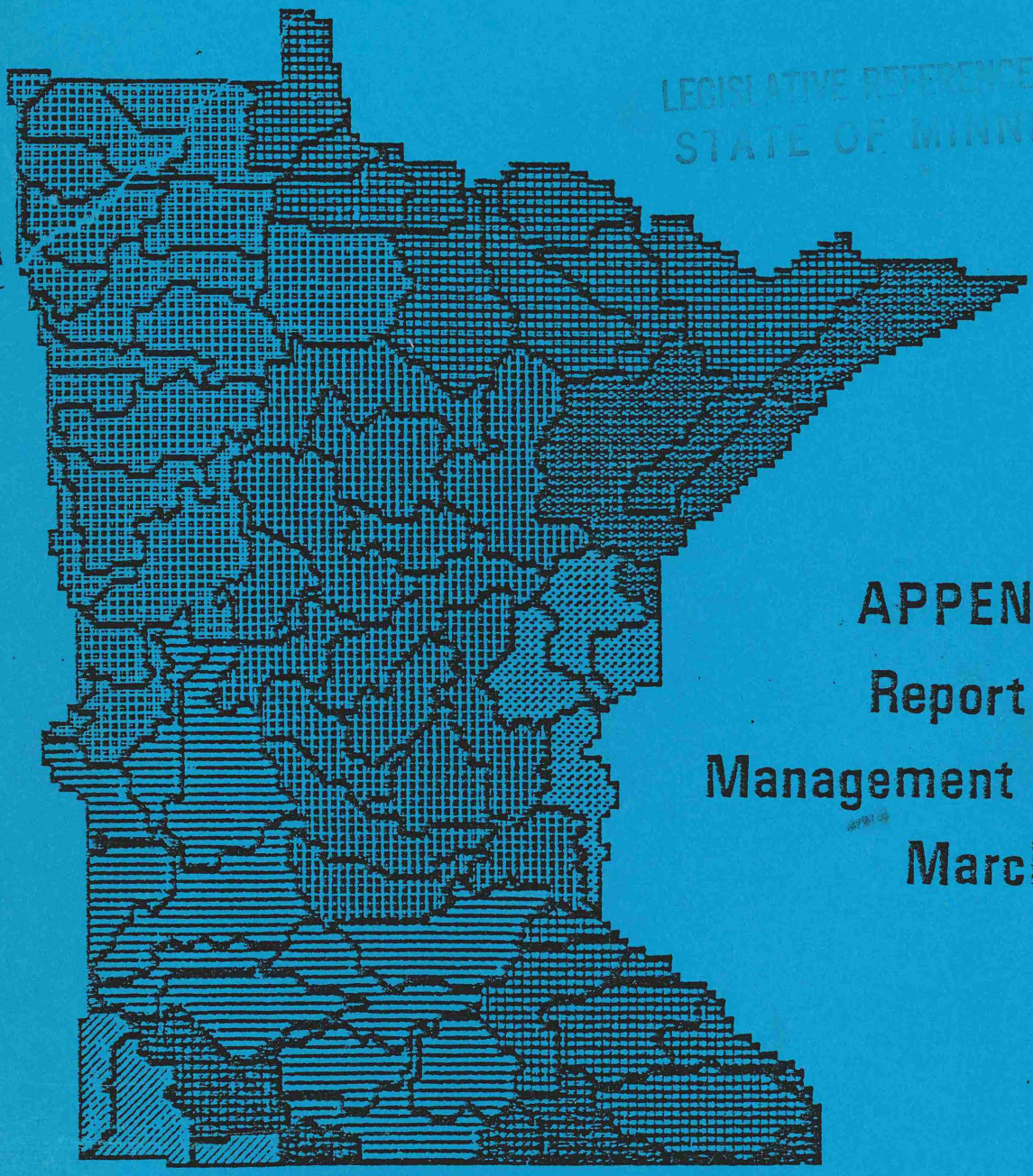
Toward Efficient Allocation and Management:



APPENDIX A:
Report of the Management Work Group
March 1979

A REPORT OF THE MINNESOTA
WATER PLANNING BOARD
TO
THE LEGISLATIVE COMMISSION
ON MINNESOTA RESOURCES
AND
GOVERNOR ALBERT H. QUIE

ACKNOWLEDGEMENTS

The "Final Report of the Management Work Group" was prepared by the Management Work Group and represents the efforts of a large number of individuals associated with the Work Group, the Technical Committee of the Water Planning Board, and various other water and management specialists in the State Planning Agency, Department of Natural Resources, Pollution Control Agency, Department of Health, Soil and Water Conservation Board, Water Resources Board, and other agencies of state, regional, and local origin. Members of the Work Group included:

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The recommendations presented are those of the Work Group. They do not always match the recommendations finally adopted by the Water Planning Board. The Work Group's recommendations are presented in the interest of presenting a historical perspective on the evolution of the framework plan.

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C O N T E N T S

INTRODUCTION

Chapter 446 of the Session Laws of Minnesota, 1977, charged the Minnesota Water Planning Board with the duty to "Evaluate and recommend improvements in state laws, rules and procedures in order to reduce overlap, duplication or conflicting jurisdictions among the many state and interstate agencies having jurisdiction in the area of public water resource management and regulation." This charge was in response to observations by citizens, public administrators, and legislators concerning the number of water management programs in the state, possible overlapping program functions, and the lack of coordinated, comprehensive decision-making among the various programs.

The Water Management Work Group of the Water Planning Board has identified 16 state agencies and boards which administer more than 80 water-related programs in Minnesota. The execution of these programs requires the coordination and exchange of vast amounts of information among decision-makers in order to achieve program goals. The Legislature and the Water Planning Board believe that a thorough analysis of the interactions of these programs, and the policies upon which they are based, will provide the necessary framework for developing greater coordination in state water management. This report represents a major step in establishing that framework.

The goal of the water management analysis has been to identify the best institutional structure for improving overall management of water resources in Minnesota. The objectives of the study have been to identify organizational and institutional alternatives for (1) improving the manner in which state water policy is developed, (2) better integrating water quality and quantity management decisions, and (3) for implementing options that may be selected to improve management of water resources in the state. Another objective of this report was to stimulate comment and criticism on identified conclusions and recommendations.

This report represents the third and final phase in study of water management institutions by the Water Management Work Group of the Water Planning Board. The first phase of effort involved a series of surveys and interviews with program managers at the state level, culminating in Water Planning Board Technical Paper No. 5, "State Water Resources Program Inventory and Problem Identification." The report identified seven issue areas based on recurring problems that tended to crop up throughout state government. At its

September 29, 1978 meeting and after significant review and comment through its public participation process, the Board approved the recommendation that three of these seven issue areas be studied. The results of these studies are the subject of the second phase of the analysis and are presented in Technical Paper No. 14, "Management Problems and Alternate Solutions."

The third phase, this final report, pulls together findings and options identified in the first two phases. It presents alternatives and recommendations for improving the institutions that manage water resources in Minnesota. This report provides the basis for recommendations by the Water Planning Board under its charge to "Evaluate and recommend improvements in state laws, rules, and procedures in order to reduce overlap, duplication, or conflicting jurisdictions in the area of public water resource management and regulation."

CHAPTER I

STATE WATER RESOURCES PROGRAM INVENTORY

AND

PROBLEM IDENTIFICATION

Introduction

This chapter presents the findings of the initial phase of the Minnesota Water Planning Board water management study published as Technical Paper No. 5, "State Water Resources Program Inventory and Problem Identification." Technical Paper No. 5 represents a thorough effort by the Board's Water Management Work Group to identify major water management programs and institutional problem areas.

Technical Paper No. 5 has served as the basis for more intensive studies of water management institutions and documentation of their problems. (See subsequent sections of this report.) It focuses on state water-related programs having, or potentially having, major impact on the institutional aspects of water and related land resources management. Thus, certain state programs directly related to water resources may have been omitted as having less than major impact on water management. Major state programs in other fields may also have been omitted as having only peripheral impact on water management. Federal programs are generally mentioned only in the context of the corresponding state programs. Similarly, discussions of local water management activities are limited to their direct relationships with state water management programs and objectives. Detailed analyses of local and regional water management will be presented in subsequent sections of the final report.

The information on state programs and problems areas was obtained through several methods. Two sets of surveys were administered. The first of these, called the "Agency Survey," was completed by each Work Group member and served to identify water-related programs and managers, agency goals, legislative authority, and major agency policies. The second instrument, entitled "Survey of Program Managers," was administered to the managers of identified water-related projects or programs. This survey served to identify specific program objectives, policies, functions and activities, major interactions, and problem areas. These surveys were followed (on a selected basis) by interviews with program managers. Interviews were utilized to help clarify the understanding of survey responses and to define gaps in program coverage and other management problems. In addition, interviews provided the opportunity to obtain comments from managers on other programs

with which they might interact. The final source of information utilized in preparation of this report was existing literature. This included the Minnesota Statutes, various agency reports, and other documents such as memoranda, regulations, and operational orders.

A special attempt has been made in the analysis of state water management to emphasize "water resource topical areas" (e.g., water quality and water quantity management) rather than state water management agencies. It is believed that this focus will facilitate consideration of new programs or efforts needed in management related to a given topical area. Possible organizational changes may also become more evident with this approach, as there will be less tendency to associate program functions with agencies.

In concert with this approach, water management programs are assigned to and described in the topical area chapter to which they most directly relate. Major programs and their policies were discussed in sections of Technical Paper No. 5 on the program "Perspective" (e.g., its objectives, purpose, and major policies), "Process" (e.g., program operation and interactions), and "Problem Areas." The problem area sections relate to institutional problems, such as overlap or deficiency in authority, rather than water management problems per se (e.g., flooding, pollution, etc.). Summary charts consisting of capsulized problem areas, problem categories, and Work Group study relevancy estimates were provided at the beginning of each chapter of the Technical Paper.

Eight categories were identified in the characterization of problem areas presented in the charts. These include: 1) overlap of authority, 2) gaps in authority, 3) coordination and communication, 4) citizen relations and participation, 5) consistency of administration, 6) conflict in priorities, 7) adequacy of information, and 8) adequacy of staff or funding. The checklist of categories associated with a specific problem area serves to help characterize identified areas. Thus, it was decided that the problem area review sections of this summary chapter should be presented in terms of the problem area categories.

Estimates of the relevancy of identified problem areas for study by the Work Group were made in Technical Paper No. 5 based on the following criteria:

High: problem area has important institutional ramifications and cuts across agency lines.

Medium: problem area has important institutional ramifications but is of direct interest to affected agency only, or problem area has minor institutional ramifications and cuts across agency lines.

Low: problem area has little direct institutional ramification.

Thus, a given problem area may be extremely significant but have received a low relevancy estimate since it may have only minor institutional ramifications (e.g., no changes in organization administration, or legislation would be required to solve the problem).

Of 152 problem areas identified, 34 were judged as being highly relevant to study by the Work Group, 64 were judged as having medium relevancy, and 54 were viewed as having low relevancy for study by the Work Group. The breakdown of high relevancy factors according to problem categories was as follows:

Overlap of authority (10),
Gaps in authority (16),
Coordination and communication (11),
Citizen relations and participation (7),
Consistency of administration (10),
Conflict in priorities (11),
Adequacy of information (0), and
Adequacy of staff or funding (1).

The frequency of high relevancy ratings contained in each topical area was:

Water resources planning and environmental review (5),
Water quality management (8),
Water quantity management (11),
Related land resources management (8), and
Wildlife and recreation resources management (2).

Identified problem areas were grouped into seven issue areas. Three of these issue areas were the subject of further study by the Work Group as recommended by the Water Planning Board. Individual problem areas were not studied separately without being related to the broader issue area, in order to provide a framework of reference by which problem areas could be placed into perspective. The principal criteria for selection of these issue areas was that at least one "high relevancy" problem area be included in each grouping and that all high relevancy areas be represented.

The seven "issue areas" selected as candidates for in-depth case studies constitute groups of representative problems which tend to be neither agency nor program oriented. The issue areas considered by the work group for further study were: 1) the water policy development process; 2) the roles of state, local and regional authorities and advisory boards in water resources planning and management; 3) citizen participation in state programs; 4) water quality, water quantity management interactions; 5) scattered state water quantity management functions; 6) scattered state water quality management functions; and 7) drainage management.

Thirty-three of 34 problem areas rated as having "high" study relevancy to the Work Group were included in the seven issue areas. The thirty-fourth high relevancy problem area concerns the importance

of close coordination between Water Planning Board and area-wide water quality management planning staff. This has been implemented as a matter of course and did not warrant special documentation as an issue area.

The issue area, "Water Policy Development Process," is comprised of four high relevancy problem areas. These relate to the Water Resources Board policy intervention process and the use of one-time studies to determine long-term water policy. Two address the effects of legislated water use priorities on water allocation decisions.

"The Roles of State, Local, and Regional Authorities and Advisory Boards in Water Resources Planning and Management" groups fourteen high relevancy problem areas. These include topics relating to: 1) lack of a well-defined state role and purpose for planning, 2) independence of certain local agencies from state policy guidance, 3) influence (or lack thereof) of the state on federal water management programs, 4) the lead time for badly needed projects, 5) the expertise required for the state to assume a major role as developer of water projects, 6) fragmented or inadequate non-point source control authority, and 7) lack of regional authorities capable of handling major water management programs.

"Citizen Participation in State Programs" is an issue area that affects nearly every state agency and program. Four high relevancy problem areas were identified with three of these related to problems with citizen relations in related land resources management programs. The area of state-mandated land use regulation is particularly susceptible to such problems, and success of related land management programs may be highly dependent on successful citizen participation programs. The other high relevancy problem area involves citizen priorities and interests which may be directly involved and affected in the priority system for water use.

"Water Quality, Water Quantity Management Interactions" is comprised of three high relevancy study areas. Significant interactions in quality and quantity management and associated institutional problem areas were identified with non-point runoff management, lake management, and public water supply management.

The issue area, "Water Quantity Management Functions Scattered at State Level," encompasses two high relevancy problem areas: overlapping permit authorities and unclear lines of authority separating agencies working in ground-water management.

A parallel issue area, "Water Quality Management Functions Scattered at State Level," is represented by one high relevancy problem area. This problem area involves jurisdiction over water supply activities, including raw water quality management. Other medium relevancy problem areas relating to this issue area include scattering of lake monitoring activities among several agencies, division of authority for feedlot regulation, ineffective communication and verification of well-log information, and the lack of coordination among water-related land use programs.

The final issue area, "Drainage Management," includes six high relevancy problem areas. Five of these relate directly to the drainage code and the limited state role in review of public drainage plans. The remaining one relates to the balancing of drainage and wetland preservation values.

In its meeting of September 29, 1978, the Water Planning Board directed the Water Management Work Group to examine problem areas related to the following three issue areas: 1) the water policy development process; 2) water quality, water quantity management interactions; and 3) the roles of state, local, and regional authorities and advisory boards in water resources planning and management. The analysis of these issue areas is published in Technical Paper No. 14, "Management Problems and Alternate Solutions" and summarized in Chapter II of this report.

Water Resources Planning and Environmental Review

Program Review

The State of Minnesota maintains three major roles in water resources management: protector, developer, and allocator of water resources. As protector, the state has instituted major programs to manage areas such as water quality, flood plain and shoreland development, and water supply. The state developmental role in water management has included programs to assist in the provision of flood control, wildlife and natural areas, and parks and other recreation areas. The state role as allocator of water resources has included programs to manage appropriation of water, use of water for waste assimilation and access to water amenities. Each of these state roles in water management requires the support and guidance of several levels of water resources planning. These levels include broad, statewide framework studies; detailed sub-state planning; single purpose and project planning; and short range or crisis studies.

Broad, statewide framework water planning is presently being carried out by the Minnesota Water Planning Board. The Board was created to oversee development of the statewide water and related land resources framework plan by June 30, 1979. The goal of this framework planning process has been:

> "to outline alternatives to maximize the benefits of available water supplies at the present and in the future through 1) development of an assessment of the present and future water supplies and needs of the state; 2) the preparation of a system for equitably allocating the scarce resource in situations where quantities appear in danger of becoming inadequate to meet all state needs; 3) identification of means to efficiently utilize water resources; 4) cognizance of instream water uses and their relationships to water resources planning; 5) the development of management recommendations consistent with the options identified; 6) identification of mechanisms

by which policies and decisions can be integrated so that agencies do not work at cross purposes; 7) the completion of special analyses and projects essential to the planning effort; and 8) the submission of recommendations and proposals to the Legislature." (Minnesota Water Planning Board, "Framework Water and Related Land Resources Work Plan," September 1977.)

The Commissioner of Natural Resources has also been charged by the Legislature to prepare a statewide framework and assessment of water and related land resources plan. This plan was intended to relate each of the programs of the Department of Natural Resources for specific aspects of water management to other state programs. To date, no single, documented plan pertaining to the above areas has been developed under this legislative charge, although a deadline of November 15, 1975 was specified by the Legislature.

Detailed sub-state planning involves systematic consideration of alternative ways for meeting projected water demands and solving water-related problems associated with river basins or other regions. The Southern Minnesota Rivers Basin Board (SMRBB) has been responsible for guiding comprehensive water resources planning in the Minnesota River basin and the southeastern watersheds tributary to the Mississippi River. The Legislature authorized the SMRBB to "guide the creation and implementation of a comprehensive environmental conservation and development plan for the southern Minnesota rivers basin." Recurring flood damage and other problems, such as pollution, lack of recreational and conservation opportunities, and deficiencies in planning for economic growth, were cited as reasons for creation of the Board. The SMRBB has relied almost exclusively on the U.S. Department of Agriculture for planning staff and expertise. In fact, the major roles of the Board have been to provide policy guidance and to facilitate citizen participation in the USDA Type IV Study of the Southern Minnesota Rivers basin. An implementation study authorized under P.L. 87-639 began in October 1978. Feasibility of a series of flood control projects will be determined by the study. (See Technical Paper No. 5, Pilot State Flood Damage Reduction Grant-in-Aid program, and Flood Control Coordination.) The SMRBB is expected to provide direction to the study, and coordination of state, local and federal participants.

Other detailed sub-state planning is conducted through the Great River Environmental Action Team (GREAT). The Great River study has been established to develop solutions to problems related to resources of the Mississippi River. The study team is comprised of participants from several states and federal agencies. The principal objective of the study is to ensure that operation and maintenance of the Upper Mississippi River nine-foot navigation project is conducted in an environmentally acceptable manner by the Corps of Engineers. Toward this end, GREAT I (referring to the upper section of the river) will prepare recommendations to the Corps for modification of channel maintenance practices. Minnesota has also been given special responsibility for flood plain management aspects of the study. Results of the flood plain management efforts are utilized by the state's Flood Plain Management program.

The Upper Mississippi Main Stem and the Minneapolis - St. Paul water and related land resources studies are similar detailed sub-state planning efforts. These studies are also multi-agency, federal-state, cooperative efforts providing the opportunity for concerned federal and state agencies to participate in a joint effort to identify and study water resources problems and solutions. These studies do not generally provide implementation or design information of sufficient detail to construct projects.

Single purpose and project or program planning studies include efforts such as: the Copper Nickel Regional Monitoring Study, Power Plant Siting Inventory, Water Quality Management Planning program, State Sediment and Erosion Control Planning program, and flood damage reduction planning for the pilot state grant-in-aid program. Power plant siting is discussed in detail in Chapter III of Technical Paper No. 5 under "Industrial and Agricultural Water Use." Water Quality Management Planning and State Sediment and Erosion Control Planning are discussed in Chapter II of Technical Paper No. 5. State flood damage reduction planning for the pilot grant-in-aid program is described in Chapter IV of that paper.

The Copper-Nickel Regional Monitoring Study is primarily intended to evaluate potential impacts of mining and processing of copper-nickel ores in an environmentally sensitive area in northeastern Minnesota. Characterization of the regional hydrology, fisheries, aquatic biology and other (less water-related) topics is a fundamental part of the study. The Power Plant Siting Inventory, like the copper-nickel study, is being conducted under the auspices of the Environmental Quality Board. Siting criteria developed as part of the inventory must contain water quantity requirements for instream flows and ground waters. The State Planning Agency relies on input from the hydrology section of the DNR Division of Waters for the water quantity criteria. This section provides an important planning function in an area relating to future water appropriations. As with the Great River and copper-nickel studies, a single, one-time resource management study is being utilized to develop major long-term water resources policy in absence of an overall policy framework.

Programs addressing related land resources management (Chapter IV of the technical paper) include major planning components for state and local program participants. The authorities and scope of these programs vary significantly, with Coastal Zone and Critical Areas programs having probably the most comprehensive water-related planning functions. Other direct planning for operational water management programs, such as water resources permit programs, is another important water planning function of state government agencies. The planning may involve, for example, consideration of resource adequacy for absorbing proposed water appropriations. The pressure in such considerations is to make decisions based on short-term resource capability with little regard for long-term cumulative needs and effects. The planning function in such programs is the element which provides this long-term perspective to the operational program.

Three distinct planning functions are provided by the Minnesota Water Resources Board (WRB). The Board has been delegated a special role in policy development. The Board's purpose is to serve as a forum where the conflicting aspects of public interest involved can be presented, and by consideration of the whole body of water law the controlling policy can be determined and apparent inconsistencies resolved. The Board's role in policy interventions is limited to that of making non-binding recommendations. These may still hold some influence in court regardless of whether or not heeded by the involved parties.

The WRB is also given the water planning related responsibility to review and approve local watershed district "Overall Plans." Minn. Stat. Section 112.49, Subd. 6 also requires the WRB to make findings and recommendations on all proposed district projects. Finally, the Water Resources Board is responsible for establishing watershed districts after proper nominating petitions have been filed, public hearings held, and favorable findings made. The latter authority constitutes an indirect water planning function since the entities formed have broad powers and authority for water resources planning and management at the local level of government. The State Soil and Water Conservation Board has somewhat parallel responsibilities over soil and water conservation districts, with review of district plans and oversight of the formation of new districts.

Short range or crisis water planning studies constitute the fourth level of planning by the state. These may be associated with flood or drought, siting of major unanticipated water uses, and other unexpected water-related activities. Two examples of this level of planning include state studies relating to Reserve Mining and power plant sitings preceding adoption of the site inventory. Other such studies are undertaken through the Environmental Impact Statement process.

Problem Area Identification

Two problem areas were characterized as representing overlap of authorities, two as representing gaps in authority, none were principally attributed to coordination and communication or citizen relation's sources, five concerned consistency of administration, four reflected conflicts in priorities, and one was most related to adequacy of information, staff, and funding.

