PLAN OF STUDY
ILLINOIS STATE WATER PLAN
MARCH 1981

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INTRODUCTION

This document is a Plan of Study (POS) which describes the need for an Illinois State Water Plan which is to be developed in 1981 and subsequent years. It will describe the Plan concept which has evolved and outlined the work plan, agency responsibilities, schedule, and budgets required to reach the Plan objectives.

Need for State Water Plan

The need for an Illinois State Water Plan has been increasingly evident for several years. The most recent plan was published in 1967 and has become obsolete in a number of respects. During the intervening years a number of events on a state, national, and international scale have resulted in changing and competing demands upon the available water resources. Among these can be cited the energy crisis and the strong demand for Illinois crop production. There was also a decade of environmental concern which has resulted in changed values. More recently attention has focused upon conservation and nonstructural approaches to solving water problems. On the state level a number of changes in water-related agencies have taken place, and the lack of adequate program integration is still present.

Under consideration for about two years, the decision to proceed with a State Water Plan was triggered by action of the Executive Branch of the U. S. Government. Through administration by the Water Resources Council, funding under Title III of P. L. 89-80 was substantially increased. This provided a grant to Illinois and other states to increase planning and management of water and related land resources at the state level. For the federal fiscal year 1980 an amount of $245,200 was made available to Illinois with a minimum of equal matching funds. Fiscal Year 1981 grant amount will be $270,000.

Action of the Governor

Early in 1980 Governor Thompson appointed a special Task Force to prepare a State Water Plan. Membership of the State Water Plan Task Force consists of policy level individuals of the following agencies:

Department of Agriculture
Bureau of the Budget
Capital Development Board
Department of Commerce and Community Affairs
Department of Conservation
Emergency Services and Disaster Agency

Institute of Natural Resources
Environmental Protection Agency
Department of Mines and Minerals
Office of the Governor
Department of Public Health
Department of Transportation/Division of Water Resources
Water Resources Center
Water Resources Commission

The Governor designated the Director of the Division of Water Resources in the Department of Transportation as Task Force Chairman. The chairman, in turn, retained an Executive Director and provided professional and supporting staff.

The Task Force met first on May 6, 1980, and has met monthly since that time.

Development of Plan Concept

The Task Force organized itself and began the process of identifying the nature of its task.

An early decision was that the Illinois Water Plan would not be a one-time effort, but instead, would be a dynamic process which can be updated annually. Thus, the Plan will address problems in some order of priority and current relevance. The product or Plan will guide and reflect current problems, policies, programs, and budgets.

It was decided not to focus directly upon institutions or agencies with respect to organization or reorganization. It was also decided not to concentrate upon traditional and well-established programs, but instead to focus on problems at the margin of attention. That is, attention will be directed toward programs that are ineffective in meeting current problems or have not yet addressed emerging issues.

Similarly it was decided that circumstances in Illinois do not require major attention to an inventory of water resources at this time. The 1967 report remains generally useful with regard to resource evaluation, and numerous additional sources of data are available. The option was left open that an improved data repository and retrieval system may subsequently become important.

By a process of concensus the Task Force will assume responsibility for the Plan of Study and the Annual Work Plan. Minimal staff will be established for the plan development, and responsibilities for development of elements of the Plan will be through a system of assignments to lead agencies and supporting agencies.

It was decided that the initial partial year would be devoted to preparation of a Plan of Study to be completed by December 1980. This is the present document which is intended to guide

activities in subsequent years and also form the basis for a grant application to support activities during the year 1981.

From Task Force deliberations there emerged agreement on the Water Plan mission, tentative goals, and initial focus as follows:

•Mission - Develop a total water management system that is socially acceptable and that operates within resource constraints.

•Tentative Goals -Achieve more efficient resource utilization through (a) coordinated planning and implementation, (b) using meaningful public participation, and (c) establishing any needed mechanisms for conflict resolution.

•Initial Focus - The Water Plan will focus initially on significant water issues related to currently marginal programs or emerging issues which can be anticipated to lead to future problems or conflicts.

A preliminary list of significant issues was developed from agency nominations. These were considered by the Task Force in the light of several criteria. These were that issues to be considered must affect the entire state or a major portion of it. They must be of concern and involve the programs of two or more agencies, and they must be issues which require an initiative by the state.

By this process numerous suggestions were proposed, tested against the criteria, and either accepted, deferred, or rejected. What emerged was a preliminary list of 18 issues as follows, which are not shown in any priority order.

Floodplain management
Integration of water quality and quantity management
Erosion and sediment control
Recreational use
Energy
Navigation
Urban competition
Drought
Planned weather modification
Illinois water use law
Irrigation
Instream flow needs
Regional competition
Aquatic and riparian habitat degradation
Atmospheric deposition and climatic change
Conflict resolution mechanisms
Water conservation
Meaningful public participation

Public Participation and Advisory Groups

Considerable Task Force time was devoted to the subject of the need for and nature of public participation in the program. Although it was decided that responsibility for Water Plan decisions would remain in the Task Force, it was decided that outside advice will be clearly beneficial, if not mandatory. It was further decided that a series of public meetings would be conducted before the Plan of Study was finalized so that public response can be considered from the start. It was also decided to organize two Advisory Groups to provide additional advice. The results of these two advisory mechanisms is next summarized.

Public Forums

Responsibility for the public forums was assigned to the Water Resources Commission and the University of Illinois Water Resources Center--both of which are represented on the Task Force. Arrangements were made to have the first of these public forms in Chicago on September 12, 1980 as part of the annual meeting of the Illinois Municipal League. Four subsequent public meetings were held at Peoria, DeKalb, Carbondale, and Edwardsville between September 16 and October 1, 1980. The four later meetings were preceded by the formation of local steering committees which were of considerable assistance, and which will continue to function.

The format of each public meeting was to have brief presentations on the water resources of Illinois and on the proposed Plan of Study. Presentations were illustrated by slides, and material was distributed to those in attendance. The average attendance at the five forums was about 60. The attendees were then asked for comments and questions which have been summarized in minutes for each meeting. The attendees were also requested to complete a questionnaire indicating their priority rating of the preliminary list of 18 issues. The results of these weighted ratings are given below.

Results of Public Forums

Issues	Weighted Rating of Importance	Rank
Erosion and sediment control	284	1
Integration of water quality and quantity management	271	2
Water conservation	215	3
Floodplain management	185	4
Illinois water use law	150	5
Energy	112	6
Irrigation	101	7
Meaningful public participation	97	8

Issues	Weighted Rating of Importance	Rank
Urban competition	94	9
Conflict resolution mechanisms	92	10
Drought	56	11
Aquatic and riparian habitat degradation	51	12
Recreational use	51	13
Regional competition	50	14
Navigation	27	15
Instream flow needs	25	16
Atmospheric deposition and climatic change	18	17
Planned weather modification	11	18

It can also be said that in verbal statements, questionnaire responses, and written statements the public in attendance was in strong support of agency coordination and the State Water Plan. Although there was a range of views, there was a predominence of feeling in opposition to further regulations or the making of local decisions at the state level. There was strong representation at each meeting from irrigation interests. There was also widespread concern with toxic waste disposal and its impact upon groundwater pollution. There was also a prevalent view that 18 issues may be too many to deal with adequately in one year of study and planning effort and, as reflected in the summary table above, that a number of issues are considered of low, current priority.

The local steering committees at DeKalb, Peoria, Carbondale, and Edwardsville have each met subsequent to the public forums. Minutes of their discussions are available and their suggestions have been considered in the preparation of the Plan of Study. The existing steering committees see the need for a similar group in the Chicago area, and believe such committees can and should provide local inputs into Water Plan decision making. Among numerous suggestions they also express a strong conviction that the Plan develop an integrated management structure.

Advisory Groups

A Federal Agency Advisory Group was established and held its first meeting on October 16, 1980. Minutes of that meeting are available which make clear that this group will continue to be useful in coordinating state and federal planning efforts.

Similarly, a Future Development Advisory Group was established and held its first meeting on October 21, 1980. This is a diverse group of Illinois citizens and representatives of interested groups and associations. The purpose of this group is to ensure that the State Water Plan is developed with full consideration of the directions of larger trends of environmental and developmental views.

Water Planning Issues

In consideration of the public and advisory group views and its own maturing judgment, the Task Force agreed upon the following outline of issues upon which to proceed in the Plan of Study. The topics contain the preliminary list of 18 issues, but the subjects have been partially regrouped and are listed in an order which reflects both importance and sequence of consideration.

Case studies may be used in the Water Plan to illustrate interrelationships among various issues.

Water Issues

1. Erosion and Sediment Control
2. Integration of Water Quality and Quantity Management
3. Water Conservation
4. Floodplain Management
   - (a) Regulatory Program
   - (b) Rural Flood Control
   - (c) Urban Stormwater Management
5. Competition for Water
   - (a) Irrigation
   - (b) Energy
   - (c) Instream Needs
     - (1) Navigation
     - (2) Water Quality
     - (3) Aquatic Organisms, Fish, and Wildlife
   - (d) Urban Uses
6. Aquatic and Riparian Habitat Degradation
7. Recreation
8. Atmospheric Controls
   - (a) Atmospheric Deposition and Climate Change
   - (b) Planned Weather Modification
9. Drought Contingency Planning
10. Illinois Water Use Law

Cross-Cutting Topics

The following two topics are not listed in priority order, but are of a cross-cutting nature and will receive continuing attention throughout the planning process:

Conflict Resolution
Meaningful Public Participation

WATER RESOURCES PROBLEMS AND PROGRAMS UNDER THE PLAN OF STUDY

Introduction

During 1980 the Water Plan Task Force identified a preliminary list of 18 critical issues for incorporation in the Plan of Study. These issues were considered at five public forums and at meetings of two advisory groups. With the benefit of this advice the Task Force has formulated an amended and reorganized list of 10 issues in priority order and two cross-cutting topics which form the basis upon which it will proceed in the Plan of Study. These issues, which are identified by title only in the previous section, are elaborated in the present section. In general, these 12 topics are organized in the material which follows by an initial statement of the problem, followed by a summary of ongoing activities, and concluded with an outline of the Plan of Work for 1981 and subsequent years.

Water Issues

1. Erosion and Sedimentation

- Statement of the Problem - The problem of erosion which causes loss of the soil resources and productivity has been the subject of federal, state, local and private attention and programs for 45 years. Much remains to be done. More recently, and particularly under Section 208 of the Water Pollution Control Act Amendments of 1972, we have come to realize that sedimentation resulting from erosion is our greatest remaining source of water quality degradation. Recent studies have determined that over 8 million of Illinois' 23.8 million acres of cropland now suffer from serious water induced soil erosion. The judgment of the Task Force, strongly reinforced by public and outside advice, identifies erosion and sedimentation as the single most important water resources problem. The focus of the State Water Plan will be to address the complex interrelationship between soil erosion and water quality/quantity and to develop a soil erosion implementation strategy for priority areas.

