non-structural programs to prevent future damages from occurring. These programs include land acquisition, land protection and floodplain regulations.

Floodwater damages to agricultural land are predominant. However, significant residential and commercial flooding occurs near Russell, Gurnee, and Libertyville.

A feasibility study is underway by the Corps of Engineers to investigate the flood problems at North Libertyville Estates under authority of Section 205 of the 1948 Flood Control Act. The study is scheduled for completion in June 1993. Further, the State of Illinois has requested the Corps of Engineers to investigate the flood problem of the Upper Des Plaines River Basin from Hoffman Dam in Riverside to the Wisconsin State line. The feasibility study is scheduled to be completed September 1994.

Land Protection Program

The Lake County Soil and Water Conservation District, assisted by the Soil Conservation Service, provides technical assistance to landowners, and operators in planning and applying resource management systems on land they own or control. In addition, assistance is given to units or government with developing and implementing natural resource protection ordinances.

Agriculture remains the predominant land use in the watershed. Resource management goals in the watershed include conservation tillage systems and grass waterways for soil conservation, improvement of wildlife habitat, natural wetland retention and stream channel preservation.

Seven of the fourteen municipalities within the watershed and unincorporated Lake County presently have soil erosion and sediment control ordinances in various stages of implementation. These municipalities include Grayslake, Green Oaks, Libertyville, Lindenhurst, Mundelein, Third Lake, Waukegan and Gurnee.

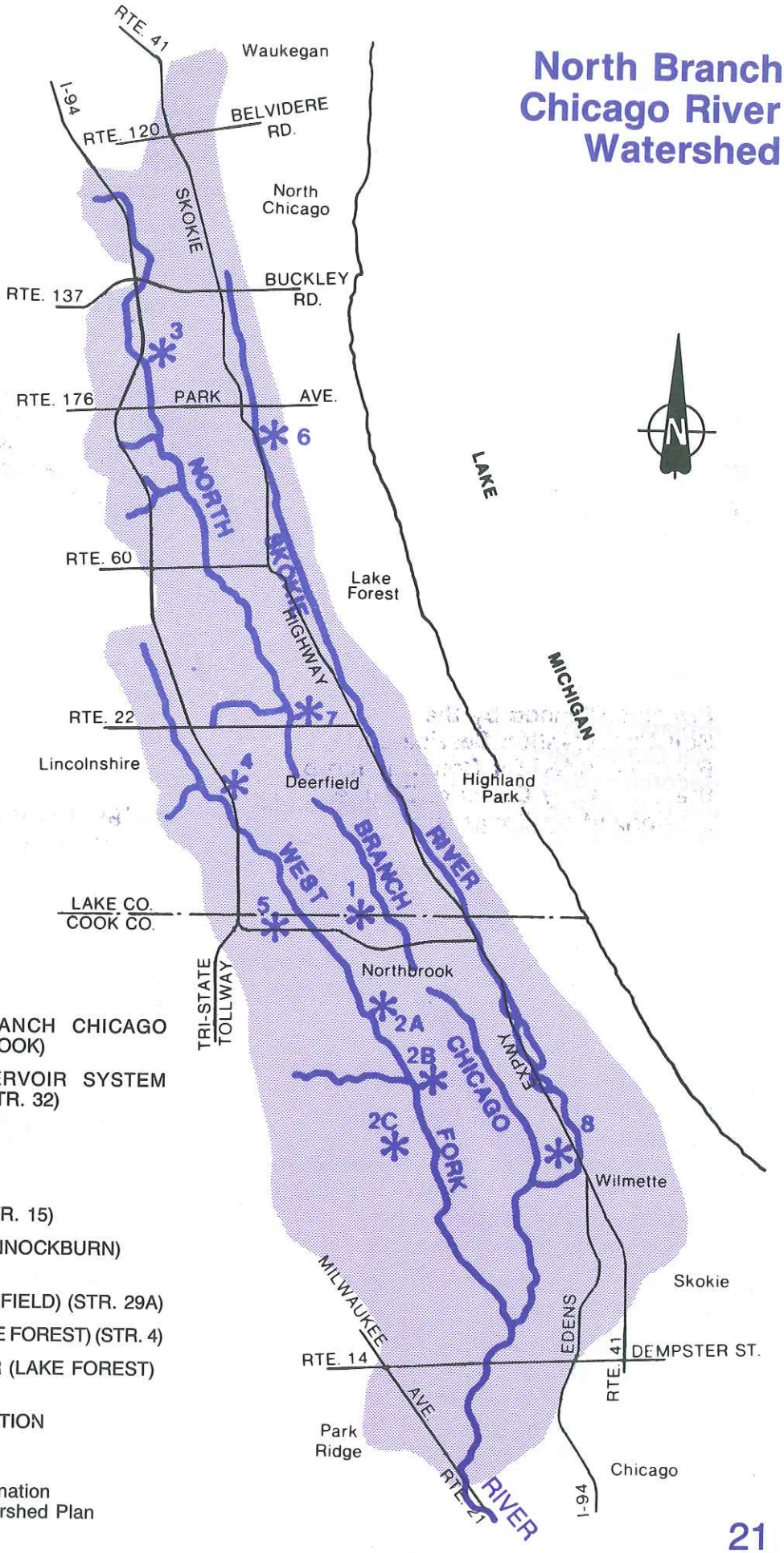
Land Acquisition Program

The Lake County Forest Preserve District has actively pursued a program of open land, wetland and floodplain purchase in the Upper Des Plaines River Watershed. To date, 8400 acres of land adjacent to the River and its tributaries have been acquired by the District. Only a few parcels remain to be acquired to achieve the District's goal of providing continuous open space along the entire length of the Upper Des Plaines River.

Floodplain Regulations

The Illinois Division of Water Resources regulates the floodways throughout the Upper Des Plaines Watershed in Illinois. Any construction proposed within the floodway areas must be permitted by the DWR and must not have significant adverse impacts.

North Branch Chicago River Watershed



*1 MIDDLE FORK NORTH BRANCH CHICAGO RIVER RESERVOIR (NORTHBROOK)

2 TECHNY RETENTION RESERVOIR SYSTEM (UNINCORPORATED COOK) (STR. 32)
- **A** NORTHBROOK RESERVOIR
- **B** TECHNY RESERVOIR
- **C** GLENVIEW RESERVOIR

3 ATKINSON ROAD RESERVOIR (UNINCORPORATED COOK) (STR. 15)

4 DUFFY LANE RESERVOIR (BANNOCKBURN) (STR. 27)

5 DEERFIELD RESERVOIR (DEERFIELD) (STR. 29A)

6 SKOKIE ROAD RESERVOIR (LAKE FOREST) (STR. 4)

7 WAUKEGAN ROAD RESERVOIR (LAKE FOREST) (STR. 18)

8 WILLOW ROAD DAM MODIFICATION

Structure Numbers Appearing in Parenthesis Above (e.g. Str. 32)
Refer to Structure Number Designation Appearing in the SCS 1974 Watershed Plan

Projects of the Metropolitan Water Reclamation District

1 MIDDLE FORK NORTH BRANCH CHICAGO RIVER RESERVOIR (COMPLETED IN 1975)

FLOOD STORAGE: 600 acre-feet
FLOOD PROTECTION TO: Northbrook, Northfield, Glenview, Morton Grove, Niles
COST: Construction – $2,900,000 (MWRDGC)
Land – 22 acres donated by the Homart Corp. (Sears Roebuck Inc.)
$776,000 (Estimated Value)
MAINTENANCE: Homart Corp. and MWRDGC

2 TECHNY RETENTION RESERVOIR SYSTEM (COMPLETED 1979) (STR. 32)

A NORTHBROOK RESERVOIR
FLOOD STORAGE: 300 acre-feet

B TECHNY RESERVOIR
FLOOD STORAGE: 250 acre-feet

C GLENVIEW RESERVOIR
FLOOD STORAGE 850: acre-feet

FLOOD PROTECTION TO: Glenview, Morton Grove, Niles
COST: Construction – $3,831,000 (MWRDGC)
Land-180 acres at three separate locations donated by Techny Orders, $5,280,000 (Estimated value)
MAINTENANCE: MWRDGC

Projects Planned by the Soil Conservation Service and Recommended for Construction by the U.S. Army Corps of Engineers and Authorized by Congress

3 ATKINSON ROAD RESERVOIR (STRUCTURE 15) (COMPLETION IN 1992)

VOLUME: 500 acre-feet
FLOOD PROTECTION TO: Lake Forest, Unincorporated Lake and Cook Counties
COST: Construction – $4,168,000 (COE)
and $1,389,000 (Non-Federal)

4 DUFFY LANE RESERVOIR (STRUCTURE 27) (COMPLETED 1990)

VOLUME: 525 acre-feet
FLOOD PROTECTION TO: Lincolnshire, Bannockburn, Deerfield
COST: Construction – $5,590,000 (COE)
and $2,390,000 (Non-Federal)

5 DEERFIELD RESERVOIR (STRUCTURE 29A) (COMPLETION IN 1992)

VOLUME: 575 acre-feet
FLOOD PROTECTION TO: Deerfield, Northbrook, Glenview
COST: Construction – $5,075,000 (COE)
and $1,692,000 (Non-Federal)

Projects of the Division of Water Resources but Not Recommended for Construction by COE

6 SKOKIE ROAD RESERVOIR (STRUCTURE 4)

VOLUME: 1,800 acre-feet
FLOOD PROTECTION TO: Lake Forest, Unincorporated Cook
COST: Construction – $10,500,000 (Estimate DWR)
Land – DWR and Lake County Forest Preserve District $958,300

Projects Planned by the Soil Conservation Service but Not Recommended for Construction by the U.S. Army Corps of Engineers

7 WAUKEGAN ROAD RESERVOIR (STRUCTURE 18)

VOLUME: 2,068 acre-feet
FLOOD PROTECTION TO: Bannockburn, Highland Park, Deerfield
COST: Construction – $10,156,000 (Estimate)
Land – $2,033,300 (DWR and Lake County Forest Preserve Dist.)

8 WILLOW ROAD DAM MODIFICATION

PURPOSE: Two automatic control gates to improve the flood control featuree of the lagoon.
FLOOD PROTECTION TO: Northfield, Wilmette, Glenview, Niles, Morton Grove
COST: Construction – $130,000 (Estimate)

Program Status

Federal Funding Status

The 1986 Water Resources Development Act authorized construction of reservoirs 3, 4, and 5 for the North Branch Watershed by the Corps of Engineers.

Land Protection Program

Soil erosion and sedimentation control ordinances have been enacted in the communities of Glenview, Lake Forest, Lincolnshire, North Chicago, Waukegan, Gurnee, Green Oaks, Bannockburn, Riverwoods, and unincorporated Cook and Lake Counties.

The Lake County and North Cook County Soil and Water Conservation Districts are providing technical assistance. The land protection programs are presently being evaluated by the Districts to determine their effectiveness and to make recommendations for improving them if necessary.

Land Acquisition Program

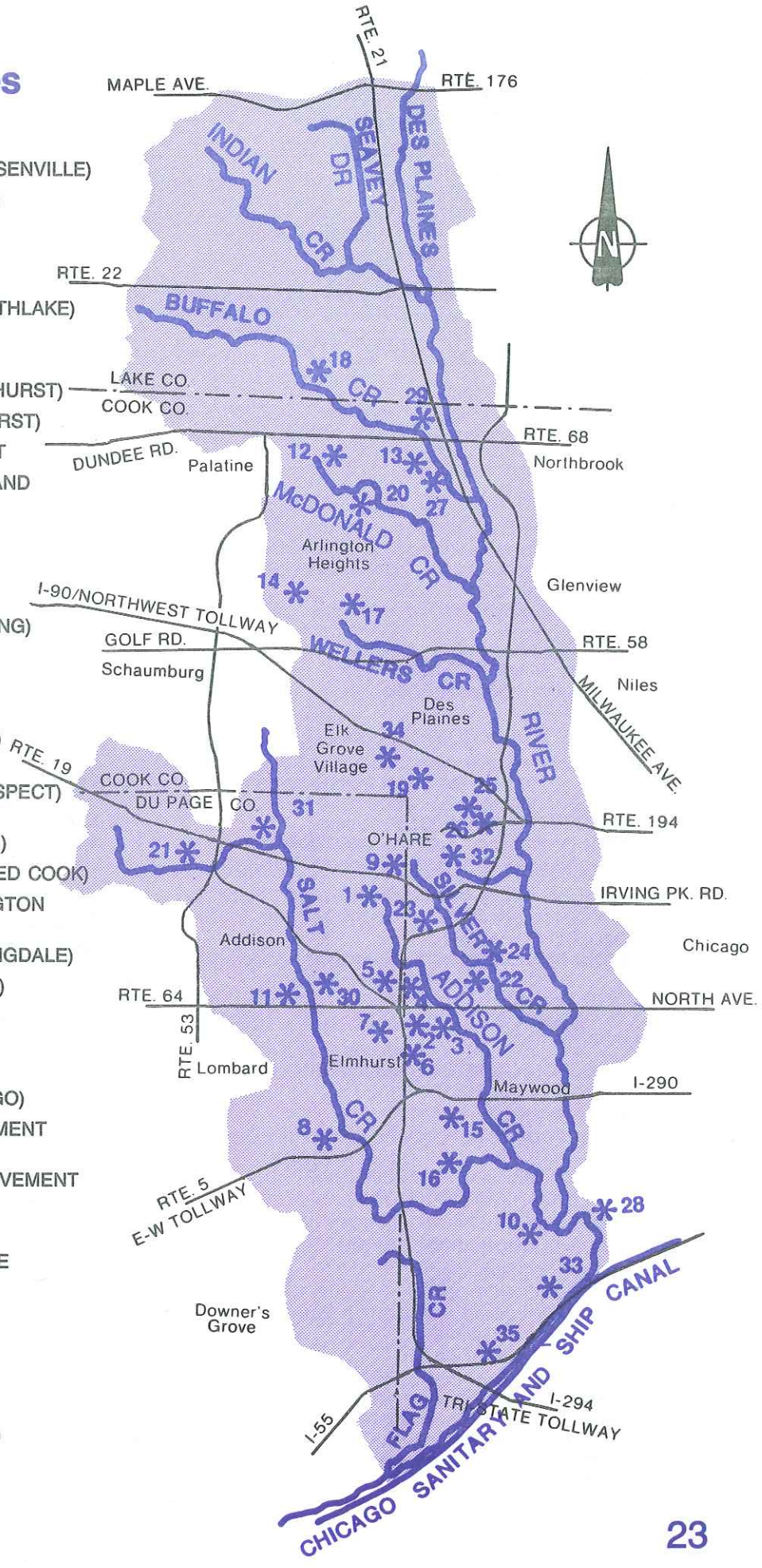
The Lake County Forest Preserve District has actively pursued a program of open land, wet land and floodplain purchase in the North Branch Chicago River Watershed. To date 1175 acres of land adjacent to the River and its tributaries have been acquired by the District.