The problem areas relating to overlap of authority concern 1) charges to both the Department of Natural Resources and the interim Water Planning Board to conduct framework water and related land resources assessments, and 2) the unclear division of responsibilities between the Environmental Quality Board and the interim Water Planning Board with respect to coordination of water resources and environmental quality management. The first of these has not caused a serious conflict since all DNR water planning activity is currently coordinated by the interim WPB and the DNR charge is to develop an assessment

targeted more at coordinating DNR operational programs than at developing overall state policy. The second problem area would only require clarification should the WPB be extended beyond its present sunset date of June 30, 1980 and should the WPB assume a more aggressive role in coordinating water management activities of the state.

Identified gaps in authority relate to local and regional organizations involved in water management and authority of the Water Resources Board in its policy conflict resolution process. The first of these problem areas concerns the lack of coverage statewide of authorities capable of carrying out needed programs in water resources management, such as in flood damage reduction and lake improvement. The gap in authority of the Water Resources Board rests in its inability to effect resolution of policy conflicts according to its findings.

The following problem areas concern consistency of administration: 1) a poorly defined role and purpose of state water resources planning, 2) lack of long-term goals to guide planning and management of water and related land resources, 3) use of special one-time studies in development of long-term water policy, 4) absence of program goals and performance indicators in health risk assessment, and 5) the lack of formal procedures for selection of risk assessment studies. As with other problem areas, the above are often equally pertinent to other categories, such as conflict in priorities, since, for example, such conflicts may cause problems with consistency of administration. The first two problem areas placed in this category concern the lack of direction and understanding of need for water resources planning in management of Minnesota's water resources. The third area is a potential problem since one-time studies carried out without reference to a well conceived overall state framework could lead to development of unwise or conflicting policies. The latter two problem areas were identified in reference to the new program of health risk assessment and may simply reflect this factor.

Four problem areas reflecting conflicts in priorities include: 1) lack of detailed sub-state plans and the possible effect of this on project implementation time, 2) the dependence of the quality of EIS review on agency commitment and capability, 3) the apparent narrowness of perspective of Environmental Quality Board members, and, 4) the ad hoc and reactive nature of health risk assessment studies. The lack of detailed sub-state plans reflects not absence of need, but rather a lack of focus on other than the immediate tasks of water management. This conflict in priorities can be seen in the case of DNR which has been charged for some time with completing a detailed water assessment, but which has not yet given the charge a priority. Absence of sub-state water plans may also adversely impact implementation time of proposed projects since state priorities and policy may often have to be reformulated as projects are identified by other levels of government. Identified problems with functioning of the EQB may reflect the tendency of

agencies to be more concerned with their own immediate charges than with overall direction of state government. Finally, the ad hoc reactive nature of the current health risk assessment program may tend to reflect the generally reactive rather than prospective nature of much of state government.

Water Quality Management

Program Review

This section describes nine program categories. The first five of these are administered by the Minnesota Pollution Control Agency and include the following: water quality standards development, surface- and ground-water monitoring, permit programs, certification programs, and waste treatment systems programs. The next two runoff-related pollution control planning and runoff-related pollution control management, include programs administered by the MPCA, State Soil and Water Conservation Board (SWCB), Minnesota Department of Agriculture (MDA), and U.S. Agricultural Stabilization and Conservation Service (ASCS). The Minnesota Departments of Natural Resources (DNR) and Transportation (MDOT) are also involved in programs relating to these categories. The final two categories include programs administered exclusively by the Minnesota Department of Health (MDH) and include the categories public drinking water quality and ground-water quality control.

The Water Quality Standards Development program of the MPCA is involved with developing and refining the water quality standards and classification system. The standards and classification system serve as the foundation on which water quality management programs are based. The surface and ground-water monitoring category includes the following programs: Routine Monitoring, Toxic Substances Monitoring, Biological Monitoring, Intensive Monitoring, and Lake Studies and Monitoring. These programs characterize water quality in streams, lakes, and underground, and thereby serve to guide associated regulatory efforts. The category, permit programs, includes the National Pollutant Discharge Elimination System, State Disposal System, Solid Waste Disposal, Feedlot Operations, and Hazardous Waste Disposal programs. "Certification programs" includes the "401" and PCB Exemptions programs, while "waste treatment systems programs" includes the Construction Grants program, Review of Municipal and Industrial Waste Treatment Facilities, Municipal Sludge Disposal, Land Application, and Operator Training programs. These three categories of programs form a major portion of Minnesota's water quality regulatory effort.

The category, runoff-related pollution control planning, includes the 208 Area-Wide Water Quality Management Planning program (MPCA), the State Sediment and Erosion Control Planning program (SWCB), and water quality monitoring programs in the DNR and MDOT relating to non-point sources of pollution. The related category, runoff-related pollution control management, includes a diverse set of water programs. The State Cost-Share program (SWCB), Sediment and

Erosion Control Demonstration program (SWCB), and Agricultural Conservation program (ASCS) involve application of land treatment measures to reduce soil erosion and sedimentation, thereby reducing water pollution from these non-point sources. The Lake Restoration program (MPCA) involves the management of non-point sources of pollution entering lakes. This program concentrates on providing permanent solutions to a limited number of problem lakes for which restoration is feasible and for which funding is available. The Pesticides Control program (MDA) involves regulation of pesticides and pesticides use. It is located in the runoff-related management category since pesticides can be such an important component of runoff-related pollution.

The category, public drinking water quality, includes the MDH programs for Drinking Water Quality Operator Certification and Training, and Plan Review and General Engineering Consultation. These programs relate to the protection and management of public water supply systems and the provision of safe drinking water. A related program, the Water Well Construction Code program (MDH), is the major component of the category, ground-water quality control. This program is designed to protect ground-water quality by the regulation of water well drilling, construction, and abandonment.

The water quality management topical area relates to and affects nearly every facit of water resources management. Water use for domestic, commercial, agricultural, and industrial supply is dependent on certain levels of quality, as is support of wildlife populations and quality of the water-based recreational experience. Other waste management activities, such as provision of flood control and drainage, may affect the quality of water and thus also demonstrate the relationship between water quality and overall water resources management.

Problem Area Identification

The 47 identified problem areas relating to water quality management may be characterized in the following distribution: overlap of authority (4), gap in authority (5), coordination and communication (9), citizen relations and participation (3), consistency of administration (7), conflicts in priorities (5), and, adequacy of information, staff, or funding (14). The most significant of these are noted below.

The problem areas relating to overlap of authority concern 1) division of authority between the MPCA and other agencies regulating feedlots, 2) duplication of effort in dredge and fill permitting between the U.S. Army Corps of Engineers and Department of Natural Resources, 3) the number of local agencies with non-point management responsibility, and 4) jurisdiction over water supply activities, including raw water quality. The many different agencies involved in the feedlot permit program have established informal but workable relationships. These are expected to be formalized through the water quality management planning (208) process. Overlapping of dredge and fill permit authorities occurs between the Corps section 404 and DNR works-in-the-bed permits. The state could under certain circumstances take over the Corps authority in all but truly

navigable waters, though it may not wish to assume the accompanying burden of federal review. Among the many organizations involved, or potentially involved, in non-point source management are soil and water conservation districts, county committees of the federal Agricultural Stabilization and Conservation Service and Farmers Home Administration, watershed districts, and lake improvement districts, This situation is explored in Technical Paper No. 14, though there may be little the state can do concerning federally-related organizations. The fourth problem area concerns the division of responsibility between the Department of Health, charged with over-seeing all aspects of municipal water supplies including raw water quality, and the Pollution Control Agency charged with primary authority over water quality. The Department of Health may mandate, for example, that a sanitary survey be performed, but it has no enforcement power to order changes in a system as a result of the survey findings.

Problem areas relating to gaps in authority include 1) the optional nature of individual sewage treatment system regulations in non-shoreland areas, 2) the absence of means to assure that landowners maintain land treatment practices, 3) the independence of certain local agencies from state policy guidance, 4) the fragmentation or inadequacy of authority for regulation of non-point source generating activities, and 5) the lack of penalties for improper well abandonment, filling, and sealing. The first problem area could result in situations where land occupiers might have little recourse or access to judicial remedy should an adjacent landoccupier not install or maintain an adequate treatment system. The second problem area concerns the ineffectiveness of land treatment programs at enforcing agreements with landoccupiers receiving state or fedreal cost-sharing assistance. Present state programs are attempting to improve this situation with enforceable contracts between the State Soil and Water Conservation Board and SWCD's, and between districts and landoccupiers. The third problem area refers to federally-formed county committees utilized in distributing funds on behalf of USDA SCS and FmHA programs. The state has no authoritative means of assuring that these programs conform to state policy and are coordinated with other state, regional, and local efforts. The fourth problem area concerns lack of explicit authority and means for managing certain non-point sources of pollution, such as sediment from construction-site runoff. The fifth problem area categorized as a gap in authority concerns the lack of redress if well abandonment procedures of the water well construction code are not followed, and the lack of a viable means of assuring compliance during abandonment. One possible remedy might be to authorize county or state government to properly fill and seal wells and assess the property owner for costs.

Coordination and communication problem areas of most significance include a) the lack of coordination between MPCA water quality classifications and DNR public waters inventory and permits programs, b) the perception of certain soil and water conservation districts of their relationship to the federal Soil Conservation Service, c) coordination of water quality and quantity runoff management, d) problems with present attempts to verify well log data, and e) the inadequacy of technical assistance to water well contractors, drillers, and well owners. The first problem area may be illustrated by the

hypothetical example of a small stream protected by advanced treatment of waste discharges only to be destroyed by private dredging with little or no public controls. This situation could occur if PCA were to classify the stream as "C" waters while DNR were to classify it as non-public waters, or of only local concern. The past lack of coordination between the two efforts has resulted from the complex process of public waters designation and associated administrative problems within DNR. The second problem area concerns the incorrect perception of certain soil and water conservation districts of their relationship with the Soil Conservation Service. This problem may be limited to a few districts and may be attributable to both lack of district staff support and the dependence on SCS for assistance in carrying out routine district functions. The third area, the coordination of quality and quantity runoff management, is typified by the situation where stormwater has been allowed to be routed directly to a lake, eventually necessitating costly lake restoration measures. This problem area is further examined in Technical Paper No. 14. The fourth area concerns problems with verifying well log data, a function which soil and water conservation districts may perform. District staff is often limited and state assistance in training ineffective. The fifth area, the inadequacy of technical assistance to well drillers, reflects a significant enforcement problem with assuring Water Well Construction Code compliance.

Citizen relations and participation problems in water quality management do not appear widespread. Identified problem areas were limited to the following: the lack of citizen participation in class "D" waters designation, citizen resistance to hazardous waste disposal siting, and the absence of an information and education position for communicating soil and water conservation program opportunities and conservation needs.

Problems areas relating to consistency of administration include a) the failure to use quantitative criteria in ranking land treatment demonstration projects, b) liability of soil and water conservation districts, c) current lack of any single regulation covering construction of municipal water supplies, d) the recent change in policy orientation to enforcement of drinking water regulations, e) the sporadic SWCD participation in well log verifications, and, f) problems with enforcing well log submission requirements of the Water Well Construction Code. The first area refers to the demonstration program of the State Soil and Water Conservation Board. Criteria were utilized to qualify applications for cost-sharing but not to prioritize them, leading to an accumulation of applications for better projects and a shortage of funds as the program became publicized. The second area has become a potential problem as the functions of SWCD's have expanded. The SWCB is currently taking steps to make districts aware of their potential liability and to encourage insuring against it. Problem areas concerning drinking water regulations are attributed to the recent changes in state policy toward protection of water supplies. Problem areas relating to well log verification and construction code enforcement were described previously.

Problem areas reflecting conflicts in priorities include a) the concentration on surface- and stream-water quality monitoring, b) the lack of historical commitment to control of non-point sources of pollution, c) the lack of concern for non-agricultural non-point source management, d) the unavailability of front-end money for lake assessment and feasibility studies, and e) potential water conservation problems with the water use priority system. Historically, there has been a great emphasis on monitoring the quality of streams in association with point sources of waste discharge. Little emphasis has been given to lake monitoring and until very recently routine ground-water quality monitoring. Non-point sources of pollution have received little attention until recently and management efforts have historically been directed at soil conservation to maintain agricultural productivity rather than explicitly to protect water quality. Little has been done in urban and urbanizing sections of the state to control non-point pollution. A related problem area is the lack of front-end money to enable communities to assess lake problems and, subsequently, to seek funds for their solution. The present water use priority system gives top priority to domestic uses, second priority to small quantity users, third to agricultural irrigation and processing, and so forth. This system may tend to discourage water conservation by higher priority users as well as restrict local discretion in setting of water use priorities.

Numerous problem areas relating to adequacy of information, staff, or funding were identified. It was judged beyond the scope of the management analysis to evaluate the urgency or priority of these claims. In certain cases, real deficiencies were evident, however. Lack of technical and administrative staff with soil and water conservation districts, and lack of staff assigned to shore-land management, and the consequent delay in implementation of new individual waste disposal system regulations, are two such examples.

Water Quantity Management

Program Review

This section includes six program categories. The Minnesota Department of Natural Resources administers programs in the first four of these categories. The categories include: public waters inventory and water bank programs, water resource permit program (works in public waters), public drainage, and water appropriation permit program. With the exception of public drainage, all categories are synonomous with the associated programs. The state program relating to the category on public drainage is the Public Drainage Plan Review program. The next category, water quantity research and support, includes programs administered by the DNR, the Minnesota Geological Survey (MGS), the U.S. Geological Survey (USGS), and other federal agencies, including the U.S. Army Corps of Engineers (COE). The final category, industrial and agricultural water use, includes studies by the MDA relating to water use and irrigation, and the Power Plant Siting program, administered by the Minnesota Environmental Quality Board (EQB) and staffed by the State Planning Agency (SPA).

The Public Waters Inventory and associated Water Bank programs are designed to balance public and private interests in waters of the state. The inventory serves to identify which waters are of sufficient value to the state to warrant its regulation of activities affecting those waters (such waters will not become "public" in any other sense). The Water Bank program provides a means for compensating landowners in exchange for an agreement not to destory the wetland character of an area. This program will become operational once the inventory is completed, and when landowners apply for public water resource permits to drain or otherwise affect wetlands identifed as public waters. The Water Resource Permit program regulates activities affecting public waters (e.g., works-in-the-bed) in order to protect the resource values of interest to the state contained in them. The Public Drainage Plan Review program involves the limited state role of providing technical review of drainage authority plans. The program also serves to provide notice to the DNR regarding proposals that would affect public waters.

The Water Appropriation Permit program regulates the appropriation and use of any waters of the state (with legislative and administrative exceptions). Programs in the water quantity research and support category provide support to the appropriation program in addition to several other research and related activities. Programs in this category include State Climatology (DNR), Ground-Water Hydrology (DNR, MGS, USGS), Stream Hydrology (DNR, USGS), and Lake Hydrology (DNR, USGS, COE).

The Power Plant Siting program (SPA, EQB) is intended to coordinate the identification, planning, and allocation of water supplies and other natural resources for use in power generation. Close coordination with the Water Appropriation Permit program and support programs is essential to the siting program.

The water quantity management topical area relates to overall water resources management through programs affecting the allocation and development of water resources.

Problem Area Identification

The distribution of the 41 problem areas identified in water quantity management is as follows: overlap of authority (2), gaps in authority (5), coordination and communication (3), citizen relations and participation (2), consistency of administration (17), conflicts in priorities (6), and adequacy of information, staff, or funding (6). The most significant of these are summarized in the following paragraphs.

Problem areas most relating to overlap of authority include overlapping public waters permit authorities and unclear lines of authority in state ground-water management. The first problem area concerns overlapping permit programs of the DNR (works-in-the-bed of public waters), the Army Corps of Engineers (section 404 fill permits), and watershed districts and other local governments. The second problem area relates to division of responsibility in state ground-water management between DNR (water appropriation), MDH (water

supply and water well construction), PCA (ground-water quality monitoring and regulation), the Minnesota Geological Survey (well log verification and data entry), and the State Soil and Water Conservation Board (administration of funding and supervision of districts involved in permit review, data acquisition, and aquifer testing). This problem area is examined in detail in Technical Paper No. 14.

Problem areas best characterized as gaps in authority include: a) state authority needed to assume partial responsibility of Corps of Engineers 404 permit program, b) the partial immunity of public drainage projects from permit requirements, c) the state's restricted advisory role in drainage proceedings, and d) drainage procedures allowing gerrymandering to circumvent permit requirements. The first of these areas concerns the steps that may be required should the state wish to assume responsibility for that portion of the Corps 404 wetlands filling permit program in all but truly navigable waters. The second and third areas refer to the possible exemption of public drainage projects in non-lake basins and in previously assessed areas, and to the state's limited advisory role in plan review of public drainage projects.[1] The fourth problem area concerns the fact that adequacy of drainage petitions are determined as given projects are proposed, not as they may be altered during the establishment procedure.

Coordination and communication problem areas include: a) the discretionary DNR consideration of advisory comments of local governments in permit issuance, b) the separation of power plant need certification from siting decisions, and c) the dependence of the power plant site selection process on determination of protected stream flow criteria. The first problem area has constituted a problem of coordination and communication in that DNR has occasionally taken final action on a permit application prior to receiving recommendations from local authorities. This may create tension between these agencies, deprive DNR of local expertise, and result in wasted effort by local authorities. The separation of power plant need certification (Energy Agency) from siting (Environmental Quality Board) precludes analysis of the benefit of power generated versus environmental cost to a specific site. The dependence of the site selection process on protected stream flow criteria has caused delays since these criteria have not been fully determined and applied to determining protected flows.

The two identified problem areas relating to citizen relations and participation refer to the public waters inventory process and its implications. Since the inventory concerns the balancing of public and private interests, effective involvement and communication with citizens and local governments is essential. One problem that has arisen is that waters classified as "public waters" may be perceived as public in every sense, not in the intended restricted sense of their contribution to public good in water management.

1. Editors Note: Changes in public waters legislation by the 1979 Session of the Legislature clarifies the ambiguity over permit requirements in non-lake water basins.

The most significant of the numerous problem areas relating to consistency of administration include: a) the depth of investigation backing interim public waters classification decision, b) the delay of water appropriation permit rules, c) lack of monitoring and enforcement of appropriation permit requirements, d) lack of protected stream flow criteria, e) lack of state contingency planning for allocation when protected stream flows are threatened, f) lack of comprehensive lake management policy, and g) difficulty in integrating lake quality and quantity management. The first problem area, the degree of public waters interim designations, is a problem since determination of public waters must be made on a case-by-case basis until the inventory is completed. The time constraints on permit actions require speedy determination, possibly without the depth of investigation that might be desirable. The second problem area is the delay of water appropriation permit rules several years beyond initial legislated deadlines, potentially resulting in inconsistent administration of the program. The lack of monitoring and enforcement in the appropriation program has resulted in many appropriators, even large-volume municipal users, operating without permit. This has implications with respect to the capability of the program to moderate existing and potential conflicts in water use. The fourth and fifth areas concern administration of the appropriation program during periods of critically low flows and water availability. As noted previously, criteria for establishment of protected stream flows have not been developed and operationalized. In conjunction with this, the state has not developed plans for allocating water among competing users as protected stream flows or lake elevations are approached. Neither has any attempt been made to define "periods of critical water deficiency" as a step in facilitating such determinations by the Governor as future conditions may warrant. The final two problem areas concern the lack of an integrated, comprehensive state lake management effort. These are discussed in depth in Technical Paper No. 14.

The major problem areas reflecting conflicts in priorities include: a) decisions made by local authorities in public drainage proceedings, b) possible circumvention of recent environmental safeguards in enlargement of public drainage systems, and c) the rigid priority system for water appropriations. The first area concerns the possible bias of local decision-makers involved in drainage proceedings toward favoring drainage, because of such factors as potentially increased tax-revenues, dependence of the drainage engineer on approval for his livelihood, and so forth. The second area relates to the current difficulty in preventing additional drainage in areas where drainage systems already exist. Major improvements of such systems are possible upon petition of only 26 percent of affected property owners. The third problem area was previously noted in the section on water quality.

Problem areas relating to adequacy of information, staff, or funding were identified in at least six instances. Examples of the more significant ones include: a) the lack of a reliable soil moisture data network and its hampering of moisture and crop forecasts, b) the lack of intermediate level data on ground-water availability, necessitating costly procedures in application for appropriation permits, and c) the lack of data on higher priority uses making projections of water availability for lower uses, such as power plant cooling, difficult.

Related Land Resources Management

Program Review

This section includes seven program categories. All but the first category, state flood plain management and national flood insurance program coordination, involve only one program. The DNR administers the state Flood Plain Management program, Flood Control Coordination, Wild and Scenic Rivers Management, Shoreland Management, and the Dam Safety programs. The State Soil and Water Conservation Board (SWCB) is currently the only state agency administering a program in state flood control development, the Pilot State Grant-in-Aid Flood Damage Reduction program.[1] The State Planning Agency administers the Critical Areas Management program and has administered the Coastal Zone Management program. The National Flood Insurance program is administered by the Federal Emergency Management Agency (FEMA) and coordinated at the state level by the DNR.

The state Flood Plain Management program is intended to reduce flood damages incurred by those who have developed or would develop in flood plains. This is accomplished by adoption and enforcement of flood plain management ordinances by cities and counties, and, potentially, assistance in the development of flood control projects. The National Flood Insurance program also required adoption of ordinances as a prerequisite to providing flood insurance at affordable prices for those residing in flood hazard areas. Flood Control Coordination by the DNR involves coordination of water related public works efforts to assure that federal projects adequately reflect the concerns of the state. The primary federal agencies affected are the Army Corps of Engineers and the Soil Conservation Service. The Pilot State Grant-in-Aid Flood Damage Reducation program (SWCB) provides technical and financial assistance for flood control projects in a portion of the Minnesota River basin. A program related to flood management, the Dam Safety program (DNR), includes inspection and regulation of the construction, maintenance, and abandonment of water control structures. Financial and technical assistance are also provided to state and local governments owning structures in need of repair.

The Critical Areas Management program provides a process for developing planning and management programs for designated critical areas. Other means of protecting public interest in these significant regional or statewide interest areas must not be available or effective. The Coastal Zone Management program was intended to facilitate development of a plan for both the growth and preservation of Lake Superior's coastal area. The program would have provided federal and state funds for local planning and management, but was discontinued because of local opposition.