- Ongoing Activities - Following the intensive study and planning efforts under Section 208, and prior to initiation of the State Water Plan, Illinois erosion and sedimentation and related water quality management programs were extensively reorganized and accelerated.

The 1980 Illinois Soil Erosion and Sedimentation Control Guidelines along with the 1979 Illinois Water Quality Management Plan Volume III have served as the focal points by which the state has renewed its commitment to promote soil erosion and sediment control programs. Leadership for this responsibility lies with the Illinois Department of Agriculture and local soil and water conservation districts working in conjunction with private concerns and other units of local, state and national government.

Intermediate and long term statewide soil erosion control goals have been established. It is the policy of the state to meet those goals through a coordinated soil erosion and sediment control program which will conserve and protect our natural resources.

Space does not permit a detailed reporting of a series of current program activities directed toward improving program credibility and efficiency of implementation. These activities can be characterized as being directed toward (1) an adequate data base, (2) the transfer of such information, and (3) the implementation of control strategies for problem resolution.

- Work Plan - The State Water Plan will not replace the ongoing program or establish a parallel program for erosion and sedimentation. Instead, it will adopt the current program, coordinate related activities closely with it, and seek ways to accelerate ongoing activities. Specifically the Work Plan for 1981 is to:

a. Continue to support the program of sediment transport and deposition observations by the INR State Water Survey.

b. Develop a state level advisory committee to assist the IDOA, DNR in identifying priority soil erosion areas and provide a multi-disciplined approach to formulating soil erosion implementation strategies.

c. Review and monitor the Rural Clean Water Program as it relates to a comprehensive evaluation of the effect of Best Management Practices (BMP's) on water quality.

d. Initiate a comprehensive literature search on cost/effective application of BMP's.

e. Initiate a comprehensive literature search to evaluate incentives for BMP appliction.

f. In coopertion with other state and federal agencies evaluate the accuracy and usability of computer modeling techniques to identify tracts of land with high erosion potential.

g. Promote land treatment projects through the Watershed Protection and Flood Prevention Act, Agricultural Conservation Practice (ACP), Special Projects, Rural Clean Water Program (RCWP), and Section 314 of Clean Lakes Act programs.

2. Integration of Water Quality and Quantity Management

- Statement of the Problem - Within recent years there has been a heightened recognition that water quality and water quantity management programs have developed along and follow largely separate paths. We have also come to realize that the two characteristics of water resources are so interrelated that efficiency requires that their management be integrated. In fact, there is a reasonable probability that these separated programs are at times at cross purposes.

Water quality management programs have been directed toward achieving state and national water quality goals. This has included control of point and non-point pollution, administration of construction grant funds, development of standards and institutional mechanisms, and program accountability.

Water quantity programs of measurement and development are directed toward such typical applications as navigation or for municipal, industrial, and agricultural water supplies including cooling and irrigation. For some of these applications raw water quality is satisfactory, while for other uses water can be treated to an adequate quality.

Water quality/quantity relationships involve hydrologic features such as groundwater and surface water including physical, chemical, and biological parameters. The relationships also involve programmatic applications of water use and disposal. The relationships are numerous, but perhaps can be illustrated by a few examples. Withdrawal of groundwater from a shallow aquifer may reduce the low flow of a stream and result in higher concentrations of dissolved chemicals. Navigation, which is primarily concerned with the quantity of instream flow, may cause the suspension of bottom materials and degrade water quality. On the other hand, water quality restrictions on the discharge of cooling water to streams and lakes lead to closed-cycle cooling, greater water consumpiton, and reduced quantity of stream flow. Many other examples could be cited.

-Ongoing Activities - The integration of water quality and quantity has not been addressed formally or comprehensively. However, there are probably examples where current awareness of the relationships have influenced program decisions. Research is beginning to be funded in this area, and considerable progress has been made toward the integration of quality and quantity observation programs.

-Work Plan - No known precedent is available to guide an approach to comprehensive consideration of water quality/quantity mangement. Thus 1981 will be devoted to an identification and analysis of the hydrologic and programmatic circumstances where such interactions potentially exist. In the following year, 1982, water management objectives and existing program decision processes will be examined to develop considerations and constraints which need to be built into the water management processes in Illinois. The first year of activity will also identify those areas where water quality/quantity relationships are inadequately understood and further study is required.

It is likely that under this and other topics case studies will be used to illustrate interrelations, trade-offs, and potential solutions to problems.

3. Water Conservation

-Statement of the Problem - The historical attitude toward water conservation has been one of indifference on the part of the public and governmental agencies. There is evidence, however, that this attitude is changing and that we may be entering a decade of conservation.

Attention to conservation has become a federal policy and this has resulted in changed attitudes and programs. It has resulted in the requirement of various agencies that conservation be considered as an option to development to qualify for federal funding. The new perception is evident in the Illinois public as well, and at the public forums conducted under the Water Plan, conservation was rated third in importance among 18 issues.

It is a present reality that new developments are expensive and are often delayed by environmental considerations. Other factors which incline decision making to conservation are the cost of energy and the overdevelopment of existing water sources in northeastern Illinois and in scattered other locations.

Another aspect of the problem is the limitation of state authority under present Illinois law. Such authority to require conservation is limited to Lake Michigan water and a few other locations where the state has created or purchased reservoir storage.

-Ongoing Activities - During the past two years the Department of Commerce and Community Affairs and the University Water Resources Center each have conducted local or regional workshops to increase awareness and to communicate water conservation technology.

-Work Plan - It is proposed that the State develop and implement a program of technical assistance in water conservation and improved water system management during 1981. It is believed that sufficient technology exists from research, demonstration, and implementation in Illinois and in the U.S. to do this. The principal thrust of the program will be a voluntary and educational one with the municipalities.

Attention will be given also to industries which are large water users. It is recognized that many industries are unique in their water requirements and also that many industries have already achieved considerable water conservation. However, studies will be carried out on the economic and hydrologic impacts of modified water withdrawal and consumptive uses.

Two additional elements of the 1981 Work Plan will be to consider (1) inclusion of conservation elements in the Illinois Plumbing Code and (2) the standards used for state-funded building construction by the Capital Development Board.

4. Floodplain Management

Flood damages have increased over time despite the years of state and federal effort and hundreds of millions of dollars spent on flood control works. Urban development in floodprone areas have simply outpaced damage reduction measures, and only a part of existing damages can be reduced economically. Obviously, floodplain regulation and flood insurance programs, both urban and rural, must be prerequisite to and synchronized with project planning.

(a) Regulatory Program

-Statement of the Problem - Floods cause $300 million in urban damages and $50 million in rural damages, annually. In 1975, a multi-agency task force recommended policies and procedures for addressing the problem in a "Report on Flood Control in Illinois".

The floodplain management program consists of traditional structural measures and of non-structural measures including: statewide regulation of construction in watercourses; regulation of construction in floodplains, when defined by formal processes (6 basins so far); flood insurance technical assistance; and disaster assistance.

Despite the adoption of an excellent Illinois program following from the 1975 report, flooding damages continue to accelerate.

-Ongoing Program - The floodplain regulatory program continues to be administered by the Division of Water Resources with hydrologic/hydraulic and data repository functions being carried out by the State Water Survey. It is the conviction of those involved that the program is falling further behind actual and potential flood experience.

-Work Plan - The Task Force will review the regulatory program during 1981 to determine the causes of inadequate progress. Elements of this review may include:

1. Determine a desirable level of funding.

2. Determine whether inadequate enforcement of floodplain and watercourse construction is taking place.

3. Find the means to end federally funded floodplain encroachment.

4. Quantify the natural values along streams and lakes and assure there are adequate legislation and programs to protect these values.

5. Insure that state facilities or state-supported facilities are not constructed in floodplain areas.

(b) Rural Flood Control

-Statement of the Problem - Rural flood damages are estimated to total over $50 million annually in Illinois. This includes the losses in agricultural income due to flood damages of products, facilities, transportation, and soil and land improvements. It also includes the flood damages occurring in small, rural communities.

Little or no progress appears to be occurring to reduce rural flooding losses. The small watershed program has come to a virtual halt in the state. There are some 1,000 miles of agricultural levees built without much consideration for resultant flood stage increases in other locations.

-Ongoing Program - Traditional approaches to rural flood control are proceeding at a slow pace and therefore the benefits of these approaches are not being realized.

-Work Plan - The area of rural flood control needs a thorough re-evaluation leading to initiatives which will reduce the present high annual damages. The evaluation will need to consider commodity prices, production costs, and taxes as these apply to farming flood-prone rural lands. Facilities in place need to be surveyed, and a program of structural and nonstructural measures devised for the economical reduction of damages. During 1981 a detailed, multi-agency work plan will be developed and agreed upon.

(c) Urban Stormwater Management

-Statement of the Problem - It is estimated that average flood damages to urban areas in Illinois exceed $300 million per year. Flood damages occur in more than 700 municipalities and numerous unincorporated urban areas.

Increasing urbanization throughout the state has led to a corresponding increase in stormwater runoff and often to increased stormwater induced property damages. Existing design procedures vary among municipalities and counties and often lead to locally expedient solutions which are detrimental to downstream areas. Responsibilities for improper drainage have become fractionalized and in many cases the affected citizens are left with neither answers nor solutions to their problems. In addition, the effects of future upstream developments are frequently not considered in the design of local systems. Sophisticated management systems in the Chicago area require better input information to anticipate events so as to optimize operations.

Management of urban stormwater has been largely the responsibility of landowners, developers, and local government. The role of the state has been small.

-Ongoing Program - The subject of flood hazard mitigation is undergoing intense evaluation on the national level. Much of this attention is being focused on urban damages.

Here in Illinois an initial test has been conducted in the Chicago area during two months which has suggested the value to urban stormwater management of highly accurate, short-range, rainfall forecasts and near real time information on observed rainfall.

-Work Plan - It is clear that the national assessment will lead to an increased role for the states in flood hazard mitigation. Even without assuming direct responsibility there is much that the State of Illinois can do. The rain prediction system for the Chicago metropolitan area needs a major demonstration to produce a full measure of value to diverse urban and suburban institutions. During 1981 a detailed plan will be adopted which includes hydrologic and programmatic guidelines for the municipalities of design procedures which are efficient and effective and do not adversely affect downstream areas. An example of this is stormwater detention basins. Institutional solutions for bridging local and regional barriers need study.