Floodplain Regulations

The Illinois Division of Water Resources regulates the floodways throughout the North Branch Chicago River Watershed in Illinois. Any construction proposed within the floodway areas must be permitted by the DWR and must not have significant adverse impacts.

Lower Des Plaines Tributaries Watershed

*1 WILLIAM REDMOND RESERVOIR (BENSENVILLE)
2 GENE DOYLE DETENTION RESERVOIR (NORTHLAKE)
3 LAKE STREET CULVERT
4 RAILROAD AVENUE RESERVOIR (NORTHLAKE)
5 ARLINGTON CEMETERY RESERVOIR (NORTHLAKE)
6 LOWER ELMHURST RESERVOIR (ELMHURST)
7 YORK ROAD, I-90 RESERVOIR (ELMHURST)
8 SALT CREEK CHANNEL IMPROVEMENT
9 BENSENVILLE DITCH IMPROVEMENT AND RESERVOIR
10 CECH TERRACE LEVEE
11 KINGERY WEST LEVEE MODIFICATION
12 WHITE PINE DITCH RESERVOIR
13 HERITAGE PARK RESERVOIR (WHEELING)
14 WILKE-KIRCHOFF RESERVOIR (ARLINGTON HEIGHTS)
15 HILLSIDE RESERVOIR (HILLSIDE)
16 MAYFAIR RESERVOIR (WESTCHESTER)
17 MT. PROSPECT RESERVOIR (MT. PROSPECT)
18 BUFFALO CREEK RESERVOIR (UNINCORPORATED LAKE & COOK CO.)
19 O'HARE RESERVOIR (UNINCORPORATED COOK)
20 LAKE ARLINGTON RESERVOIR (ARLINGTON HEIGHTS)
21 SPRING BROOK RESERVOIR (BLOOMINGDALE)
22 NORTHLAKE RESERVOIR (NORTHLAKE)
23 SILVER CREEK RESERVOIR (CHICAGO)
24 JACK B. WILLIAMS RESERVOIR (FRANKLIN PARK)
25 WILLOW HIGGINS RESERVOIR (CHICAGO)
26 WILLOW HIGGINS CHANNEL IMPROVEMENT (ROSEMONT)
27 BUFFALO WHEELING CHANNEL IMPROVEMENT (WHEELING)
28 RIVERSIDE LAWN DIKE (RIVERSIDE)
29 BUFFALO WHEELING CHANNEL BRIDGE REPLACEMENT (WHEELING)
30 KINGERY WEST LEVEE (ADDISON)
31 WOODDALE—ITASCA RESERVOIR
32 LAKE O'HARE RESERVOIR (CHICAGO)
33 McCOOK LEVEE REHABILITATION
34 CUP O'HARE RESERVOIR (ELK GROVE)
35 CUP McCOOK RESERVOIR (HOGKINS)*



Projects of the Division of Water Resources

1 WILLIAM REDMOND RESERVOIR
(COMPLETED IN 1977)
VOLUME: 685 acre-feet
FLOOD PROTECTION TO: Bensenville, Broadview, Northlake, Stone Park, Bellwood
COST: Construction – $4,588,000 (DWR)
Land – $132,000 (Bensenville) $83,000 (DWR)
MAINTENANCE: Bensenville

2 GENE DOYLE DETENTION RESERVOIR
(COMPLETED IN 1979)
VOLUME: 70 acre-feet
FLOOD PROTECTION TO: Northlake
COST: Construction – $1,373,000 (DWR)
Land – $165,000 (DWR)*
MAINTENANCE: Northlake

3 LAKE STREET CULVERT (FIRST STAGE COMPLETED IN 1973)
PURPOSE: Improve drainage in the residential area from Addison Creek to Lake Street and Mannheim Road.
FLOOD PROTECTION TO: Northlake, Melrose Park, Stone Park
COST: Construction – $1,025,000 (DWR)
$2,644,000 (Division of Highways)
Land – $58,000 (DWR)*
MAINTENANCE: Northlake

(SECOND STAGE COMPLETED IN 1979)
PURPOSE: Improve the drainage in the residential area along Lake Street from Railroad Avenue to Mannheim Road
FLOOD PROTECTION TO: Northlake
COST: Construction – $1,625,000 (DWR)
$2,644,000 (Illinois Division of Highways)

4 RAILROAD AVENUE RESERVOIR
(COMPLETED IN 1981)
VOLUME: 47 acre-feet
FLOOD PROTECTION TO: Northlake, Addison Creek Communities
COST: Construction – $645,000 (DWR)
Land – $215,000 (DWR)*
MAINTENANCE: Northlake

5 ARLINGTON CEMETERY RESERVOIR
(COMPLETED IN 1981)
VOLUME: 71 acre-feet
FLOOD PROTECTION TO: Addison Creek Communities, Northlake
COST: Construction – $779,000 (DWR)
Land – $362,000 (DWR)*
MAINTENANCE: Elmhurst,

6 LOWER ELMHURST RESERVOIR
VOLUME: 93 acre-feet
FLOOD PROTECTION TO: Elmhurst, Berkeley
COST: Construction – $2,700,000 (Estimate, 1990)
Land – Elmhurst
Estimated value $10,000*

*Combined Land cost–local participation: Northlake, $65,000; Melrose Park, $44,000; Stone Park, $50,000; Bellwood, $30,000; Elmhurst, $190,000; Broadview, $7,000; Westchester, $14,000; Addison Creek Conservancy District, $68,000; Leyden Township, $70,000; Addison Township, $25,000.

7 YORK ROAD, I-90 RESERVOIR (COMPLETED IN 1979)
VOLUME: 20 acre-feet
FLOOD PROTECTION TO: Elmhurst
COST: Construction – $119,000 (Elmhurst) and $202,000 (DWR)
Land – Elmhurst,
Estimated value $10,000
MAINTENANCE: Elmhurst

8 SALT CREEK CHANNEL IMPROVEMENT
16,100 foot channel improvement of Salt Creek in Elmhurst and Oakbrook
FLOOD PROTECTION TO: Oak Brook, Oakbrook Terrace, Elmhurst
COST: Construction – $3,235,000 (Under Construction, Scheduled 1991) (DWR)
Land – $500,000 (Estimate)
MAINTENANCE: Oak Brook, Elmhurst

9 BENSENVILLE DITCH CHANNEL IMPROVEMENT
FLOOD PROTECTION TO: Bensenville
COST: Construction – $1,600,00 (Estimated 1990)
Land – $1,204,000 (Bensenville)
MAINTENANCE—Bensenville

10 CECH TERRACE LEVEE
(SCHEDULED FOR 1991)
DESCRIPTION: 130 foot levee with 23 foot flood gate
PURPOSE: Flood protection for 15 residents in the Village of Lyons
COST: Construction—$30,000 (DWR)
Land—$3,500 (Lyons)
Maintenance: Village of Lyons

11 KINGERY WEST LEVEE MODIFICATION
PROPOSED WORK: Raise levee to meet FEMA requirements (1990-1991)
COST: Construction—$1,450,000 (DWR)
MAINTENANCE: Du Page County Forest Preserve District

Projects of the Metropolitan Water Reclamation District

12 WHITE PINE DITCH RESERVOIR
(COMPLETED in 1976, Modified in 1986)
FLOOD STORAGE: 50 acre-feet
FLOOD PROTECTION TO: Buffalo Grove
COST: Construction – $120,000 (MWRDGC)
$130,000 (DWR)
$ 7,400 (Buffalo Grove)
Land – 12 acres provided by Buffalo Grove, $240,000 (Estimated Value)
MAINTENANCE: Buffalo Grove

13 HERITAGE PARK RESERVOIR
(COMPLETED IN 1976, Improved in 1986)
FLOOD STORAGE: 114 acre-feet
FLOOD PROTECTION TO: Wheeling
COST: Construction – $225,000 (MWRDGC)
$215,000 (Wheeling)
$ 93,000 (Wheeling Park District)
Land – 25 acres donated by Wheeling Park District, $545,000 (Estimated Value)
MAINTENANCE: Wheeling Park District and Wheeling

14 WILKE-KIRCHOFF RESERVOIR (COMPLETED IN 1973)
FLOOD STORAGE: 100 acre-feet
FLOOD PROTECTION TO: Arlington Heights

Continued . . . .

COST: Construction – $736,000 (MWRDGC)
$135,000 (Arlington Heights)
Land – 16 acres acquired by
Arlington Heights, $232,000
Maintenance: Arlington Heights

15 HILLSIDE RESERVOIR (COMPLETED IN 1976)

VOLUME: 100 acre-feet
FLOOD PROTECTION TO: Hillside, Westchester
COST: Construction – $920,000 (MWRDGC)
Land – 5 acres, $371,000 (MWRDGC); 2 acres donated by Hillside (1976 Estimated Value $148,000)
MAINTENANCE: Hillside

16 MAYFAIR RESERVOIR (COMPLETED IN 1977)

VOLUME: 74 acre-feet
FLOOD PROTECTION TO: Westchester
COST: Construction – $545,000 (MWRDGC)
Land – 14 acres, $280,000 (MWRDGC)
MAINTENANCE: Westchester

17 MT. PROSPECT RESERVOIR (COMPLETED IN 1978)

VOLUME: 130 acre-feet
FLOOD PROTECTION TO: Mt. Prospect
COST: Construction – $1,252,000 (MWRDGC)
Land – 36 acres, $3,175,000 (MWRDGC)
MAINTENANCE: Arlington Heights and Mt. Prospect

18 BUFFALO CREEK RESERVOIR
(PHASE I COMPLETED 1983)
(PHASE II COMPLETED 1989)

FLOOD STORAGE: PHASE I – 280 acre-feet
PHASE II – 420 acre-feet
Total – 700 acre-feet
FLOOD PROTECTION TO: Buffalo Grove, Wheeling, Unincorporated Cook County
COST: Construction – PHASE I – $671,700 (MWRDGC);
PHASE II – $2,753,150 MWRDGC
Total – $3,424,800
Land – 190 acres, $2,000,000 (MWRDGC)
MAINTENANCE: Lake County Forest Preserve District, Buffalo Grove, and MWRDGC

19 O'HARE RESERVOIR (COMPLETED 1982)

FLOOR STORAGE: 510 acre-feet
FLOOD PROTECTION TO: Des Plaines, Rosemont, Unincorporated Cook County
COST: Construction – $8,667,800 (MWRDGC)
Land – 20 acres, $904,000 (MWRDGC)
MAINTENANCE: MWRDGC

20 LAKE ARLINGTON RESERVOIR
(Completed in 1990)
FLOOD STORAGE: 540 acre-feet
FLOOD PROTECTION: Arlington Heights, Prospect Heights
COST: Construction— $450,000 (MWRDGC)
$354,000 (DWR)
$8,965,000 (Arlington Heights)
LAND: 107 acres. $2,300,000 (Arlington Heights)
MAINTENANCE: Arlington Heights

Projects of the Soil Conservation Service

21 SPRING BROOK RESERVOIR (STRUCTURE 5)
(Completed 1990)

FLOOD STORAGE: 870 acre-feet
FLOOD PROTECTION TO: Itasca, Wood Dale, Addison, Unincorporated DuPage County
COST: Construction – Flood Control – $6,313,000 (DWR)
Recreation – $447,400 (DCFPG & SCS)
Land – $3,120,000 (Estimate, DuPage County Forest Preserve District)
MAINTENANCE: DuPage County Forest Preserve District

22 NORTHLAKE RESERVOIR (STRUCTURE 86)
(COMPLETION IN 1992)

FLOOD STORAGE: 415 acre-feet
COST: Construction – $4,300,000 (SCS-not including pre-excavation by the State)
Land – 19 acres, $432,000 (MWRDGC)
MAINTENANCE: Leydon High School and MWRDGC

23 SILVER CREEK RESERVOIR (STRUCTURE 102)
(COMPLETION IN 1991)

FLOOD STORAGE: 500 acre-feet
FLOOD PROTECTION TO: Franklin Park, Unincorporated Cook County
COST: Construction – $6,127,000 (SCS-not including pre-excaration by Chicago)
Land – 24 acres, $1,760,000 (MWRDGC) plus 10 acres donated by Chicago, $884,000 (Estimated value)
MAINTENANCE: MWRDGC

24 JACK B. WILLIAMS RESERVOIR (STRUCTURE 106)
(Completed 1990)

FLOOD STORAGE: 245 acre-feet
FLOOD PROTECTION TO: Franklin Park, Melrose Park
COST: Construction – $4,707,000 (DWR)
Land – $462,000 (Franklin Park)
plus $370,000 (DWR)
MAINTENANCE: Franklin Park

25 WILLOW-HIGGINS RESERVOIR (STRUCTURE 140)

FLOOD STORAGE: 1,200 acre-feet
FLOOD PROTECTION TO: Des Plaines, Rosemont and Chicago
COST: Construction – $9,512,600 (Estimate, SCS)
Land – 45 acres, $100,000 (Chicago)
MAINTENANCE: MWRDGC

26 WILLOW-HIGGINS CHANNEL IMPROVEMENT

DESCRIPTION: 2,200 foot long open channel
FLOOD PROTECTION TO: Des Plaines, Rosemont and Chicago
COST: Construction – $1,565,200 (Estimate, SCS)
Land – $923,000 (Estimate, Rosemont, Des Plaines)
MAINTENANCE: Des Plaines, Rosemont

27 BUFFALO-WHEELING DIVERSION CHANNEL

DESCRIPTION: 8,800 feet of new channel
FLOOD PROTECTION TO: Wheeling
COST: Construction – $1,094,600 (Estimate, SCS)
Land – $1,008,000 (Wheeling); $703,000 (DWR); $39,000 (Cook County Forest Preserve District)
MAINTENANCE: Wheeling

28 RIVERSIDE LAWN DIKE

DESCRIPTION: 2,500 foot earthen dike
FLOOD PROTECTION TO: Riverside Lawn (Unincorporated Cook County)
COST: Construction – $261,300 (Estimate, SCS)
Land – $88,000 (Estimate, Cook County Forest Preserve District)
MAINTENANCE: Cook County FPD and MWRDGC

Continued . . . .

Projects of the Division of Highways

29 BUFFALO-WHEELING CHANNEL BRIDGE REPLACEMENT
LOCATION: Route 83 and McHenry Road
FLOOD PROTECTION TO: Residential areas of Wheeling
COST: Construction – $241,000 (Illinois Divisions of Highways and Water Resources.)

Projects of the DuPage County Forest Preserve District

30 KINGERY WEST LEVEE
LOCATION: East side of Salt Creek between North Avenue and Fullerton Avenue
FLOOD PROTECTION TO: Kingery West Subdivision of Addison
COST: Construction – $850,000 (Estimate DuPage Co. Forest Preserve Dist.) $1,015,000 (DWR)
Land – $3,750,000 (DuPage County Forest Preserve District)
MAINTENANCE: DuPage County Forest Preserve Dist.