The Wild and Scenic Rivers program is intended to preserve and protect the values of outstanding Minnesota streams. Local units of government are given a major role in the management of designated streams through adoption and administration of land use controls. The Shoreland Management program required local governments to enforce

1. The 1979 Legislature approved a second program, to be administered by the DNR, in the Red River Valley.

minimum standards for the subdivision, use, and development of the shorelands of public waters. The purposes are to preserve the economic and natural resource values of shorelands and public waters. Water quality protection is a major emphasis of this program.

The Related Land Resources Management topical area includes programs concerned with the interface of land and water resources. The value of land resource is greatly enhanced by the nature and quality of associated water resources. In turn, the quality and quantity of water resources is dependent on the activities on and use of adjacent lands. In other instances, use of adjacent lands may subject man to disruption and loss of life from floods. Thus, the linkage of related land resources management to the total water management picture is significant.

Problem Area Identification

The distribution of problem areas identified in related land resources management programs is as follows: overlap of authority (0), gap in authority (5), coordination and communication (6), citizen relations and participation (5), consistency of administration (3), conflicts in priorities (1), and adequacy of information, staff, or funding (10). The most significant problem areas are described in the following paragraphs.

Problem areas relating to gaps in authority include: a) the ten-year plus lead time currently typical of flood control project development, b) the absence of local authority with sufficient jurisdiction for solution of large scale problems, c) the difficulties with joint powers agreements, and d) the lack of authorization to provide financial assistance to private dam owners for making repairs. The first problem area is the excessive time required for solution to flooding problems when total reliance is placed on the federal government. This time period is likely to increase unless new approaches to federal water policy and state water planning change present trends. The second area concerns lack of coverage of authorities capable of pursuing large scale water management problems. Watershed districts are generally considered capable of performing these functions but do not blanket all areas of the state and may not in some cases be of optimal size for solving problems. Joint powers agreements (the third problem area) could be and are being used in certain parts of the state but are dependent upon the full and enduring cooperation of member organizations, sometimes a difficult task when such issues as resolution of project benefit and cost allocation criteria must be addressed. The fourth problem area concerns the inability of the state program to provide financial assistance to private owners of dams. Existing program efforts are limited to determination of the extent of required repairs.

The most significant problem areas with coordination and communication include: a) the lack of state influence on federal flood damage reduction planning, b) the lack of coordination among water-related land use programs, c) the level of participation by regional

development commissions in the Critical Areas program, and d) perception by local authorities of overlap between the Critical Areas program and certain DNR programs. The first problem area refers to the lack of state influence on Corps of Engineers flood damage reduction planning, including selection of priorities for funding projects and initiating studies. Historically, the quality of DNR participation in the planning process has been irregular. It also appears that the state has been unwilling or unable to maintain sufficient expertise and staff to effectively coordinate state agency participation on a regular, ongoing basis.

The second problem area concerns the lack of coordination between state water-related land use programs, including the Critical Areas program, Shoreland, Flood Plain, and Wild and Scenic Rivers Management programs, and the Scientific and Natural Areas program, among others.

The third and fourth problem areas concern the perception by both regional and local authorities of the Critical Areas program. Attitudes of local governmental authorities toward state involvement are antagonistic while those of RDC's are cautious, at best. Lack of knowledge about the program and its possibilities may be a significant problem.

Problem areas concerning citizen relations and participation are extremely significant in the related land resource topical area. Similar troubles have plagued several programs in this area. All seem to relate to themes of state or federal government "usurping" local authority and citizen property rights. These problem areas include: a) hostility of local government and citizens to the Critical Areas program for state participation in what is considered local affairs, b) citizen perception of the Coastal Zone Management program as usurping local authority, c) failure on the state's part to involve citizens in the Coastal Zone program at an early enough stage, and d) similar problems with the Wild and Scenic Rivers program.

Two significant problem areas relating to consistency of administration were identified: a) delays in implementation of the regulations governing individual domestic waste treatment systems in shoreland areas, and b) the laxity of enforcement of shoreland ordinances by certain local authorities. The first of these concerns the need to revise local shoreland ordinances to incorporate the new regulations for individual waste treatment systems. The DNR is approaching this effort on a case-by-case basis as new ordinances come up for approval, largely because of limitations in staff. Local administration and enforcement of shoreland ordinances varies considerably. Required notifications to DNR of variances, conditional use permits, and inconsistent plats are often not made in a timely manner or not made at all. As a result, DNR input into local land use decisions is often not as effective as it should be.

The sole problem area identified as a conflict in priority relates to unrealistic deadlines of the Federal Emergency Management Agency (FEMA) in mapping flood plains for the National Flood Insurance program. FEMA has elected to conduct groups of studies based upon close geographical proximity rather than on state priorities and needs.

Several problem areas concerning adequacy of information, staff, or funding were identified. These relate both to state and local administration of programs. Examples include: a) the current lack of state expertise should it choose to become aggressively involved in development of structures for flood damage reduction, (b) the insufficiency of information to assure selection of economically efficient projects in the Pilot State Grant-in-Aid Flood Damage Reduction program, c) the lack of funding to local government in support of Critical Areas and Shoreland Management programs, and d) the lack of state staff for administration of the Shoreland Management program, and the consequent lagging of municipal ordinance adoption and program enforcement monitoring.

Wildlife and Recreation Resources Management

Program Review

This section includes six program categories, all of which are administered by the Minnesota Department of Natural Resources. With the exception of wildlife management, each category is represented by only one program. The Fish Management and Wildlife Management programs comprise the wildlife management category.

The Scientific and Natural Areas program is designed to protect and perpetuate natural features of exceptional scientific and education value through purchase and management by the state. The Fish Management program is concerned with maintaining and enhancing the productivity of desirable fish populations through stream habitat improvement, rough fish control, lake rehabilitation, and other means. The Wildlife Management program is also directed toward habitat protection and enhancement. Efforts are concentrated on preventing habitat destruction or damage that may be caused by public and private development. Wetlands acquisition is an important component of both the Wildlife Management program and the total water management picture. The Ecological Services program is involved with various surveys and investigations to evaluate, protect, and enhance the fish and wildlife resources of the state. Habitat evaluation of areas that would be affected by proposed water resources projects is a responsibility of this program. The Canoe and Boat Route Planning and Acquisition, Public Access, and Comprehensive Recreation Planning programs each concern aspects of water-based recreation. A fourth program relating to recreation resources, Wild and Scenic Rivers Management, is described in the previous section.

The wildlife and recreation resources management topical area provides a combination of water resources protection and development programs. The emphasis of development efforts is on enhancing natural values

and providing for man's enjoyment of these values. The link to water resources management is not limited to the relationships of wildlife and recreation to water, but includes the role these lands play in watershed management as well.

Problem Area Identification

Distribution of problem areas identified in the wildlife and recreation resources management chapter is as follows: overlap in authority (0), gaps in authority (2), coordination and communication (2), citizen relations and participation (1), consistency of administration (4), conflict in priorities (2), and adequacy of information, staff, or funding (6). The most significant of these are discussed in the following paragraphs.

The problem area relating to gaps in authority was identified as the absence of authority over privately owned wetland habitat. The inability to prevent a private landowner from degrading resources under his stewardship imposes limitations on wetland protection efforts. State and federal programs cannot purchase all the lands necessary for the protection of water-oriented wildlife, and existing wetlands can be degraded by drainage activities.

Identified coordination and communication problems include: a) the need for better access to data of the Pollution Control Agency and b) the need for better cooperation with local officials to alleviate problems of conflicting uses and misuse of access sites. The first problem area reflects the difficulties that may result when data collected by agencies is not put in a readily accessible form for use by others. The second problem area concerns the misuse of public access sites and accompanying disturbance of nearby residences. There may be insufficient numbers of conservation officers to control the problem. Conflicting uses of access areas, such as swimming near power boat landings, may also demonstrate a need for additional coopearation with local officials.

The one identified problem area concerning citizen relations and participation is the unfamiliarity of the public with the Scientific and Natural Areas program and the opportunity presented by the program for complementing previous local efforts in preserving natural features.

Problem areas relating to consistency of administration include: a) absence of a wetland inventory, b) possible drainage of state-purchased wetlands, and c) the lack of criteria for river designation as canoe and boating routes. The absence of a wetland inventory hampers wildlife management planning, leaving managers with little knowledge of the extent, value, and vulnerability of wetland resources. Wetlands purchased by the state for habitat preservation may be drained by proceedings conducted according to the Minnesota Drainage Code. The state is cautioned not to interfere or

unnecessarily delay public drainage proceedings. These provisions may negate efforts by the state to preserve wetland areas of statewide interest for wildlife and water management purposes. The third problem area relates to the procedure utilized by the Legislature for identification and designation of canoe and boat routes. It appears that some rivers which should qualify are not considered while others seldom used are being designated.

The two problem areas reflecting conflicts in priorities include the additional management emphasis needed for warmwater streams and the reception of county commissioners to approval of state wildlife acquisition proposals. County commissioners have grown much less receptive in the past several years to purchases by the DNR for wetland preservation. This may particularly be a problem in the agricultural section of the state.

Problem areas concerning the adequacy of program information, staff, or funding include: a) limited data and incomplete inventory of scientific and natural areas, b) insufficient data on fish and benthic organisms of rivers, c) the overly heavy use and insufficient numbers of access sites in the seven county metro area, and d) the competition with the private sector for land and resulting increases in cost of acquiring public access sites.

CHAPTER II

MANAGEMENT PROBLEMS

AND

ALTERNATE SOLUTIONS

Introduction

Technical Paper No. 14, "Management Problems and Alternate Solutions," presents the analysis of three issue areas first identified in Water Planning Board Technical Paper No. 5, "State Water Resources Program Inventory and Problem Identification." The first of these issue areas concerns the process by which state water policy is developed. Chapter I of Technical Paper No. 14 examines how water policy has been developed in Minnesota, including a look at policy recommendations of various water-related plans published over the past decade, and an analysis of the policy conflict resolution process of the Water Resources Board. Chapter 1 also presents a summary of the way six neighboring and three western states plan and manage water resources, including their institutional management structures, framework water planning progress, and means of water policy development. General recommendations concerning development of state water policy in Minnesota are presented.

The second issue area concerns the interaction of water quality and quantity management considerations. Chapter 2 of Technical Paper No. 14 analyzes these interactions independently for both ground- and surface-water management. Legislative authorities of the agencies involved in quality-quantity management are surveyed for overlapping authorities. Institutionally-related problems are identified to illustrate the need for making improvements in the way, and structure within which water is managed. A set of management requirements and alternative options for improving overall water resources management are presented, though no recommendations are made.

The third issue area, Chapter 3 of Technical Paper No. 14, concerns the roles of state, regional, and local authorities and advisory boards in water planning and management. These roles are examined in relation to flood damage reduction, non-point source management, and lake management alternatives identified in Water Planning Board technical and working papers. Only those alternatives likely to be recommended by the Board's Technical Committee and that have significant implications for water management institutions are analyzed. The analysis looks into existing and possible future institutions for implementing options, drawing on studies by the Board and others to assess the suitability of potentially involved

organizations. Alternative institutional arrangements are identified for the options under each topical area. Recommendations for water management institutions at each level of government are presented later in this final report. These integrate the best arrangements identified under each topical area.

Analysis of options described under each issue area was made in light of a common set of criteria for evaluating institutional arrangements and alternatives. These may be useful to decision-makers and citizens in reaching their own conclusions on the feasibility and desirability of identified options. They include:

** Effect on reducing overlap and duplication of water management functions and programs.

** Compatibility of program objectives with agency goals and charges.

** Priority given to water management within an organization.

** Capacity of institutions to carry out related programs or options.

** Institutional stability.

** Adequacy of funding methods and sources in support of education, research, data collection, planning, operations, and enforcement.

** Ability to provide or obtain and supervise technical planning and engineering services.

** Proximity to important service or reference programs and the ability to obtain input from them.

** Effect on reducing expense of program administration.

** Accessibility of program planning and decision-making to the public.

** Separability of functions.

Issue Area No. 1 - Water Policy Development Process

Although the methodology used in conducting natural resource planning varies considerably, the initial planning process usually builds upon an identified base of goals, objectives and policies pertaining to the subject resource. The base must be well-defined in order to

establish a logical planning process. For the purposes of this issue area analysis, these three concepts were defined as follows:

> Goal. A statement of intent to proceed in an identified direction in order to approach an optimal condition. Goals are generally dynamic, long-range, unconstrained by time and not necessarily attainable.
>
> Objective. An activity which will assure progress toward meeting a goal. Objectives are specific, attainable conditions to be achieved by quantifiable measures within identified constraints.
>
> Policy. A policy is an expression of direction or intent about what will be done to attain an objective. Policies are consistent management mechanisms which identify quantifiable means to implement goals and objectives.

Water Policy Development

This research effort was designed to assess conflicts which may arise between statements of water policy contained in state statutes and those found in various state water (or water-related) planning documents. The project addressed only those statutory policy statements which corresponded to policy statements in selected state plans. The purpose of the research effort was to identify and document explicit contradictions at the state policy level. These conflicts were then to be reconciled by statutory modification or revisions in plan documents.

This study found that statements of water policy (as defined above) are not consistently included in Minnesota Statutes. Broad legislation goals are often enunciated in various statutes although these statements vary in specificity. In some instances, state policy is explicitly stated in Minnesota Statutes under the heading "Declaration of Policy." In other cases, policy may be inferred from the narrative contained in a "Purpose" section of the statute, while other laws contain no declaration of policy, explicit or implicit.

The sufficiency of policy statements contained in state legislation is frequently a matter of program interpretation for which the legislature can not be held responsible. For example, certain sections of the Minnesota statutes recognize drainage as an effective means of increasing agricultural production, while other chapters acknowledge the threat posed by drainage to the various beneficial public purposes of state waters (e.g. wildlife habitat, ground-water recharge, recreational activity, floodwater retention and water quality protection). Minnesota Statutes, Section 105.38 contains an explicit declaration of policy pertaining to this situation. Minnesota Statutes, Section 105.39 directs the operation of a public waters inventory and classification program based on this policy. Although the project has been in operation for several years, criteria have not yet been devised to quantify public purposes. These criteria were left to be formulated at the program level, rather than being explicitly stated in the legislation. [1]

1. Editor's Note: Public waters legislation passed by the 1979 Session of the Legislature addressed this problem.

Most water policy plans appear to develop little or no state water policy. The great majority of water plans reviewed were written by the state Water Resources Coordinating Committee or the interstate Upper Mississippi River Basin Commission but few of these documents ever received full review and comment by state agencies, and none were adopted by the Legislature. In short, there has been no systematic means to "legitimize" recommended policy. Where planning documents suggested water policy, it was seldom found to be in conflict with statutory policy. However, in some cases where complementary water policy was identified in both statutes and plans, existing policy still required further expansion on the program level. For example, Minnesota Statutes, Section 104.01, Subd. 3 and several plans recognize the policy of the state to reduce flood damages through flood plain management, stressing non-structural measures. Neither existing statutory policy nor state plans clearly define a point at which the decision-maker must opt for structural versus non-structural methods of flood damage reduction, however. This policy decision was left to the discretion of the program manager.

Conclusions and Alternatives: The water policy development study indicated that explicit contradictions at the state policy level were not generally evident between most water plans and corresponding statutes. Comprehensive state goals, objectives, and policies are frequently documented in a generalized manner which does not lend itself to specific conflicts. Rather, conflicts tend to arise in the implementation of policy through program procedures, rules and regulations, and program operations. However, these issues are seldom defined explicitly in state statutes and plans. The study indicates that state needs in water policy development are two-fold: 1) the development of more explicit water-related goals, objectives, and policies, and 2) the consistent implementation of these statements through coordinated program operations.

There is a need for more specific delineation of state water policy in order to fill the gaps and reconcile the contradictions in the administration of state water programs. State efforts to meet this need could be supplemented by more effective utilization of the federally-assisted river basin planning process. All of the river basin commissions in which the state participates sponsor a comprehensive, coordinated, joint planning process and a program priorities process. To date, the state has expended a minimal amount of effort in participating in these processes. Yet, they offer the state an opportunity to conduct policy planning on a statewide and substate level. Greater state participation in this process appears to be cost-effective.

State water policy needs, however, go beyond the identification of water policy in various documents. Water policies are the means by which changing state goals and objectives are accomplished. Consequently, the state should concentrate its own resources in the coordination of the water policy development process. The state should look to consolidating water policy development in a single entity, and should provide a process or forum through which the day-to-day conflicts and ambiguities of this complex process can be managed. Such an organization might also be delegated the additional duty of synthesizing and coordinating water policy-related recommendations to the Legislature.

Water Policy Conflict Resolution

The purpose of this element was to analyze the conflict resolution function of the Minnesota Water Resources Board in terms of the Board's ability to accomplish its current legislative mandate, and to fulfill additional state water policy needs identified in the framework water and related land resources plan. This analysis was conducted by means of 1) a discussion of the legislative purpose underlying the creation of the Water Resources Board, 2) a description of the structure and function of the Board, 3) the identification of existing problems in the current water policy intervention process and, 4) a discussion of alternate solutions to existing and future problems concerning the roles of the Water Resources Board. Alternative uses for the conflict resolution forum offered by the Board are discussed in terms of state needs to develop and maintain a comprehensive state water policy development process.

Problem areas with the conflict resolution function were found in its non-specific jurisdiction, lack of authority, and diminished response capacity. All appear to be a result of the enabling legislation of the WRB. Consequently, it may be inferred that it was not the intent of the Legislature to create a board capable of articulating comprehensive, statewide water policy.

The jurisdictional aspects of the Board's enabling legislation do not consistently correspond to the recommendations of the Legislative Interim Commission on Water Conservation, Drainage and Flood Control. Contrary to these recommendations, the Board was not given authority to approve departmental rules and regulations, nor, it can be argued, was it given full authority and responsibility to determine water policy, since its judgements are not enforceable. Rather, the Board's water policy role is problem-specific. Like the courts, the Board has no jurisdiction until a controversy exists. Consequently, this process does not lend itself to a planning and review function targeted at avoiding initial controversy. Unlike the courts, the Board's decisions are unenforceable and without sanction.

It would appear that the legislative creation of the water policy conflict resolution role for the WRB was an attempt to regularize conflict resolution by placing responsibility for it in the hands of an administrative agency. Conflict is predictable when two entities are mandated to interpret and determine policy in the same area. As the situation currently exists, the Legislature has given broad discretion to various agencies (e.g., DNR) to form water policy through the manner in which they administer state water programs. At the same time, they have given the WRB power to delay these actions, but little more. The net effect may be to diminish the efficiency of agency administration while leaving their policy unchanged. An alternative approach would recognize the adversary nature of some water policy questions and vest responsibility for their solution in a committee composed of the heads of agencies or a citizen's board. This approach uses the Environmental Quality Board, interim Water Planning Board and a citizen board as models, It would have the advantage of a solution negotiated by equal participants in the state's

administrative process with access to technical staffs to aid in a full appreciation of the technical issues in controversy. The WRB, as it is presently constituted, does not have this capacity.

The WRB has heard only 11 cases during the past 20 years. In addition, the Board's conflict intervention process has generally pertained to policy questions involved in the issuance of various permits by the DNR. A minimal use of the conflict resolution forum by agencies or citizens might be attributed to factors such as: a small support staff, the lay (non-technical) composition of the Board, unclear jurisdiction, the Board's lack of authority to enforce its decisions, and the low visibility of this particular facet of the WRB. Clearly, broad areas of policy conflict currently exist which fall within the scope of WRB's mandate. In the area of policy conflicts between state agencies, recent issues between MPCA and DNR concerning the cooling process utilized by the Sherburne Power Plant or dredge spoil practices on the Mississippi River might have been ripe for consideration. In the area of private water policy conflicts with state agencies, disputes between irrigators, domestic well owners, and lake front property owners may be appropriate subjects for consideration by the WRB.

The Legislature has indicated that there exists a clear need for comprehensive water policy determinations in four distinct areas: specific water policy conflict resolution, comprehensive water policy identification, water planning review and coordination, and the coordination of statewide program implementation. Policy questions such as these are currently eligible for consideration by at least five separate organizations within state government: the State Planning Agency, the Environmental Quality Board, the Water Resources Board, the interim Water Planning Board, and the Office of Hearing Examiners. It is important to note here that division of functions is is not per se bad. It may in fact be the most efficient method of accomplishing state objectives. However, these functions must be divided in a manner that is clear and not duplicative. This is currently not the case. Most of the above organizations engage in similar functions at the same time. The WRB could be the organization best suited for the conflict resolution functions. Some modifications in the Board's procedures and enabling legislation would increase its effectiveness in this area. However, the remaining three functions (comprehensive policy identification, state plan review and coordination, and coordination of program implementation) are not appropriate for the WRB in light of its current structure and legislative mandate.

Alternative Solutions: Two alternatives are available to the state in dealing with the problem of water policy conflict resolution. The first alternative is to maintain the specific conflict resolution function within the Water Resources Board, but with certain modifications in law to assist the WRB in carrying out this function. The second alternative is to shift the water policy conflict resolution process entirely to the body also charged with water policy planning and development. This alternative would include the options of the Environmental Quality Board, a body modeled after the Water Planning Board, and a citizens board. (The Department of Natural Resources can be dismissed as an option since it could not be expected to represent the interests of other agencies unless these were transferred to it in a major reorganization.)

If conflict resolution authority is to be retained by the WRB, the Legislature should consider a more specific definition of the Board's role in water policy conflict resolution. This might include delineation of specific categories of conflicts in which the WRB might become involved; use of state hearing officer and specifically defined quasi-judicial procedures; and imposition of binding determinations, sanctions, or other means of insuring that decisions are carried out. Although binding determinations could assure impact after the hearing process, the value of this solution should be weighed carefully against the cost in terms of administrative efficiency and agency policy-making. Alternatively, the WRB might be charged with providing annual reports to the Legislature containing proposed statutory modifications to deal with problems uncovered in policy dispute hearings. For example, much of the controversy currently associated with WRB proceedings might be reconciled by clarification of certain ambiguities in the statutes.[1] These include:

1) What is the effect of the use of the word "lake basin" in section 105.42 and does this create a partial exemption from permit requirements for Chapter 105 public drainage projects?

2) Does the public waters designation procedures as interpreted by the DNR in 6 M.C.A.R. 1,5200 coincide with legislative intent? and,

3) What effect does the "subject to existing rights" language in section 105.38 have with regard to water bodies on land that has been assessed for benefits under Chapter 106?