5. Competition for Water

(a) Irrigation

-Statement of the Problem - In 1979, about 125,000 acres of cropland were irrigated in Illinois. Historically, Illinois has increased its irrigated acres by around 15 percent annually. Although this is insignificant in terms of total crop acreage ($< .5\%$), there are signs that irrigation could eventually become a major consumptive water user. Therefore, it has the potential for creating huge supply deficits, especially during critical drought periods.

-Work Plan - The issue to be addressed by the State Water Plan Task Force will be to assess the potential for future expansion of irrigation in Illinois and how this will compete with other demands for our water resources. The other major issue is the capacity of current surface and subsurface water supplies to meet current and future water demands as well as the potential for developing new supplies in the context of climate variabilty.

During 1981 irrigation activities will include meeting with irrigation interests to receive more detailed input for developing an implementation and assistance strategy. Having developed the overall strategy, which it is anticipated will include soils, crops, water sources and use, climate, and economic relations, a start will be made on accumulating the data necessary to define potentially suitable areas and to predict the rate and geographical distribution of expanded use.

Eventual activities beyond the first two years will be a consideration of the statutes with respect to the meeting of irrigation requirements. Also required will be water quality/quantity considerations, and possibly, conflict resolution.

(b) Energy

-Statement of the Problem - National energy policy to achieve energy independence will stimulate development of energy sources requiring major allocation of water in competition with industrial, agricultural, municipal, and aquatic habitat needs. The State Water Plan must anticipate the location, magnitude, and impacts of energy development, etc. Water constraints must become an integral part of State and federal energy policy. The following aspects must be addressed as a minimum:

1. Development of synthetic fuels could involve several major plants with water use at each reaching a possible 30 billion gallons per year. Water quality and habitat are affected by withdrawals and by-product disposal, and must be considered in plant siting.

2. Evaluate hydrogeologic effects of surface and deep coal mines on long-term water supply. State promotion of coal development must be cognizant of the direct effects of mining on water supply. Site-by-site analysis is inadequate to address the total impact on the State. Extensive data collection must precede analysis of spoil, dewatering, washing, and impacts on groundwater supplies.

3. Economics and environmental conflicts must be assessed with regard to coal transportaton by barge or slurry pipeline. Accurate assessment of coal demand, coal supply, and water availability must precede establishment of mining goals.

4. Evaluate hydropower potential and effects on instream flow needs. Economic and environmental tradeoffs between developing new sites and retrofitting old sites must be evaluated and policies established.

-Work plan - In the first year it is planned to initiate a resource and technology assessment for synthetic fuel development and use. This study involving water resources availability is aimed at the energy-related problem which has the greatest potential to lead to water conflicts.

(c) Instream Needs

-Statement of the Problem - State, local and corporate water use planning often presumes that all water in a stream is potentially available for off-stream uses. This assumption clearly contradicts legislative mandates regarding the public

interest in preserving water in the stream for (1) navigation, (2) water quality and (3) aquatic organisms, fish and wildlife.

1. Navigation - In its location with respect to the Mississippi, Ohio, Illinois, and Kaskaskia Rivers, and Lake Michigan, commercial navigation is clearly of great importance to Illinois.

Instream flow requirements for commercial navigation are fortunately limited to lockage, since the waterways are essentially canalized and water levels are supported by a system of dams. Recreational navigation, however, includes the use of a variety of smaller streams which can be thought of as having an instream flow need.

2. Water Quality - Water quality is dependent upon the quantity of flow available for dilution, and the design of waste treatment facilities is conditioned upon the amount of receiving water. Under an earlier issue the subject of integration of quality and quantity is elaborated.

3. Aquatic Organsims, Fish and Wildlife - Thinking has only recently evolved to recognize that the needs of aquatic organisms must be known and integrated into the process of allocation of existing or potential water resources.

Instream flow analysis methodologies have been largely developed in the West and must be tested for applicability to Illinois streams and modified as necessary.

Data on the variability of flow regimes in the 18 major watersheds of the State is lacking.

The critical flow needs of the various species of aquatic organisms which inhabit Illinois streams and the riparian vegetation, which depends upon various flows for survival, need to be determined before flow reservation plans can be developed.

-Work Plan - Among the several categories of instream flow needs, the one most urgent for evaluation is that relating to aquatic organsims. Fortunately the process of evaluating such needs has begun during the past year. It will be accelerated during 1981. The work can be characterized by the following three steps:

a. Carry out sufficient research to develop information on the instream flow requirements of target species of aquatic organisms in the State's 18 major river basins.

b. Develop and modify species habitat preference curves to reflect data from fish and invertebrate collection in Illinois streams.

c. Develop sufficiently detailed information on the yearly distribution of flow to enable the determination of the impact of distribution on associated aquatic life forms.

(d) Urban Uses

-Statement of the Problem - Urban use and competition for limited water resources is most evident in northeastern Illinois. In that region Lake Michigan affords a seemingly endless water supply source for the Chicago Metropolitan area. This diversion was frozen by a U. S. Supreme Court decision in 1967 at 3,200 cfs (2,068 MGD). Many suburban communities and industries still obtain well supplies from the deep (Cambrian-Ordovician) aquifer. The current withdrawal of 150 MGD is three times faster than natural recharge. At least 100 MGD of deep aquifer extraction must be transferred to new water supply sources quickly. The Plan must address alternative institutional mechanisms to promote or accomplish this transfer.

Many communities have developed water supply reservoirs at considerable distance upstream from a town and have used existing watercourses to transmit their releases to the treatment and distribution systems. The problem with this transmission method is that the water user must either acquire flowage easements, increasing the cost of water, or run the risk that someone else between the source and the user will divert and use the water. The Plan should investigate alternative mechansims for protection of instream transmission.

-Work Plan - The state will develop a program with municipalities, particularly in the Chicago region, to aid them in establishing improved management including water conservation, and alternate sources where needed.

Also to be continued during 1981 will be the inventory and evaluation presently underway of water supplies for problem communities throughout the state as these relate to urban and regional uses and competition.

6. Aquatic and Riparian Habitat Degradation

-Statement of the Problem - Aquatic environments can be placed into three broad categories--streams, impoundments and wetlands. Illinois has more than 900 streams covering over 13,200 miles and 83,365 impoundments containing 1,273,909 acres. There has been no recent assessment of the magnitude of wetland environments remaining in Illinois, so acreage and numbers cannot be specified. Each of these resources have unique characteristics; however, all three types share the common problems of loss of water volume through sedimentation and degradation of water quality in influxes of organic and inorganic pollutants. Stream environments continue to be modified through canalization, substrate mining, and removal of streamside vegetation and by inundation. Impoundments are degraded by overdevelopment of shoreline, nutrient-accelerated eutrophication, excessive artificial beach development, and siltation. Wetlands are lost through draining and by utilizing them as land fills. All of these forces act to both decrease

species diversity and the compatibility of Illinois waters and their adjacent lands as quality environments for water-dependent organisms.

Efforts to protect and manage Illinois' aquatic habitats are constrained by the following obstacles:

a. While the number of impoundments is known, and the IEPA has already collected some physical and chemical information, additional data is needed to facilitate development of effective management techniques to address existing problems.

b. Although information on the water quality of some streams has been gathered for the past 15 years and occurrence records for fish, mussels and other aquatic life for approximately one half of the State's streams exists, land use information for the watershed of each stream, the extent of man's impacts on stream environments and the miles and acreage of riparian vegetation which still exists along the State's stream corridors has never been assessed.

c. Optimum flow condition for many of Illinois' stream-dwelling organisms and recreational and commercial users are unknown, making the establishment of minimum flow guidelines difficult.

d. The lack of an organized body of information on Illinois' wetland resources, including backwater and oxbow lakes seriously limits State attempts at wetland classification, protection, and management.

e. No State agency has been designated responsiblity for the protection of wetlands and natural stream environments and their associated riparian lands.

f. Mechanisms are lacking in many instances to mediate conflicting water uses, and there is no clear State policy on the value and protection of healthy aquatic habitats.

g. There is an unclear State mandate and inadequate mechanisms to insure equal consideration of environmental factors in water use and development planning and permitting.

h. There are insufficient funding sources and mechansims at both the state and local levels to finance rehabitation of degraded aquatic environments.

-Work Plan - A long-range program has been designed which, over a period of years, will carry out the following steps:

a. Examine existing programs, institutional frameworks, and statutory authorities which affect the protection and management of riparian and aquatic environments in Illinois and recommend needed policy and improved strategies for overcoming the previously identified obstacles.

b. Carry out comprehensive, computer-based inventories of the present physical, chemical and biological characteristics of both Illinois stream and wetland environments, incorporating the work already begun by IEPA and including the collection of data on shoreline vegetation, urban encroachment and intrusions by man. Classify each type of environment and make recommendations for its protection and management.

c. Complete an analysis of gross land use in the watersheds of Illinois' more than 900 streams and develop recommendations for the management of each based upon watershed characteristics.

d. Carry out appropriate research to determine the best management practices for lake watershed management, in situ lake management, lake outflow water quality and quantity management, recovery and re-use of sediments, and techniques for the reservation of future impoundment sites and site feasibility analysis parameters.

e. Through legislation, executive order, or both, designate lead agency responsibility for the protection of wetlands, stream corridors and impoundments, and develop: a unified State policy on the protection of Illinois' aquatic habitats, State environmental guidelines for water resource development projects, and procedures to insure interagency coordination.

Activities proposed for 1981 are a detailed ~~total program~~ assessment leading to a final report. Other activities will include inventories of the streams, wetlands, instream flow needs and watershed land use.

7. Recreation

-Statement of the Problem - The opportunity to participate in outdoor recreation is a basic right of Illinois citizens. However, neither sufficient land nor water exists to satisfy the demand for outdoor recreation opportunities. There are many reasons for this supply-participation imbalance. For water-based recreation, they include: insufficient available surface water in the quantity, location and quality desired by recreators; extensive physical and chemical degradation of the aquatic environment; and the lack of properly located access.

Stream channel modification and floodplain encroachment have destroyed and continue to threaten large portions of the State's finest natural and recreationally significant stream corridors. No agency is designated by Illinois law to protect the State's recreationally significant streams, lakes, and wetlands.

A balanced program, based on an analysis of deficits, to acquire important aquatic areas, restore deteriorated aquatic environments, develop recreation facilities and institute needed controls is necessary if Illinois is to adequately address this situation.