Projects of DuPage County Stormwater Management Division

31 WOODDALE—ITASCA RESERVOIR
LOCATION: Along Salt Creek just downstream of Thorndale Ave.
FLOOD STORAGE: 1775 acre-feet
FLOOD PROTECTION TO: Elk Grove Village, Wood Dale, Itasca, Addison, Villa Park, Elmhurst, Oak Brook, Oakbrook Terrace and unincorporated DuPage County
COST: CONSTRUCTION $21,300,000 (Pre-excavatopm by IDOT, Not estimated)
Land-65 acres DuPage County Forest Preserve District
40 acres City of Wood Dale
27 acres DuPage County Stormwater Committee
MAINTENANCE: DuPage County Stormwater Management Committee

Projects of the City of Chicago

32 LAKE O'HARE RESERVOIR
LOCATION: O'Hare Airport on Crystal Creek
VOLUME: 1,120 acre-feet
FLOOD PROTECTION TO: Neightoring O'Hare Airport Communities
COST: CONSTRUCTION – $4,000,000 (Estimate)
Land—102 acres owned by Chicago (Estimated value – $122,000, 1955)
MAINTENANCE: City of Chicago

Projects of the U.S. Army Corps of Engineers

33 McCOOK LEVEE REHABILITATION
LOCATION: West bank levee between 47th Street and Lawndale Avenue
FLOOD PROTECTION TO: Commercial/Industrial area of McCook
COST: Construction – $2,510,000 (Corps of Engineers)
$ 675,000 (MWRDGC)

34 CUP O'HARE RESERVOIR
(TARP-PHASE II) See. No. 15, Page 44

35 CUP McCOOK RESERVOIR
(TARP-PHASE II), See. No. 16, Page 44

Continued . . . .

Program Status

Funding

The final Watershed Plan EIS for the Lower DesPlaines Tributaries Watershed was authorized for construction by the U.S. Congress in 1986.

Floodplain Regulations

The Illinois Division of Water Resources regulates the floodways throughout the Lower Des Plaines Tributaries Watershed in Illinois. Any construction proposed within the floodway areas must be permitted by the DWR and must not have significant adverse impacts.

DuPage County Stormwater Management Division is implementing a program to study, define, remap and protect the floodplains and natural depressional storage area within the County. Off-site increases in runoff are not allowed.

Stream Preservation Program

The Illinois Division of Water Resources has implemented a watershed-wide stream preservation program for the areas served by the projects planned by SCS. The program outline's annual inspection and maintenance procedures.

DuPage County Stormwater Management Division is implementing a stream maintenance program on main stem streams and tributaries in DuPage County. The program goals are to protect the hydraulic capacity of the streams in such a manner to also protect other stream corridor uses such as habitat protection, water quality, aesthetics, and recreation. Streams are inspected and videotaped. Cleaning consists of debris removal from the entire stream corridor, selective cutting and pruning. Woody debris is used at the County's solid waste compositing program.

Floodproofing Program

Approximately 1,500 existing structures will remain subject to flooding by the l00 year frequency flood event after installation of the structural measures recommended by the SCS Studies. Floodproofing technical assistance to these owners is available through the Division of Water Resources.

Land Protection Program

Based upon an inventory of identified needs, a land protection program was developed by a subcommittee of the Lower Des Plaines Tributaries Steering Committee. Under this program the local Soil and Water Conservation Districts (SWCD), assisted by the Soil Conservation Service (SCS), will provide technical assistance to landowners, operators, and units of government to install the agricultural and urban land protection measures outlined in the plan.

When the plan was prepared, agriculture represented only 9 percent of total land use, with the majority being adequately protected from excess erosion. It is believed that increasing development within the watershed has led to a decline in this figure.

The land protection program will consist of accelerated technical assistance to individuals and local units of government for implementation of urban soil erosion and sediment control ordinances for land under their jurisdiction. The following municipalities have ordinances in various stages of implementation Arlington Heights, Bensenville, Bloomingdale, Buffalo Grove, Burr Ridge, Deer Park, Des Plaines, Elk Grove Village, Elmhurst, Glenview, Green Oaks, Hawthorn Woods, Hinsdale, Itasca, Kildeer, Lake Zurich, Libertyville, Lombard, Long Grove, Mt. Prospect, Mundelein, North Lake, Oak Brook, Palatine, Prospect Heights, Riverwoods, Rolling Meadows, Roselle, Schaumburg, Vernon Hills, Villa Park, Westchester, Westmont, Wheeling, Willowbrook, and Wood Dale. In addition, ordinances are in effect within unincorporated areas of Cook, DuPage, and Lake Counties.

DuPage County Stormwater Division is implementing a sediment and erosion control regulatory program. The regulations are embodied in the Stormwater ordinance and will regulate construction activities to reduce erosion and sedimentation.

Procedures and Standards for Urban Soil Erosion and Sedimentation Control for Illinois was revised in 1988 by the Association of Illinois Soil and Water Conservation Districts. In 1990 they also developed the Illinois Urban Soil Erosion and Sedimentation Control Field Manual for use by inspectors and other field personnel.

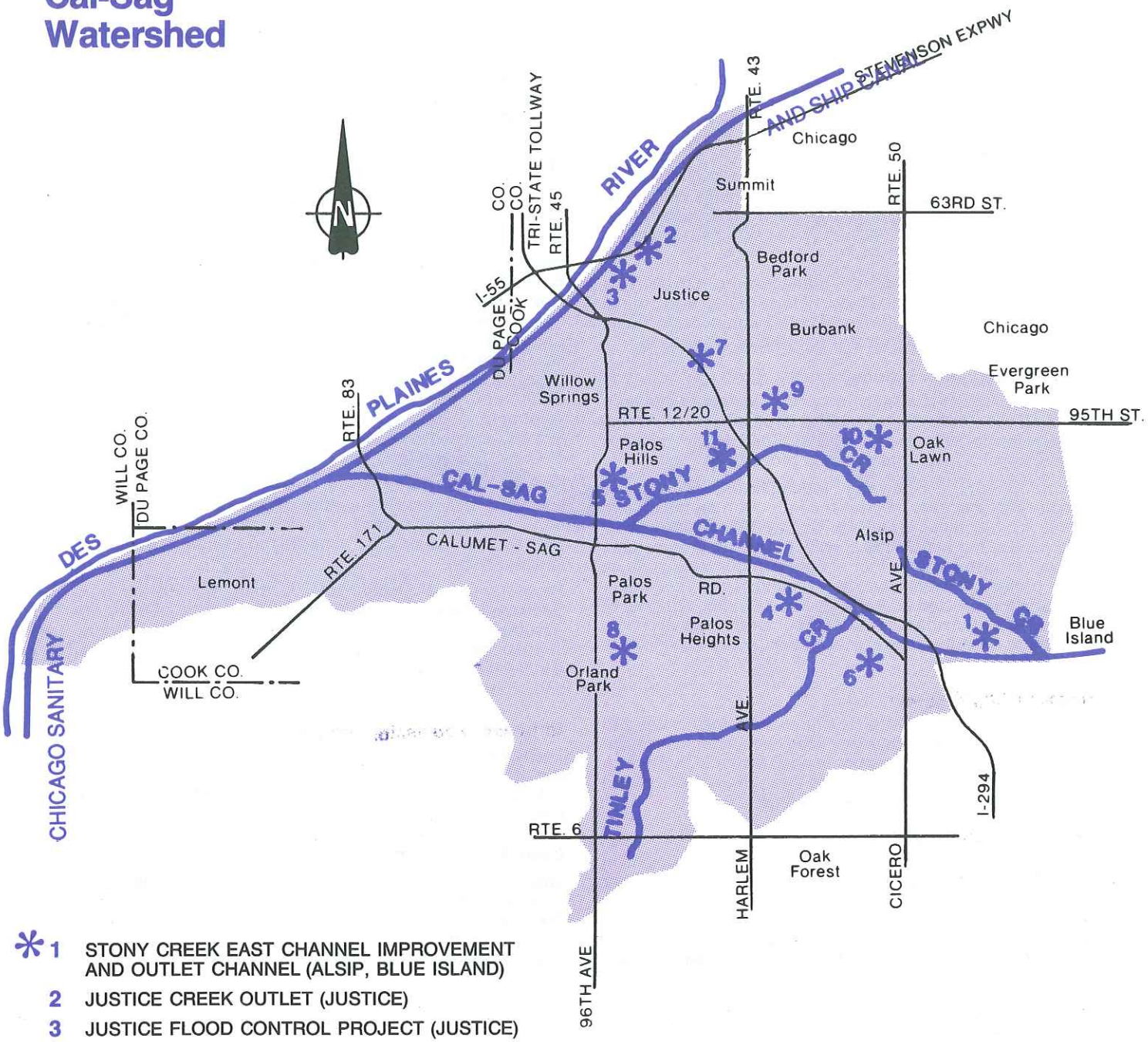
Structure Acquisition Program

The State of Illinois and the DuPage County Forest Preserve District have actively acquired residential buildings subject to frequent and severe flooding. To date, 62 structures have been acquired and removed.

Land Purchase Program

The Forest Preserve District's of Cook, DuPage and Lake Counties have actively pursued a program of wetland and floodplain purchases within the watershed area. The Lake County Forest Preserve District has acquired 2800 acres of land adjacent to River and its tributaries.

Cal-Sag Watershed



1. STONY CREEK EAST CHANNEL IMPROVEMENT AND OUTLET CHANNEL (ALSIP, BLUE ISLAND)
2. JUSTICE CREEK OUTLET (JUSTICE)
3. JUSTICE FLOOD CONTROL PROJECT (JUSTICE)
4. NAVAHO CREEK OUTLET (PALOS HEIGHTS)
5. LUCAS DITCH FLOOD CONTROL PROJECT (PALOS HILLS, HICKORY HILLS)
6. CRESTWOOD DRAINAGE PROJECT (CRESTWOOD)
7. HICKORY HILLS RESERVOIR (HICKORY HILLS)
8. MILL CREEK LEVEE
9. MELVINA DITCH RESERVOIR AND CHANNEL IMPROVEMENT (OAK LAWN)
10. OAK LAWN RETENTION RESERVOIR (OAK LAWN)
11. STONY CREEK WEST CHANNEL IMPROVEMENT (PALOS HILLS, HICKORY HILLS, WORTH, CHICAGO RIDGE)

Projects of the Division of Water Resources

1 STONY CREEK EAST CHANNEL IMPROVEMENT AND OUTLET CHANNEL (COMPLETED IN 1977)
PURPOSE: Improve flow in creek and discharge into Cal-Sag Channel; Approximate length 3.2 miles (from 115 st. & Cicero Ave. South to Cal Sag)
FLOOD PROTECTION TO: Alsip, Blue Island, Merrionette Park
COST: Construction – $1,262,000 (DWR)
Land – furnished by MWRDGC (1960 Estimated value $10,000)
MAINTENANCE: MWRDGC

2 JUSTICE CREEK OUTLET (COMPLETED IN 1974)
PURPOSE: Improve discharge into Sanitary and Ship Canal; length 450 feet (Connecting Sanitary and Ship Canal with the I&M Canal in Justice)
FLOOD PROTECTION TO: Justice
COST: Construction – $96,000 (DWR)
Land – furnished by MWRDGC (Estimated value $10,000)
MAINTENANCE: Justice

3 JUSTICE FLOOD CONTROL PROJECT (COMPLETED, 1989)
PURPOSE: Alleviate flooding along Justice Creek and 71st Street Ditch
FLOOD PROTECTION TO: Justice
COST: Construction $803,000 (DWR)
Land – furnished by Justice
MAINTENANCE: Justice

4 NAVAHO CREEK OUTLET (COMPLETED IN 1975)
PURPOSE: Improve discharge into Calumet-Sag Channel
FLOOD PROTECTION TO: Palos Heights
COST: Construction – $14,000 (DWR)

5 LUCAS DITCH FLOOD CONTROL PROJECT (COMPLETED, 1965)
PURPOSE: 12,760 foot channel improvement and 4,200 foot diversion channel to improve drainage
FLOOD PROTECTION TO: Palos Hills, Hickory Hills
COST: Construction – $185,000 (Estimate, 1961)
Land – 16 acres (Estimated Value $32,000; MWRDGC, 1962)

6 CRESTWOOD DRAINAGE PROJECT (COMPLETED IN 1974)
PURPOSE: Improve drainage in Crestwood and divert floodwaters from Tinley Creek
FLOOD PROTECTION TO: Crestwood
COST: Construction – $179,000 (DWR)
MAINTENANCE: Crestwood

7 HICKORY HILLS RESERVOIR (Under Construction)
VOLUME: 203 acre-feet
FLOOD PROTECTION TO: Approximately 44 structures in Hickory Hills
COST: $2,722,000 (DWR, not including pre-execavation by Hickory Hills)
Land – 16 acres, 1984, $319,200 (Estimated MWRDGC)
MAINTENANCE: Hickory Hills

8 MILL CREEK LEVEE (COMPLETED, 1990)
PURPOSE: Flood protection to eight structures in unincorporated Cook County
COST: Construction – $800,500 (DWR)
Land – $72,000 (Orland Township)
MAINTENANCE: Orland Township

Projects of the Metropolitan Water Reclamation District

9 MELVINA DITCH RESERVOIR AND CHANNEL IMPROVEMENT (COMPLETED IN 1973)
VOLUME: 165 acre-feet
CHANNEL IMPROVEMENT LENGTH: Approximately 1 mile
FLOOD PROTECTION TO: Bedford Park, Oak Lawn
COST: Construction – $1,900,000 (MWRDGC)
$ 500,000 (Oak Lawn)
Land – 12 acres, $119,000 (MWRDGC)
MAINTENANCE: Oak Lawn, Oak Lawn Park District and MWRDGC

10 OAK LAWN RETENTION RESERVOIR (COMPLETED IN 1971)
VOLUME: 24 acre-feet
FLOOD PROTECTION TO: Oak Lawn
COST: Construction – $120,000 (MWRDGC)
Land – donated by Oak Lawn (1970 Estimated Value, $83,000)
MAINTENANCE: Oak Lawn