The remaining functions necessary in water policy conflict resolution are inappropriate for the Water Resources Board. Clearly, however, the state must provide for the orderly identification, development and implementation of comprehensive water policy if it is to avoid continual conflict and ambiguity. The solutions to these problems lie in the explicit and orderly definition of the water policy roles of remaining state agencies and organizations.

Shifting resolution of water policy conflicts to the body also charged with water policy planning and development would be an effective means to link identification of conflicting statutory and program policies with development of new policies. The options for housing these combined functions include the Environmental Quality Board, Water Planning Board-model, and a citizens board.

The Environmental Quality Board might assume an expanded conflict resolution process under its current program review authority. This option would vest conflict resolution authority in a board composed of agency administrators and citizens, providing access to substantial technical expertise in water management. In addition, the involvement by top agency administrators would increase the likelihood of implementing the Board's decisions within agencies.

1. Editor's Note: Public waters legislation passed by the 1979 Session of the Legislature clarified points 1) and 2).

The Water Planning Board-model option would place the water policy conflict resolution function in a multi-agency water-oriented board. Use of this type of body for water policy conflict resolution would have advantages of an ongoing direct focus on water resources planning and policy development, areas closely linked to water policy conflict resolution. In addition, it would also have access to technical expertise, staff support, and citizen input.

The citizen board option would provide a conflict resolution forum removed from narrow agency interests, but combined with comprehensive planning and policy development (in contrast to the existing Water Resources Board process). Such a board would have disadvantages in its lack of a positive forum for interagency coordination, the possible difficulty in getting state agencies to participate in board functions and to comply with board determinations (which are problems with the current Water Resources Board process), and the possibility that a larger staff would be required for the board to actively pursue resolution of conflicts (since agencies seem less inclined to bring disputes to non-agency boards).

State Approaches to Water Policy

The identification and maintenance of an ongoing, comprehensive state water policy is the basic tool used in state water planning. The State of Minnesota is currently involved in numerous interstate, statewide and intrastate water planning and operations programs. These programs have many complex goals, objectives, and procedures which, if not closely coordinated with those of other programs, tend to work ineffectively and at cross-purposes. This section discusses the organizational mechanisms used by other states to deal with this situation as reported in Technical Paper No. 14.

The report (see Technical Paper No. 14) examines three organizational phases in the development of state water policy. The first phase of investigation covers each state's progress in regard to its framework water and related land resources plan. Plans often vary in terms of the degree to which they 1) identify statewide water problems, 2) initiate limited or ongoing procedures to identify and maintain comprehensive state water policies, and 3) recommend the implementation of water-related programs in specific areas.

The second phase of investigation concerns the water planning and management structure within each state. Some states utilize a single agency to manage almost all of their water-related programs. Other states are extremely decentralized; using as many as 19 agencies to plan and administer water programs. Many of these decentralized states, however, allow a single agency to dominate state water planning and management activities.

The final phase of investigation in this report relates to the formation of state water policy. State procedures for the identification, development and maintenance of water policy are examined in terms of a comprehensive state perspective. Methods used by various states to achieve interstate and intrastate coordination are also discussed.

The following figure illustrates various state approaches to water policy planning. Most states have completed, or are in the process of completing a framework water plan. Only Illinois and Wisconsin do not intend to complete a formal plan at the present time.[1] Many of the completed plans, however, were written five to ten years ago and have not been updated or maintained. Other plans were limited to broad problem inventories and the collection of baseline data, without regard to policy or program recommendations.

The water planning and management structure used in these states is generally decentralized. Although several states place primary reliance on one agency, most states utilize six to 19 major organizations to plan and operate water programs. Only Texas and Wisconsin rely solely on one agency.

State approaches to water policy can be divided into three issues. The first issue concerns the identification of water policy. States seem to use three methods to accomplish this. Some states delineate almost all water policy in various statutes. Other states document overriding policies in their state water plan, and use the planning processes of various river basin commissions to supplement ongoing water policy identification. Five states rely (partially or totally) on ad hoc agency decisions to formulate water policy. This latter method does not appear to lend itself to consistent, prospective water policy development.

The second issue goes beyond the specific documentation of water policy. This issue concerns the process used to develop and maintain such policy. All states use some form of representative board or commission to maintain and update water policy with the exception of two western states. These states have little administrative discretion within their statutory policies. In addition, some states use planning committees or work groups of middle managers (similar to the Minnesota Water Planning Board Technical Committee) to accomplish portions of the research necessary to maintain plan development.

The final issue in water policy planning is that of staff support for the ongoing planning process. Five states utilize staff on a time-available basis (borrowing personnel from various agencies when they are available). One state relies solely on a citizen board for input. Three states have identified specific personnel to accomplish this task. Idaho maintains a staff within the Department of Water Resources to accomplish state water policy planning. A separate staff is employed to develop water policy for various department water programs. The State of Nebraska has assigned full-time staff to an ongoing water policy work group designed to 1) survey and identify state water policy, 2) prioritize water policy implementation, and 3) devise annual work programs in order to update and implement the state water plan. Finally, after a recent evaluation of state water management, administrators in the State of North Dakota will request funds to staff an office of water policy development in order to assure the development and coordination of a more comprehensive state water policy.

1. Although, the State of Illinois has recently contacted the WPB requesting advice in developing a state framework plan.

FIGURE 1

STATE APPROACHES TO WATER POLICY DEVELOPMENT AND MAINTENANCE

	WI	IA	IL	SD	ND	ID	NE	CA	TX
I. Water Planning and Management Structure									
Multi-Agency		X	X	X	X	X	X	X	
Single Agency	X								X
II. Comprehensive Water Plan									
Completed					X	X	X	X	X
Incompleted	X	X		X					
No Intent to Complete	X		X						
III. Plan Components									
Problem Identification		X			X	X	X	X	X
Program Needs and Rec's		X				X	X		X
State Goals/Policy		X		X	X	X			
IV. Water Policy Development									
By Representative Body	X	X	X	X	X	X	X		
In Comprehensive Plan		X		X	X	X			
Incremental, by Agency	X		X		X	X		X	
Largely by Legislation								X	X
V. Water Policy Maintenance									
By Representative Body	X	X	X	X	X	X			
Incremental, by Agency	X	X	X		X		X	X	X
Utilizes Technical Staff Support		X	X	X		X	X		
No Ongoing Effort	X							X	X

Conclusions

The following overall conclusions are offered in assessment of the state's water policy development process.

1. The state should designate a process to identify, coordinate, and recommend comprehensive state water policy. The Legislature should authorize sufficient staff support and technical expertise to apply this process to water policy issues on a comprehensive, statewide basis. Functions should include:

** Statewide coordination and implementation of water policies on the program level;

** Intrastate coordination of water policy development, involving soil and water conservation districts, watershed districts, regional development commissions, and other special and general purpose water planning and management organizations;

** Periodic updates to the state water plan, including, for example, setting priorities for implementation of water planning recommendations and identifying program needs; and

** Coordination and setting priorities for program proposals which intend to utilize federal water planning grants to the state, such as Title III, P.L. 89-80 and Section 22, P.L. 93-251.

2. The state should devise a process to arbitrate water policy conflicts on a comprehensive statewide basis.

** The outputs of this process should be documented and made available to the legislative and executive branch with recommendations to resolve recurring conflicts.

Note: The Water Resources Board may have the capacity to provide this function if current problems concerning jurisdiction, authority, and response capacity are resolved. A second alternative is to vest this responsibilty in an organization also charged in an on-going basis with water policy development as described above.

3. The state should assume a more active, developmental role in federal-state river basin planning.

** The state should support an expansion of its participation in the Comprehensive, Coordinated, Joint Planning Process and the Program Priorities Process of the Upper Mississippi River and Great Lakes Basin Commissions.

** The state should utilize this expanded participation and resulting outputs in policy development and recommendations for state program administration.

Issue Area 2 - Water Quality and Quantity Management Interactions

Introduction

Recognition of the interdependence of water quality and quantity aspects has been in evidence throughout the decade in specific incidents. One example is the conflict that arose between DNR and MPCA on the desirability of using cooling towers in operation of the Sherburne Power Station. Until very recently, however, the recognition that ongoing coordination and integration might be required of quality and quantity aspects was not widely held. State recognition was first evidenced in development of work programs for staff of the Water Planning Board. Explicit federal recognition came with passage of the Clean Water Act in 1977. The Environmental Protection Agency has since initiated efforts to integrate water pollution control, a dominant federal concern, with water quantity management, a dominant state concern. It remains uncertain whether water quality or water quantity concerns will govern management of the waters of this state, or whether effective integration of these concerns can be made in the face of conflicting federal and state policies.

With the increased activity and the increased attention given to quality-quantity aspects of water management at the state level, an analysis of institutional interactions has seemed particularly appropriate. In fact, the need was identified in 1972 with the charge of the Environmental Quality Council's advisory subcommittee on ground-water quality. The analysis of the subcommittee concentrated on the extreme limitations in staff at the state level, a critical problem at the time. Little attention was given to the interactions of each of the programs involved in quantity and quality aspects of water management.

This analysis focused on these institutional interactions, beginning with a review of technical water quality and quantity management considerations followed by an analysis of legislative authorities and programs of the state. Problems relating to the institutional structure were identified and alternative solutions described and evaluated. The criteria for evaluation of these solutions are presented in the introduction to this paper. This abbreviated version of the study presents a condensed review of legislative authorities and identified problems, as well as complete listing of the management requirements and alternative options.

Legislative Authorities

A great number of agencies are involved in ground-water management at all levels of government. Primary authority rests with the state Departments of Natural Resources and Health, and with the Pollution Control Agency. These same agencies also have primary authority in surface-water management. There are shifts in the roles and emphasis given by these agencies, and others with less prominant roles, to management of ground or surface waters, however. The Department of Natural Resources, for example, has several additional important programs relating to quality and quantity aspects of surface-water management.

Several apparent overlaps of authority were identified, as might be expected with separation of state regulatory functions between quantity, quality, and health components. These range from certain specific, concrete overlaps to less well-defined overlapping of agency goals or broad charges. An example of the former is the assignment of well abandonment authority to both the Department of Natural Resources and the Department of Health. An example of the latter is the interaction of Natural Resources, Health, and the Pollution Control Agency in critical or emergency period conservation. Both DNR and MDH have specific responsibilities relating to quantity management measures, though MDH is charged with involvement only when a serious health risk could be imminent. MDH can also issue orders to protect the public when a decline in quality creates a serious health risk. MPCA possesses similar power to direct the discontinuance or abatement of pollution endangering health and welfare. The Departments of Agriculture and Public Safety (through the Division of Emergency Services) may also be involved under certain circumstances.

Overlaps should not be condemned outright as inefficient since they may result in constructive advocacy, competition, and cross-checking among the various agencies. For example, the authority for recommending abandonment of wells over a specified size was retained by DNR to aid in its identification of potential observation wells, even though MDH was given specific authority in this area through the Water Well Construction Code. However, overlapping authorities, whether concrete or indefinite, do tend to require well-coordinated management of activities by the involved agencies if ineffective and efficient management of resources is to be avoided.

Institutionally-Related Water Quality-Quantity Management Problems

Institutionally-related quality-quantity management problems were discussed in Technical Paper No. 14 in sections on a) gaps in authority, b) overlap in authority, c) coordination and communication, d) consistency of administration, and e) conflict in priorities. In certain cases, problems could be attributed to the institutional structure and the division of responsibilities among the various agencies. For example, several cases of quality in absence of quantity monitoring and monitoring of quantity in absence of quality monitoring were identified. In other cases, problems were not attributable to division of responsibilities, but tended to crop up independently in several agencies. The widespread problems with enforcement of regulatory programs is a good example.

Gaps in authority were identified in ten instances relating to surface- and ground-water management:

** The need for clearly designating responsibility for a statewide lake improvement program.

** Lack of a charge to provide financial incentives for lake improvement feasibility studies.

** The inability of lake management institutions to provide for protection of lakes.

** The lack of control of urban stormwater discharges to lakes.

** Absence of technical assistance and educational efforts for existing and potential lake management authorities.

** Lack of authority for MPCA to require certification of inspectors and contractors of individual domestic waste treatment systems.

** A gap in authority might be considered to exist with regard to solution of well interference problems since, short of permit revocation, solutions are left up to the well owners involved in a dispute. No administrative entity exists to assign costs or arbitrate solutions to the problem.

** There is insufficient authority for the state to properly fill and seal abandoned wells, and to assess property owners for costs.

** The remaining two gaps in authority concern the absence of any explicit charges to MPCA and MDH to assist in development of a surface-water management information system. This is significantly given the extensive quality data gathered by PCA in its National Pollutant Discharge Elimination System and State Disposal System permit programs, and both quality and quantity data collected by MDH in administration of its Safe Drinking Water and related supply programs. An example of the utility of accessing these data to the state system is seen in the information on consumption and compliance that would be obtained in correlating NPDES and appropriation permit information.

Several instances of overlap in authority were identified in the discussion of legislative authorities. The most significant of these are summarized in this section, though actual identification of specific problems with overlap appears under paragraphs describing problems in coordination and communication, conflict in priorities, and consistency of administration.

** The Environmental Quality Board is charged with coordinating environmental programs it judges are interdepartmental in nature while the Water Planning Board is charged with coordinating public water resources management. The EQB involvement has been largely limited to examination of specific actions of major environmental concern, such as a single irrigation project of 640 acres or greater. The WPB has focused on coordinating state policy relating to interstate basin commission activities and on major federal actions, areas not previously addressed by EQB.

** Protection of domestic supplies from pollution in general and critical periods. Both MPCA and MDH may regulate disposal of sewage and pollution of streams and other waters, though MDH generally defers to MPCA in such matters. DNR is also charged with developing and managing water resources to assure supplies adequate to meet long range seasonal requirements of quality and quantity. MPCA and MDH also both have special powers when

emergency or critical periods are involved. In addition, MDA has specific charges to contain and control pesticides spills, and to inspect and improve dairy and packing plant water supplies.

** The program for permitting underground storage of gasses or liquids includes quality considerations, but is located in DNR since displacement of ground waters is also a significant issue.

** Protection of the availability of domestic supplies during critical periods. DNR is charged with developing regulations governing mandatory adoption of ordinances by public water-supply authorities. MDH is charged with developing emergency plans to protect the public when declining quantities create health risks.

** Both DNR and MDH have legislated responsibilities for regulating well abandonment, though DNR's interest is in identifying potential observation wells while MDH's concern is protection of ground-water quality.

** Both DNR and MDH are charged with requiring submission of well drillers reports containing the logs of materials and waters encountered. MDH additionally requires submission of water samples and, under certain circumstances, water well cuttings samples. DNR may also require submission of pumping tests. DNR requirements are in support of the Water Appropriation Permit program while MDH's are in support of its Water Well Construction Code program. Additionally, both MDH and DNR are authorized to prevent waste by well owners.

** Both DNR and WPB are charged with preparation of a statewide framework water and related land resources plan, including supply and demand assessment. The WPB effort may be considered an acceleration of initial DNR attempts in plan development, and the two agencies are working together in current efforts.

** One problem area concerns the interaction of the water pollution control effort generally, with the Public Waters Inventory and Water Resource Permits programs in the DNR Division of Waters. The definition of waters determining the scope of water pollution control programs refers very broadly to "waters of the state." The public waters programs, however, operate under a definition limited to waters serving at least one beneficial public purpose.[1] The classification of public waters is sometimes confused with MPCA's water quality classifications. The distinction between the the two programs is, therefore, potentially unclear to affected citizens. The problem could lead to more

1. Editor's Note: Changes to the public waters legislation made by the 1979 Session of the Legislature removed determination of "beneficial public purpose" as a component in public waters designation.

than a simple understanding, however. The Pollution Control Agency could require dischargers to install expensive advanced waste treatment facilities in order to protect an aquatic habitat from pollution. The very same habitat could be destroyed by private dredging with no public controls should it not be protected by the public waters designation.

** Another example of this overlap is DNR's permitting of storm sewer systems discharging to public waters. The authority to do so originates in its charge to regulate changes in the course, current, or cross-section of public waters. Should MPCA choose to regulate storm sewers to plans for quality reasons (see section following on non-point source management), the two efforts would require effective coordination to prevent problems with overlapping.

** A significant problem area relates to certification of Section 404 dredge and fill permits. These are presently administered by the U.S. Army Corps of Engineers in apparent duplication with the state Water Resource Permits program (DNR permits are issued for works-in-the-bed of public waters). The Clean Water Act of 1977 authorizes the delegation of the Corps' permit authority to the states for all but truly navigable waters. The DNR could take over this program once it has demonstrated the authority and competence to effectively administer it. New procedures defining the relative roles of the PCA and the DNR would be required since one state agency could be "certifying" actions of another.

** A proliferation of local agencies is charged with some form of non-point management responsibility. These include soil and water conservation districts, county committees of the Agricultural Stabilization and Conservation Service, Farmers Home Administration county committees (charged with determining eligibility of applicants for farm operating loans), watershed districts, lake improvement districts, and others. Some of these are formed and operated independent of any formal state influence or guidance. The roles of these agencies appear to be changing with increasing importance being placed on non-point source management and local water management, generally. Additionally, the number of local water management agencies may lead to confusion in the public eye with division of responsibilities, making identification of water management problems with the responsible or concerned agency difficult.

Several examples of problems are identified below with <u>coordination and communication</u> among agencies involved in water quality-quantity considerations. Other problems closely related to coordination and communication are discussed under the grouping relating to consistency of administration. Both groups include problems attributable to the fragmented division of responsibilities at the state level and to the general lack of agency interaction in problem solving and program developent.

** Several examples relating to monitoring of quality in absence of quantity and monitoring of quantity in absence of quality considerations were identified. For example, MPCA requires quality monitoring of roughly 800 observation wells adjacent to sanitary landfills, but level data is not consistently obtained. Correspondingly, DNR and participating soil and water conservation districts do not collect water samples for quality analysis when monitoring well levels or in conducting pumping tests. Though complete integration of such monitoring efforts might not be desirable, this kind of consideration has received little attention with existing organizational structure.

** An example of a management problem that could require extensive coordination between agencies is the creosote contamination of ground-water supplies in St. Louis Park. Both MDH and MPCA are involved in quality considerations, with the former being principally concerned since a major domestic water supply resource is involved. However, the solution to the problem could very well involve restriction of appropriation permits, a DNR responsibility, in a zone surrounding the contaminated area. Though DNR cooperation would likely not constitute a problem in this instance, administrative efficiency would likely be hampered by the absence of a single administrative entity with final decision-making authority.

** Many well interference disputes result from interaction of high capacity wells with wells constructed to protect ground-water quality but not availability under stress conditions. The Water Well Construction Code sets standards protecting quality but does not effectively address the issue of quantity. Other states, North Dakota for example, require wells to be drilled with a "best effort to capture" water supplies.

** The Safe Drinking Water Act has forced the Department of Health to move from an educational approach to a more enforcement-oriented policy. This change in policy orientation has attendent problems because MPCA has responsibility for enforcement activities in the area of raw water supply. Health must oversee all aspects of municipal supplies, but its' authority is limited to plan review activities. The Department may mandate that a sanitary survey be performed, but it has little administrative power to order changes in a waste treatment system as a result of the survey findings. Thus, Health must deal with raw water quality, but MPCA has primary authority over both surface- and ground-water quality.

** Until very recently, there has been little attempt at getting MPCA water quality data into the state water management information system. This has resulted chiefly because available federal funding has been directed more toward satisfying Environmental Protection Agency requirements than overall state water management needs. It has been recommended by the WPB's Data Work Group that MPCA should not bring water quality data directly

into the state water management system data base. MPCA water quality information should be connected to the state system, however, an effort which would be facilitated by an explicit state mandate and monetary commitment.

** Coordination of development of the public waters inventory with the classification of surface waters for quality management has been lacking. This has resulted largely from problems with the public waters inventory program, itself. However, the consequences of ineffective coordination could be significant, as discussed in the section on problems in overlap of authority.

** Fragmentation of lake management authorities has resulted in several independent data-gathering activities compounding difficulties in communicating information among agencies. Access to PCA data on lakes has been perceived as a problem for DNR fisheries managers, for example. (The section on lake management provides a more detailed explanation of the problem of fragmentation of lake authorities.)

** The process of certifying need for power generation is located in the Energy Agency, entirely separated from the siting process. This separation makes difficult any analysis of benefit of power generated versus environmental cost to a specific site.

** The DNR Division of Waters is currently developing criteria for the establishment of protected stream flow and lake elevation levels. The formation of the EQB Inventory of Study Areas is complicated because these criteria were not developed and made operational in a timely fashion.

** Problems have been identified with the advisory role of local governments, watershed districts, and soil conservation districts in DNR permit decisions. DNR consideration of these recommendations is discretionary. Occasionally, the DNR will take final action on a permit application before recommendations are received. This may create tension between these agencies, deprive DNR of local expertise, and result in wasted effort by local authorities.

Problems affecting consistency of administration were generally not attributable to the division of responsibilities in water management. One exception, identified in Water Planning Board Technical Paper No. 11, relates to the absence of regular review of available quality data to determine the implications for health and overall water quality management. Certain problems, such as those relating to enforcement of regulatory programs, tended to crop up independently in several agencies, however. Others were attributable either to insufficiency of information, staff, and/or funding, or to problems in administration within a single agency.

** State lake management programs do not interrelate with respect to either formation of goals or responsibilities of programs. This is manifested by a) the need for the state to establish lake management goals, policies, and priorities, b) the absence of program planning and consideration of the inter-relationships of other lake-related programs, and c) the need for recognition of the lake as a basic management unit.

** Enforcement problems are evident in the program to regulate water well construction. Since 1975, the rate of compliance by well drillers in submitting well records required by the Water Well Construction Code has been roughly 50 percent. Compliance with the requirement for submission of water samples has been somewhat less. Numerous complaints are received concerning problems such as improper isolation distance from sources of contamination, and inappropriate drilling methods used for specific types of wells and aquifers. Technical assistance to well drillers is needed to prevent these problems as well as to educate drillers in the proper completion of well logs. MDH appears to be reluctant to use its authority to revoke licenses and court action in both time-consuming and costly.