Illinois' 1977 Statewide Comprehensive Outdoor Recreation Plan (SCORP) adopted the following five state policy objectives:

1. To provide recreation opportunities for all Illinois' citizens.

2. To preserve and enhance the environment, both natural and man-made.

3. To provide public outdoor recreation programs and opportunities which are as non-competitive with the private sector as possible.

4. To educate our citizens to internalize a conservation ethic in their environmental decision making.

5. To identify the institutional framework needed to insure that state recreational goals and objectives are achieved.

The plan identifies 32 additional policies specifically related to water-based recreation and the aquatic environment.

-Work Plan - The 1977 Statewide Comprehensive Outdoor Recreation Plan (SCORP) formulated aquatic management objectives consisting of: (1) support to local governments for sound shoreline management, (2) statutory protection to lakes and streams, (3) preservation of lake sites with prime outdoor recreation potential, (4) cost-sharing in recreational development at multiple-purpose reservoirs, (5) land treatment, (6) clarification of public access rights to streams.

The Illinois Historic Preservation Plan identifies water-related cultural sites requiring preservation as well as land sites requiring protection against water management activities, such as levees, impoundments, and floodplain encroachment.

These recent evaluations and plans become the long-term plan for water-based recreation under the State Water Plan.

During 1981 it is intended to conduct a comprehensive program assessment of existing State and Federal Programs that effect the recreational use of water. Program assessment reports will also be completed for a streams inventory, a legal study related to access, a user needs study, a conflict analysis, a Lake Michigan study, and a study of urban waterfronts.

8. Atmospheric Controls

(a) Atmospheric Deposition and Climate Change

-Statement of the Problem - Natural and man-made climate changes are taking place which affect the quality and quantity of our water resources.

One particular area of concern is the material being deposited on the surface of Illinois including acid rainfall. The sources, transport, transformation, and deposition of pollutants, plus their impacts on the water resources of Illinois represent a major unknown. Changes in temperature and precipitation, due partly to industrial activities, large cities, and jet aircraft are producing local and regional changes in climate although the future magnitude and trends are uncertain. The ability to detect climate trends and to predict trends up to five years in advance present an opportnity to adjust water resources planning and avoid later operational problems.

Obstacles to progress relate to the lack of data and research to document the reality, magnitude and impacts of these changes, to identify man's influence for management strategies, and to evolve climate predictions. Information about existing capabilities is not flowing to the user community.

-Ongoing Program - Illinois has maintained an active program of research on natural and man-made climatic change with federal support over a period of years. In addition the Illinois State Water Survey operates the Central Analytical Laboratory where wet and dry fallout samples from throughout the United States are analyzed.

-Work Plan - Atmospheric deposition and climate change are potentially of substantial importance to the management of Illinois water resources. However, at the present the processes are not sufficiently understood to determine spacial and temporal variability or to form the basis for climate prediction. Therefore, the Plan of Study will maintain this subject in a research mode with non-planning support from state and federal sources. The approach to solving the problems would include: installation of an atmospheric deposition network across Illinois (to describe the time and space variations of pollutant deposition over a period of years); the identification of the impact on the waters of Illinois of altered climate and atmospheric pollutants; study of the trends and variations of temperature and precipitation and other important weather variabilities; and concentrated statistical research to improve evolving capabilities to predict climate trends.

(b) Planned Weather Modification

-Nature of the Problem - Planned enhancement of precipitation is one emerging technology for increasing water supplies of Illinois, but it is still frought with scientific and social uncertainties. Research has been adequate to illustrate that if it could be done, sizable economic and environmental benefits would accrue in most years but not in severe droughts or in extreme wet periods.

-Ongoing Programs - Illinois farmers and agribusinesses have spent $0.5 million in the past 4 summers to support cloud seeding projects to increase rainfall. These operational projects are largely unevaluated as to their effectiveness.

At the same time the state with major federal support has conducted both theoretical studies and large field experiments to develop the base of knowledge for eventual implementation if weather modification proves feasible.

-Work Plan - Weather modification, and particularly cloud seeding for rainfall increases, is potentially of great importance to the management and increase of our water resources. At the present time uncertainties are too great for adoption and implementation of a major statewide operational program. Therefore, a program of research and experimentation will be encouraged with state and federal funding outside of the planning process.

On one hand is the need to perform the complex scientific research required to prove whether and how precipitation can be increased and by how much, in various seasons. This calls for a major national experiment partially lauched in 1980 as a 4-state effort (Illinois, Indiana, Michigan and Ohio) with federal funding. This effort will need multi-million dollar support for up to 10 years. At this time the effect of various cloud seeding materials on the state's rain and surface water quality is unknown and needs resolution.

The other major issue of concern is the evolution of the ongoing and future cloud seeding projects. These are not experimental in nature and based on the user's belief that seeding will increase rain, ignoring the possibilities it might do nothing or even decrease rain. These locally suported projects represent both institutional and scientific opportunities and create issues for the state to address. Such projects are now regulated by a model state law, a wise early state decision. Supporters of cloud seeding are now calling for joint state and/or local tax support of projects. This could evolve into state costs of $1 million annually.

These operational projects need to be evaluated as to their likely changes in rainfall, a difficult but important task that can inform the supporter and the state as to its general effectiveness, as well as providing useful scientific information. In addition to the results of the evolving major experiment, operational projects, if properly instrumented with certain weather equipment, in a piggyback approach, could provide considerable useful scientific information as to the approach and utility of cloud seeding.

9. Drought Contingency Planning

-Statement of the Problem - The occasional severe

droughts that occur in Illinois bring a series of predictable and repeatable problems. These include insufficient water supplies in selected communities, difficult institutional reactions to drought relief and advice, questions over use of weather modification, and water management decisions relating to the onset, severity, duration, and ending of the drought. There is a lack of local planning to avoid drought impacts as well as to deal with drought-induced shortages.

-Ongoing Activities - The state is well along in a program to identify those communities whose water supply capability is at risk during drought periods. This is being accomplished for both surface and groundwater sources and will also identify whether potential deficiencies are resource related or facility related. This program is also updating the State Water Survey Bulletin 51 of 1964 on "Low Flows of Illinois Streams for Impounding Reservoir Design."

Promising climatological research is underway at both the state and national level which hopefully will lead to the ability to predict in advance the onset, severity and duration of droughts. This will make it possible to anticipate and initiate contingency planning which will mitigate the effects of droughts.

-Work Plan - During 1981 it is planned to complete the ongoing activities of resource and facility adequacy which will set the stage for the following year in which contingency plans including institutional responses will be developed with each of the identified communities.

Every encouragement will be given to climatological research on drought forecasting by agencies at the state and federal levels.

10. Illinois Water Use Law

-Statement of the Problem - Water use rights derive primarily from state law. In Illinois, we have an uncodified collection of court decisions and statutes which define some of the rights and duties.

Court decisions have dealt mostly with water shortages affecting individual landowners along a watercourse. This part of common law is considered well settled and is called the "reasonable use doctrine" of riparian rights. A person who owns land along a watercourse has a right to use the water for his own benefit on his own land as an incident of ownership. His use is limited by an equal right of all other riparian landowners. None may use more than a reasonable share in time of shortage.

Cities and villages are rarely riparian landowners. Their rights to obtain public water supply come from legislative grant. Statutes now provide public water supply rights and powers to local governments, special districts, and regulated utilities.

The main defect in Illinois water use law is apparent. There is no means to prevent water shortages from occurring. Instead, every water user's needs are clouded by uncertainty. New users can tap a source until the supply is inadequate for all. Court allocation will only share the shortage, which is hardly a solution.

Government programs concerned with water supply do not control energy siting decisions.

No protection presently exists in law for a community which responsibly develops its water supply at an economically and environmentally optimum site--remote from its intake facilities.

Under the present law the state is limited in many ways in carrying out desirable water management.

-Ongoing Programs - At the present time there seems to be little expressed interest or activity leading to modification of existing water laws.

-Work Plan - Revision of existing water law will not be an early objective of the State Water Plan. It will remain an active discussion topic and tested against the various programs and issues which merge. Perhaps at some future time legislation will be proposed, and the timing of this is likely to be related to unusual weather events such as a drought.

Cross-Cutting Topics

Conflict Resolution

This topic is not an issue in the sense of those previously identified and discussed. Rather it is a subject for continuing attention as the Water Plan is developed.

-Statement of Problem - Illinois has been remarkably free of water conflicts in the past. This can be attributed generally to the ample water resources. Conflicts which have arisen have been resolved under existing laws and programs by public works to increase supplies, by accommodation between the parties at issue, and in rare cases, by the courts.

This circumstance of absence of conflict cannot necessarily be expected to continue. Water withdrawal in the State is now in

the same order of magnitude as average supply. This can be expected to lead to conflicts during times of limited supplies. Possible conflicts may involve traditional uses and could certainly involve the growing irrigation use or the location in Illinois of a coal conversion plant.

Conflicts which can be anticipated could be within or between the following levels of government:

local
local vs another local
local vs state
local vs. federal
state agency vs state agency
state vs federal
interstate (i.e., Indiana)

In addition there could be regional conflicts or differences involving various private industries or interest groups.

-Ongoing Activities - It is probably fair to say that little attention is currently being directed to methods of conflict resolution in the field of water resources.

Meaningful Public Participation

-Statement of the Problem - A significant new facet of the administration of water resource related programs is the increasing emphasis on direct public participation in the planning processes associated with these programs. There seems to be growing recognition of the usefulness to both decision-makers and "publics" of two-way communication supported by timely information/education activities. However, it is also apparent that the concept of "public participation" means different things to different people and agencies. Most of the agencies associated with the Task Force have developed program specific approaches to public participation/education which may or may not blend well together for the ongoing process of water management in Illinois. The crux of this cross-cutting issue is not the effectiveness or appropriateness of any particular independent activity, but rather how these many efforts interrelate within the context of a matrix of programmatic activities for water management.

-Ongoing Activities - As has been mentioned, most agencies have some type of public participation/education program. Typical mechanisms include special advisory groups, newsletters, public notices and hearings, and various technical and general reports. Historically, regulatory agencies have used somewhat different approaches than service agencies and probably focused on different "publics". Apart from the direct line activities of the administrative agencies, lies the Water

Resources Commission which serves as a focal point for legislative involvement in water management. Another supportive role is played by the Water Resources Center which serves to tie the academic community into state water management activities.