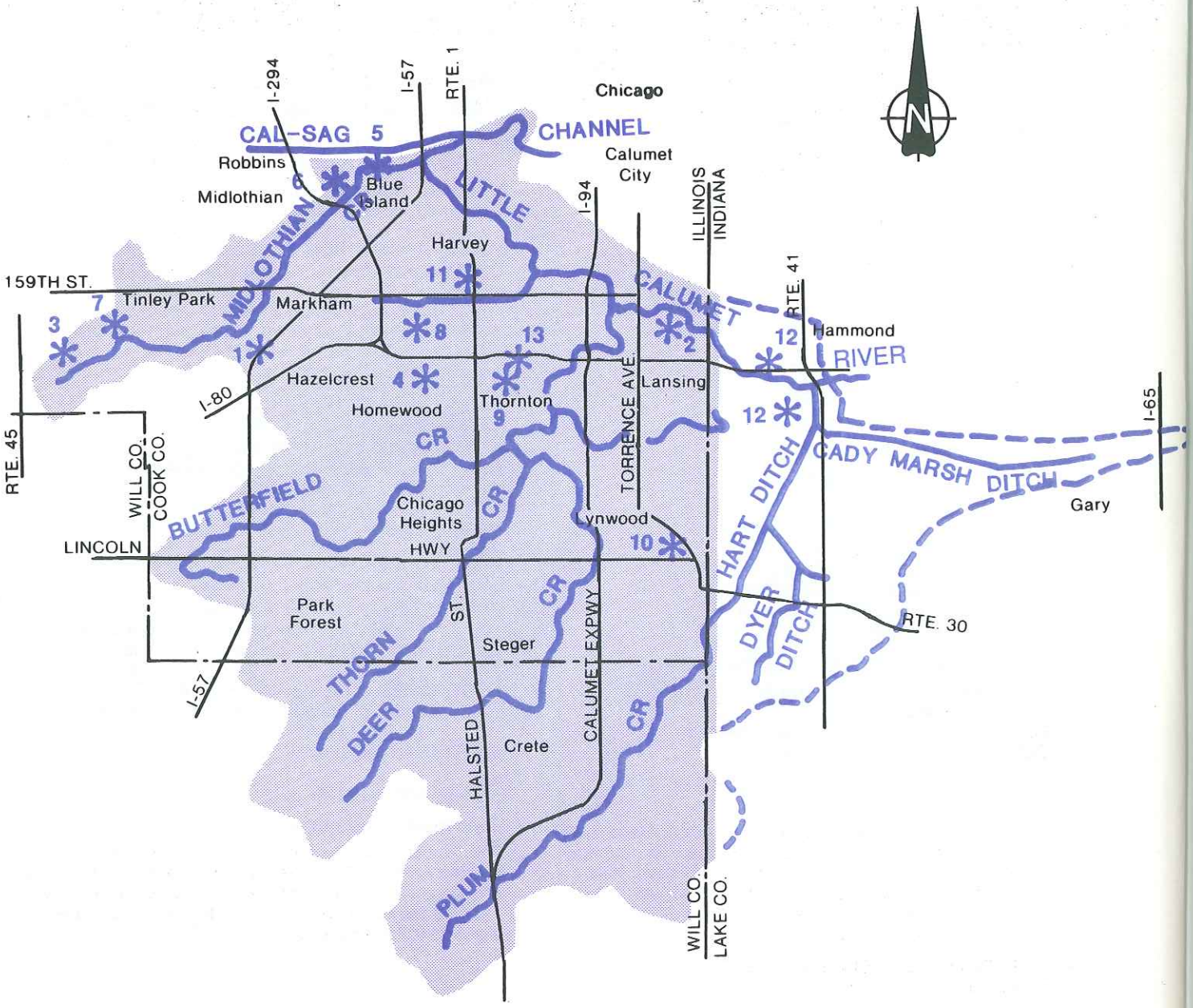
11 STONY CREEK WEST CHANNEL IMPROVEMENT (COMPLETED IN 1972)
PURPOSE: Improve flow in Creek and discharge into Cal-Sag. Approximate length – 5.7 miles
FLOOD PROTECTION TO: Palos Hills, Hickory Hills, Worth, Chicago Ridge
COST: Construction – $344,000 (MWRDGC)
Land – obtained by MWRDGC (1960 Estimated Value $17,000)
MAINTENANCE: Local

Program Status

Floodplain Regulations

The Illinois Division of Water Resources regulates the floodways throughout the Cal-Sag Watershed in Illinois. Any construction proposed within the floodway areas must be permitted by the DWR and must not have significant adverse impacts.

Little Calumet River Watershed



- 1 TWIN LAKES RESERVOIR (MIDLOTHIAN)
- 2 LITTLE CALUMET RIVER DREDGING
- 3 FERNWAY FLOOD CONTROL PROJEECT
- 4 CALUMET UNION RESERVOIR (HAZELCREST)
- 5 MIDLOTHIAN CREEK DIVERSION CHANNEL (ROBBINS)
- 6 NATALIE CREEK DIVERSION CHANNEL (MIDLOTHIAN)
- 7 TINLEY PARK RESERVOIR (TINLEY PARK)
- 8 EDWARD C. HOWELL RESERVOIR (MARKHAM)
- 9 GEORGE M. O'BRIEN RESERVOIR (THORNTON)
- 10 DR. MARY WOODLAND RESERVOIR (LYNWOOD)
- 11 CAL-UNION CHANNEL IMPROVEMENT (HARVEY)
- 12 LITTLE CALUMET RIVER INDIANA LEVEES (HAMMOND & MUNSTER)
- 13 THORTON RESERVOIR (CUP)

Projects of the Division of Water Resources

1 TWIN LAKES RESERVOIR (COMPLETED IN 1974)
VOLUME: 950 acre-feet
FLOOD PROTECTION TO: Midlothian, Tinley Park
COST: Construction – $939,400 (DWR)
Land – furnished by Cook County Forest Preserve District, DWR, Village of Midlothian (1974 Estimated value $273,000)
MAINTENANCE: Cook County Forest Preserve District

2 LITTLE CALUMET RIVER DREDGING
DESCRIPTION: Removal of low quality polluted sediment and snagging of debris, to aesthetically enhance 4.5 river miles.
COST: Construction—$2,000,000 (DWR)
MAINTENANCE: Calumet City and Lansing

3. FERNWAY FLOOD CONTROL PROJECT (Midlothian Creek)
PURPOSE: 100 year flood protection to Fernway Park Subdivision, Village of Orland Park
DESCRIPTION: 2000 lineal feet of channel improvements and channel clearing on Midlothian Creek and North Tributary, plus new box culvert under 171st Street.
COST: Construction—$762,000 (Estimate, DWR)
Land—$662,000 (Estimate, Orland Park)
MAINTENANCE: Orland Park, Cook County Highway Dept.

Projects of the Metropolitan Water Reclamation District

4 CALUMET UNION RESERVOIR (COMPLETED IN 1976)
VOLUME: 500 acre-feet
FLOOD PROTECTION TO: Hazelcrest, Markham, Harvey
COST: Construction – $2,838,000 (MWRDGC)
Land – 44 acres, $414,500 (MWRDGC)
MAINTENANCE: Hazelcrest Park District and MWRDGC

Projects of the Cook County Highway Department

5 MIDLOTHIAN CREEK DIVERSION CHANNEL (COMPLETED IN 1980)
DESCRIPTION: 1,200 feet channel improvement between 137th and 139th Streets; 2,500 feet, 7.5'12' twin box conduit along Kedzie Avenue to Cal-Sag Channel
FLOOD PROTECTION TO: Robbins, Midlothian
COST: Construction – $1,482,000 (Cook County)
Land – Cook County, Robbins
MAINTENANCE: Cook County Highway Department

6 NATALIE CREEK DIVERSION CHANNEL
DESCRIPTION: 9,200 feet, 96'' and 48'' pipe (147th to 135th Streets); 700 feet 102'' pipe 135th to Cal-Sag Channel)
FLOOD PROTECTION TO: Midlothian
COST: Construction – $1,382,600 (Estimate) Plans and specifications have been prepared.
MAINTENANCE: Cook County Highway Department

Projects of the Soil Conservation Service

7 TINLEY PARK RESERVOIR (STRUCTURE 32) (COMPLETED in 1989)
FLOOD STORAGE: 616 acre-feet
FLOOD PROTECTION TO: Tinley Park, Midlothian
COST: Construction – Flood Control – $7,983,600 (SCS)
Recreation – $1,068,000 (SCS) plus $768,000 (Tinley Park Park District)
Land – 98 acres, $2,845,000 (MWRDGC) plus 32 acres, $1,450,000 (Estimated value, Tinley Park) plus 8 acres, $313,000 (Estimated value, Tinley Park Park District)
MAINTENANCE: MWRDGC and the Tinley Park Park District

8 EDWARD C. HOWELL (STRUCTURE 53) (COMPLETED in 1987)
(Approach channel completed 1984 – $231,400; MWRDGC)
FLOOD STORAGE: 589 acre-feet
FLOOD PROTECTION TO: Markham, Harvey, South Holland
COST: Construction – $4,492,000 (SCS) plus $250,000 (Cook County)
Land – 84 acres, $990,000 (MWRDGC); Landscaping $25,000 (SCS)
MAINTENANCE: MWRDGC

9 GEORGE M. O'BRIEN RESERVOIR (STRUCTURE 84) (Composite with COE Thornton CUP Reservoir)
FLOOD STORAGE: 9,600 acre-feet
FLOOD PROTECTION TO: Dolton, South Holland, Hammond, Calumet City, East Chicago
COST: Construction – $33,853,000 (SCS)
Land – 129 acres, $4,814,000 (MWRDGC) including $774,000 (DWR)
MAINTENANCE: MWRDGC

10 DR. MARY WOODLAND RESERVOIR (STRUCTURE 143, COMPLETED, 1989)
FLOOD STORAGE: 1,076 acre-feet
FLOOD PROTECTION TO: Lynwood, Lansing
COST: Construction – $5,364,000 (SCS)
Land – 137 acres, $1,417,500 (MWRDGC); Landscaping $20,000 (SCS)
MAINTENANCE: MWRDGC

11 CAL-UNION DRAINAGE DITCH IMPROVEMENT (COMPLETED, 1988)
DESCRIPTION: 1.74 miles improved channel; 0.25 miles of concrete lined channel; from Halsted St. to Western Ave,
FLOOD PROTECTION TO: Markham, Harvey, South Holland
COST: Construction – $4,192,000 (SCS)
Land – $167,000 (MWRDGC, Cal-Union Drainage Ditch); Landscaping $75,000 (SCS)
MAINTENANCE: Calumet Union Drainage District

Continued . . . .

Projects of the Corps of Engineers

12 LITTLE CALUMET RIVER, INDIANA LEVEES
(Under construction)

DESCRIPTION: 12.1 river miles of levees/floodways on both banks. Recreation trail and support facilities.
(East of Indiana-Illinois state line)

FLOOD PROTECTION TO: Hammond, Munster (Project continues through Griffith, Highland and Gary on Lake Michigan basin)

COST: Construction – $77,900,000 (Estimate, Corps of Engineers and Commission)
Land – $9,200,000 (Estimate, Little Calumet River Basin Development Commission)

13 THORTON CUP RESERVOIR (TARP – Phase II Composite) See No. 17, Page 44

Program Status

Federal Funding for the Soil Conservation Service Proposed Program

In September 1982, the Little Calumet River Watershed Plan and Environmental Impact Statement were approved and funded. All projects have been completed except for the George O'Brien. Land acquisition is proceeding for Geroge O'Brien.

Land Protection Program

Twenty-three communities as well as unincorporated Cook and Will Counties have passed and are enforcing ordinances to control soil erosion losses on developing land.

Three areas of high sediment production are included in this protected area. They are Plum Creek (16,700 acres) which is 85 percent adequately treated; Butterfield Creek (1,200 acres) which is 60 percent treated; and Midlothian Creek (2,400 acres) which is 65 percent treated. The protected area of Midlothian Creek is especially critical because it is upstream from the Tinley Park Reservoir. Likewise, the area upstream from the Lynwood Reservoir is 91 percent adequately treated. These measures will assure that sediment will not fill the reservoirs and rivers.

Federal Funding for the Corps of Engineers Proposed Program

In October 1986, the Little Calumet River, Indiana project was authorized. Construction was initiated in 1990 and is scheduled for completion in 1997.

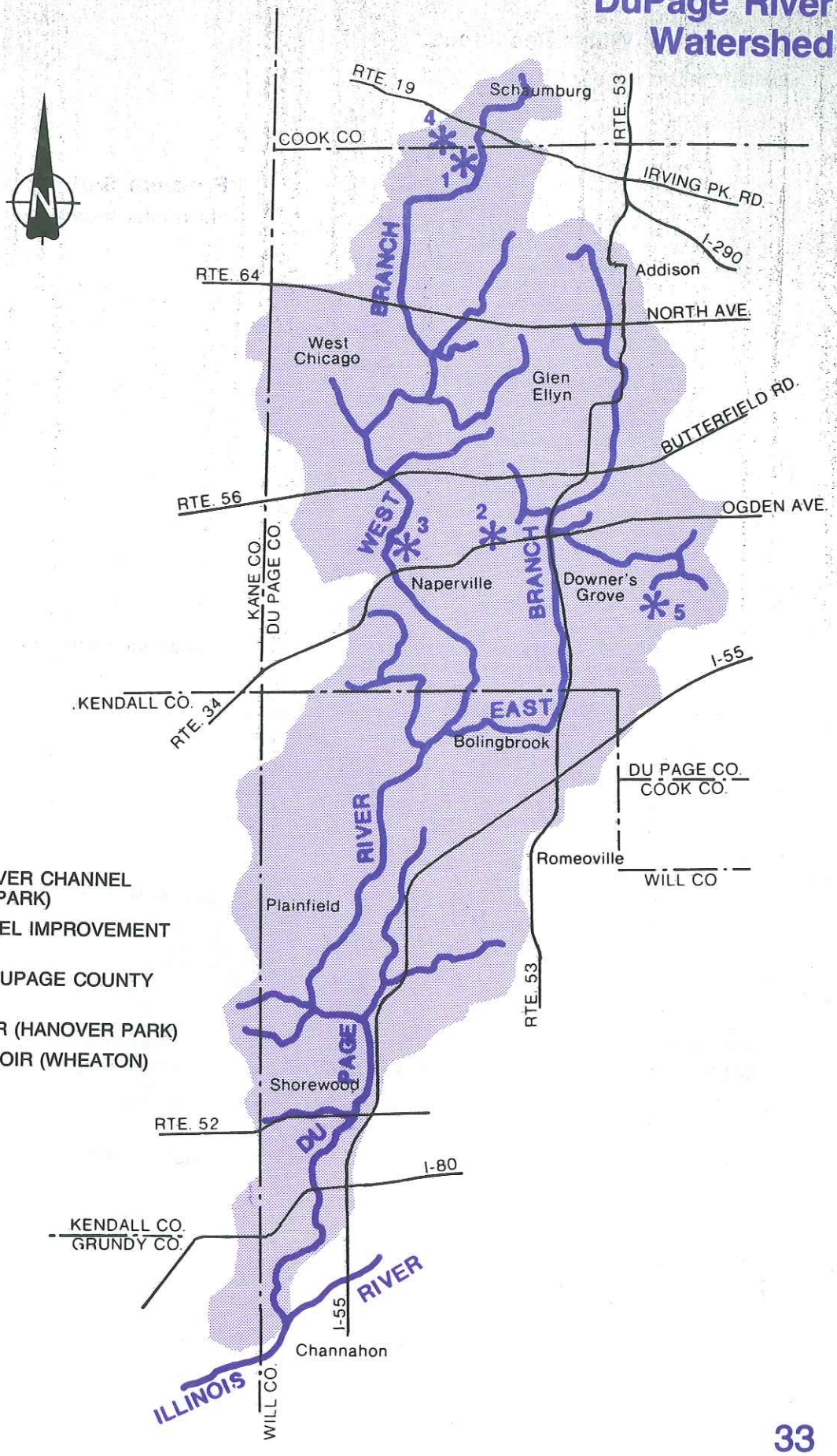
Floodplain Regulations

The Illinois Division of Water Resources regulates the floodways throughout the Little Calumet River Watershed in Illinois. Any construction proposed within the floodway areas must be permitted by the DWR and must not have significant adverse impacts.