** The thoroughness of permit coverage and reporting in DNR's water appropriation permit program is suspect. Large volume appropriators in at least one category, municipal supply, are without permits. An effective monitoring and enforcement program, including computerization of use reports, cross referencing appropriator lists with other data sources (e.g., NPDES water quality permits, municipal water suppliers, energy facilities, etc.), and enforcement surveys at regional offices, is lacking. This has implications with respect to the capability of the program to moderate existing and potential conflicts in water use.

** Examination of water use through DNR permits is complicated by individual permits which apply to multiple sources of the appropriation. Additionally, some use categories have not been sufficiently defined to eliminate overlap between categories or to isolate uses which have been grouped. This may have resulted from use of inconsistent procedures as the program evolved. Use of a data system to assist in day-to-day operations only (rather than for planning and assessment of water availability) may have also contributed to this situation.

** Rules and regulations to provide for the "orderly and consistent review of applications for permits" are currently under development by the Division of Waters. They are scheduled for completion late in 1979. The deadline for their completion was January, 1978. The DNR also lacks a conservation program to guide its issuance of appropriation permits, though the statutes include this requirement. In addition, DNR has failed to complete a statewide framework water and related land resources assessment mandated by the statutes. This would provide the foundation for development of a conservation program. As mentioned previously, the DNR is currently participating in the water planning effort with the Water Planning Board.

** Criteria for establishment of protected stream flows have not been developed and operationalized. Until this has been accomplished, it is unlikely that decisions with regard to water allocation during periods of low flow will be consistent from one stream segment to the next across the state.

** Chapter 446, Section 21 of the Session Laws of 1977, appropriated $100,000 to DNR for training and $184,000 to the State Soil and Water Conservation Board for district participation in 1) the conduct of pumping tests and ground-water data acquisition, and 2) permit review. Experience and expertise within soil and water conservation districts relating to the first item is minimal. A series of training sessions for aquifer pumping tests was conducted by DNR but needed follow-up training has not proceeded in a timely manner. (DNR has failed to keep the position filled or the program operating.)

** The verification of well log data was to constitute a portion of the data acquisition function of soil and water conservation districts under agreement with the Minnesota Geological Survey. To date, the participation in well log verification by SWCD's has been sporadic. Many districts do not have the staff, funds, or expertise to conduct the necessary review and verification. Yet verification of well logs is central to their effective use. Specific procedures for assuring that tasks delegated to districts are accomplished, appear to be lacking.

** Minnesota Statutes require submission of contingency plans in conjunction with applications for surface-water appropriation. The individual applying for the permit must describe alternatives he will utilize if further appropriation is restricted. The state has not developed a comparable plan for allocating water among competing users as protected stream flows or lake elevations are approached.

** Until the public waters inventory is complete, determination of public waters subject to permits is being made on a case by case basis. The time constraints on permit actions require speedy determination, possibly without the depth of investigation that might be desirable. Ill-considered determinations made under this time pressure may be difficult to correct in the future.1

** There has been an increasing role for soil and water conservation districts in water management activities in recent years. This has included responsibilities in research for the 208 program, in land treatment though the demonstration and cost-share programs, and in permit review for state public waters and water appropriation programs. In most cases, districts have insufficient manpower (often only a part-time clerk) to administer these programs. This may pose problems not only in the ability of a district to carry out program objectives, but in the area of district liability for decisions adversely affecting other parties.

1. Changes in the public waters legislation in the 1979 Session of the Legislature may ease some problems here.

Conflicts in priorities were found both between agencies and within individual agencies. Evidence of conflicts was implicit, for example, in the failure to meet certain legislative charges, rather than explicit in the conflict between agency actions. Nine areas were identified though the list must certainly not be considered exhaustive.

** The failure of DNR to accomplish in a timely fashion its charges to develop a water conservation program (first mandated in 1947), prepare a framework water and related land resources assessment (due November 15, 1978), and develop rules and regulations governing its water appropriation permit program (due first on January 15, 1975, then postponed to January 30, 1978) represents a major conflict in priorities. It is possible that DNR did not get sufficient funding to do the job that would be desirable, but its failure or inability to direct existing resources toward completion of legislative mandates raises significant institutional questions.

** MPCA has no written policy on diverting effluent discharges. However, diversion is encouraged whenever feasible to reduce treatment costs in protection of lake quality. This diversion of effluent discharges can potentially impact water quantity as well as quality by changing distribution of stream flows.

** The practice of adjusting effluent standards to give dischargers credit for water conservation is employed by MPCA only when absolutely necessary. It is used as a negotiating tool in cases where a discharger could not meet effluent standards due to economic, technological, or other constraints. MPCA does not promote this practice even though total loading to a water body by a discharger would not be altered and water would be conserved.

** The goals of water conservation and environmental quality come into direct conflict with regard to selection of power plant cooling systems. It is expected that all plants built in the future, regardless of generating capacity, will be required to utilize closed cycle cooling, though this process is highly consumptive of water.

** The number of surface-water stations has been decreased from 105 in fiscal year 1976 to 42 in fiscal year 1978. The parameters analyzed at these stations has been reduced from 40 to eleven. This small a number of routine monitoring stations is sufficient only to characterize trends in quality of a fraction of Minnesota's water resources. The recent approach has been to concentrate on special studies where discharge permits must be analyzed. This leaves a major portion of the state's waters uncharacterized in quality and may cause management decisions relating to non-point sources and new sources of pollution to be made with little knowledge of long-term background quality characteristics. The 42 monitoring stations are for the most part established to provide information on stream water quality. Data on quality of Minnesota's 12,000 lakes are very limited and have been collected by a number of different agencies.

** There has been a great deal of emphasis on treatment of agricultural sources of non-point pollution over the past forty years (though this originated from the need to maintain land productivit... Little emphasis has been given to combat of urban runoff-related quality problems. The predominance of agricultural interests in this field, both politically and technologically, may also impede acceleration of an urban treatment program. This has been made evident with passage of the Rural Clean Water program (Section 208(j) of the Clean Water Act) providing for a substantial amount of agricultural cost-sharing but no assistance for urban runoff-related quality problems.

** Legislation written to protect or enhance the use of lakes has not been promptly implemented. Several important programs have progressed slowly due either to insufficient funding or staffing, or to the low priority given by responsible agencies to implementation of these programs. Examples include the failure of DNR to develop rules for lake improvement districts, surface-use zoning, and appropriations from lakes, as well as its failure to complete an assessment of need for lake improvements and to provide criteria for allocation of state aid (refer to section on lake management).

** The attention given by MPCA to ground-water quality monitoring has been far short of overall state need. Efforts have recently included monitoring of potential sources of contamination, such as active sanitary landfills and establishment of a routine ground-water quality monitoring network. Significant needs in monitoring for background levels, for trends associated with land and water use changes, and for "watchdogging" potential sources of contamination still remain. The conflict in priorities can be viewed in relationship to attention given stream water quality monitoring and, more generally, the proportion of resources allocated to monitoring in comparison to that committed elsewhere in resource management development.

** A generic problem related to conflicts in priorities, existing and unforeseen, is the absence generally of any meaningful program planning by agencies in state government. The notable exception has been the Pollution Control Agency which prepares detailed plans and priorities annually in meeting requirements of the U.S. Environmental Protection Agency.

Management Requirements

This section presents a list of components judged necessary for development of an integrated, comprehensive water management program. An integrated program would involve all the various ground- (or, respectively, surface-) water programs as a unit, regardless of where each was located. A comprehensive program would include all appropriate areas of ground- (or surface-) water management, either directly or through effective coordination with programs in related areas.

The following list of management requirements was developed with reference to statutory charges, technical quality-quantity considerations, and the identified institutionally-related water management problems. The list should serve as the reference by which alternative options for improving management of Minnesota's water resources can be judged. The criteria for actually making these judgements are presented in the introduction to this chapter.

Information Related Needs:

** To direct data gathering efforts of the various state agencies in a coordinated approach to obtaining needed water management information. This involves development and utilization of standards and criteria for data collection that would reflect agency concerns and needs.

** To measure, monitor, and record the quantity of water used or appropriated in various aquifers, lakes, and streams; the potential of these resources; and the quality of their waters. Information assessing background levels, long-term trends, and potential sources of short-term changes is required with appropriate frequency and distribution in time and space.

** To access, retrieve, and analyze within a statewide water information system including components relating to availability, distribution, quality, and use of waters of the state.

** To identify areas of the state especially susceptible to ground-water contamination because of hydrogeology, land use, population, and other characteristics. To identify areas of the state possessing high yields and clean waters suitable for various types and levels of development as well as protection.

Evaluation Related Needs:

** To define aquifer and surface-water long-term safe yields with sufficient accuracy and specificity to enable effective and rationale permit decisions meeting long-range seasonal requirements.

** To interpret available data and evaluate problems pertaining to the use of ground- and surface-water resources, such as to define effects of irrigation water wells on surrounding domestic water wells. This involves correlating pumpage withdrawals with water-level changes in time and space, and determining specific hydrologic parameters of the aquifer.

** To predict effects of surface-water withdrawal, drainage, impoundment, and other land use practices on ground-water resources, and correspondingly, the effects of ground-water appropriation on stream flows, lake levels, and other surface waters.

Process Related Needs:

** Standards and criteria reflecting comprehensive interagency concerns for protection and development of the state's water resources, including concerns relating to issuance of water appropriation permits; construction, maintenance, and abandonment of water wells; storage of liquids and gases above and underground; and the determination of periods of critical water deficiency and degradation.

** To coordinate and, as appropriate, influence related pollution control regulation, water resources development, and land use programs administered by state and local agencies (e.g., pesticides control, feedlot management, highway development and maintenance, etc.).

** Strategies for allocating safe-yield capacity among existing and projected users in meeting long-range seasonal requirements for water.

** Strategies for allocating water among permitted users during periods of critical water deficiency and degradation.

** To enforce compliance with water quality and quantity permits and regulations, including the ability to obtain interagency and intergovernmental cooperation and assistance.

** Clearly defined lines of responsibility and procedures for coordinating the agencies involved in ground- and surface-water management, with provisions for addressing problems that might otherwise fall through the gaps.

Alternative Options for Improving Quality-Quantity Decision-Making

The alternatives presented in this section do not represent an all-inclusive list of means for solving water quality-quantity management problems. Suggested options do not for the most part offer direct solutions to water problems. Instead, this section focuses on options for setting up processes to deal with problems. For example, no attempt would be made to instruct the Departments of Health and Natural Resources and the MPCA on how best to go about solving the creosote contamination problem in St. Louis Park. Instead, suggestions will be offered on how this and other similar problems might be better handled with institutional changes.

Five categories of options have been identified. These include a) miscellaneous coordination options, b) planning and budgeting, c) the authoritative coordinating body, d) incremental reorganization, and e) major reorganization. The goal toward which each category of options is directed is to get water management efforts working as one program. The criteria by which the suggested options can be evaluated are presented in the introduction to the chapter.

The category of miscellaneous coordination options includes a diverse list of alternatives targeted at processes for solving specific institutional problems. These alternatives would generally be required should organizational and planning options discussed below not be implemented, or should it be judged desirable to consider these in the interim.

An interagency agreement defining clearly the lines of responsibility in ground-water management should be developed by the Departments of Natural Resources and Health, the Pollution Control Agency, and the Minnesota Geological Survey. Beyond this, the agreement should include mechanisms for active interaction of agency field personnel in enforcement of ground-water management programs. In addition, provisions should be included for acquisition of data by one agency for another. For example, MDH staff in Environmental Field Services could assist the DNR in acquisition and verification of water appropriation data. Where appropriate, joint training sessions of water well contractors could be organized to meet training needs of DNR and MPCA as well as MDH. Finally, the agreement should specify the mechanism and timetable for ascertaining which quality and quantity monitoring sites can be integrated.

The interagency agreement could also be utilized to implement joint criteria, standards, and plans for identifying and managing ground- and surface-water resources during emergency or critical periods. The Division of Emergency Services would also need to be involved. Consideration should be given to including the Environmental Quality Board and the interim Water Planning Board in this process as final review authorities, since major environmental quality and water management concerns are involved.

The Water Well Construction Code could be modified after appropriate changes in legislation to include quantity as well as quality considerations. Provisions relating to required well depths would be included to assure well owners sufficient quantities of supply under natural and artificial stress. The feasibility of this option would have to be judged in light of costs to well owners of all types and purposes, and in light of the existing state policy protecting domestic supplies whether or not adequately developed.

The Water Resources Board, or its successor, could provide the mechanism for settling well interference disputes through its water policy conflict resolution process. Modification of existing legislation could be required and close analysis of staff and funding requirements would be needed should this option be judged desirable. Adoption of this alternative would be contingent upon the finding that existing means for conflict resolution in well interference cases place too great a burden on either the DNR or on lower priority water users.

The Pollution Control Agency and Department of Health should make the commitment (either administratively or through legislation) to materially contribute to the surface component of the state water management information system by accessing their information (e.g., NPDES and Safe Drinking Water) and incorporating necessary identifiers (e.g., watershed and, eventually, river-mile number) for the state

system. The Pollution Control Agency should also contribute correspondingly to the ground-water component of the state water management information system. A river-mile indexing system should be developed by the Water Planning Board or an agency designated by it in contribution to the state water management information system.[1] This will enable recall of all quantity and quality-related information for analysis of selected stream segments.

The DNR should adopt a total water management approach to its water appropriation, works-in-the-bed, shoreland, and other water management programs by integrating fish, wildlife, recreation, quality, as well as quantity management factors. This was envisioned by the Legislature when it charged the DNR with preparation of a program-oriented water and related land resources framework assessment.

The category of options relating to planning and budgeting includes a series of alternatives for mandating preparation of program plans annually, development of long range plans, and linkage of these plans to operations through the budgetary process. Each of the major agencies involved in water management, the Departments of Natural Resources and Health, and the Pollution Control Agency, would be charged with annual preparation of program plans for submission to the state water resources coordinating body (see following section). The model for these program plans would be those currently prepared by the MPCA. The state coordinating body would resolve any conflicts in programs or priorities, and assure compliance with state environmental policy and the state water and related land resources framework plan. Once more specific comprehensive or special purpose (e.g., DNR's water conservation program plan) plans are developed, compliance with these would also be required. The authoritative coordinating body would approve and submit the program plans to the Governor and the Legislature releasing the individual agencies to make the required budgetary requests and presentations relating to water resources management in context of approved program plans.

Alternatives for an authoritative coordinating body could supplant other organizational alternatives discussed below when effectively implemented, though the incremental reorganization alternatives would still require coordination with other water and related land use programs. This option would satisfy identified needs for a single administrative entity with final decision-making authority in cases where two or more agencies have jurisdiction (see example discussed previously relating to creosote contamination in St. Louis Park). An authoritative coordinating body could also serve to review and reconcile agency program and long range plans (see planning and budgeting options above) in the context of a comprehensive viewpoint.

The options which should be considered to fulfill this function include the Department of Natural Resources, the Environmental Quality Board, a citizens board, or a body modeled after the Water Planning Board.

1. The Department of Natural Resources, with LCMR funds, is initiating this work in F.Y. 1980-81, with coordination through the WPB.

The DNR is charged with the administration of a wide range of water management programs. It could be assigned the duty of assuring coordination of its programs with all other state water and related land resources programs. However, the DNR does not have authority to resolve conflicts among agencies and does not have a strong record in interagency coordination. The provision to a single agency of the authority to resolve disputes between it and other agencies raises serious questions of equity.

The EQB is presently charged with coordinating state programs it determines are interdepartmental in nature, as well as resolving agency conflicts with regard to programs, rules, and permits. It has not fully utilized this authority, however, due in part to its preoccupation with more visible environmental concerns.

A citizens board could remove the resolution of conflicts among agencies from the narrow boundaries of agency interests. However, the separation of such a board from agencies may make the achievement of interagency coordination difficult and increase the difficulty of achieving agency compliance with citizen board decisions.

The Water Planning Board has been charged on an interim basis with coordinating public water resources management and regulation acticities, though it has not had the EQB's authority to resolve conflicts. A body modeled after the Water Planning Board would have the advantage of a direct focus on water resources, in contrast to the EQB's more general environmental focus.

Two options characterized as incremental reorganization would include a) placement of both the Safe Drinking Water and Water Well Construction Code programs into the Pollution Control Agency, and b) placement of the Water Well Construction Code program, alone, in the PCA. The first option would create a little "Environmental Protection Agency" structure, facilitating state interaction with the federal programs deriving from EPA. It would solve one major problem identified by the management analysis: the separation of domestic supply-quality regulation from regulation of the sources of pollution. One significant problem, however, would be separation of the program regulating public water supplies from non-public supply reguation and from other health programs, such as food sanitation inspection.

The second incremental alternative, placement of the Water Well Construction Code program in MPCA, would avoid this problem. On the positive side, it would place a program with major pollution control functions in the Pollution Control Agency. This might also tend to foster in MPCA a more balanced focus between surface- and gound-water pollution control, a problem identified in the management analysis. The reception of this option by those most directly affected, the water well contractors of the state, might bear on the feasibility of the alternative.

Major reorganization of the water management structure in Minnesota would bring quality, quantity, and health aspects together under direction of a single agency. Several options to achieve this could be identified but this discussion will outline only three: the Department of Waters model, an expanded Department of Health, and the super department model.

The Department of Waters option would consist of an independent agency combining the present Pollution Control Agency, the DNR Division of Waters, and Water Well Construction and Safe Drinking Water programs of the Department of Health. This combination would place all major water-related programs, including surface and ground waters, into one agency. Also added to this agency would be the air quality and solid waste programs of the present MPCA, keeping pollution control functions together. This arrangement would provide a strong, unified governmental voice for management of water resouces at the state level. A decision to opt for this alternative would place greater emphasis on integrated water management, rather than on the ties of certain water programs to health or conservation goals. One concern with this option would be the potential "tyranny of centralization;" that is, the absence of other water agencies capable of checking decisions of the proposed agency.

The expanded Department of Health option would combine all major ground-water programs in that department. MDH would become the primary ground-water management agency including programs in water appropriation, ground-water hydrology, underground gas and liquid storage, ground-water pollution control, and ground-water quality monitoring. This option would also place all water supply functions, including both quantity and health aspects, in MDH, since splitting of surface- and ground-water appropriation permitting functions would be clearly untenable. A decision to opt for this alternative would favor integration of ground-water and water supply programs within the health goal at the expense of connections with other water conservation programs in DNR and pollution control programs within MPCA. It would not address, effectively, coordination problems with surface-water quality programs of the MPCA and DNR.

The super-department option would combine the programs of the Department of Waters option with other conservation programs in the present Department of Natural Resources. This alternative would constitute nearly total integration of quality, quantity, and health-related water programs with other natural resources conservation programs. The arrangement looks promising on paper and has been tried in several states, including Wisconsin, with varying degrees of success. One major question that might be asked is whether such a department could be effectively administered, or whether it would break down into a loose confederation of poorly coordinated agencies.

Issue Area 3 - The Roles of State, Regional, and Local Authorities and Advisory Boards in Water Resources Planning and Management

Introduction

This section examines state, regional, and local governmental roles in three areas of water resources management: flood damage reduction, non-point source management, and lake management. The purpose of this analysis was to identify operational requirements of agencies and organizations at each level of government that are or could become involved in water management, and to assess the capability of each of these institutions for implementing options under consideration by the Water Planning Board.

The principal components of the analyses involved identification of the operational requirements associated with each option, assessment of which level(s) of government would be most appropriate for carrying out each requirement, and evaluation of the agencies and organizations that could be designated to implement the option. This approach to analysis of governmental roles was chosen for three reasons: 1) these roles may vary dramatically from one topical area to the next, 2) examination of institutional implications of proposed options focuses the evaluation of governmental roles in areas where problems have been identified, and 3) the examination forces staff of the Water Planning Board to assess institutional consequences of its technical recommendations. Only those alternatives from technical and working papers which were likely to be recommended by the Board's Technical Committee and that have significant implications for water management institutions were analyzed. This narrowed the evaluation, for example, of flood damage options to those targeted on structural rather than non-structural solutions, since the latter were not considered to have major institutional ramifications.

Flood Damage Reduction

State, regional, and local roles in flood damage reduction were examined for the Statewide Grant-in-Aid program, Long-Term Loan program, and state water resources priority body options. These options were first identified in Water Planning Board Technical Paper No. 7 "Flooding and Flood Damage Reduction". Other options identified in that paper were not analyzed for institutional implications since the existing institutions were considered adequate for implementing them.

The option for a Statewide Grant-in-Aid program is a proposal to expand the current grant-in-aid programs in the Minnesota River basin and the Red River Valley to make state cost-sharing available for the planning and construction of small flood damage reduction structures in the rest of the state. The operational requirements of such a program include (a) citizen participation, (b) determination of criteria for state cost-sharing priorities, (c) development of basin-specific flood plain management plans, (d) planning and engineering, (e) evaluation of project economic efficiency, environmental quality, and social well-being effects, (f) operation and maintenance, (g) funding and finance management, (h) land rights acquisition, and, (i) project and program effectiveness evaluation.

The distribution of these operational requirements among the levels of government would be determined by statutory mandates (e.g., state environmental quality regulations); the degree of control deemed necessary to assure that the program fulfills state goals; the willingness of the Legislature to provide the needed technical and financial support; the principle that project beneficiaries, regardless of the level, pay a fair share of the cost; and the principle that those closest to a problem are most capable of identifying feasible solutions to it.

Organizational alternatives were identified and evaluated for all three levels of government, though no recommendations were made. Alternatives for state level administration of the program include the Department of Natural Resources, the State Soil and Water Conservation Board, the Water Resources Board, and the Water Planning Board model. Regional alternatives were identified for two independent functions: administration of region-wide projects and coordination of local proposals with regional and state plans and programs. Alternatives considered include regional development commissions, water management boards similar to the lower Red River Water Management Board, boards similar to the Southern Minnesota Rivers Basin Board, and joint powers agreements between counties. Local governmental alternatives considered include watershed districts, soil and water conservation districts, counties, municipalities, and various joint powers agreements.

The option for a state Long-Term Loan program would institute a trial program to provide long-term loans to local units of government for the planning and construction of flood damage reduction projects. Many of the operational requirements of this option would be identical to those identified in the Statewide Grant-in-Aid program option. Additional requirements relate to procedures for review and evaluation of applications, and project funding and finance management unique to the loan option. Organizational alternatives would be identical to those presented with the Statewide Grant-in-Aid program except that financial management would probably necessitate involvement of the State Board of Investment.

Four state agencies considered feasible candidates to administer the Statewide Grant-in-Aid program and technical aspects of the Long-Term Loan program include the Department of Natural Resources, Soil and Water Conservation Board, Water Resources Board, and Water Planning Board model.