-Work Plan - During 1981 it is planned to establish an interagency work group composed of key "public participation" staff from the agencies represented on the Task Force. In general, this group will be focusing on interrelated aspects of involving the public at selected points in the planning process prior to key decision-making activities. The Department of Commerce and Community Affairs (DCCA) will chair this work group. The Water Resources Commission and the Water Resources Center will serve in key roles as points of liaison with the General Assembly and the academic community. Special attention will be given to the use of readily available mechanisms within existing programs for enhancing and coordinating the communications process for water management in Illinois. This may involve consideration of multiple "publics", identification of public values and needs, assessment of levels of interest, and facilitation of communication and involvement. A specific assignment will involve development of the detailed public participation program to be implemented during the development of the State Water Plan.

The two advisory groups established during the Plan of Study phase will be continued, and the local steering committees will serve as regional advisory committees. The Water Resources Center will continue to serve as the liaison with these regional committees.

DIVISION OF RESPONSIBILITY FOR PLAN DEVELOPMENT

DIVISION OF RESPONSIBILITY FOR PLAN DEVELOPMENT

	Issue	Lead Agency	Support
1.	Erosion & Sediment Control	IDA	INR, IEPA, IWRC
2.	Integration of Water Quality and Quantity Management	IEPA	DWR, INR
3.	Water Conservation	DCCA	WRC, CDB, IDPH, DWR
4.	Floodplain Management	DWR/IDA	
	(a) Regulatory Program	DWR	
	(b) Rural Flood Control	IDA	
	(c) Urban Stormwater Mgmt.	INR	DWR
5.	Competition for Water	OG	INR
	(a) Irrigation	IDA	INR, DWR, WRC
	(b) Energy	INR	
	(c) Instream Needs	DWR	DOC, IEPA
	(d) Urban Uses	DWR	
6.	Aquatic & Riparian Habitat Degradation	DOC	INR
7.	Recreation	DOC	
8.	Atmospheric Controls	INR	
9.	Drought Contingency Planning	DCCA	INR, ESDA
10.	Illinois Water Use Law	DWR	IWRC
	CROSS-CUTTING TOPICS		
	Conflict Resolution	OG	Task Force Agencies
	Meaningful Public Participation	DCCA	Task Force Agencies

Key

IDA	Illinois Department of Agriculture
CDB	Capital Development Board
DCCA	Department of Commerce and Community Affairs
DOC	Department of Conservation
ESDA	Emergency Services and Disaster Agency
INR	Institute of Natural Resources
IEPA	Illinois Environmental Protection Agency
DMM	Department of Mines and Minerals
OG	Office of the Governor
IDPH	Department of Public Health
DWR	Department of Transportation/Division of Water Resources
WRC	Water Resources Center
IWRC	Illinois Water Resources Commission

RESOURCES AND EXISTING PROGRAMS

The thrust of this water plan is to identify problems which require timely action to avert future crisis. The emphasis on emerging problems may falsely impress the reader with their importance in relation to existing problems and programs. For comparison, it is sufficient to note here that existing problems represent nearly a quarter billion dollar annual effort while the emerging issues represent only a small fraction of that amount.

The Plan will contain a limited description of the State's resources plus ongoing management programs excerpted from great volumes of documentation generated annually. A bibliography will be provided for the interested reader.

APPENDIX

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B. SCHEDULE

LEAD AGENCY ABBREVIATIONS USED IN SCHEDULE

BOB	Bureau of the Budget
CDB	Capital Development Board
DCCA	Department of Commerce and Community Affairs
DOC	Department of Conservation
DPH	Department of Public Health
DWR	Division of Water Resources
ESDA	Emergency Services and Disaster Agency
IDA	Illinois Department of Agriculture
IEPA	Illinois Environmental Protection Agency
INR	Institute of Natural Resources
IWRC	Illinois Water Resources Commission
OG	Office of the Governor
WRC	Water Resources Center
UI/EX SVC	University of Illinois Extension Service

CHART SYMBOLS USED IN SCHEDULE

Y:	Yes the activity was part of the FY 80 Title III Program
C:	Continous activity
I:	Intermittent activity
T:	Key milestone termination date
A:	Annual activity

EROSION AND SEDIMENT CONTROL

EROSION AND SEDIMENT CONTROL ACTIVITY 1981 TASK OR MILESTONE	LEAD AGENCY	FY 80	1	2	3	4	5	FY 81 6	7	8	9	10	11	12	FY 82 End
Continue Sediment Observations	INR	Y	C	C	C	C	C	C	C	C	C	C	C	C	1984
Evaluate Interagency Soil Erosion Prog.	IDA														
Develop a state level advisory committee to assist the IDA, DNR in identifying priority soil erosion areas and provide a multi-disciplined approach to formulating soil erosion implementation strategies.	IDA	Y	C	C	C	C	C	T							
Promote Program Accessibility & Accountability.	IDA	Y	C	C	C	C	C	C	C	C	C	C	C	C	C
Establish Erosion Control Priority System	IDA	Y	I	I	I	I	I	I	I	I	I	I	I	I	
In cooperation w/other state and federal agencies evaluate the accuracy & usability of computer modeling techniques to identify tracts of land w/high erosion potential.	IDA	Y	C	C	C	C	C	C	C	C	C	C	C	C	1984
Evaluate Interrelationship of Soil Erosion, sediment delivery & water quality and quantity.	IEPA	Y	C	C	C	C	C	C	C	C	C	C	C	C	
Monitor the Rural Clean Water Program as it relates to a comprehensive evaluation of the effect of BMP's on water quality.	IDA	Y	C	C	C	C	C	C	C	C	C	C	C	C	
Initiate a comprehensive literature search to evaluate incentives for BMP application.	IDA	Y	C			C			C	C	C	T			

EROSION AND SEDIMENT CONTROL ACTIVITY 1981 TASK OR MILESTONE (Cont'd)	LEAD AGENCY	FY 80	FY 81 1	2	3	4	5	6	7	8	9	10	11	12	FY 82 End
Examine State Cost-Sharing for Minimum Tillage.	IDA	Y	C	C	C	C	C	C	C	C	C	C	C	C	
Initiate a comprehensive literature search to evaluate incentives for BMP appliction	IDA	Y	C	C	C	C	C	C	C	C	C	T			
Promote land treatment projects through the Watershed Protection and Flood Prevention Act, ACP, Special Projects, RCWP, and 314 programs.	IDA	Y	C	C	C	C	C	C	C	C	C	C	C	C	

INTEGRATION OF WATER QUALITY AND WATER QUANTITY
MANAGEMENT INCLUDING SURFACE & GROUNDWATER REGIMES

INTEGRATION ACTIVITY 1981 TASK OR MILESTONE	LEAD AGENCY	FY 80	FY 81 1	2	3	4	5	6	7	8	9	10	11	12	FY 82 End
Construct Matrix of Interactions	IEPA														
Compile inventory of existing plans and studies as base reference information	IEPA	Y	I	I	I	I	I	I	I	I	I	I	T		
Document existing institutional and programmatic baseline	IEPA	Y	I	I	I	I	I	I	I	I	I	I	T		
Evaluate existing information base, policy & programs relative to objectives, deficiencies & overlap	IEPA	Y													
Identify technical, legal & institutional studies & elements necessary to complete conceptual framework & formulate detailed plan of action & integrated trade-off policy	IEPA	Y	I	I	I	I	I	I	I	I	I	I	T		

1982 ACTIVITY	LEAD	FY 82 1st Qtr	FY 82 2d Qtr	FY 82 3d Qtr	FY 82 4th Qtr	FY 82- End
Carry-out any studies identified in initial phase	IEPA	C	C	C	C	T1983

1982 ACTIVITY (cont'd)	LEAD	FY 82 1st Qtr	FY 82 2d Qtr	FY 82 3d Qtr	FY 82 4th Qtr	FY 83- End
Evaluate multiple level impacts & trade-off alternatives to refine baseline priorities & objectives for State Water Plan	IEPA	C	C	C	C	T1983
Interface with other issue development to ensure cross-cutting planning approach	IEPA	C	C	C	C	T1983
Develop specific program & plan elements for implementation	IEPA	C	C	C	C	T1984
Establish framework for continuous update & refinement during plan and implementation phases	IEPA	C	C	C	C	T1984

WATER CONSERVATION

CONSERVATION ACTIVITY 1981 TASK OR MILESTONE	LEAD AGENCY	FY 80	1	2	3	4	5	FY 81 6	7	8	9	10	11	12	FY 82 End
Conduct education & technical assistance	DCC	Y	C	C	C	C	C	C	C	C	C	C	C	C	C
Evaluate Impact of Industrial Conservation	INR		C	C	C	C	C	C	C	C	C	C	C	T	
Analyze, propose and enact appropriate changes in State Plumbing Code	DPH		I	I		I	I	I	I	I	I	I	I	I	
Analyze and propose changes in construction standards	CDB	Y	C	C	C	C	C	C	C	C	C	C	C	C	T1982

FLOODPLAIN MANAGEMENT

FLOODPLAIN MANAGEMENT ACTIVTYY 1981 TASK OR MILESTONE	LEAD AGENCY	FY 80	1	2	3	4	5	FY 81 6	7	8	9	10	11	12	FY 82 End
Implementation of "Governor's Task Force Report for Flood Control In Illinois" (pp.65-75)	DWR														
Assess Staff Capability			C	C	C										
Assess Legal Availability						C	C	C							
Assess Legal Authority									C	C	C				
Formulate Resolution Strategy												C	C	T	
Assess Whether Enforcement of Encroachment is Adequate	DWR														
Evaluate Damages			C	C	C										
Review Litigation						C	C	C							
Compute Optimum									C	C	C				
Develop Remedial Stretegy												C	C	T	
Develop Mechanism to Mitigate Federally-Funded Floodplain Encroachment	DWR														
Estimate Scope			C	C	C										
Identify Violations of Policy						C	C	C							
Notify Violators of Concern									C	C	C				
Formulate Coercive Strategy												C	C	T	
Insure State Facilities Not Constructed in Floodplain	OG														
Review Budgets			I												A
Veto Legislative Violations							T								A
Quantify Natural Values Along Streams and Assess Legal Protection	DOC		C	C	C	C	C	C	C	C	C	C	C	C	T1982

RURAL FLOOD CONTROL ACTIVITY 1981 TASK OR MILESTONE	LEAD AGENCY	FY 80						FY 81						FY 82 End
			1	2	3	4	5	6	7	8	9	10	11	12	
Develop method to Evaluate and Prioritize Rural Watershed Projects	IDA				C	C	C	C	C	C	C	C	C	T	
Evaluate Change in Watershed Hydrology from Installation of BMP	IDA				C	C	C	C	C	C	C	C	C	T	
Evaluate Sediment Removal Methods as a Tool in Rural Flood Control & Water Supply	IDA	Y	C	C	T										