Stream Preservation Program

The Illinois Division of Water Resources has implemented watershed-wide stream preservation program. The program outlines annual inspection and maintenance procedures.

DuPage River Watershed



*1 WEST BRANCH DUPAGE RIVER CHANNEL IMPROVEMENT (HANOVER PARK)

2 ST. JOSEPH CREEK CHANNEL IMPROVEMENT (LISLE, DOWNERS GROVE)

3 NAPERVILLE RESERVOIR (DUPAGE COUNTY FOREST PRESERVE)

4 UPPER DUPAGE RESERVOIR (HANOVER PARK)

5 WILLOWAY BROOK RESERVOIR (WHEATON)

Projects of the Division of Water Resources

1 WEST BRANCH DUPAGE RIVER CHANNEL IMPROVEMENT

PURPOSE: Channel modification to improve drainage in the Hanover Park residential area adjacent to the river
FLOOD PROTECTION TO: Hanover Park;

1A LONG MEADOW ROAD TO CMSP & P RAILROAD TRACKS 4,700 FEET (COMPLETED IN 1977)
COST: Construction – $280,000 (DWR)
Land rights furnished by MWRDGC as part of Upper DuPage Reservoir Project
MAINTENANCE: Hanover Park

1B IRVING PARK ROAD TO LONG MEADOW ROAD 1,300 FEET (COMPLETED IN 1981)

COST: Construction – $88,000 (DWR)
Land rights furnished by Hanover Park
Estimated value – $10,000
MAINTENANCE: Hanover Park

1C IMPROVEMENT 1,700 FEET (NORTH OF IRVING PARK ROAD) (Completed, 1990)

COST: Construction – $1,300,000 (DWR)
Land rights furnished by Hanover Park
Estimated value $20,000
MAINTENANCE: Hanover Park

2 ST. JOSEPH CREEK CHANNEL IMPROVEMENT (COMPLETED IN 1980)

PURPOSE: 14,200 feet of channel modification to improve drainage in Lisle and Downers Grove
FLOOD PROTECTION TO: Lisle, Downers Grove
COST: Construction $1,320,000 (DWR)
Land – $128,000 (DWR)

3 NAPERVILLE RESERVOIR (COMPLETED IN 1971)

VOLUME: 2,500 acre-feet
FLOOD PROTECTION TO: Naperville, Unincorporated DuPage County
COST: Construction – $1,176,300 (DWR)
Land – $975,000 (DWR)
MAINTENANCE: DuPage County Forest Preserve District—Storage Pool
DWR—Embankment and Gates

Projects of the Metropolitan Water Reclamation District

4 UPPER DUPAGE RESERVOIR (COMPLETED IN 1977)

VOLUME: 230 acre-feet
FLOOD PROTECTION TO: Hanover Park
COST: Construction – $847,000 (MWRDGC)
Land – 26 acres, $212,000 (MWRDGC)
MAINTENANCE: Hanover Park Park District and MWRDGC

Projects of DuPage County

5 WILLOWAY BROOK RESERVOIR (Rice Lake) (COMPLETED IN 1990)

VOLUME: 345 acre-feet
FLOOD PROTECTION TO: Wheaton, Lisle & Unincorporated Du Page County
COST: Construction/Design—$1,750,000 (Du Page County, Wheaton, Build Illinois)
LAND—Du Page County Forest Preserve District
MAINTENANCE: DuPage County Forest Preserve District

Program Status

Floodwater Management Planning

The Corps of Engineers through the Chicago-South End of Lake Michigan Urban Water Damage Study is investigating solutions to urban water damage problems caused by overbank flooding and poor drainage. The investigation of drainage problems is limited to flooding that results from the submergence of sewer outlets by high river stages. Because of the large size of the area, the study is being conducted through a series of six interim reports.

Work on Interim Report No. 2 for the DuPage River was completed in August 1982. The report concluded that Corps of Engineers participation in implementing flood damage reduction measures in the DuPage River Basin is not justified due to the lack of economic feasibility.

In cooperation with DuPage County, the Corps is investigating the flood problems at the Valley View residential development on the East Brandh under the authority of Section 205. The feasibility study was initiated in 1990.

Floodplain Regulations

The Illinois Division of Water Resources regulates the floodways throughout the DuPage River Watershed in Illinois. Any construction proposed within the floodway areas must be permitted by the DWR and must not have significant adverse impacts.

DuPage County Stormwater Management Division is implementing a program to study, define, remap and protect the floodplains and natural depressional storage area within the County. Off-site increases in runoff are not allowed.

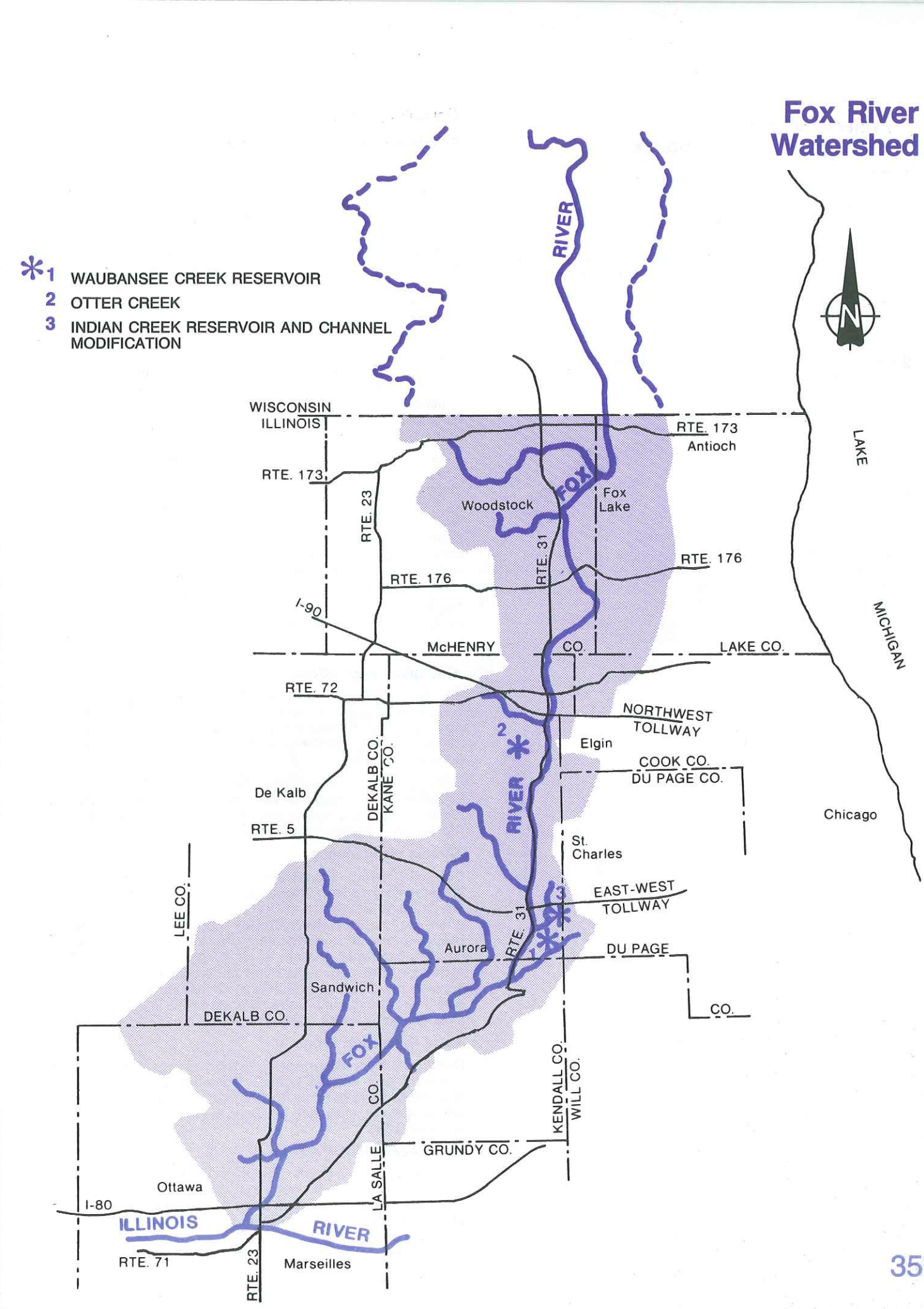
Stream Maintenance

DuPage County Stormwater Management Division is implementing a stream maintenance program on main stem streams and tributaries in DuPage County. The program goals are to protect the hydraulic capacity of the streams in such a manner to also protect other stream corridor uses such as habitat protection, water quality, aesthetics, and recreation. Streams are inspected and videotaped. Cleaning consists of debris removal from the entire stream corridor, selective cutting and pruning. Woody debris is used at the County's solid waste composting program.

Land Protection

DuPage County Stormwater Division is implementing a sediment and erosion control regulatory program. The regulations are embodied in the Stormwater ordinance and will regulate construction activities to reduce erosion and sedimentation.

Fox River Watershed



Projects of the Division of Water Resources

1 WAUBANSEE CREEK RESERVOIR
(COMPLETED IN 1979)

VOLUME: 50 acre-feet
LEVEE: 3,000 feet
FLOOD PROTECTION TO: 60 homes in Park View Estate Subdivision, Village of Montgomery on Fox River
COST: Construction – $914,000 (DWR)
Land – $119,000 (Montgomery)
MAINTENANCE: Montgomery

2 OTTER CREEK CHANNEL IMPROVEMENT
(COMPLETED IN 1982)

LENGTH: 5,295 feet
FLOOD PROTECTION TO: City of Elgin
COST: Construction – $281,200 (DWR)
Land – Obtained by City of Elgin
MAINTENANCE: City of Elgin

3 INDIAN CREEK RESERVOIR AND CHANNEL MODIFICATION
PHASE I—Reservoir (Scheduled 1990)
PHASE II—Channel Improvement (Scheduled 1991)

FLOOD STORAGE VOLUME: 310 acre-feet
CHANNEL LENGTH: 8,400 feet
FLOOD PROTECTION TO: 130 homes in Aurora and Aurora Township
COST: Construction – $4,475,000 (Estimate, DWR)
Land – 55 acres, $600,000 (Estimate, City of Aurora)
MAINTENANCE: City of Aurora

Program Status

Floodwater Management Planning

The Corps of Engineers is investigating the water resource problems and needs of the Fox River Basin to provide a plan for developing, utilizing, and conserving the basin's water and related land resources.

The Fox River Basin has a drainage area of 2,580 square miles and includes parts of both Illinois and Wisconsin. The character of the basin varies from resort-type developments in the north to predominantly rural areas in the south. The Fox River flows through the Chain of Lakes area, which contains several inter-connected lakes in northern Illinois.

Among the study's objectives are flood control, floodplain management, wastewater management, including storm water runoff, regional water supply, water quality control, recreation, fish and wildlife conservation protection and enhancement of aesthetic qualities, and other measures for enhancement and protection of the environment on streams in the basin area.

A preliminary feasibility report was completed by the Chicago District in fiscal year 1978. A detailed feasibility study was completed in June 1984 with recommendations for new gate structures to be added to the Algonquin and McHenry dams and for non-structural protection to be provided to some 80 homes in Kane County to be constructed under the Corps of Engineers continuing authorities for small project program. The final design study is scheduled to be completed in 1991.

The Corps is also conducting a Section 205 reconnaissance study of the ice related flooding in the vicinity of East Dundee.

Floodplain Regulations

The Illinois Division of Water Resources regulates the floodways throughout the Fox River Watershed in Illinois. Any construction proposed within the floodway areas must be permitted by the DWR and must not have significant adverse impacts.

DuPage County Stormwater Management Division is implementing a program to study, define, remap and protect the floodplains and natural depressional storage area within the County. Off-site increases in runoff are not allowed.

Stream Maintenance

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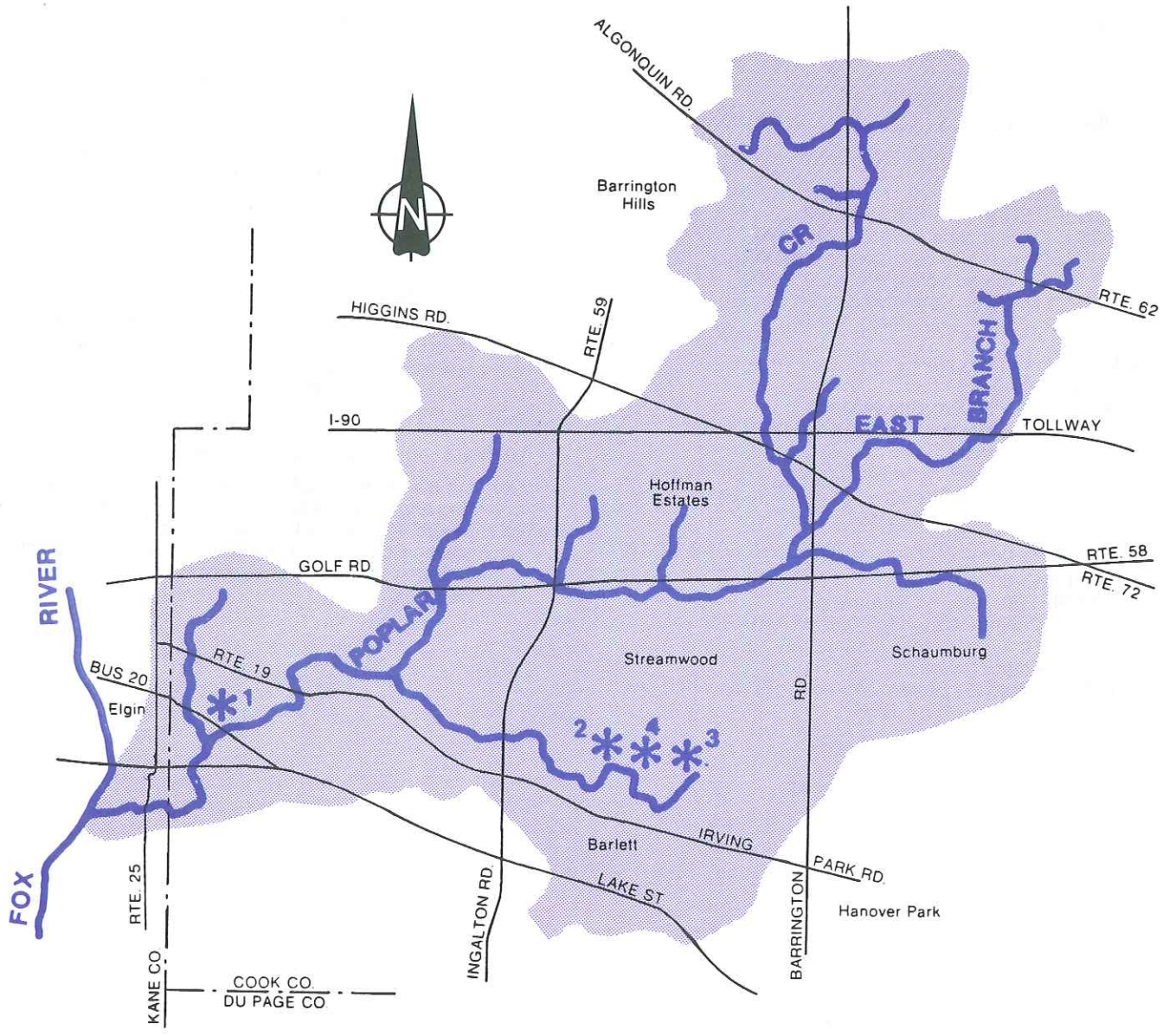
Land Protection Program

DuPage County Stormwater Division is implementing a sediment and erosion control regulatory program. The regulations are embodied in the Stormwater ordinance and will regulate construction activities to reduce erosion and sedimentation.