The Department of Natural Resources is currently the lead state agency involved in management of flood plains. The State Flood Plain Management, Flood Control Coordination, and Dam Safety programs are located in the Department's Division of Waters. The director of this division is charged by Minnesota Statutes, Section 105.40 Subd. 8 to make recommendations to the agencies involved and to the Governor as to the desirability, feasibility, and practicability of proposed projects and works of improvement affecting waters within the state. Administration of the Grant-in-Aid and Long-Term programs would thus be compatible with the charges and goals of the Department.

Conflicts with DNR programs oriented toward preservation could pose problems to those favoring flood control at the discretion of local government. However, these would occur anyway since the DNR administers the permit program governing works-in-the-bed of public waters. An advantage to location of the program within the DNR would be the early detection of projects posing environmental problems. In addition, the Division of Waters houses a great deal of technical expertise in service and related water management programs, including programs in surface-water hydrology and public waters management, and a network of regional hydrologists located throughout the state in six regional offices.

The State Soil and Water Conservation Board currently administers the Pilot State Grant-in-Aid Flood Damage Reduction program for a portion of the Minnesota River basin. Though the Board has experienced certain problems in program administration, such as in hiring a professional engineer and in developing a priority system for allocation of state funds, there appears to be a general satisfaction at the local level with its performance. The Board also has responsibility for recommending priorities for planning of small watershed protection and flood prevention projects by the U.S. Soil Conservation Service. In addition, the principal responsibilities of the Board, those of assisting, coordinating, and (where state funds are involved) supervising district activities and programs, may also involve considerations relating to flood damage reduction. Control of floods and prevention of the impairment of dams and reservoirs are among the purposes, stated in Minnesota Statutes, Chapter 40.02, relating directly to the Soil and Water Conservation Board and soil and water conservation districts. Administration of the Statewide Grant-in-Aid and Long-Term Loan program options would thus be compatible with the charges and goals of the SWCB.

Though the SWCB is located with the Department of Natural Resources for administrative purposes only, this arrangement has facilitated coordination with Department programs and expertise. However, the expertise of regional hydrologists and Division of Waters central office staff has not been utilized in program development to the extent it would likely be if the program were located with the Division of Waters. The State Board has relied on its close working relationship with the U.S. Soil Conservation Service to obtain much of the technical services needed in the pilot program. The Service has agreed to help train the Board's professional engineer in design of flood retarding structures, while taking responsibility for the design of structures presently being constructed under the program. This arrangement has unquestionably worked to the benefit of the state, though it is uncertain whether SCS would be able to provide a comparable service for the proposed statewide program.

An additional factor that must be considered in connection with SWCB's supervision of any proposed program is its heavy orientation toward rural/agricultural resource problems. Neither the SWCB nor the Soil Conservation Service has been heavily involved in flood damage reduction in urban upstream areas, although SCS and the State

Association of Soil and Water Conservation Districts have shown some recent concern for the natural resource problems faced by these areas. To the extent the program fund may be allocated for small urban projects, an organization more attuned to urban as well as rural flooding problems would have an advantage in administering the program.

The Water Resources Board is involved in flood damage reduction somewhat indirectly through its responsibilities for establishing watershed districts and for prescribing overall plans for watershed districts. The Board's staff has been kept small (two professionals) since many of the necessary technical services are provided, or intended to be provided, by the Department of Natural Resources. This relationship has worked effectively in the past, though increasingly less so in the last several years.

It is questionable whether the objectives of the proposed Statewide Grant-in-Aid and Long-Term Loan programs would be compatible with the charges of the Water Resources Board. It is not disputed that goals of the Watershed Act provide for conservation of natural resources, including flood control, and that watershed districts are an appropriate local authority for administration of the proposed program. It appears, however, that the WRB's responsibilities relating to resolution of conflicts in water policy may dictate that it remain an independent, impartial agency. Participation in the proposed program could jeopardize this position.

The interim Water Planning Board is charged with preparation of a statewide framework water plan, direction of state involvement in activities undertaken pursuant to the federal Water Resources Planning Act, and coordination of public water resource management and regulation activities among state agencies. Other responsibilities of the Board, less directly related to flood management as an ongoing function, include evaluation of state participation in the federal-state river basin commissions and evaluation of state laws, rules, and procedures. The present emphasis of the Water Planning Board has been to coordinate resource management programs of other state agencies, rather than to administer water management programs directly. Addition of a resources management program (such as either the proposed Statewide Grant-in-Aid or Long-Term Loan programs) to the agency charged with water resources coordination would represent a departure from WPB's present charge and its present schedule to cease existence by June 30, 1980. It would not, however, represent a departure from the Board's overall goal (or that of a successor) of achieving wise management of Minnesota's water resources.

The Board has operated with a small central staff (the chairperson and a research director) and a team of water resources planners situated within six departments. While this arrangement has caused certain problems administratively, it has facilitated coordination with other staff of these agencies. However, this relationship has not permitted the Board to draw on agency staff to the extent that might be desirable in administration of the proposed program.

Four types of regional authority are considered potentially feasible for carrying out regional responsibilities associated with the proposed programs. A fifth type of authority, the Metropolitan Council, is considered an appropriate candidate in the seven-county metropolitan area, exclusively but is not analyzed independently from RDC's below. The four types of authority include regional development commissions, water management boards similar to the Lower Red River Water Management Board, boards similar to the Southern Minnesota Rivers Basin Board, and joint powers agreements between counties.

The institutional structure currently being utilized in Area II of the Minnesota River basin is a ten-county joint powers agreement. The authority for joint exercise of powers is contained in Minnesota Statutes, Section 471.59. This statute authorized cooperative exercise of any power common to the governmental units entering into an agreement. Joint powers agreements must state the purpose of the agreement, the power to be exercised, and provide for the method in which joint powers will be exercised. Since there are no other limitations on the specific objectives which these agreements can be used to accomplish, nor upon the type of governing authority to be used, joint powers agreements represent a comparatively flexible type of institutional structure. While joint powers agreements have no specific authority to tax, the law permits the parties to such an agreement to make disbursements from public funds to achieve the objectives of the agreement. Thus, the ability of a joint powers organization to raise funds is limited only by the taxation powers of the individual members.

The advantages of joint powers agreements, flexibility of structure, and ease of access to member reserves, must be weighed against several disadvantages. The first is that joint powers are relatively fragile institutions whose stability depends upon the ongoing agreement of all members. In that respect, it would be difficult to work out cost-allocation arrangements acceptable to member governments. The Area II corporation experienced difficulties in this, but did arrive at a formula satisfactory to all members. A second disadvantage of joint powers agreements is related to the assumption of liability required in regional cost-sharing of approved flood damage reduction projects. Since there is no statutory requirement that joint powers agreements be maintained in perpetuity, the state must ensure that the terms of the initial agreement require members to meet ongoing responsibilities for operation and maintenance of constructed projects. If this is not done, the state could be forced to assume this responsibility should the agreement be terminated during the operational life of a project. The Area II corporation has circumvented this difficulty by transferring the responsibility for operation and maintenance of completed projects to counties or other local governments.

Water management boards are a variation of the joint powers agreements discussed above. The major distinctions are that they are composed of watershed districts and that they have independent taxation power. The only such board currently in existence is the Lower Red River

Water Management Board. Under Chapter 172 of the 1976 Laws of Minnesota, member watershed districts were empowered to levy and ad valorem tax of two mills or less on each dollar of assessed taxable property for the construction and maintenance of projects of common benefit to the districts. The Act also permitted the Board to institute joint projects and to enter into agreements with the State of North Dakota and the Province of Manitoba to assure integration of its projects with the purposes of these governments.

The chief advantages of water management boards patterned after the Lower Red River board are:

** Greater familiarity with water-related problems;

** Geographical boundaries that conform closely with actual watersheds;

** Specific taxation authority of member districts for water-related projects; and

** Statutory recognition of the board.

A significant drawback of the water management board concept is that, unlike counties, watershed districts have not been organized for the entire state. Should this structure be employed for regional setting of project priorities as well as for administration of regionwide projects, certain areas of the state might not be properly represented. However, it should be noted that (a) most portions of the state subject to serve flooding are already organized into watershed districts, and (b) legislation providing for the establishment, purposes and governance of watershed districts is currently in existence under Minnesota Statutes, Chapter 112.

A third alternative for carrying out regional responsibilities associated with the proposed statewide Grant-in-Aid Flood Damage Reduction Program is the river basin board. The model for this concept is the Southern Minnesota Rivers Basin Board, the statutory authority for which is contained in Minnesota Statutes, Chapter 114A. The SMRBB was established to serve as the regional organization for guiding the creation and implementation of a comprehensive environmental conservation and development plan for southern Minnesota Rivers basins. Other powers and duties of the SMRBB include:

** Adoption of planning guidelines and regulations designed to prevent the impairment or destruction of air, water, land, or other natural resources in the basin;

** Development and coordination of a system to enable units of government located in the basin to carry out those activities necessary to prepare a basin-wide plan; and

** Fostering and promoting the implementation of the plan by the various federal, state, and local units of government in the area.

The Southern Minnesota Rivers Basin Board has been generally effective in meeting its statutory charge. However, significant drawbacks would be associated with the use of similar boards to carry out the operational requirements for administration of regionwide projects. These include the lack of taxation powers and the lack of authority to undertake the construction of natural resource-related projects.

Regional development commissions were established in Minnesota under the authority of the Regional Development Act of 1969 (Minnesota Statutes, Section 462.381 - 462.396). The twelve regional development commissions cover the entire state outside the jurisdiction of the Metropolitan Council. Four mandatory responsibilities given RDC's include:

** To develop a comprehensive plan for the region in cooperation with the subregional planning agencies, the State Planning Agency, and local units of government;

** To review and comment on long-term comprehensive plans of local governments within the region;

** To review plans of independent boards or commissions within the region and to suspend plans which conflict with the regional plan; and

** To review and comment on applications of governmental units for loans and grants from state or federal government.

In addition to these mandated responsibilities, the Act authorizes RDC's to engage in other activities, including the following:

** To conduct research;

** To develop regional information and data collection systems;

** To provide technical assistance and services to local units of government;

** To coordinate civil defense and flood plain management;

** To participate in proceedings of the Minnesota Municipal Board; and

** To designate one of its members to serve without a vote on any other multijurisdiction planning board or council within the region.

Regional development commissions have broad powers to raise revenues, with each RDC having access to three sources of funding. First, the commissions are authorized to levy a property tax in the region of no more than one-sixth of one mill. Second, in anticipation of collection of taxes, the commissions may borrow money on a short-term basis. Third, the commissions may have access to various federal

and state planning grant programs and to the regional and local assistance fund of the State Planning Agency (the state appropriation in support of regional development commissions was approximately $2 million in the 78-79 biennium).

Despite the broad planning powers of the RDC's and their ability to raise funds by a variety of means, the operational requirements for administration of regionwide projects are not consistent with the objectives or capability of the RDC's. Specifically, the RDC's have little direct expertise in resource management, they are not currently authorized by law to undertake specific natural resource-related projects, and their boundaries do not in general coincide with any single watershed or group of watersheds in the state. Regional development commissions do have major assets that could be effectively utilized in setting regional priorities: the mandates to develop a comprehensive regionwide plan and to assure compatibility of plans of local independent boards, and the statewide coverage provided by commissions.

In order to fulfill the local operational requirements of the proposed Grant-in-Aid and Long-Term Loan programs, local units of government sponsoring flood damage reduction must have the following statutory powers:

** To acquire lands, and secure easements and rights of way for the specific purpose of flood damage reduction;

** To construct flood damage reduction projects, whether or not these projects may be part of an areawide program; and

** To raise funds for the purpose of flood damage reduction, either by (a) assessing benefited property owners on a project by project basis or (b) using existing forms of taxes generally utilized for local public works projects.

Of the various types of local units under consideration (counties, watershed districts, soil and water conservation districts, and municipalities), watershed districts have the clearest mandate to carry out all of the above operational responsibilities. These powers are specifically granted in Minnesota Statutes, Chapter 112. Two problems are associated with assigning local operational requirements to watershed districts. As previously noted, much of the state is not currently represented by watershed districts. Consequently, limiting local operational requirements to this type of body would lead to the temporary exclusion of certain areas of the state from the proposed program. The second problem is related to financial obligations that must be assumed by local units of government. While watershed districts have the power to levy taxes, existing tax limitations could in some cases hamper districts from raising the necessary revenues to meet the local cost-sharing requirement.

In fact, this problem does not apply to watershed districts alone, but may be viewed as a more general problem of government in carrying out local and regional operational requirements. For example, the Area II corporation has found it necessary to require that the Legislature raise the tax levy limitation in member counties in order to meet the cost-sharing requirements of the current program. The Legislature would have to confront this problem in considering any proposal to expand the current Pilot Grant-in-Aid program statewide.

Local operational requirements could also be carried out under joint powers agreements between soil and water conservation districts and counties. The joint powers structure would be required since neither soil and water conservation districts nor counties have the necessary powers to conduct local operational responsibilities. Under the joint powers agreement, the joint governing body would acquire from soil and water conservation districts the right to acquire land, easements, and rights of way, and to assess project costs against benefited property owners. Coupled with the more general authority of counties to levy taxes, these powers would then be sufficient to meet most local operational requirements of the program.

The shortcoming of this arrangement would be the lack of explicit statutory authority to condemn lands for the purpose of flood control, since neither counties nor soil and water conservation districts have this, though counties may have such authority under Minnesota Statutes, Section 106.021 under certain circumstances. An advantage of this type of arrangement is the statewide coverage of soil and water conservation districts. However, the state would again need to ensure that the joint powers agreement contained provisions binding participants to meeting ongoing operational needs.

Municipalities would also be viable candidates for meeting local requirements in areas not covered by watershed districts. The authority of municipalities to acquire lands for the purpose of flood control, to build and maintain flood control structures, and assess taxes against benefited property owners is contained in Minnesota Statutes, Chapter 429. One foreseeable difficulty would be that effects of structures of flood flows often range beyond that area controlled by individual municipalities. In that event, however, a city could enter into a joint powers agreement with affected counties to obtain the needed coverage.

It is concluded that any of the above arrangements (watershed districts, municipal governments, and the various joint powers agreements) could assume the local operational requirements of the proposed Grant-in-Aid and Long-Term Loan programs on a case-by-case basis. In cases where large projects necessitating condemnation would be involved, either watershed districts or some combination of municipal authority would be preferable, however.

The option for establishing a state water resources priority body would serve to assist the state in coordination of state and federal flood damage reduction programs, and to establish priorities for the construction of flood damage reduction measures in the state. The operational requirements of the priority body would include development of criteria for addressing flooding problems, setting priorities for distribution of funds under the previous two options, and ensuring

that federal planning and construction is consistent with statewide priorities and policy. The internal structure of the priority body would include representatives from the upper echelon positions with technical and administrative expertise. Representation of the following agencies on the body was considered important: The Departments of Natural Resources, Health, and Agriculture, the Pollution Control Agency, Division of Emergency Services, State Planning Agency, State Soil and Water Conservation Board, and Water Resources Board, or successor agencies. Relevant federal agencies and citizens groups would serve in an advisory capacity. The body would advise and recommend priorities and actions to a supervisory authority for final decision-making. The Environmental Quality Board, Water Planning Board model, Department of Natural Resources, and a citizens board option were evaluated for this capacity as the supervisory authority.

The Environmental Quality Board has broad powers to identify environmental quality problems, to review all agency plans that significantly effect the environment, to resolve conflicts between state agencies regarding environmental quality, and to coordinate the issuance of environmental permits. Its membership is composed of the Commissioner of Agriculture, the Commissioner of Natural Resources, the Director of the State Planning Agency, the Director of the Pollution Control Agency, the Commissioner of Health, the Commissioner of Transportation, the Director of the Minnesota Energy Agency, a representative of the Governor's Office and four citizen members. Justification for establishing the proposed water resources priority body within the EQB would lie in the fact that flood damage reduction measures can have significant environmental impacts. However, it is possible that this focus on environmental concerns, to the possible exclusion of a wide variety of other factors, may represent too narrow an approach, conceptually, to flood damage reduction planning.

The body after which this option would be modeled, the Water Planning Board, was established to direct the preparation of the framework water and related land resources plan for the State of Minnesota, to evaluate existing state water resources policy, and to coordinate public water resources management and regulation activities in the state. The membership of WPB is composed of the Commissioner of Natural Resources, the Commissioner of Health, Director of the Pollution Control Agency, the Commissioner of Agriculture, Director of the Minnesota Energy Agency, and Chairman of the State Soil and Water Conservation Board. In addition, the Board is chaired by an appointee of the Governor not connected with any other agency. To assist the WPB in meeting its responsibilities, a number of committees have been established, including a water interests advisory committee composed of representatives from the private business sectors, as well as a technical priorities committee. Justification for establishing the proposed water resources priorities committee within an agency modeled after the WPB would be based on wide experience of staff in water resources planning and policy evaluation, specific familiarity with flood damage reduction evaluation and planning, and the statutory authority of such a Board to coordinate public water resources management. This represents a broader base for supporting activities of

the proposed priorities body than would be the case with the EQB. The WPB was created with sunset provisions taking effect after completion of the initial water and related land resources framework plan and communication of findings through June of 1980.

The Department of Natural Resources could be charged with providing supervision of the water resources priority body. The DNR was charged with coordinating state water planning activities and the use of federal funds in these areas from 1972 to 1977, though there was dissatisfaction at several levels with the DNR in this role. In addition, the DNR would not constitute a meaningful forum for bringing major state water management agencies together on an equal footing in setting priorities for water management proposals. However, the option is viable in its limited application to setting flood damage reduction priorities, alone, since the DNR and Director, Division of Waters have specific charges in this area.

Citizens board options also warrant consideration as the supervisory authority to which the water resources priority body would report its recommendations. Several examples of citizens boards currently exist in Minnesota, including the Pollution Control Agency Board, the Water Resources Board, the Southern Minnesota Rivers Basin Board, and the Metropolitan Council. The experience with these boards could be drawn upon to design a board capable, generally, of providing coordination of water management programs and policies at the state level and specifically, of making final decisions on the priorities of flood damage reduction proposals. The advantage of a properly constituted and staffed citizens board would be a forum removed from narrow agency interests. The disadvantage would lie in its separation from state agencies; the possibility that it would be perceived as a new layer of government; and the possible difficulty in getting state agencies to comply with board determinations.

Non-Point Source Management

State, regional, and local roles in non-point source management were examined for seven options addressing problems in agricultural runoff, construction activities, and urban runoff. Organizational alternatives for administering these options are described in greater detail at the end of this section after a brief discussion of the options.

The first option, a voluntary erosion and sediment control program for agricultural runoff management, would continue the existing programs and maintain current funding levels for cost-sharing. At the state level, the MPCA would have primary control. The MPCA would also maintain water quality monitoring responsibility including the evaluation of program effectiveness. The SWCB would maintain the administrative responsibility for cost-sharing of management practices. At the local level, the SWC districts would have responsibility for administering cost-share funds for installing management practices to control non-point source pollution.

Under this (status quo) approach, the operational program budgets of the affected agencies and cost-sharing funds would be maintained at their current levels. This would essentially place limits on the affected agencies in broadening educational mechanisms to provide better understandings of soil conservation and water quality objectives. The major limitation under this option would be little expansion, if any, of getting management practices on the land.

The second option is also a voluntary, agriculturally-targeted program. It would continue the existing programs, but with significant increases in cost-sharing, and incentives for installing conservation practices and broadening educational efforts to incorporate water quality goals. In addition to the institutional arrangements identified under Option No. 1, the MPCA would have the lead responsibility for establishing and developing a priority system for critical areas since the prime concern relates to water quality goals. The Metropolitan Council under their continuing planning role would develop an agricultural non-point source program consistent with the State Water Quality Management Plan and would interface with the MPCA in identifying critical areas within the metro area. The MPCA and State Soil and Water Conservation Board would increase educational efforts in cooperation with other state, local, and federal agencies to broaden understanding of soil conservation and water quality objectives.

The third option is a regulatory program for control of sediment and erosion from agricultural sources. The option would continue existing programs in-place with mandatory requirements for controlling non-point source pollution. It would include increased monitoring and enforcement requirements as well as conservation plans and specific conservation practices. The state cost-share program would be increased and funds allocated to prioritized critical areas of the state. In determining critical areas, the state would establish guidelines and criteria for delineating and setting priorities. These efforts would be consistent with water quality management plans of the state and Metropolitan Council. The affected agencies would have to revise their authorities in order to implement the option. A detailed memorandum of understanding between the MPCA and the SWCB would be established to delineate the lines of authority. At the local level, soil and water conservation districts would require additional manpower, as well, to carry out conservation programs.

The fourth option is a voluntary erosion and sediment control program targeted on construction activities. Existing agencies and programs would be continued and agreements with major development groups, such as construction contractors and land developers, would be established. The MPCA would have responsibility for developing the program which would incorporate planning efforts of the Metropolitan Council. Each local unit of government would have responsibility for assuring proper implementation of construction projects within their jurisdiction.

The fifth option is a regulatory program targeted on construction activities. Existing agencies and programs would be continued but with mandatory requirements for controlling non-point sources of pollution. Legislation for a statewide erosion and sediment control program would be established. This would require increased monitoring, evaluation, and enforcement responsibilities at state and local levels.

At the state level the MPCA would have primary responsibility for an erosion control program. This effort would include a general permit program (similar to the NPDES permits) which would establish specific standards and criteria and would require plans and specifications for construction sites to include practices for controlling erosion and runoff. Monitoring effectiveness of erosion control practices would also be included under this option. The Minnesota Department of Transportation would assure implementation of erosion control practices for roadsides and assist the MPCA in developing guidelines for application of practices.

Local units of government (county, township, municipality and special districts) would need to strengthen their authorities in order to assure acceptable erosion control practices are applied. Since development/construction projects occur in a specific jurisdiction, the affected unit of government would be responsible for appropriate permitting and environmental assessment requirements.

The sixth option is a voluntary urban runoff control program. Local governmental units would be encouraged to adopt ordinances for controlling urban runoff as well as to maintain effective public works programs. At the state level, the MPCA would have primary responsibility for developing the water quality management plan in conjunction with the Metropolitan Council. At the local level, primary responsibility would fall upon municipalities although each governmental unit would have appropriate responsibility within its jurisdiction to control urban runoff.