URBAN STORMWATER ACTIVITY 1981 TASK OR MILESTONE	LEAD AGENCY	FY 80	1	2	3	4	5	FY 81 6	7	8	9	10	11	12	FY 82 End
Urban Stormwater Manual	DWR	Y	C	C	C	C	C	C	C	C	C	C	C	T	

URBAN STORMWATER MANAGEMENT MANUAL 1982 ACTIVITY	LEAD	FY 82 1st Qtr	FY 82 2d Qtr	FY 82 3d Qtr	FY 82 4th Qtr	FY 82- End
Urban Rain Forecast Systems						
a. Demonstrate & evaluate	INR	C	C	C	C	T1984
b. User assessment	INR	C	C	C	C	
Urban Rain-Runoff Modeling and Field Studies	INR	C	C	C	C	T1986
Urban Runoff Institutional Studies	INR	C	C	C	C	T1984

COMPETITION FOR WATER

IRRIGATION ACTIVITY 1981 TASK OR MILESTONE	LEAD AGENCY	FY 80	1	2	3	4	5	FY 81 6	7	8	9	10	11	12	FY 82 End
Develop Assistance Strategy	IDA		C	C	C	C	C	C	C	C	C	C	C	C	

IRRIGATION 1982 ACTIVITY	LEAD	FY 82 1st Qtr	FY 82 2d Qtr	FY 82 3d Qtr	FY 82 4th Qtr	FY 83- End
Conduct following activities for basins indicated:						
Investigate the capacity & re-recharge capacity in potential growth areas	INR	I	I	I	I	T1983
Examine the supply potential of reservoirs rivers, and lakes in growth areas	INR	I	I	I	I	T1983
Evaluate the potential for irrigation growth by hydrologic unit & correlate this with future demands of competing needs.	IDA/ DWR	I	I	I	I	T1982
Provide irrigation management data to users	UI/ExSvc	I	I	I	I	A
Investigate the effect of mineral & salt leaching on water quality	INR/IEPA	I Oct.	I	I	I	T1983

ENERGY ACTIVITY 1981 TASK OR MILESTONE	LEAD AGENCY	FY 80	1	2	3	4	5	FY 81 6	7	8	9	10	11	12	FY 82 End
Synfuel Site Optimization Study	INR		C	C	C	C	C	C	C	C	C	C	C	C	

ENERGY 1982 ACTIVITY	LEAD	FY 82 1st Qtr	FY 82 2d Qtr	FY 82 3d Qtr	FY 82 4th Qtr	FY 83- End
Assess Impacts of Different Levels of Coal Transport Via Different Modes	INR					
Form Work Groups		I				
Analyze Existing Studies		C	C	C		
Determine Alternative Scenarios			C	C	C	
Determine Impacts of Alternatives					C	T1983
Final Report & Recommendations						T1983
Assess Hydrogeologic Effects of Surface & Deep Coal Mines on Long Term Water Supply in Illinois	INR					
Site Selection		I	T			
Drilling & Instrumentation		I	I	T		
Soil Sampling		I	I	I	I	T1983
Ground Water Monitoring		I	I	I	I	T1983
Analysis & Final Report						T1984

ENERGY 1982 ACTIVITY	LEAD	FY 82 1st Qtr	FY 82 2d Qtr	FY 82 3d Qtr	FY 82 4th Qtr	FY 83- End
Assess Impact of Synthetic Fuel Development From Coal	INR					
Legal Analysis		C	C	C	C	
Technology Assessment		C	C	C	C	
Demand Sector Anlaysis			X	C	C	
Secondary Impacts					C	T1983
Siting Analysis						T1983
Final Report						T1983
						T1983
Exploration of Feasibility of Hydropower at Existing Dam Sites	INR	I	I	I	I	Unk

INSTREAM NEEDS ACTIVITY 1981 TASK OR MILESTONE	LEAD AGENCY	FY 80	FY 81 1	2	3	4	5	6	7	8	9	10	11	12	FY 82 End
Investigate flow requirements of target species of aquatic organisms	DWR	Y	C	C	C	C	C	C	C	C	C	C	C	C	T1986
Develop and modify species flow preference curves to reflect data from fish & invertebrate collections	DWR	Y	C	C	C	C	C	C	C	C	C	C	C	C	T1986
Develop sufficiently detailed information on the yearly distribution of flow to enable the determination of the impact of distribution on associated aquatic life forms	DWR	Y	C	C	C	C	C	C	C	C	C	C	C	C	T1986

INSTREAM NEEDS 1982 ACTIVITY	LEAD	FY 82 1st Qtr	FY 82 2d Qtr	FY 82 3d Qtr	FY 82 4th Qtr	FY 83- End
Continue 1981 activity for remaining river basins	DWR	C	C	C	T1986	
Collect physical data on flow regimes of State's basins	DWR	C	C	C	T1986	
Analyze flow needs for recreational and commercial uses of streams	DWR		C	C	T1986	
Identify reaches where present & future withdrawals are likely to compete with instream needs	DWR	C	C	C	T1986	
Develop a plan which incorporates critical reach information, instream flow needs, & annual duration info into recommended engineering & non-engineering systems to meet optimal water use needs while maintaining critical instream flow uses		I	I	I	T1986	
Develop a legal framework for the protection, management & regulation of state waters by providing for the designation of water resource management areas & the implementation of a system of permits for the withdrawal and use of water.		I	I	I	T1986	

URBAN USES ACTIVITY 1981 TASK OR MILESTONE	LEAD AGENCY	FY 80	1	2	3	4	5	FY 81 6	7	8	9	10	11	12	FY 82 End
Review Shallow Aquifer Drilling Program For N.E. Illinois	DWR		C	C	C	C	C	C	C	T					
Conduct Inventory of Public Water Supply Problems	DWR		C	C	C	C	C	C	C	C	C	C	C	C	T1982
Devise Mechanisms to Anticipate Areas Where Regional Demand Will Exceed Supply	DWR											C	C	C	T1982

URBAN USES 1982 ACTIVITY	LEAD	FY 82 1st Qtr	FY 82 2d Qtr	FY 82 3d Qtr	FY 82 4th Qtr	FY 83- End
Analyze and Identify Regional Problem Densities	DWR	C	C	C	C	T1983
Determine Problem Cause: Local Deficiencies or Reg. Competition	DWR			C	C	T1983
Formulate appropriate State response: Inaction, Technical Assistance, Allocation	DWR				C	T1983
Generalize Results As Appropriate To Problems Statewide	DWR				C	T1983
Formulate Strategies to Avoid Overdraft Including Demand Modification & Source Development	DWR					T1983

AQUATIC AND RIPARIAN HABITAT
DEGRADATION

HABITAT ACTIVITY 1981 TASK OR MILESTONE	LEAD AGENCY	FY 80	1	2	3	4	5	FY 81 6	7	8	9	10	11	12	FY 82 End
Examine Existing Programs and Recommend improved Strategies			C	C	C	C	C	T							
Inventory Environmental Characteristics			C	C	C	C	C	C	C	C	T				
Classify Environments									C	C	C	T			
Recommend Management Measures												I	I	I	

HABITAT 1982 ACTIVITY	LEAD	FY 82 1st Qtr	FY 82 2d Qtr	FY 82 3d Qtr	FY 82 4th Qtr	FY 83- End
Assessment of Land Use Impact on Stream Water Quality						
a. Land Use Inventory	DOC	C	C	C	C	
b. Demonstrate improvement due to watershed management	DOC					T1985

HABITAT 1982 ACTIVITY CONT'D	LEAD	FY 82 1st Qtr	FY 82 2d Qtr	FY 82 3d Qtr	FY 82 4th Qtr	FY 83- End
Water Quality Enhancement of Public Water Supply Impoundments						
a. Demonstrate in situ water quality enhancement techniques	DOC	C	C	C		T1983
b. Evaluate and assess public benefits	DOC					T1985
Desirability & Economic Evaluation of Perched Lakes as an Alternative to In-stream Impoundments	INR	C	C	C	C	
Investigations to Characterize Backwater Lake Systems	INR	C	C	C	T	
Develop Unified Policy on Protection of Aquatic Habitats	INR			C	T	

RECREATION

RECREATION ACTIVITY 1981 TASK OR MILESTONE	LEAD AGENCY	FY 80	1	2	3	4	5	FY 81 6	7	8	9	10	11	12	FY 82 End
Finalize Plan of Study	DOC	Y	T												
Program Assessment:	DOC														
Component Studies															
Inventory		Y	C	C	C	C	C	C	C	C	C	C	C	T	
Legal study			C	C	C	C	C	C	C	C	C	C	C	T	
Prepare preliminary scopes of work for User Needs, Commercial-Recreational Conflict, Lake Michigan, Urban Waterfronts									I	I	I	I	I	T	
Complete Program Assessment	DOC							End							

RECREATION 1982 ACTIVITY	LEAD	Fy 82 1st Qtr	FY 82 2d Qtr	FY 82 3d Qtr	FY 82 4th Qtr	FY 83- End
Complete Phase I of Component Studies & Develop 2nd Yr.Program				T		
Complete draft issue discussion for State Water Plan				T		
Final issue discussion for Plan						T1983

ATMOSPHERIC CONTROLS

DEPOSITION/CLIMATE CHANGE 1982 ACTIVITY	LEAD	FY 82 1st Qtr	FY 82 2d Qtr	FY 82 3d Qtr	FY 82 4th Qtr	FY 83- End
Evaluate current trend of precipitation acidity	INR	C	C	C	C	T1983
Evaluate response of natural precipitation chemistry to increased fossil fuel comsumption.	INR		C	C	C	T1983
Evaluate response of Illinois soils, water and agriculture to precipitation chemistry.	INR			C	C	T1983
Evaluate possible interstate and international implications & liability for impacts outside Illinois.	INR					

WEATHER MODIFICATION 1982 ACTIVITY	LEAD	FY 82 1st Qtr	FY 82 2d Qtr	FY 82 3d Qtr	FY 82 4th Qtr	FY 83- End
Investigate Influence of Seeding Material on Rain & Water Quality		C	C	C	C	C
Evaluation and Piggyback Efforts		C	C	C	C	T1983
Public Information, Attitude Sampling, & Reasearch Into Institutional Adjustment		C	C	C	T1984	

DROUGHT CONTINGENCY PLANNING

DROUGHT ACTIVITY 1981 TASK OR MILESTONE	LEAD AGENCY	FY 80	1	2	3	4	5	FY 81 6	7	8	9	10	11	12	FY 82 End
Community Drought Prone Study and Information Program	DCCA		C	C	C	C	C	C	C	C	C	C	C	C	T1982