Land Acquisition Program

The Lake County Forest Preserve District has actively pursued a program of open land, wetland and floodplain purchase in the Fox River Watershed. To date 4500 areas of land adjacent to the River and its tributaries have been acquired by the District.

Poplar Creek Watershed



*1 POPLAR CREEK LEVEE (ELGIN)
2 OAK HILL PARK RESERVOIR (STREAMWOOD)
3 DOLPHIN PARK RESERVOIR (STREAMWOOD)
4 HILLSIDE PARK RESERVOIR (STREAMWOOD)

Projects of the Division of Water Resources

POPLAR CREEK LEVEE (Dropped by City of Elgin)
LENGTH: 1,400 feet
BENEFITED AREA: 102 residential properties;
28 businesses; City of Elgin
COST: Construction – $750,000 (Estimate, DWR)
Land – $250,000 (Estimate, Elgin)
MAINTENANCE: City of Elgin

Projects of the Metropolitan Water Reclamation District

2 OAK HILL PARK RESERVOIR (COMPLETED IN 1976)
VOLUME: 77 acre-feet
BENEFITED AREA: Streamwood
COST: Construction – $346,000 (MWRDGC)
34 acres of land donated by Village
Estimated value $340,000 (1976)
MAINTENANCE: Streamwood and Streamwood Park Dist.

3 DOLPHIN PARK RESERVOIR (COMPLETED IN 1976)
VOLUME: 96 acre-feet
BENEFITED AREA: Streamwood
COST: Construction – $238,000 (MWRDGC)
33 acres of land donated by Village
Estimated value $330,000 (1976)
MAINTENANCE: Streamwood and Streamwood Park Dist.

4 HILLSIDE PARK RESERVOIR (COMPLETED IN 1976)
VOLUME: 35 acre-feet
BENEFITED AREA: Streamwood
COST: Construction – $87,000 (MWRDGC)
18 acres of land donated by Village
Estimated value $180,000 (1976)
MAINTENANCE: Streamwood and Streamwood Park Dist.

Program Status

Land Protection Program

Soil Erosion and Sedimentation Control Ordinances have been enacted throughout the Poplar Creek Watershed which includes Barrington Hills, South Barrington, Hoffman Estates, Schaumburg, Hanover Park, Streamwood, Bartlett, Elgin, Inverness, and unincorporated Cook County.

These ordinances will control erosion and sedimentation from developing areas in the watershed to assure that excessive sediment does not find its way into the storm water conveyance systems. Procedures and Standards for Urban Soil Erosion and Sedimentation for Illinois was revised in 1988 by the Asocition of Illinois Soil and Water Conservation District. In 1990 they also developed the Illinois Urban Soil Erosion and Sedimentation Control Field Manual for use by Inspectors and other field personnel.

The Soil and Water Conservation Districts are conducting seminars for counties, municipalities, developers and consultants.

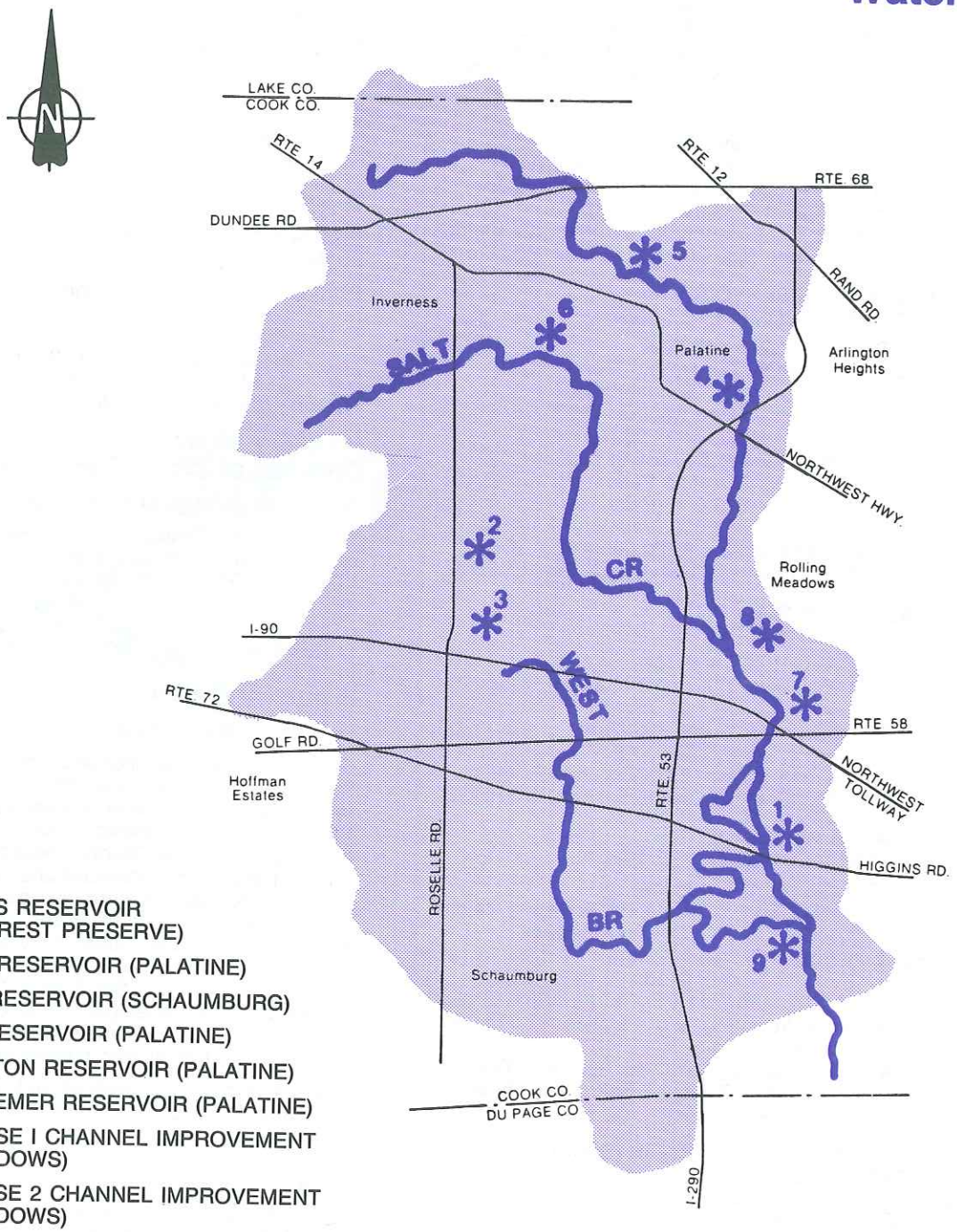
Floodplain Regulations

The Illinois Division of Water Resources regulates the floodways throughout the Poplar Creek Watershed in Illinois. Any construction proposed within the floodway areas must be permitted by the DWR and must not have significant adverse impacts.

Wetland and Open Space Acquisition

Communities in the Poplar Creek Watershed are actively acquiring and preserving open space and wetland to meet local needs. A green belt is planned to link municipalities with existing Cook County Forest Preserve District holdings. Approximately 435 acres of stream corridor is required for this need.

Upper Salt Creek Watershed



*1 BUSSE WOODS RESERVOIR (COOK CO. FOREST PRESERVE)
2 PLUM GROVE RESERVOIR (PALATINE)
3 ST. MICHAEL RESERVOIR (SCHAUMBURG)
4 TWIN LAKES RESERVOIR (PALATINE)
5 TOM T. HAMILTON RESERVOIR (PALATINE)
6 MARGRETH RIEMER RESERVOIR (PALATINE)
7 REACH F, PHASE I CHANNEL IMPROVEMENT (ROLLING MEADOWS)
8 REACH F, PHASE 2 CHANNEL IMPROVEMENT (ROLLING MEADOWS)
9 BUSSE WOODS DAM MODIFICATION (COOK CO. FOREST PRESERVE)

Projects of the Soil Conservation Service

1 BUSSE WOODS RESERVOIR (COMPLETED IN 1978)

FLOOD STORAGE: 3,940 acre-feet
FLOOD PROTECTION TO: Elk Grove Village, Wood Dale, Addison, Villa Park
COST: Construction – Flood Control – $5,964,000 (DWR) plus $2,074,000 (SCS)
Recreation – $7,928,000
$3,963,000 (SCS)
$3,965,000 (CCFPD, DWR)
Land – $14,000,000 (estimated value, Cook County Forest Preserve District)
MAINTENANCE: Cook County Forest Preserve District and Illinois Division of Water Resources

2 PLUM GROVE RESERVOIR (STRUCTURE 2, COMPLETED 1984)

FLOOD STORAGE: 218 acre-feet
FLOOD PROTECTION TO: Rolling Meadows, Schaumburg
COST: Construction – Flood Control – $3,626,800 (SCS) plus $39,300 (MWRDGC)
Recreation – $81,500 (SCS) plus $64,000 (Palatine Park District) plus $15,000 (Palatine Township) plus $ 4,500 (Village of Palatine)
Land – 146 acres, $2,790,000 (MWRDGC)
MAINTENANCE: Palatine Park District and MWRDGC

3 ST. MICHAEL RESERVOIR (STRUCTURE 3, COMPLETED 1986)

FLOOD STORAGE: 407 acre-feet
FLOOD PROTECTION TO: Schaumburg, Rolling Meadows
COST: Construction – $3,626,800 (SCS) plus $ 734,500 (MWRDGC)
Land – 215 acres, $2,100,000 (MWRDGC)
MAINTENANCE: Catholic Cemeteries and MWRDGC

4 TWIN LAKES RESERVOIR (STRUCTURE 4, COMPLETED 1986)

FLOOD STORAGE: 430 acre-feet
FLOOD PROTECTION TO: Palatine, Arlington Heights, Rolling Meadows
COST: Construction – Flood Control – $3,278,133 (SCS) plus $116,100 (MWRDGC)
Land – 32 acres, $1,400,000 (MWRDGC) plus 47 acres from Village of Palatine, $1,175,000 (Estimated Value)
RECREATION: Provided by Salt Creek Rural Park District.
MAINTENANCE: MWRDGC and Salt Creek Rural Park District

5 TOM T. HAMILTON RESERVOIR (STRUCTURE 5, COMPLETED 1981)

FLOOD STORAGE: 537 acre-feet
FLOOD PROTECTION TO: Palatine, Arlington Heights, Rolling Meadows
COST: Construction – $ 5,633,000 (SCS), $56,000 (MWRDGC)
Land – 90 acres, $1,447,000 (MWRDGC)
RECREATION—Provided by Palatine Park District.
MAINTENANCE: Palatine Park District and MWRDGC

6 MARGRETH RIEMER RESERVOIR (STRUCTURE 6, COMPLETED 1983)

FLOOD STORAGE: 572 acre-feet
FLOOD PROTECTION TO: Palatine, Rolling Meadows
COST: Construction – $7,230,000 (SCS), $ 63,900 (MWRDGC)
Land – 90 acres, $2,220,000 (MWRDGC)
MAINTENANCE: Palatine Park District and MWRDGC

7 REACH F PHASE I CHANNEL IMPROVEMENT (COMPLETED IN 1981)

DESCRIPTION: Improve channel to enhance flows for 0.38 miles (South of Phase II)
FLOOD PROTECTION TO: Rolling Meadows
COST: Construction cost included in Busse Woods Reservoir Contract.
Land rights obtained by Division of Water Resources.
MAINTENANCE: MWRDGC

8 REACH F PHASE 2 CHANNEL IMPROVEMENT (COMPLETION 1991)

DESCRIPTION: Improve channel to enhance flows for 0.38 miles (from Algonquin Road South)
FLOOD PROTECTION TO: Rolling Meadows
COST: Construction – $780,600 (Estimate, SCS)
Land Rights – Obtained by Rolling Meadows
MAINTENANCE: Rolling Meadows

Projects of the Division of Water Resources

9 BUSSE WOODS DAM MODIFICATION

VOLUME: Modification will increase useable volume for more frequent events.
FLOOD PROTECTION TO: Elk Grove Village, Itasca, Wood Dale, Elmhurst, Addison, Villa Park and Oak Brook
COST: Construction – $610,000 (DWR)

Program Status

Land Protection Program

Soil erosion and sedimentation control ordinances have been enacted in the Upper Salt Creek Watershed which includes the communities of Inverness, Hoffman Estates, Palatine, Rolling Meadows, Schaumburg, Elk Grove, and unincorporated Cook County. These ordinances will control erosion losses from agricultural and developing areas in the watershed to assure that excessive sediment does not find its way into the storm water conveyance systems. Procedures and Standards for Urban Soil Erosion and Sedimentation for Illinois was revised in 1988 by the Association of Illinois of Soil & Water Conservation Districts. In 1990 they also developed the Illinois Urban Soil Erosion and Sedimentation Control Field Manual for use by inspectors and other field personnel.

The Soil and Water Conservation Districts are conducting seminars for counties, municipalities, developers and consultants.