The seventh and final option is a regulatory urban runoff control program. Existing agencies and programs would be continued with mandatory requirements for controlling urban runoff pollution. This would require a legislative mandate. Increased monitoring and enforcement efforts would be necessary. The option could require permitting of stormwater discharges to receiving waters. The state could also require (as an alternative) that community-wide plans for stormwater control be approved as part of an overall permit requirement under a general permit program. The MPCA would have primary responsibility for this program, though DNR and MDOT would assist in monitoring activities. Federal assistance would be sought in order to fund urban runoff controls. Local units of government (counties, townships, municipalities, and special districts) would have responsibility to assure that pollution control programs for urban runoff were carried out and that permitting requirements met. The primary candidate would be municipalities since they have specific authorities relating to zoning and maintaining public works programs for controlling urban runoff pollution.

Organizational alternatives identified in the above paragraphs for the seven options are summarized in the following section for state, regional, and local levels of government.

Three organizations are considered candidates for administering identified alternative programs at the state level. These include the Pollution Control Agency, the State Soil and Water Conservation Board, and an organization representing the merger of these two agencies. The MPCA is currently the lead state agency for coordinating and conducting the water quality management (WQM) planning effort. The MPCA has prime responsibility for establishing and maintaining water quality goals and WQM objectives. The MPCA is charged with

development of a state WQM plan. In connection with the federal government's Clean Lakes program, the MPCA also assists local governments in developing programs for controlling pollution of lakes.

The SWCB has the charge and authority to work with soil and water conservation districts in establishing sound soil and water conservation programs in the state. In addition, the Board administers the State Cost-Share program for installing management practices. Some type of formal agreement with federal agencies, including EPA and SCS, would be necessary since national objectives and emphasis direct state-level program efforts.

The third alternative which might be considered is consolidating the MPCA and the SWCB's responsibilities into a single agency under the MPCA's authorities. A consolidated approach could be considered given the mandatory nature of this program option. This consideration would require legislative action. However, if consolidation is not feasible due to drastic shifts in program operations, another optimum alternative is to maintain the SWCB and the MPCA as independent agencies with distinct lines of authority and delineated responsibilites.

Also open to consideration at the state level are advisory organizations for providing assistance in administration of the alternative programs. Under the MPCA's WQM planning process, a State Task Force was established to review and recommend program alternatives during the initial planning period. The need for a continuation of a state-level structure (group of state agencies) to interface with WQM planning and other resource planning programs is essential. The Water Planning Board as it currently exists (with its advisory and technical committees), or its successor, could serve in this capacity. Under the Rural Clean Water program, a state coordinating committee is to be established. This committee could possibly serve in this role; however, the committee is federally chaired and currently is limited to agricultural concerns.

Two regional entities are considered appropriate for carrying out regional responsibilities associated with the identified alternatives. These include regional development commissions and the Metropolitan Council.

The RDC's could be utilized in an advisory role in statewide program management and in assisting local governments in identifying available financial grants. RDC's could encourage through their comprehensive plans and planning processes such efforts as programs to encourage or monitor inclusion of erosion control practices in construction of local and private developments. The RDC's should be encouraged to maintain a regionwide advisory structure for public review and participation in state and local WQM programs as well as other resource and land use concerns.

The Metropolitan Council should be considered due to their legislative responsibilities and the requirements under the WQM planning program. The Metropolitan Council through the Development Guide and Policy Plan, could address the appropriate process to minimize non-point source

pollution from construction activities, urban runoff, and other sources. The Council and the state agencies (as identified above) should define appropriate roles and responsibilities through a memorandum of understanding.

A range of local units of government were considered candidates for local administration of the alternative programs, including counties, soil and water conservation districts, watershed districts, townships, municipalities, sanitary sewer districts, and lake improvement districts. Municipalities could have a primary role concerning non-point source pollution control or urban runoff. In addition to public works programs, zoning and other ordinances could be emphasized as non-structural methods to reduce runoff at the municipal government level. Utilization of the lake improvement district program could enhance water quality goals and provide uniformity in approach of local government in addressing urban runoff pollution; however, this would need to be on a case-by-case basis.

Three forms of local government are considered appropriate candidates for the other alternative programs. These include counties, soil and water conservation districts, and watershed districts. The SWCD's would be considered the prime alternative for administration of these programs since they are involved with at least three major programs at the local level. SWCD's currently conduct soil and water conservation programs throughout the state and administer cost-sharing to landowners. The watershed districts would not be considered unless they were extended statewide in some form, as a result of reorganization of general water management structures as may be considered by the Legislature. Counties also have a wide variety of authorities that could possibly be considered in an administrative role, however.

Lake Management

State, regional, and local roles in lake management were examined for three options: establishing a coordinative mechanism for state lake management programs, designating responsibility for the statewide lake improvement (i.e., restoration) program, and provision of technical assistance and education for existing and potential lake management authorities. A fourth option relating to inclusion of storm sewer discharges in a permit program was covered in the non-point source management section.

The option to establish a coordinative mechanism for state lake management programs would promote comprehensive management of lakes by a) establishing state lake management goals and policies, b) maintaining a data base of lake and related land use information, c) classifying major lakes and ranking them for various public purposes, d) reviewing lake-related program plans to reduce overlap and promote cooperation and e) improving communication among state and local lake management agencies. This option would require participation of program managers from important state lake-related programs and the ability to secure agency commitment to group decisions. The ability to oversee the manipulation, storage, and evaluation of technical lake data would also be necessary.

The operational requirements for this option would largely rest with state government, since nearly all multi-lake programs in the state are housed there. Several state organizations were considered for housing a lake management coordinative body, including the Environment Quality Board, the Pollution Control Agency, the Department of Natural Resources, the Water Planning Board model, and an interagency task force. No organizational alternatives to regional development commissions were considered since regional roles in this option would be largely limited to provision of information on regional needs, review and input to state lake classification and ranking, and comment on proposed changes to state programs. Since involvement of local units would be confined to providing commentary and evaluation directly, or through RDC's, no units have been discussed.

The Environmental Quality Board (EQB) has legislative authorization to resolve program conflicts among state agencies and to review and coordinate environmental programs which are interdepartmental in nature. Placement of the coordinative function with the EQB would minimize duplication of authority and provide compatibility with agency objectives, but the capability -- or willingness -- to perform coordination of routine programs is uncertain, particularly when the responsibility rests primarily between two major agencies. The EQB has tended to deal with issues of a broad nature, crossing many departmental lines (e.g., power plant siting). Additional concerns are the lack of proximity to the state's limnological expertise, lake data, and lake management programs, and the membership of the EQB, which includes agencies not directly related to lake management.

The Pollution Control Agency and Department of Natural Resources both have important lake management responsibilities. Although either agency could be provided with authority to coordinate lake programs, a comprehensive approach would be served by placing the authority with DNR, where the majority of lake management programs are housed. This alternative would also serve to minimize overlap through the elimination of an external coordinating body. DNR has the proximity to lake data, to program managers, and to lake management expertise required to effectively coordinate state lake management. Three significant concerns contradict these arguments: 1) DNR's failure, to date, to take a leading role in coordinating state lake management, 2) DNR's failure to coordinate, establish policies, and set priorities for its own lake management programs, and 3) the delays in promulgating rules and implementing programs for surface-use zoning, lake improvement districts, lake protection elevations, etc.

The Water Planning Board's (WPB) authorizing legislation directs it to "coordinate public water resource management and regulation activities among the state agencies having jurisdiction..." Although this duty and the statutory responsibility of the EQB appear to overlap, in reality the EQB has not undertaken evaluation of water management issues. The WPB has also accumulated much of the expertise and structure (staff, citizen input, advisory committees) to deal with coordination and evaluation, and has demonstrated its ability to gather local and regional input. Perhaps the most serious question regarding the WPB's ability is its longevity; the WPB is scheduled to expire June 30, 1980. However, a body modeled after the WPB and charged with water resources coordination could serve with essentially

the same effectiveness. An additional concern may be the proximity of the current WPB to lake-related data and expertise after the completion of the framework water and related land resources plan.

An interagency task force could be administratively established to meet some of the operational requirements in the short-term. Although precedents may exist for the success of such groups, there are serious doubts about their ability to secure agency commitments, contribute sufficient staff time from line personnel, and to strengthen program interrelationships beyond what they have already accomplished. However, such a group would minimize overlap, be relatively inexpensive, and would provide immediate access to resource data and expertise. Their ability to prepare documents, gather regional and local input, and disseminate information would be limited by lack of staff.

A critical question is the ability of a coordinative body to secure the cooperation and assistance of lake management agencies. The EQB and WPB have explicit authority to establish interdepartmental subcommittees required to fulfill their responsibilities, and have demonstrated such ability. DNR, MPCA, and task force alternatives would not have such authority and their ability to secure cooperation is questionable. In these cases the success of the effort would be closely linked to the priority assigned by agencies.

The second option, designation of responsibility for the statewide lake improvement program, would fill this current gap in authority as well as provide financial assistance for lake restoration feasibility studies. Its objectives would be to encourage restoration of lakes of statewide significance, aid local units of government in examining the feasibility of such restoration, and develop a unified state strategy for initiating lake restoration.

This option would have the following operational requirements: a) modification of the statutes to designate a lead agency for lake improvement and restoration, b) development of policies and criteria for determining state restoration priorities, c) securing of funds to finance cost-sharing, d) opportunity for external and coordinated state input to the determination of priorities, and e) the establishment of minimum standards to be met in the performance of feasibility studies.

All operational requirements of this option are currently the responsibility of state government. Existing state programs perform several important lake restoration/improvement functions, distributed between MPCA and DNR. DNR's role includes supervising the creation of lake improvement districts, administering a very limited amount of lake improvement funds, and guiding most lake management activities (shoreland zoning, water surface use zoning, and so forth). MPCA's responsibilities encompass the administration of federal and supplemental state (LCMR) lake restoration funds, water pollution abatement from both point and non-point sources, and water quality monitoring. All lake restoration activities, excluding the implementation of a project by a local unit of government, are undertaken at the state level.

The failure to designate a lead agency for development of a lake improvement program is a contributing factor to maintenance of the state's position as reactive rather than initiative in lake improvement The state is presently performing some of the operational requirements of this option, in its review of requests for implementation of lake restoration projects financed by federal Clean Lakes assistance, and its distribution of LCMR special appropriations to facilitate these projects. However, no state aid has been available to assist the undertaking of feasibility studies, beyond some infrequent appropriations from the DNR's Lake Improvement Fund (not funded last biennium). Equally important is the state's ability to promote lake restoration in lakes of high priority to the state (see Option 3). Some federal aid may be forthcoming for cost-sharing of feasibility studies (not just implementation projects), but state assistance should be used to decrease the local share and to reflect state interests.

Either MPCA or DNR can be viewed as reasonable choices to lead a comprehensive lake improvement program and to disburse feasibility study assistance. The choice of one as a lead agency will reduce the overlap and confusion which exists under present arrangements. Both agencies have programs with which such designation would be compatible, but if a lake improvement program is to be primarily water quality oriented it would more appropriately be housed in MPCA. A more comprehensive view of "lake improvement" suggests greater compatibility with DNR's broad lake management responsibilities.

Both agencies have the capability to carry out such a program although DNR may be unwilling to undertake it based on past performance. MPCA presently has better access to water quality data and lake restoration expertise, but this is a minor consideration since much of MPCA's inventory data was gathered by DNR and since lake restoration technology is evolving rapidly.

The resolution of this situation may be influenced by consideration of the MPCA-DNR relationship in other water quality-quantity interactions discussed by the establishment of state goals for lake restoration (by the body chosen in Option 1).

The third option is for the provision of technical assistance and education for existing and future lake management authorities. The option would develop the state's capability to inform lake management authorities of lake restoration aid and provide technical assistance during feasibility studies and implementaiton. The objectives would be to a) initiate lake restoration projects in lakes of high priority to the state, b) aid in the establishment of lake improvement districts, c) facilitate the functioning of lakes management authorities, d) ensure consistency and adequacy of feasibility studies, e) educate Minnesotans on the detrimental impacts of man's activities on lakes, and on techniques for minimizing and alleviating such impacts, and f) to serve as a clearinghouse for lake management technical and financial assistance to local units of government.

All operational requirements of this option were considered the responsibility of state government due to the need for centralizing information, minimizing overlap, and maintaining proximity to information and expertise. Four organizational alternatives were considered: the Pollution Control Agency, Department of Natural Resoruces, the coordinating body chosen for the first lake management option, and the University of Minnesota - Extension.

The analysis presented under lake management Option #1 (state government alternatives) also applies to this option, although the technical assistance, promotional, and educational capability need not be housed with the coordinating body. Additionally, University of Minnesota - Extension could be considered to perform this function in a similar capacity to its agricultural technical assistance and education. However, detriments to the case are 1) Extension's distance from lake management data and expertise, 2) further fragmentation of lake management responsibilities, and 3) its lack of present involvement in lake management.

CHAPTER III

ANALYSIS OF LOCAL AND REGIONAL WATER MANAGEMENT

Introduction

This chapter of the Final Report includes results of the Water Planning Board's Water Management Survey, as well as findings of a review of annual and long range plans developed by soil and water conservation districts and watershed districts. The information gained during the course of these studies was utilized to supplement analysis summarized in the previous chapter. Both efforts, taken together, were drawn upon in developing conclusions and recommendations concerning management of Minnesota's water resources.

The Water Management Survey was administered to local and regional authorities through regional development commission offices throughout the state, and in the cases of SWCD's and watershed districts, through their respective state boards. Over two hundred surveys were administered during the months of March, April, and May of 1978 with 135 surveys returned in various stages of completion. Over 60 percent of the RDC's, and nearly 80 percent of both soil and water conservation and watershed districts responded. Twenty-five surveys were completed by cities, counties, and miscellaneous districts and boards contacted at the discretion of individual regional development commissions. The survey included questions about the water-related programs with which local and regional agencies are involved. It requested information on program goals, policies, and regulations; agencies and interest groups contacted; and problems associated with the authorizing legislation, the funding, or program administration. "Survey Responses" sections in the following pages describe responses of RDC's, soil and water conservation districts, watershed districts, and counties and miscellaneous water management authorities.

Sections on review of watershed district and soil and water conservation district plans examine plan content and scope, as well as review existing statutory authorities of both districts and their respective state boards. Other information available in the plans of one or the other type district is also presented, though not for comparison purposes. Conclusions relating to plan review observations are noted at the end of each section.

Regional Development Commission Survey Responses

Program: 208 Water Quality Management Planning

RDC involvement in 208 Water Quality Management (WQM) Planning consists of complementing statewide 208 WQM efforts at the regional level. As part of this function, the RDC provides a mechanism for citizen participation in water related planning efforts. Regional 208 committees review and comment on informational packages put together by the MPCA. The goal of this input contribution is to ensure that regional viewpoints are incorporated into the final state WQM Plan. As a by-product of participating at the state level, regional policies may be developed that will be consistent with the state's 208 policies concerning abatement or minimization of non-point source pollution. (NOTE: The special role of the Metropolitan Council is discussed elsewhere in this report.)

Problem Areas: RDC involvement in 208 planning is predicated on the assumption that regional goals and policies will be included in the final state plan. All of the responding commissions involved in this planning effort expressed real concern that the state plan would not reflect regional considerations. Skepticism was expressed over the utility of the citizen 208 committees in that their existence was seen as being only proforma. The commissions tend to feel that in any balancing of state versus regional interests will inevitably lose out.

A third of the responding RDC's expressed a need for additional funding to cover administrative and committee expenses incurred in 208 planning.

Program. Comprehensive Regional Planning, Land Use Planning

As part of their responsibilities, RDC's are required to develop a comprehensive plan for their region in cooperation with subregional planning agencies, the State Planning Agency, and local units of government. Two of the RDC's reported on the water management aspects of their comprehensive plan. Three RDC's reported water related management activities as an element of land use planning.

Problem Areas: As with 208 WQM planning, the commissions were concerned that regional policies and goals be recognized by state planning agencies and that there be a strengthening of the local and regional role in planning processes.

Program: A-95 Review

The A-95 review process is intended to facilitate coordinated development planning on an intergovernmental basis and to expedite the processing of applications for loans and grants from state and federal agencies. A-95 review is one aspect of the commissions' mandatory

responsibility of reviewing plans and proposals of local governments and independent boards or commissions within the region. Submitted plans and proposals are checked for conformity with regional plans, and for any overlap with existing plans and proposals.

Problem Areas: Half of the commissions responding indicated they were involved in A-95 review. None of them indicated any problems with its administrative aspects. One commission did cite a need for increased funding as money was a major limiting factor on staff involvement.

Program: Environmental Permit Information Center

RDC's maintain files of information on state permit requirements. This data is available to any person or unit seeking a permit of any type from the state. The EQB allocated $5,000 to each of the RDC's to cover costs involved. Three of the RDC's mentioned involvement in the program although twelve of the thirteen commissions are actually involved and receiving funds.

Problem Areas: The RDC's expressed no difficulties with functioning as a clearinghouse for the EQB. Some need was expressed for additional funding.

Miscellaneous Programs:

The Arrowhead RDC has been involved in the Coastal Zone Management program, including a harbor study, and a Regional Perspective program which consists of integrating the MLMIS data base into local and regional planning processes.

The Region Nine Development Commission performs environmental assessment and review for local units of government. Proposals involving resource planning or wildlife and critical areas are studied to determine if an EIS will be required. Problems cited included a local bias tending toward overlooking environmental effects of projects, and problems in dealing with the EQB in that it did not always have a facile knowledge of each of the individual projects being considered.

The Southwest RDC intends to develop a lake restoration and development program. It also is planning to monitor the efforts of state and federal agencies relating to municipal and rural water system treatment requirements.

Soil and Water Conservation District Survey Responses

Program: Sediment and Erosion Control Demonstration Program of the State Soil and Water Conservation Board

The Legislative Commission on Minnesota Resources (LCMR) provides funding for innovative resource programs that may be of importance to the state but that have no historical record upon which to base

a permanent legislative allocation. LCMR funds for the Demonstration program are used in solving sediment and erosion control problems. Streambank and roadside erosion are first priority projects.[1]

Sixty-five percent of the districts responding to the survey indicated that they were involved in this program.

Problem Areas: A third of the responding districts participating in the program indicated that they had encountered some difficulties with it, primarily with regard to program policies and criteria. Limitations were seen in the lack of program applicability to erosion problems of private property. Individuals with severe gully or streambank erosion problems usually have not qualified for funding. Projects are required to have a definite and demonstrable public benefit and a responsible agency must assume operation and maintenance of a project. These requirements are difficult to achieve on private property. In addition, streambank stabilization projects are frequently ineligible for funding from other cost-share programs because they usually involve non-agricultural lands and more than one landowner.

The fifty percent cost-share limitation was also seen as a restriction in utility of the program. Often the local share of the matching funds will be large enough to necessitate funding from other government sources. Where sufficient local funds are not available, a project must be adapted to the requirements of other cost-share programs.

Ten percent of those participating districts responding to the survey felt that too many layers of government are involved. Administration of the LCMR Demonstration program involves the LCMR, the State Soil and Water Conservation Board, local soil and water conservation districts and local units of government. The complaining districts cited problems such as inefficiency, time delays, and unreasonable amounts of paperwork.

As part of the program, the state SWCB must approve completion of a project before cost-share funds may be released by the SWCD. This process has occassionally resulted in delays in payment. The local district, as a project sponsor, may be put in the embarassing position of being unable to pay a contractor until funds are released.

Ten percent of the responding districts reported that they had received insufficient funds or no funding at all due to the limited demonstration project appropriation.

Program: MPCA 208 Non-Point Source Planning Program

A contractual agreement between the MPCA and the SWCB has allowed SWCD's to conduct a large portion of the agriculturally related and rural non-point source research for the 208 Water Quality Management Planning program. Districts have been most consistently involved in preparing feedlot inventories.

1. Editor's Note: The Sediment and Erosion Control Demonstration program was discontinued as a separate program by LCMR in 1979 and was combined with the State Cost-Share program by the 1979 Session of the Legislature.

Problem Areas: Fifty-five percent of the responding districts indicated involvement in 208 activities. Through the districts' survey activities, many non-point sources of pollution were identified as well as instances of noncompliance with existing regulations. Many of the districts were dismayed by the lack of funding available to abate these problems. Additionally, a need was seen for enforcement and treatment measures.

A few districts commented that the attainment by 1983 of "fishable and swimmable" waters may be an unrealistic goal in many instances. In addition, certain districts noted that a program requiring cooperation on the part of farmers may run into resistance due to distrust of governmental control.

Minor problems occurred with timely receipt of funding.

Program: Federal ASCS - Agricultural Conservation Cost-Share Program

SWCD's become involved in the ACP program whenever conservation plans are required in order to receive funding. All long term agreements under this program require preparation of a conservation plan. SCS personnel and SWCD staff provide technical assistance and advice to the landowner and as needed by the ASCS county committees. Ninety percent of the responding districts indicated involvement in the ACP program.

Problem Areas: Half of the responding districts reported problems with the program primarily related to funding policies and criteria.

The $3,500 funding limit for an individual landowner was seen as an impediment to installation of some of the more expensive conservation practices.

The seventy-five percent cost-share limit was also seen as a limitation on the program's effectiveness since an individual may be reluctant to put up twenty-five percent of the cost while receiving little apparent short-term or immediate benefit.

Despite these problems, most districts reported that more requests are received than can be funded.

This program requires administrative efforts at many levels of government. Complaints were made that too much of the available funding was being spent on administrative costs. Also, the program was said by a few to require excessive amounts of paperwork.

Program: State Cost-Share Program

SWCD's are responsible for local administration of the State Cost-Share program. Each district must prepare an annual and comprehensive long-range plan in order to qualify for funds from the SWCB, since SWCD objectives and priorities must be consistent with legislative goals. Some of the districts have added wetland protection, wildlife, and recreation objectives to their implementation plans.

All of the responding SWCD's indicated that they are involved in the State Cost-Share program.

Problem Areas: A large proportion (two-thirds) of the responding districts complained of various rpoblems associated with this program.

Inadequacy of funding and staff were reported. Increased demands have been made of district technical personnel with no provision made for hiring additional staff to ease the workload.

The demand for cost-share funds far exceeds the available supply. Funding problems have been aggravated as initial release of funds had been nearly a year behind schedule. Districts were not informed of the amount of their appropriation until late in the planning and administrative process. They were thus put in the position of administering a program without knowing whether they would be adequately reimbursed, and having to proceed with long-range and annual plans before being informed of a starting date or the amount of funding which would be recieved.