DROUGHT 1982 ACTIVITY	LEAD	FY 82 1st Qtr	FY 82 2d Qtr	FY 82 3d Qtr	FY 82 4th Qtr	FY 83- End
Drought Definition and Institutional Ajustments	DCCA	C	C	C	C	T1982
Use of Weather Modification	INR					
Research of Drought Prediction	INR	C	C	C	C	End 1983

ILLINOIS WATER USE LAW

WATER LAW ACTIVITY 1981 TASK OR MILESTONE	LEAD AGENCY	FY 80	1	2	3	4	5	FY 81 6	7	8	9	10	11	12	FY 82 End
Conduct Inventory of Water Problems	DWR		C	C	C	C	C	C	C	C	T				
Determine Whether Problems are Soluble Within Existing Statutes	DWR								C	C	T				
Formulate Alternatives, Including the Ill. Water Res. Mgmt. Act	DWR											C	C	T	
Discuss Alternatives with Affected Interest	DWR													T	
Provide Staff Recommendations for Legislation	DWR														T1982

CONFLICT RESOLUTION

CONFLICT RESOLUTION ACTIVITY 1981 TASK OR MILESTONE	LEAD AGENCY	FY 80	1	2	3	4	5	FY 81 6	7	8	9	10	11	12	FY 82 End
Analyze conflicts identified during Plan formulation	OG													I	A
Assess ability of existing mechanisms to address conflicts	OG													I	A
Develop alternative conflict resolution mechanisms as appropriate	OG													I	A

MEANINGFUL PUBLIC PARTICIPATION

PUBLIC PARTICIPATION ACTIVITY 1981 TASK OR MILESTONE	LEAD AGENCY	FY 80	FY 81 1	2	3	4	5	6	7	8	9	10	11	12	FY 82 End
General Information Forums	DCCA	Y													
Establish interagency work group		Y													
Identify agency perceptions of legitimate public role	DCCA		T												
Develop Detailed Public Participation Program	DCCA		C	C	C	C	C	C	T						
Conduct Meetings of Advisory Groups	DCCA		C	C	C	C	C	C	C	C	C	C	T		
Provide Appropriate Communication for the Water Plan	DCCA		C	C	C	C	C	C	C	C	C	C	C	T	

DOCUMENTATION OF ONGOING PROGRAMS

ONGOING PROGRAMS 1981 ACTIVITY	LEAD	1980	1981/ 1st Qtr	1981/ 2d Qtr	1981/ 3d Qtr	1981/ 4th Qtr
Describe problems in the foreground		X				
Describe agency response			X			
Incorporate agency drafts into chapter of Plan				X		

C. BUDGET

FY 1981 TITLE III GRANT PRIORITIZATION BY ACTIVITY

Activity	Amount to Be Expended Per Activity At Various Grant Levels Shown ($1000)			
	175.0	260.0	600.0	3916.9
Erosion and Sediment Control				
Sediment monitoring	47.0	47.0	60.0	332.6
Incentives	20.0	20.0	45.0	53.0
Integration of Q/Q		7.0	15.0	75.0
Water Conservation	15.0	30.0	50.0	150.0
Floodplain Management				
Task Force Reprt	10.0	10.0	20.0	102.4
Rural Flood Control	10.0	10.0	13.3	25.0
Urban Stormwater		30.0	300.0	
Competition for Water				
Irrigation			50.0	50.0
Energy				707.0
Instream Needs	30.0	30.0	30.0	200.0
Urban Uses				0.0
Habitat Degradation			25.0	601.5
Recreation		18.0	30.0	259.3
Atmospheric Controls				
Atmos. Deposition			62.0	552.2
Weather Modification			40.0	165.0
Drought Contingency Plan			20.0	175.0
Illinois Water Use Law				0.0

Conflict Resolution				0.0
Meaningful Participation	10.0	20.0	35.0	150.0
Title III Program Administration	30.0	65.5	65.5	65.5
TOTAL ACTIVITY	172.0	257.5	590.8	3916.9

EROSION AND SEDIMENT CONTROL

Activity	Object Class	1980	1981	1982	1983	1984	1985	Rest	Total
Sediment Observation	Personnel		16,180	114,500					
	Fringe		2,400	16,985					
	Travel		2,871	20,320					
	Equipment		10,486	74,210					
	Supplies		361	2,555					
	Contractual		5,299	37,500					
	Other		5,864	41,500					
	Total Direct		43,462	307,570					
	Indirect		3,538	25,030					
	TOTAL		47,000	332,600					
Incentives	Personnel		10,120	27,000	45,000	63,000			
	Fringe		2,000	5,400	9,000	12,600			
	Travel		1,120	3,000	5,000	7,000			
	Equipment		1,200	3,200	5,300	7,400			
	Supplies		2,840	7,500	12,500	17,500			
	Contractual		-0-	-0-	-0	-0			
	Other		860	2,250	3,750	5,250			
	Total Direct		18,140	48,350	80,550	112,750			
	Indirect		1,860	4,950	8,250	11,550			
	TOTAL		20,000	53,300	88,800	124,300			

INTEGRATION OF WATER QUALITY AND WATER
QUANTITY MANAGEMENT INCLUDING SURFACE AND GROUNDWATER REGIMES

Activity	Object Class	1980	1981	1982	1983	1984	1985	Rest	Total
Staff Investigations	Personnel		5,566	41,200					
	Fringe		1,434	10,362					
	Travel			3,000					
	Equipment			955					
	Supplies			300					
	Contractual			1,808					
	Other			-0-					
	Total Direct		7,000	54,875					
	Indirect		-0-	20,125					
	TOTAL		7,000	75,000					

WATER CONSERVATION

Activity	Object Class	1980	1981	1982	1983	1984	1985	Rest	Total
Domestic Education	Personnel		23,850	36,206					
	Fringe		2,650	3,793					
	Travel		1,500	5,000					
	Equipment		-0-	2,000					
	Supplies		-0-	13,000					
	Contractual		2,000	10,000					
	Other		-0-	-0-					
	Total Direct		30,000	72,000					
	Indirect			-0-					
	TOTAL			72,000					
Public Supply Financial Tech. Assist.	Personnel			40,000					
	Fringe			6,400					
	Travel			4,000					
	Equipment			-0-					
	Supplies			1,000					
	Contractural			-0-					
	Other			-0-					
	Total Direct			51,000					
	Indirect			-0-					
	TOTAL			51,000					
Industrial Use Technology Transfer	Personnel								
	Fringe								
	Travel								
	Equipment								
	Supplies								
	Contractual			50,000					
	Other			-0-					
	Total Direct			50,000					
	Indirect			-0-					
	TOTAL			50,000					

FLOODPLAIN MANAGEMENT

Activity	Object Class	1980	1981	1982	1983	1984	1985	Rest	Total
Task Force Report Implementation	Personnel		9,310	80,850					
	Fringe		690	14,551					
	Travel			6,000					
	Equipment			-0-					
	Supplies			-0-					
	Contractual			1,000					
	Other								
	Total Direct		10,000	102,401					
	Indirect		10,000	-0-					
	TOTAL		10,000	102,401					
Rural Flood Control	Personnel		5,060						
	Fringe		1,000						
	Travel		560						
	Equipment		600						
	Supplies		1,420						
	Contractual		-0-						
	Other		430						
	Total Direct		9,070						
	Indirect		930						
	TOTAL		10,000						
Urban Storm-water Management	Personnel			147,500					
	Fringe			25,000					
	Travel			12,500					
	Equipment			6,000					
	Supplies			8,000					
	Contractual			2,000					
	Other			6,200					
	Total Direct			201,400					
	Indirect			98,600					
	TOTAL			300,000					

Urban Rain Assessment	Personnel	12,500				
	Fringe	2,000				
	Travel	1,500				
	Equipment	-0-				
	Supplies	500				
	Contractual	-0-				
	Other	-0-				
	Total Direct	16,500				
	Indirect	8,500				
	TOTAL	25,000				
Urban Rain Runoff Model/Field	Personnel					
	Fringe					
	Travel					
	Equipment					
	Supplies					
	Contractual					
	Other					
	Total Direct					
	Indirect					
	TOTAL	100,000	100,000	100,000	100,000	500,000
Urban Stormwater Manual	Personnel					
	Fringe					
	Travel					
	Equipment					
	Supplies					
	Contractual					
	Other					
	Total Direct					
	Indirect					
	TOTAL	60,000				
Urban Runoff Institutional Studies	Personnel					
	Fringe					
	Travel					
	Equipment					
	Supplies					
	Contractual					
	Other					
	Total Direct					
	Indirect					
	TOTAL	50,000	50,000	100,000		

COMPETITION FOR WATER

Activity	Object Class	1980	1981	1982	1983	1984	1985	Rest	Total
Resolution	Personnel								
	Fringe								
	Travel								
	Equipment								
	Supplies								
	Contractual								
	Other								
	Total Direct								
	Indirect								
	TOTAL								
Irrigation	Personnel			36,300					
	Fringe			-0-					
	Travel			-0-					
	Equipment			-0-					
	Supplies			1,000					
	Contractual			-0-					
	Other			-0-					
	Total Direct			37,300					
	Indirect			3,700					
	TOTAL			41,000					
Hydropower	Personnel		-0-						
	Fringe		-0-						
	Travel		-0-						
	Equipment		-0-						
	Supplies		-0-						
	Contractual		-0-						
	Other		-0-						
	Total Direct		-0-						
	Indirect		-0-						
	TOTAL		-0-						

Synfuel Siting Optimization	Personnel	-0-			
	Fringe	-0-			
	Travel	-0-			
	Equipment	-0-			
	Supplies	-0-			
	Contractual	50,000			
	Other	-0-			
	Total Direct	50,000			
	Indirect	-0-			
	TOTAL	50,000			
Coal Transportation	Personnel		-0-	-0-	
	Fringe		-0-	-0-	
	Travel		-0-	-0-	
	Equipment		-0-	-0-	
	Supplies		600	600	1,200
	Contractual*		37,690	45,750	83,440
	Other		2,000	3,000	5,000
	Total Direct		39,690	48,750	88,440
	Indirect (1954 x TD)		7,755	9,526	17,281
	TOTAL		47,445	58,276	105,721
	*Contractual Details:				
	Personnel		26,600	28,660	55,200
	Equipment Rental		850	850	1,700
	Postage		240	300	540
	Travel		3,000	3,000	6,000
	Other		7,000	13,000	20,000