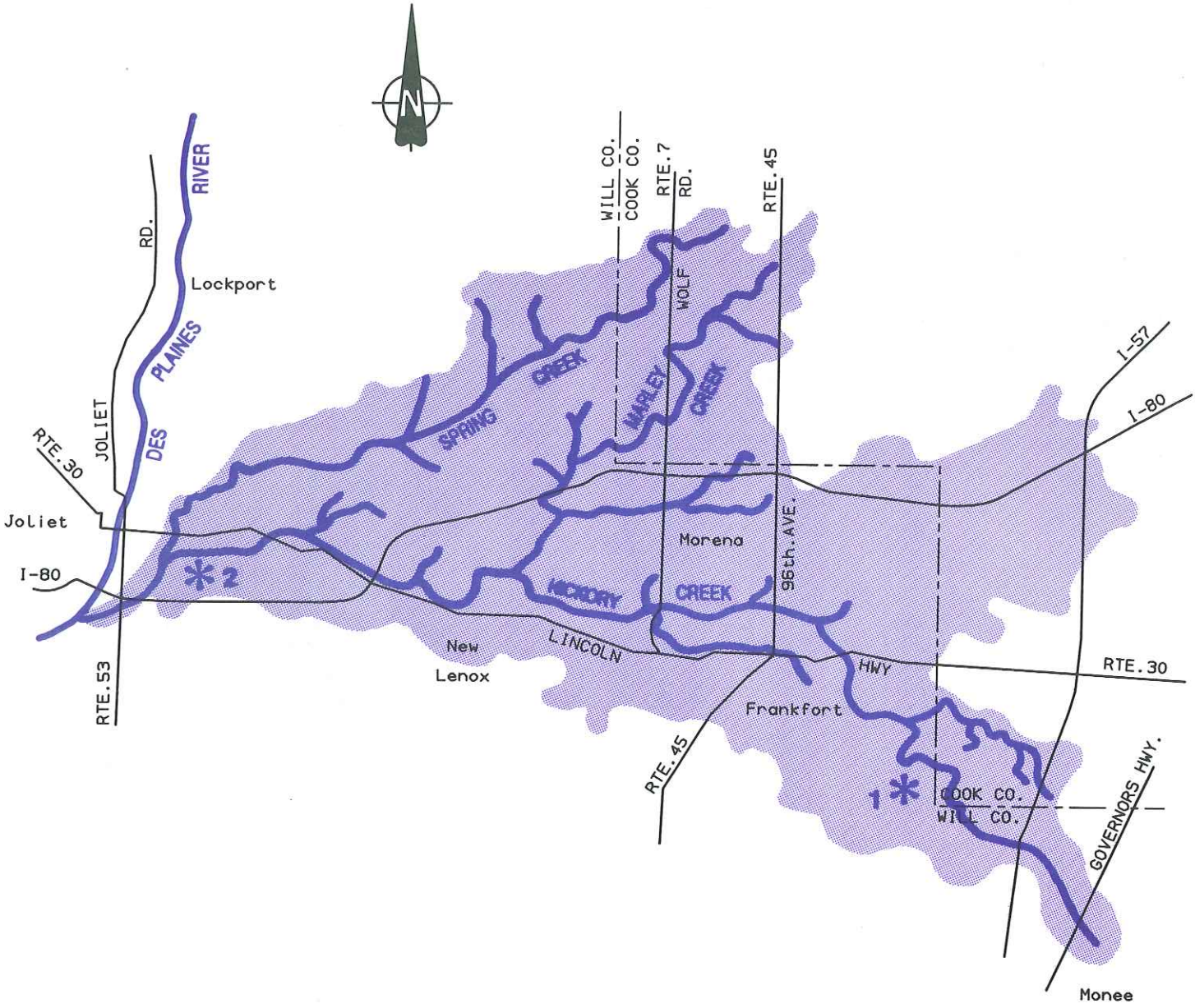
Stream Preservation Program

The Illinois Division of Water Resources has implemented a watershed-wide stream preservation program. The program outlines annual inspection and maintenance procedures.

Floodplain Regulations

The Illinois Division of Water Resources regulates the floodways throughout the Upper Salt Creek Watershed in Illinois. Any construction proposed within the floodway areas must be permitted by the DWR and must not have significant adverse impacts.

Hickory Creek Watershed



*1 SAUK TRAIL RESERVOIR

2 HICKORY AND SPRING CREEK CHANNEL IMPROVEMENTS

Projects of the Division of Water Resources

1. SAUK TRAIL RESERVOIR, HICKORY CREEK
(Completed 1980)

VOLUME: 1300 acre-feet
FLOOD PROTECTION TO: Will County
COST: Construction – $1,060,000 (DWR)
MAINTENANCE: Will County Forest Preserve District

2. HICKORY AND SPRING CREEK CHANNEL IMPROVEMENTS

7 miles of channel improvement (0.8 mile constructed to-date)

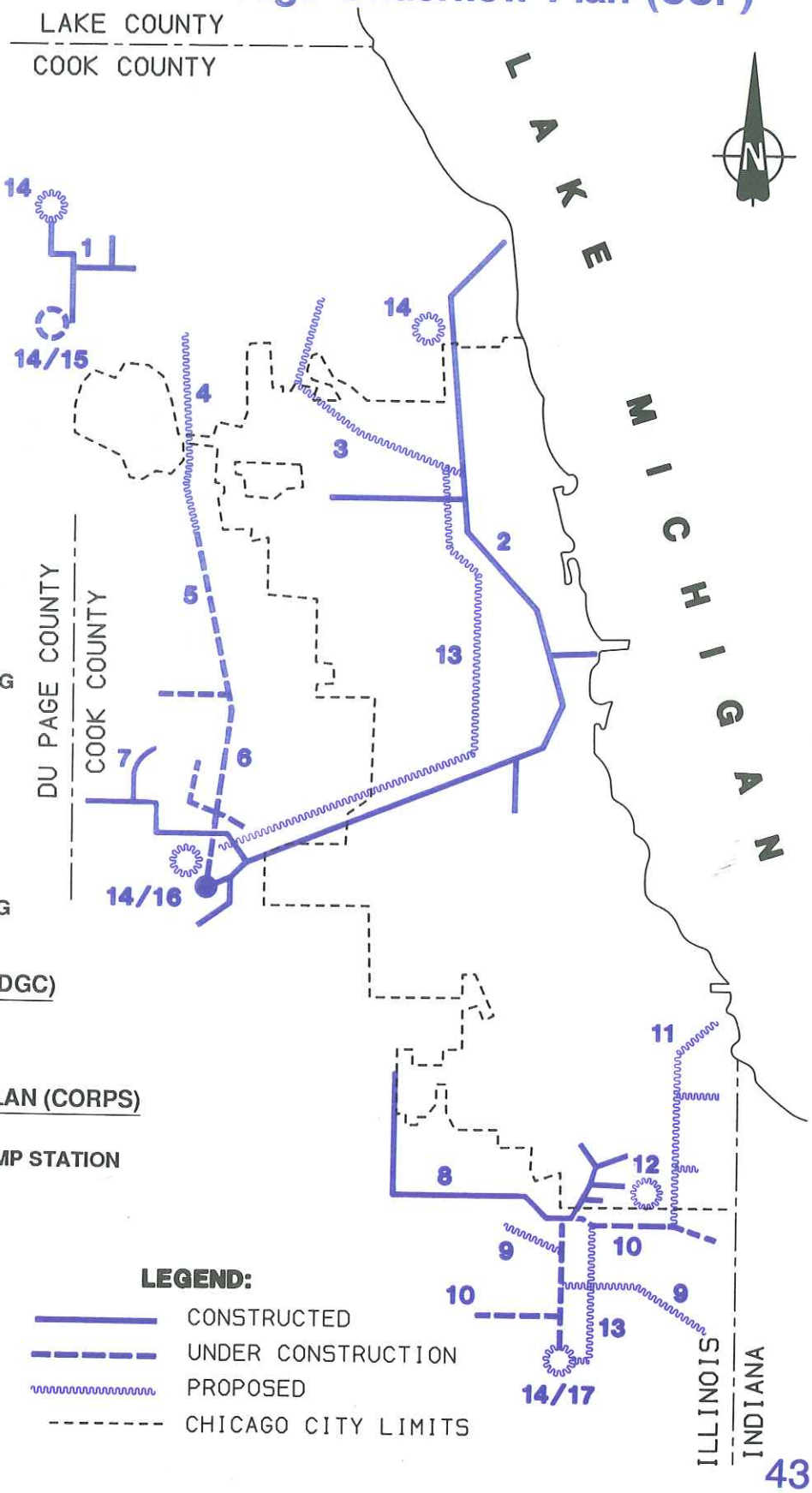
FLOOD PROTECTION TO: Joilet
COST: Construction – $30,940,000 (DWR)
Land – $240,000 (Joilet)
MINTENANCE: Joilet

Program Status

Floodplain Regulations

The Illinois Division of Water Resources regulates the floodways throughout the Hickory Creek Watershed in Illinois. Any construction proposed within the floodway areas must be permitted by the DWR and must not have significant adverse impacts.

Central Basin Watershed
Tunnel and Reservoir Project (TARP)
Chicago Underflow Plan (CUP)



PHASE I TARP SYSTEMS

1 UPPER DES PLAINES
2 MAINSTREAM
3 MAINSTREAM, NORTH BRANCH LEG
4 DES PLAINES, NORTH LEG
5 DES PLAINES, MIDDLE LEG
6 DES PLAINES, SOUTH LEG
7 DES PLAINES, WEST LEG
8 CALUMET, CAL-SAG LEG
9 CALUMET LITTLE CAL LEG
10 CALUMET, 140TH STREET AND INDIANA AVENUE LEGS
11 CALUMET, TORRENCE AVENUE LEG
12 O'BRIEN PUMP STATION

PHASE II TARP SYSTEMS (MWRDGC)

13 TUNNELS
14 RESERVOIRS

CHICAGOLAND UNDERFLOW PLAN (CORPS)

15 O'HARE RESERVOIR
16 McCOOK RESERVOIR AND M.S. PUMP STATION
17 THORNTON RESERVOIR

Projects of the Metropolitan Water Reclamation District

1 UPPER DES PLAINES SYSTEM (COMPLETED (1981)
TRIBUTARY AREA: 13.7 square miles
TOTAL TUNNEL LENGTH: 6.6 miles
STORAGE VOLUME: 212.8 acre-feet
TOTAL CONSTRUCTION COST: $64,000,000

TOTAL MAINSTREAM SYSTEM SUMMARY
TRIBUTARY AREA: 219.9 square miles
TOTAL TUNNEL LENGTH: 40.3 miles
STORAGE VOLUME: 3,170 acre-feet
TOTAL CONSTRUCTION COST: $1,179,000,000

2 MAINSTREAM TARP SYSTEM (COMPLETED 1985)
TUNNEL LENGTH: 31.2 miles
CONSTRUCTION COST: $975,000,000

3 NORTH BRANCH LEG MAINSTREAM TARP SYSTEM
TUNNEL LENGTH: 9.1 miles
CONSTRUCTION COST: $204,000,000

DES PLAINES SYSTEM SUMMARY
RIBUTARY AREA: 34.8 square miles
TOTAL TUNNEL LENGTH: 26.4 miles
STORAGE VOLUME: 1,267 acre-feet
TOTAL CONSTRUCTION COST: $468,000,000

4 NORTH LEG DES PLAINES TARP SYSTEM
TUNNEL LENGTH: 8.9 miles
CONSTRUCTION COST: $172,000,000

5 MIDDLE LEG DES PLAINES TARP SYSTEM (COMPLETION, 1993)
TUNNEL LENGTH: 6.6 miles
CONSTRUCTION COST: $148,000,000

6 SOUTH LEG DES PLAINES TARP SYSTEM (COMPLETION, 1993)
TUNNEL LENGTH: 6.8 miles
CONSTRUCTION COST: $157,000,000

7 WEST LEG DES PLAINES TARP SYSTEM (COMPLETED 1988)
TUNNEL LENGTH: 3.5 miles
CONSTRUCTION COST: $23,000,000

CALUMET SYSTEM SUMMARY
TRIBUTARY AREA: 90.8 square miles
TOTAL TUNNEL LENGTH: 36.3 miles
STORAGE VOLUME: 1,638 acre-feet
TOTAL CONSTRUCTION COST: $730,000,000

8 CAL SAG LEG CALUMET TARP SYSTEM (COMPLETED 1986)
TUNNEL LENGTH: 9.2 miles
CONSTRUCTION COST: $153,000,000

9 LITTLE CAL LEG CALUMET TARP SYSTEM
TUNNEL LENGTH: 7.7 miles
CONSTRUCTION COST: $113,000,000

10 140TH STREET AND INDIANA AVENUE LEGS, CALUMET (Completion, 1996)
TUNNEL LENGTH: 11.5 miles
CONSTRUCTION COST: $195,000,000

11 TORRENCE AVENUE LEG, CALUMET TARP SYSTEM
TUNNEL LENGTH: 7.9 miles
CONSTRUCTION COST: $106,000,000

12 O'BRIEN PUMP STATION
CONSTRUCTION COST $41,000,000

13 PHASE II TARP TUNNELS

14 PHASE II TARP RESERVOIRS

Projects of the U.S. Army Corps of Engineers

15 O'HARE CUP RESERVOIR
FLOOD STORAGE: 1,050 acre-feet
TOTAL COST: CONSTRUCTION – $16.29 million
(CEO, MWRDGC)
(Estimated, July 1989)
LAND – 93.7 acres, $4.23 million (MWRDGC)
MAINTENANCE: MWRDGC

16 McCOOK CUP RESERVOIR
LOCATION: South of Joilet Road and East of East Avenue
FLOOD STORAGE: 32,100 acre-feet
TOTAL COST: CONSTRUCTION – $287.8 million
(CEO, MWRDGC)
(Estimated, Dec. 1986)
LAND – 200 acres, $29.62 million (MWRDGC)
MAINTENANCE: MWRDGC

17 THORNTON CUP RESERVOIR
(To Be Combined With George O'Brien Reservoir, See No. 9 on Page 29)
FLOOD STORAGE: 14,600 acre-feet
TOTAL COST: Construction – $73.96 million
(COE, MWRDGC)
(Estimated, Dec. 1986)
Land – $4.99 million (MWRDGC)
MAINTENANCE: MWRDGC

Continued . . . .

Program Status

TARP consists of two phases. Phase I of the Plan is primarily a water pollution control project. Phase II is associated primarily with urban flood control.

TARP goals are listed below:

1. Prevent backflows into Lake Michigan.
2. Eliminate waterway pollution caused by combined sewer overflow.
3. Provide an outlet for flood waters.
4. Comply with Federal and State environmental laws.
5. Accomplish results in the most cost effective manner.

TARP performance is shown in the table below.

Phase I

Phase I of TARP consists of 109 miles of tunnels ranging in size between 9 feet and 33 feet in diameter constructed 150 to 350 feet below grade in solid rock. These tunnels will intercept combined wastewater from the 645 existing overflow relief outlets by means of 252 drop shafts and convey it to huge pumping stations which will deliver this wastewater to treatment plants. All wastewater will be treated prior to being discharged to the area's waterways from combined sewer overflows. This will result in approximately 85 percent reduction in the total annual discharge of pollutants into the waterways. The estimated cost of Phase I is $2.49 billion. As Phase I of TARP is primarily a pollution control project, the USEPA is providing grant funds for approximately 75 percent of the project cost.

As of September 1990, three-quarters of the TARP Phase I projects have been awarded. The cost of projects under construction or completed is $1.71 billion. The remaining portion of TARP Phase I, with an estimated cost of $774 million, has been designed, but remains unfunded.

Phase II

The flood control benefits of TARP will be minimal until Phase II is operational. Phase II TARP consists of 21 additional miles of rock tunnels and three reservoirs with a total storage capacity of 127,550 acre-feet. During major storms, the discharge from the tunnels will be directed into the reservoirs for temporary storage and preliminary treatment followed by final treatment in the Water Reclamation District treatment plants.

Chicagoland Underflow Plan (CUP)

Since Phase II is primarily a flood control project and not a pollution control project, authority for its implementation was assigned to the U.S. Army Corps of Engineers by Congress in 1976.