Hydrogeology of Coal Extraction	Personnel		34,807	34,620	9,680	78,387
	Fringe		4,473	4,113	1,563	10,149
	Travel		4,550	2,500	1,500	8,550
	Equipment		2,000	750	250	3,000
	Supplies		6,000	3,500	500	10,000
	Contractual		37,000	7,000		44,000
	Other		500	500	2,000	3,000
	Total Direct		88,160	52,983	14,493	157,086
	Indirect		23,180	23,542	6,582	53,304
	TOTAL		111,790	76,525	22,075	210,390
Synthetic Fuel Production	Personnel		12,500	13,625		26,125
	Fringe		2,075	2,125		4,200
	Travel		1,500	1,500		3,000
	Equipment		-0-	-0-		-0-
	Supplies		700	700		1,400
	Contractual*		228,000	140,250		368,250
	Other		4,150	8,150		12,300
	Total Direct		248,925	166,350		415,275
	Indirect (1954 x Direct)		48,640	32,505		81,145
	TOTAL		297,565	198,855		496,420
	*Contractual Details					
	Personnel		29,000	31,250		60,250
	Equipment					
	Rental		850	850		1,700
	Postage		150	150		300
	Travel		3,000	3,000		6,000
	Other		195,000	105,000		300,000
IFN Framework Development	Personnel	6,000	40,600			
	Fringe	331	2,210			
	Travel	450	3,000			
	Equipment	75	500			
	Supplies	253	1,690			
	Contractual	300	2,000			
	Other	0	-0-			
	Total Direct	7,500	50,000			
	Indirect	750	5,000			
	TOTAL	8,250	55,000			

IFN Hydrologic Analysis	Personnel	3,696	24,638
	Fringe	1.641	10,942
	Travel	1,080	7,198
	Equipment	1,348	8,990
	Supplies	809	5,394
	Contractual	7.569	50,460
	Other	700	4,663
	Total Direct	16,842	112,285
	Indirect	4,907	32,714
	TOTAL	21,750	145,000
Urban Uses	Personnel		
	Fringe	-	
	Travel		
	Equipment		
	Supplies		
	Contractual		
	Other		
	Total Direct		
	Indirect		
	TOTAL		

AQUATIC AND RIPARIAN HABITAT DEGRADATION

Activity	Object Class	1980	1981	1982	1983	1984	1985	Rest	Total
Land & Water Inventory	Personnel			41,880					
	Fringe			7,337					
	Travel			3,000					
	Equipment			1,800					
	Supplies			300					
	Contractual			310,000					
	Other			1,200					
	Total Direct			365,517					
	Indirect			-0-					
	TOTAL			365,517					
Land Use Impact	Personnel			50,000	50,000	50,000	25,000	25,000	
	Fringe			-0-	-0-	-0-	-0-	-0-	
	Travel			-0-	-0-	-0-	-0-	-0-	
	Equipment				100,000	100,000	100,000	-0-	
	Supplies			-0-	-0-	-0-	-0-	-0-	
	Contractual			-0-	-0-	-0-	-0-	-0-	
	Other			5,000	5,000	5,000	5,000	5,000	
	Total Direct			55,000	155,000	155,000	130,000	30,000	
	Indirect			5,500	15,500	15,500	13,000	3,000	
	TOTAL			60,000	170,500	170,500	143,000	33,000	
Water Quality Enhancement of Public WS Impounds	Personnel			30,000	30,000	30,000	10,000		
	Fringe			-0-	-0-	-0-	-0-		
	Travel			-0-	-0-	-0-	-0-		
	Equipment			60,000	-0-	5,000	-0-		
	Supplies			-0-	15,000	15,000	5,000		
	Contractual			-0-	-0-	-0-	-0-		
	Other			-0-	-0-	-0-	-0-		
	Total Direct			90,000	45,000	50,000	15,000		
	Indirect			9,000	4,500	5,000	1,500		
	TOTAL			99,000	49,500	55,000	16,500		

Perched Lakes	Personnel	25,000	25,000
	Fringe	-0-	-0-
	Travel	-0-	-0-
	Equipment	-0-	-0-
	Supplies	-0-	-0-
	Contractual	-0-	-0-
	Other	5,000	5,000
	Total Direct	30,000	30,000
	Indirect	3,000	3,000
	TOTAL	33,000	33,000
Backwater Lakes	Personnel	30,000	30,000
	Fringe	-0-	-0-
	Travel	-0-	-0-
	Equipment	-0-	-0-
	Supplies	10,000	20,000
	Contract	-0-	-0-
	Other	-0-	-0-
	Total Direct	40,000	40,000
	Indirect	4,000	5,000
	TOTAL	44,000	55,000

RECREATION

Activity	Object Class	1980	1981	1982	1983	1984	1985	Rest	Total
	Personnel		15,034	62,800					
	Fringe		2,966	12,003					
	Travel		-0-	4,500					
	Equipment		-0-	2,700					
	Supplies		-0-	450					
	Contractual		-0-	175,000*					
	Other		-0-	1,800					
	Total Direct		18,000	259,273					
	Indirect		-0-	-0					
	TOTAL		18,000	259,273					

*Contractural Studies:

Inventory	50,000
Legal	20,000
User Needs	30,000
Commerce vs Rec. Conflict	25,000
Lake Michigan	30,000
Urban Waterfronts	20,000
TOTAL	175,000

ATMOSPHERIC CONTROLS

Activity	Object Class	1980	1981	1982	1983	1984	1985	Rest	Total
Atmospheric Deposition Network	Personnel			99,000					
	Fringe			16,000					
	Travel			5,000					
	Equipment			70,000					
	Supplies			6,500					
	Other			48,700					
	Total Direct			245,200					
	Indirect			67,320					
	TOTAL			312,520					
Climate Change Investigation	Personnel			30,000					
	Fringe			4,800					
	Travel			-0-					
	Equipment			-0-					
	Supplies			1,000					
	Other			6,000					
	Total Direct			41,800					
	Indirect			20,400					
	TOTAL			62,200					
Defining Impacts of Changes Upon Water Resources	Personnel			38,000					
	Fringe			6,000					
	Travel			500					
	Equipment			-0-					
	Supplies			1,000					
	Other			3,200					
	Total Direct			48,700					
	Indirect			25,840					
	TOTAL			74,540					

Prediction of Climate Change	Personnel	50,000
	Fringe	8,000
	Travel	-0-
	Equipment	-0-
	Supplies	1,000
	Other	10,000
	Total Direct	69,000
	Indirect	34,000
	TOTAL	103,000
Influence of Seeding on Water Quality	Personnel	12,000
	Fringe	1,800
	Travel	2,000
	Equipment	1,200
	Supplies	500
	Contractual	-0-
	Other	14,300
	Total Direct	31,800
	Indirect	8,200
	TOTAL	40,000
Evaluation of Projects	Personnel	50,000
	Fringe	8,000
	Travel	2,000
	Equipment	-0-
	Supplies	3,000
	Contractual	-0-
	Other	3,000
	Total Direct	66,000
	Indirect	34,000
	TOTAL	100,000

Public Information	Personnel	11,000
	Fringe	1,760
	Travel	2,760
	Equipment	-0-
	Supplies	2,000
	Contractual	-0-
	Other	-0-
	Total Direct	17,250
	Indirect	7,480
	TOTAL	25,000

DROUGHT CONTINGENCY PLANNING

Activity	Object Class	1980	1981	1982	1983	1984	1985	Rest	Total
Drought-Prone Community Study	Personnel			55,000					
	Fringe			-0-					
	Travel			2,000					
	Equipment			1,000					
	Supplies			1,000					
	Contractual			-0-					
	Other			-0-					
	Total Direct			59,000					
	Indirect			6,000					
	TOTAL			65,000	115,000	124,300			
Drought Definition & Institutional Adjust.	Personnel			34,000					
	Fringe			-0-					
	Travel			2,000					
	Equipment			-0-					
	Supplies			300					
	Contractual			-0-					
	Other			-0-					
	Total Direct			36,300					
	Indirect			3,700					
	TOTAL			40,000	35,000	124,300			
Drought-Prediction	Personnel			52,000					
	Fringe			-0-					
	Travel			-0-					
	Equipment			-0-					
	Supplies			1,600					
	Contractual			10,000					
	Other			-0-					
	Total Direct			63,600					
	Indirect			6,400					
	TOTAL			70,000	70,000	70,000			

ILLINOIS WATER USE LAW

Activity	Object Class	1980	1981	1982	1983	1984	1985	Rest	Total
	Personnel								
	Fringe								
	Travel								
	Equipment								
	Supplies								
	Contractual								
	Other								
	Total Direct								
	Indirect								
	TOTAL								

CONFLICT RESOLUTION MECHANISMS

Activity	Class	1980	1981	1982	1983	1984	1985	Rest	Total
	Personnel								
	Fringe								
	Travel								
	Equipment								
	Supplies								
	Contractual								
	Other								
	Total Direct								
	Indirect								
	TOTAL								

MEANINGFUL PUBLIC PARTICIPATION

Activity	Object Class	1980	1981	1982	1983	1984	1985	Rest	Total
Operating Expenses	Personnel		9,500	47,800					
	Fringe		1,554	8,000					
	Travel		1,500	4,000					
	Equipment			-0-					
	Supplies			1,500					
	Contractual*		5,628	28,300					
	Other			-0-	4,400				
	Total Direct			18,182	14,000				
	Indirect		1,818	9,400					
	TOTAL		20,000	103,400					

*Contractual
Explanation
Meeting
Postage
Printing
Copying

TITLE III PROGRAM ADMINISTRATION

Activity	Object Class	1980	1981	1982	1983	1984	1985	Rest	Total
State Water Plan Executive Director	Personnel		13,793						
	Fringe		2,207						
	Travel		1,350						
	Equipment								
	Supplies								
	Contractual								
	Other		500						
	Total Direct		17,850						
	Indirect		-0-						
	TOTAL		17,850						
Administration									
Program	Personnel		16,034						
	Fringe		2,565						
	Travel		3,600						
	Equipment		-0-						
	Supplies		100						
	Contractual		24,000						
	Other		500						
	Total Direct		46,800						
	Indirect		-0-						
	TOTAL		46,800						
Accounting	Personnel		-0-						
	Fringe		-0-						
	Travel								
	Equipment		-0-						
	Supplies		-0-						
	Contractual		2,000						
	Other		-0-						
	Total Direct		2,000						
	Indirect		-0-						
	TOTAL		2,000						

Title III Program Administration cont'd.

	1981	1982	1983	1984	1985	Rest	Total
*Contractual Explanation							
Audit	5,000						
Accountant	2,000						
Word Proc.	8,302						
Printing	8,700						