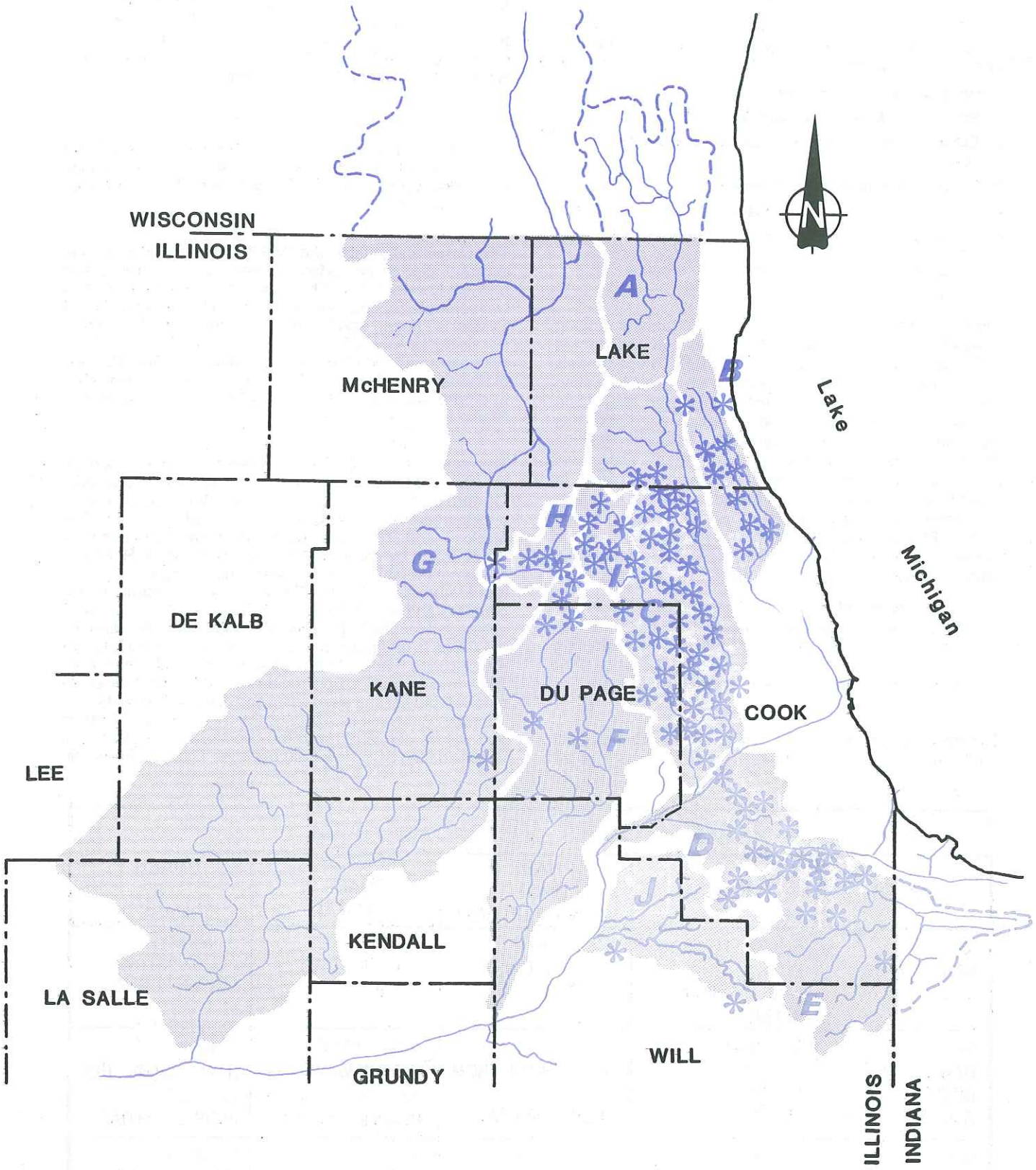
The Corps reevaluated the TARP System on the basis of determination of the Federal interest rather than the goals previously established. The reevaluation was published as two separate reports, one covering the Upper Des Plaines System (O'Hare), and the other covering the Mainstream (McCook) and the Calumet System (Thornton). The NED Plan recommended by the Corps eliminates the 21 miles of Phase II tunnel and reduces total storage in all reservoirs to 47,750 acre-feet (versus 127,750 acre-feet envisaged for Phase II).

The construction of O'Hare CUP Reservoir was authorized by the 1986 Water Recources Development Act. Construction was initiated in 1990, and completion is anticipated in 1993, subject to availability of funds. The McCook and Thornton Reservoirs were authorized for construction by the 1988 WRDA. The McCook Reservoir will serve the Mainstream System and provide 2,000 acre-feet of storage for the Des Plaines System. Preconstruction planning and engineering is underway, with construction scheduled for 1993. The 1990 Appropriations Act directed the Corps to undertake a reevaluation study of the McCook site selection. The study is scheduled for completion in early 1991, and is focusing upon an economic reevaluation of the reservoir project and an examination of alternative sites. The Thornton Reservoir is to service the Calumet TARP System and will be combined with the previously authorized but unconstructed SCS Little Calumet River Thornton Reservoir.

TARP GOALS PERFORMANCE

GOALS	PROBLEM	PHASE I UNDER CONSTRUCTION	PHASE II TOTAL	PHASE I & PHASE II
NO RAW SEWAGE INTO	**5** BACKFLOWS INTO LAKE MICHIGAN IN 1981	**ELIMINATE** **4** BACKFLOWS IN 1981	**ELIMINATE** **5** BACKFLOWS IN 1981	**ELIMINATE** **ALL** BACKFLOWS FOR ANY REASON
NO RAW SEWAGE INTO RIVERS	RAW SEWAGE FROM **1,000,000** PEOPLE PER DAY	**ELIMINATE** RAW SEWAGE FROM **606,900** PEOPLE PER DAY	**ELIMINATE** RAW SEWAGE FROM **840,000** PEOPLE PER DAY	**ELIMINATE** RAW SEWAGE FROM **1,000,000** PEOPLE PER DAY
NO RAW SEWAGE FLOODING IN HOMES	**550,000** HOMES SUSCEPTIBLE TO RAW SEWAGE FLOODING	**ELIMINATE** RAW SEWAGE IN **70,400** HOMES SUSCEPTIBLE TO FLOODING	**ELIMINATE** RAW SEWAGE IN **82,500** HOMES SUSCEPTIBLE TO FLOODING	**ELIMINATE** RAW SEWAGE IN **357,500** HOMES SUSCEPTIBLE TO FLOODING

Watersheds of the Chicago Metropolitan Area



* Floodwater Management Projects

Structural Program Summary by Watershed

		B North Branch Chicago River	C Lower Des Plaines Tributaries	D Cal-Sag Channel	E Little Calumet River	F DuPage River	G Fox River	H Poplar Creek	I Upper Salt Creek	J Hickory Creek
Reservoirs: Volume in Acre-Feet	Planned	5,468	4,769	134	9,600	--	310	--	--	--
	Constructed	2,000	3,411	189	3,731	2,730	50	208	3,704	1,300
	Total	7,468	8,411	323	13,331	2,730	360	208	3,704	1,300
Channel Improvements: Length in Miles	Planned	--	6.75	--	7.9	--	1.6	0.26	0.38	6.2
	Constructed	--	--	13.2	2.7	4.1	1.0	--	0.38	0.8
	Total	--	6.75	13.2	10.6	4.1	2.6	0.26	0.76	7.0
Construction: In $1,000's	Planned	34,202	59,008	2,404	106,885	--	2,300	500	2,222	28,000
	Constructed	6,731	33,382	4,600	27,471	5,011	1,195	671	27,976	4,000
	Total	40,933	92,390	7,004	134,356	5,011	3,495	1,171	30,189	32,000
Land Costs: In $1,000's	Planned	5,426	4,367	--	20,723	--	600	88	--	--
	Constructed	6,056	24,935	620	8,120	1,345	119	850	25,132	NA
	Total	11,482	29,302	620	28,843	1,345	719	938	25,132	NA
Total Costs In $1,000's		52,415	121,692	7,624	163,199	6,356	4,214	2,109	55,321	66,614

Note: Floodwater Management activities in the Upper DesPlaines River Watershed (A) are non-structural and not included in the summary. See pages 43, 44, & 45 for TARP & CUP data.

PART III – Where To Go For More Information

FLOOD CONTROL PROJECTS OF THE METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

Metropolitan Water Reclamation District of Greater Chicago
Flood Control Section
111 East Erie Street
Chicago, Illinois 60611
(312) 751-3240

FLOOD CONTROL PROJECTS OF THE DIVISION OF WATER RESOURCES

Illinois Department of Transportation,
Division of Water Resources
Bureau of Planning
2300 South Dirksen Parkway
Springfield, Illinois 62764
(217) 782-4636

Illinois Department of Transportation,
Division of Water Resources
Chicago Engineering Studies Unit
201 West Center Court
Schaumburg, Illinois 60196-1096
(708) 705-4341

FLOOD CONTROL PROJECTS OF THE P.L. 566 PROGRAM, U.S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE

U.S. Department of Agriculture
Soil Conservation Service
22 Heritage Plaza, Suite 107
Bourbonnais, Illinois 60914
(815) 937-3225

Joliet Field Office
(South Cook-Will Counties)
100 Manhattan Road
Joliet, Illinois 60433
(815) 723-5078

St. Charles Field Office
(Kane-DuPage Counties)
545 Randall Road
St. Charles, Illinois 60171
(708) 584-7961

Palatine Field Office
(North Cook County)
675 North Court, Suite 120
Palatine, Illinois 60067
(708) 991-1189

Grayslake Field Office
(Lake County)
70 South U.S. Highway 45
Grayslake, Illinois 60030
(708) 223-1057

FLOOD CONTROL PROJECTS OF THE CORPS OF ENGINEERS

U.S. Army Corps of Engineers
Chicago District
111 North Canal Street
Chicago, Illinois 60606
(312) 353-6400

MISCELLANEOUS PROGRAMS

Stream Preservation Program

Illinois Department of Transportation,
Division of Water Resources
Bureau of Planning
3215 Executive Park Drive
Springfield, Illinois 62703-3215
(217) 782-4636

Floodplain Regulations

Illinois Department of Transportation,
Division of Water Resources
Bureau of Resource Management
201 West Center Court
Schaumburg, Illinois 60196-1096
(708) 705-4341

Flood Mitigation Programs

Illinois Department of Transportation,
Division of Water Resources
Flood Mitigation Regional Stormwater Programs
310 South Michigan, Room 1606
Chicago, Illinois 60604
(312) 793-3123

Land Protection Programs

South Cook-Will County Soil and
Water Conservation District
Joliet Field Office
100 Manhattan Road
Joliet, Illinois 60433
(815) 723-5078

Lake County Soil and Water Conservation District
Grayslake Field Office
70 South U.S. Highway 45
Grayslake, Illinois 60030
(708) 223-1057

North Cook Soil and Water Conservation District
Palatine Field Office
675 North Court, Suite 120
Palatine, Illinois
(708) 991-4330

Kane-DuPage Soil and Water Conservation District
St. Charles Field Office
545 Randall Road
St. Charles, Illinois 60174
(708) 584-7960

On-Site Storm Water Detention

Metropolitan Water Reclamation District of Greater Chicago
Local Sewer Systems Section
111 East Erie Street
Chicago, Illinois 60611
(312) 751-3250

Tunnel and Reservoir Plan (TARP)

Metropolitan Water Reclamation District of Greater Chicago
Sewer Design Section
111 East Erie Street
Chicago, Illinois 60611
(312) 751-4010

Chicago Underflow Plan (CUP)

U.S. Army Corps of Engineers
Chicago District
219 South Dearborn
Chicago, Illinois 60604
(312) 353-6400

Floodplain Management and Technical Assistance

U.S. Army Corps of Engineers
Chicago District
111 North Canal Street
Chicago, Illinois 60606
(312) 353-6400

Collar Counties Stormwater Management Committees

DuPage County Stormwater Management Division
421 North County Farm Road
Wheaton, Illinois 60187
(708) 682-6946

Kane County Development Dept.

719 South Batavia Avenue
Genevia, Illinois 6]134
(708) 232-3497

Lake County Planning Dept.

18 North County Street
Room A-803
Waukeegon, Illinois 60085
(708) 360-6350

Cooperating Agencies

Addison
Addison Creek Conservancy District
Alsip
Arlington Heights
Arlington Heights Park District
Aurora
Bannockburn
Bellwood
Bloomingdale
Blue Island
Broadview
Brookfield
Buffalo Grove
Calumet City
Cal-Union Drainage District
Chicago Heights
Chicago Ridge
City of Chicago
Cook County
Cook County Forest Preserve District
Country Club Hills
Crete
Crestwood
Deerfield Park District
Des Plaines
Drainage District #2
DuPage County Stormwater Management Division
DuPage County Forest Preserve District
East Chicago Heights
East Skokie Drainage District
Elgin
Elgin Sanitary District
Elk Grove
Elk Grove Park District
Elmhurst
Elmhurst Park District
Flossmoor
Franklin Park
Glenview
Glenwood
Gurnee
Hanover Park
Harvey
Hazelcrest
Hazelcrest Park District
Hickory Hills
Highland Park
Highland Park Park District
Hinsdale
Hoffman Estates
Homewood
Homewood-Flossmoor Park District
Itasca
Kane-DuPage Soil & Water Conservation District
Kane County Development Dept.
Kenosha County, Wisconsin
Kenosha County, Wisconsin Soil & Water Conservation District
LaGrange
Lake Bluff
Lake County Stormwater Management
Lake County Forest Preserve District
Lake County Soil & Water Conservation District
Lake Forest
Lansing
Lansing Park District
Libertyville
Lincoln-Lansing Drainage District
Lincolnshire
Long Grove
Lynwood
Lyons
Markham
Markham Park District
Matteson
Melrose Park
Metropolitan Water Reclamation District of Greater Chicago
Midlothian
Mt. Prospect
Niles
North Brook
North Chicago
North Cook Soil & Water Conservation District
North Skokie Drainage District
Northeastern Illinois Planning Commission
Northfield
Northlake
Oak Brook
Oak Forest
Oak Lawn
Olympia Fields
Orland Park
Palatine
Palatine Park District
Palos Heights
Palos Hills
Palos Park
Park Forest
Park Forest South
Prospect Heights
Richton Park
Riverdale
Riverside
Robbins
Rolling Meadows
Roselle
Salt Creek Rural Park District
Sauk Village
Schaumburg
Schaumburg Park District
Southeastern Wisconsin Regional Planning Commission
South Chicago Heights
South Holland
State of Illinois, Department of Conservation
State of Illinois, Division of Water Resources
State of Illinois, Water Survey
Steger
Streamwood
Thornton
Tinley Park
Tinley Park District
Union Drainage District #1, #2, and #4
U.S. Army Corps of Engineers
U.S. Department of Agriculture, Soil Conservation Service
Villa Park
West Skokie Drainage District
West Haven
Weller Creek Drainage District
Westchester
Western Springs
Wheeling
Wheeling Park District
Will County
Will County Forest Preserve District
Will South Cook Soil & Water Conservation District
Wilmette
Winnetka
Wood Dale
Wood Dale Park District
Worth
Lower Des Plaines Tributaries Watershed