Other miscellaneous problems were cited. Certain essential practices, such as pumps in animal waste holding ponds, have been ineligible to receive funding. Some aspects of the program overlap with the ACP program, resulting in confusion. As with the ACP program, the percentage limit on cost-share was seen as a barrier to installation of more costly conservation practices.

Program: DNR Water Appropriation and Works in Public Waters Permit Review

Chapter 446, 1977 Session Laws amended Chapter 105 providing for review of all water permits by SWCD's. Duties of the districts under this program include review of permits for water appropriations and/or works in the beds of public waters. SWCD's are directed under Chapter 105 to provide the DNR with ground-water data relevant to issuing irrigation permits. Each district is to make recommendations favoring permit issuance only where it has determined that the proposed soil and water conservation measures are adequate.

SWCD's may also participate in the MPCA, Army Corps of Engineers (COE), and municipal permit programs. State statutes don't specifically refer to this type of activity and the degree and nature of involvement may vary between districts. Interactions seem to occur on a case-by-case basis without any ongoing formal agreement.

Problem Areas: A major problem with the DNR permit procedures was cited as confusion over permit requirements. Applicants appear to be unaware of proper procedures for permit applications. In addition, the districts themselves appear confused about their responsibilities.

Specific complaints about the DNR permit programs include the following: districts have received too little training; the overall direction of the permit program is not well understood; program priorities and enforcement procedures lack continuity; policies regarding district obligations have not been established; frequent breakdowns occur in communicating with DNR offices; and time delays in processing applications seem excessive.

Some of these problems may be due to insufficient funding. In situations where district personnel are overtaxed, they may be unable to

provide a consistent level of effort. Lack of training and effective communication of procedures by DNR may be equally serious problems, however.

Problems were also noted in cases where applications lacking necessary information have been submitted. The districts have been reluctant to badger applicants for the necessary data. This situation could be eased by consistent DNR refusal to process incomplete applications.

Program: MGS Water Well Log Verification

Many SWCD's have entered into agreements with the Minnesota Geological Survey (through the SWCB) to verify location and logs of newly constructed wells. Copies of well logs are sent to appropriate SWCD's as contractors send them into the Minnesota Department of Health. District personnel visit sites and verify well locations and, in some cases, other log information.

Problem Areas: No problems were identified with this program directly. Problems have arisin as a result of the cumulative effect of all the district's various activities, since provision of a multitude of services may cut into the time available for income-producing activities.

Program: USGS Water Well Monitoring

A small number of districts indicated agreements with USGS to monitor water levels of certain wells at regular intervals.

Problem Areas: Problems were indicated with lack of communication with USGS. Districts expressed a need for more training and direction. One district complained it had never received a promised payment. Comment was also made that the program should be expanded to include areas with a high concentration of irrigated lands, class "B" areas, and areas with deep aquifers.

Program: Public Waters Designation

SWCD's may participate in the public waters inventory in three ways. A district may assist DNR in making field investigations, it may be employed by the county board to do field investigations on water basins, or a district representative may be appointed to serve on a conflict-resolving special hearing board.

Problem Areas: The districts did not report any problems within the context of their agreements with either the DNR or county boards. They have reported that policies and criteria have changed frequently and that there is a need for firm administrative policies.[1]

Watershed District Survey Responses

Program: Data Acquisition and Research Activities

Twenty-eight of the 35 watershed districts reponded to the survey, with 17 indicating that they are involved in data acquisition or research projects. Generally this information is gathered to provide

1. Editor's Note: Recent changes to public waters legislation address the need for firm, straightforward policies and criteria.

a data base upon which knowledgeable management decisions can be made. Hydrologic data collection programs are used by many districts to assess the need for particular types of water resource management activities. This data may also be provided to agencies or local units of government. The latter may then utilize this information in formulating ordinances or zoning and development restrictions. Hydrologic data reports are generally included as part of a district's annual plan.

Three general types of data are collected relating to the following areas: water quality, stream and lake levels, and geographic and mapping information. Districts may also be involved in monitoring flood flows, recording precipitation levels, estimation of high water marks, and lake and wetland surveys. The type of data collected corresponds to a district's concern with flood control, drainage, erosion, or water quality.

A third of the responding districts involved in data collection do research studies directed toward determining the effects of certain water management practices. Another fourth of the districts have conducted feasibility studies concerning proposed projects.

Problem Areas: The major concern of the districts in regard to data collection is that they acquire sufficient information to make informed decisions. Lack of data on ground-water quality and quantity is a concern to those districts where irrigation is conducted (approximately one-fourth of the districts). In such cases, conditional irrigation permits have been issued or permit applications have been denied outright because of the lack of data.

Program: Education, Public Service

One-third of the responding districts have information programs providing services to citizens and/or local units of government. These are generally directed toward informing groups of district programs and potential. This type of activity is important since a majority of the districts develop projects only where initiated by petition. However, informational programs may be beneficial to any district in generating support for and interest in water management activities.

Specific activities under this heading include providing information needed for permit applications, answering citizen inquiries, developing informational programs, holding public meetings, issuing news releases, and conducting tours of watershed projects. The more aggressive districts attend meetings of units of local government in order to facilitate exchange of ideas and policies.

One-fifth of the districts responding indicated that they provide technical information or assistance to state agencies or other governmental units. This usually consists of supplying investigative assistance or information in response to specific inquiries. In addition, annual plans are of informational value and are generally available to the public through local libraries.

Problem Areas: Three districts expressed the position that their educational and service efforts are limited by budgetary constraints and statutory limits on their taxing power.

Program: Regulatory Programs

Twenty-six of the thirty-five watershed districts have promulgated rules and regulations, with 24 of these requiring permits for water and related land resources management activities. Pertinent regulations of the DNR, MPCA, and MDH have sometimes been adopted by reference as part of a district's regulatory program. Generally, adopted rules and regulations are portions of DNR requirements concerning works-in-the-beds of public waters and water appropriation, or MPCA and Health regulations regarding disposal of wastes. One reason for this adoption by reference is that it allows a district a veto power if agency enforcement is considered too lax to meet its objectives. Where adoption by reference occurs, districts generally allow dual permit application to lessen the burden of paperwork for the applicant. Certain districts noted that their permit requirements were not intended to obstruct, but rather were for purposes of ensuring orderly and intelligent use of natural resources.

Watershed districts, like state agencies, have regulatory authority over public waters. Typically regulated activities include dikes, ditching, and flood plain development. As part of its public waters purview, a district may require submission of proposed county, municipal, and township ordinances related to surface water drainage, shoreland use, and flood plain zoning. A district may review such proposals and make recommendations deemed necessary to further its objectives. These recommendations are not binding upon local governments. Districts consequently experience frustration in this area.

Regulatory programs are adopted to ensure orderly development protective of water resources values. The areas of activity most often regulated are: alteration or drainage into legal and natural drainageways, works-in-the-beds of lakes and marshes, excavations potentially altering water quality or quantity, improvements within the flood plain, water reservoirs and impoundments, waste and effluent disposal, water appropriation, shoreland development, bridges and culverts, and alteration of watercourses.

Generally, the areas regulated by a district reflect the purposes for which each was created (e.g., flood control, erosion, drainage and/or quality). Fifty percent of the districts included flood control as a principal objective of their programs. Twenty-five percent require permits for construction or improvements within flood plains. Drainage has been the other primary objective of district activities. In fact, drainage permits have constituted the majority of the permits issued. Drainage not only has been a major concern of those areas that are intensively cultivated, but also of the Twin Cities Metropolitan Area. Regulation in the metro area has been concerned primarily with the harmful effects of urban and suburban development on the few remaining wetlands. Thus, drainage in the metro area has been approached from a different perspective.

Forty percent of the responding districts require permits for works-in-the-beds of lakes and marshes. These regulations pertain to dredge, fill, and land reclamation activities. One-third of the districts require permits for excavation, grading, or other actions disturbing

topsoil which may potentially affect the quality or quantity of water reaching natural water sources. Regulation of all these activities reflects concern for the magnitude of erosion and surface water runoff problems created by such actions.

Twenty-eight percent of the responding districts regulate aspects of water supply, such as water reservoirs or impoundments, and water appropriation.

Seventy-five percent of the responding districts have enacted rules and regulations. Sixty-eight percent have permit requirements and are thus administratively equipped to engage in active regulatory programs. A chief limitation of the effectiveness of their regulatory activitiy is that districts cover only a small proportion of the lands and waters of the state.

Problem Areas: District enforcement of regulations has run into problems owing to insufficient sanctions. Under the 1978 amendments to the Watershed Act, however, violation of a watershed district regulation has become a misdemeanor. This may alleviate some of the enforcement difficulties. Another constraint on effective enforcement is the cost of an effective regulatory and enforcement program.

Portions of the cost for permit programs may still be borne primarily by the district. Districts can charge fees for permit issuance, but problems arise where the necessary engineering data must be gathered by the district consulting engineer. Districts have contended that data acquisition costs for larger projects should be carried by the project proponent. In addition, active enforcement of regulations entails expenses for educational and surveillance efforts as well.

One district expressed concern that Minnesota Statutes, Section 112.43 may be interpreted to limit the authority of district managers when county or municipal ordinances have been adopted. However, district managers are given a limited authority to adopt ordinances relating to flood plains, greenbelts, and open spaces. Such ordinances are applicable only in the absence of county or municipal ordinances relating to these same areas.

Program: Projects

Seventy percent of the districts have taken on projects of one type or another. Projects have generally fallen into six groupings: dams and water impoundment structures, ditch and drainage systems, lake restoration projects, river channel maintenance, land acquisition, and erosion control projects. Research projects were discussed previously.

Twenty percent of the districts have been involved in construction of dams and water retention structures. Dams have generally served multiple purposes, although the major concern has been for flood damage reduction. Other beneficial effects have included ground-water recharge, water storage, increased recreational opportunity, and creation of wildlife habitat. Funding for these projects has usually been supplied

by the counties, although additional financing has been provided by the federal or state government or by watershed district general and special assessments. In the Red River Valley area, seven watershed districts and two counties have entered into a joint powers agreement to sponsor projects (including dam construction) and provide funds with each district contributing from a general levy.

Twenty-five percent of the districts indicated involvement in the improvement and maintenance of ditches and drainage systems. These efforts are typically initiated by petitions from landowners, counties, or municipalities. Such projects are financed by special assessments against benefited properties.

Closely related to drainage system improvement is the project area of river channel clean-up and maintenance. One-fourth of the districts are involved in stream projects such as construction of headwaters control and retention structures, channel improvements, sediment catch-basins, snagging, and debris removal measures. The purposes of these activities include flood control, sediment reduction, and lake-level augmentation.

Lake restoration projects have been undertaken or planned by 14 percent of the responding districts. Activities included as part of these projects include: snagging and debris removal, desiltation, restrictions on lake drainage, lake-level management, advanced treatment of waste water, storm sewer improvements, treatment of storm-sewer effluent, and construction or improvement of lake outlet structures. These projects are frequently initiated and funded cooperatively by the EPA, DNR, and local units of government.

Twenty percent of the responding districts indicated participation in land acquisition activities. Property is acquired to provide sites for runoff retention structures of various types, water storage, and so forth. Other purposes include provision for and protection of wildlife and recreation areas, river access points, and parks and open spaces. Financing for these acquisitions is provided from general and special assessments by the watershed districts, HUD grants, municipal funds, and state agency grants.

Erosion control projects have been initiated by 10 percent of the districts. Reduction of erosion has been achieved through projects involving slope stabilization, inlet controls, drop structures, sodding, and water retention. The goal of these projects is to improve water quality and prevent damage to streams and lakes. Funding is provided by district general and special assessments and federal cost-share funds.

Problems: Twenty percent of the districts identified problems with the present methods of funding projects. Assessment against benefited properties was considered a cumbersome method of obtaining local funding. The process of determining and assessing benefits may be both time-consuming and costly. Contention may arise as to which properties are being benefited. For example, non-lake shore property owners may resent being assessed for pollution control projects on lakes. Installation of drainage systems may create problems with assessing certain properties contributing water to the drainage system. Counties and municipalities may not be submitting petitions

due to the financial liability attached to them. Two districts indicated that their tax base is not sufficiently developed to support planning or data collection studies (since general assessments are based on land valuation).

Problems also arise with funding of projects through grants. Lake restoration grants may require costly feasibility studies. Additionally, one district stated a need for continued state funding of flood control structures. Finally, districts may be unable to deal with the more extensive watershed problems due to a statutory limit on the cost of projects initiated by the board of managers.

Several districts felt a need to coordinate their activities with those of other agencies. One district felt that the regional development commission in its area was being uncooperative and that the RDC was not the proper body to handle review of federal grant applications. The DNR was suggested as being a more appropriate agency to handle this function.

Program: Special Agreements

A third of the districts have entered into agreements with other groups or units of government, these agreements generally being of an informal nature. However, districts have entered into formal agreements with other watershed districts. The most notable of these is the Lower Red River Watershed Management Board. Under this joint powers agreement seven watershed districts jointly sponsor projects to reduce flood damages.

No major problems with these agreements have been identified by the watershed districts.

Survey Responses of Counties and Miscellaneous Water Authorities

Surveys of counties and other water authorities summarized in this section were administered at the discretion of individual regional development commissions. Consequently, no percentages of surveys returned can be cited for each type of governmental unit. Because responses from several types of authority are summarized, it was not judged desirable to describe specific programs unless pertinent to the understanding of a given problem. Surveys were returned by 16 counties, a municipality, and six boards or commissions charged with water management responsibilities.

The most significant and widely recognized problem with "program legislation, administration, and funding" concerned the lack of state support for the numerous programs that the state has mandated local government carry out. This problem was addressed by nearly one-half of the counties responding to the survey. Programs for which shortages in staff, expertise, and funding were cited include the Feedlot Regulation and On-Site Waste Disposal (septic tank) programs of the Pollution Control Agency, and the Shoreland and Flood Plain Management programs of the Department of Natural Resources. The effects of staff and funding shortages were cited in several instances. In one case, it was noted that efforts to upgrade non-conforming septic tank systems were limited to responses to complaints concerning failed systems. In another, one county expressed the fear that lack of

funding might lead to increased citizen resentment against local enforcement authorities and state mandates. This might occur if insufficient funding were to cause ineffective, inefficient, and inequitable management of state-mandated programs.

Other problems and pertinent observations listed by counties and miscellaneous water authorities included:

** Need for more effective relations with state offices, and greater use of educational efforts prior to setting of state deadlines for program adoption.

** Lack of clarity in rural water system legislation, with Minnesota Statutes, Chapter 116A singled out and the depth of investigation of new legislation (Minnesota Statutes, Chapter 110A) questioned.

** Frustration over the long period of time felt by citizens toward getting any type of state or federal flood damage reduction assistance.

** Belief that water management policies successfully implemented on the local level must be the basis for development of policies on the state level.

** Current planning and zoning legislation doesn't allow innovative approaches to regulatory administration. Specifically, current legislation requires a cumbersome public review process and lacks authority for one possible solution, a development review agency at the local level.

** Minnesota Statutes, Section 394.26, Subdivision 2 relating to notice requirements for hearings, issuance of variances, and so forth is unnecessarily burdensome. The one-half mile notification radius should be reduced to 500 feet.

** Minnesota Statutes, Sections 394.27 - 394.30 require separate planning commissions and boards of adjustment, a burden on small counties.

** A per capita $1.00 revenue for environmental administration and enforcement of state agency approved and annually certified county programs was proposed to address county problems with lack of funding.

** Use of the legislative process is very time-consuming in identification of areas of the state to work on in development of an overall state solid and hazardous waste management plan.

Though certain of the above observations were judged beyond the scope of the Water Planning Board's management analysis, others were very useful in assessing management needs and in designing recommendations to meet these needs.

Review of Watershed District Overall Plans and Annual Reports

The Watershed Act, Minnesota Statutes, Chapter 112, contains the following declaration of policy: "In order to carry out conservation of natural resources of the state through land utilization, flood control and other needs upon sound scientific principles for the protection of the public health and welfare and the provident use of the natural resources, the establishment of a public corporation, as an agency of the state for the aforesaid purposes, is provided in this chapter."

Thirty-five watershed districts (WD's) have been created to carry out this declaration of policy. The districts are local units of government with power and authority to develop and finance water resources projects. As part of the development process, the districts are required to prepare an "Overall Plan," as well as "Annual Status Reports."

Minnesota Statutes, Section 112.46 prescribes the content of overall plans. The plan may include provisions relating to any or all of the purposes for which a district may be established, as set forth in Minnesota Statutes, Section 112.36:

(1) Control or alleviation of damage by flood waters;
(2) Improvement of stream channels for drainage, navigation, and any other public purpose;
(3) Reclaiming or filling wet and overflowed lands;
(4) Providing water supply for irrigation;
(5) Regulating the flow of streams and conserving the waters thereof;
(6) Diverting or changes watercourses in whole or in part;
(7) Providing and conserving water supply for domestic, industrial, recreational, agricultural, or other public use;
(8) Providing for sanitation and public health and regulating the use of streams, ditches, or watercourses for the purposes of disposing of waste;
(9) Repair, improve, relocate, modify, consolidate, and abandon, in whole or in part, drainage systems within a watershed district;
(10) Imposition of preventive or remedial measures for the control or alleviation of land and soil erosion and siltation of watercourses or bodies of water affected thereby; and
(11) Regulating improvement by riparian landowners of the beds, banks, and shores of lakes, streams, and marches by permit or otherwise in order to preserve the same for beneficial use.

The overall plan itself is to be composed of narrative statements of existing water and water related problems within the districts, possible solutions thereto and the general objectives of the districts. The overall plan may also include as a separate section any proposed work or projects, but inclusion of this section is optional.

The Water Resources Board (WRB), as overseer of the watershed districts, has made recommendations concerning the content of overall plans. The WRB recommends that plans include descriptions of the problems leading to formation of each WD. Specific, identified problems should be described in detail, including their location, magnitude, and frequency. Reasonable solutions should be included where possible. Goals and objectives are to be listed along with priorities and policies to be followed.

Many of the WD's preface their overall plan by describing it as a framework only, with plans not intended to provide specific information for all individual project developments. As a result of the optional nature of detailing proposed works or projects, the plans vary in their levels of specificity. The contents may vary from broad policy statements to plans for a proposed creek improvement project in a sub-watershed. Generally the plans refer to what are perceived as the major problems of the watershed area and make a tentative proffering of solutions to be considered by the managers. Proposed solutions vary greatly in level of specificity.

Minnesota Statutes, Section 112.43, Subdivision 3 mandates that the managers of the WD annually make and file a report of the financial conditions of the district, the status of all projects and work therein, the business transacted by the district, and other matters affecting the interest of the district. The principal purpose in filing annual reports seems to be for the preparation of an annual audit. Otherwise, copies are simply filed with the WRB, DNR, and DNR Division of Waters. The WRB is responsible for watershed district establishment and review, but the board does not supervise the districts in their projects and activities.

Annual reports generally contain a statement identifying the members of the board of managers and the advisory committee, a brief description of any meetings held, regulatory activities, projects, and any other actions taken during the year. These reports also vary in their scope and depth of treatment. They range in length from one page to nearly one hundred pages. Information as to projects undertaken may range from a cryptic statement that "Project #2 completed" to detailed engineering reports and analyses. Annual reports are not surprisingly more in the nature of a recounting of activities undertaken, rather than a planning for the future. A few of the reports may state goals and objectives for the upcoming year and a few outline the specific projects that have been approved and will be commenced in the coming year. Annual reports tend to be retrospective rather than prospective.

In surveying the overall and annual reports of the districts, the first area of inquiry concerned the purposes for which WD's are formed as set forth in the overall plan. The majority of the districts listed the specific problems leading to their formation. The alternative approach was to simply refer to all the purposes permitted in Chapter 112.

Depending on their location, WD's have usually been created for the following reasons: flood , erosion or drainage control; water management; or for the purposes listed in Minnesota Statutes, Section 112.36. Flood prone areas are naturally concerned with problems related to flooding, erosion, and drainage. Metro areas or WD's composed of lakes tended to gravitate toward water management, especially concerning water quality.

The managers of the WD are required to review the overall plan every two years and make amendments as may be advisable. A few of the older WD's have revised their overall plans and expanded their areas of concern. As an example, the Nine Mile Creek WD's original plan dealt mainly with water management and flood control. Their revised plan reflects new concern for preserving the few remaining wetlands, for aesthetic objectives, for the observance of sound conservation principles, regulation of land uses, and recreational needs.

Each district has its own set of perceived problems and it might be assumed that listed problems would include those on which the WD intended to take some action. The districts annual reports were surveyed to determine whether any action had been taken in regard to the concerns listed in overall plans. It was apparent that there is less than perfect correlation. Problems mentioned in the overall plans were not necessarily dealt with by actual activity. "Actual activity" included a range from actual works or projects, regulatory activity issuance of permits, to carrying out studies. It is apparent that planning (in development of overall plans) and implementation have not been proceeding apace. Some of the districts have been very active in a multitude of areas, while others have done nothing since their formation.

The scope of planning activities outlined in the overall and annual plans was also characterized. One district appeared to be carrying out only single purpose planning, that is concerning itself with only one area of resource management. This designation was applied to the Clearwater River WD as it indicated interest only in reversing water quality deterioration. The improvement measures mentioned in the overall plan did contain aspects of erosion control, hydrologic testing, and so forth, yet all these activities are directed solely toward water quality improvement.

Three districts were characterized as conducting multi-purpose planning, citing flooding, drainage, erosion, and related aspects of water management as areas for works, projects, or other measures. These problems tend to be interrelated so that districts concerned with these areas only were not considered to have developed truly comprehensive plans.

"Comprehensive planning" was defined to include the areas listed under multi-purpose planning with the addition of concerns for pollution, wildlife and recreation, sanitation and public health, regulation of land use, or water management in a comprehensive approach to solution of water-related problems. Thirty-one districts were included under this category though they have not necessarily become actively

involved in all these areas, but rather simply expressed an awareness of and concern for a broader scope of water-related problems. Whether or not a district has followed through on these objectives, their overall plan would still be deemed comprehensive. Another qualifier with this classification is that districts were included regardless of the depth of treatment accorded the enumerated areas.

To illustrate, wildlife management statements can be compared from two districts. The Lac Qui Parle-Yellow Bank WD Overall Plan states that 26,000 acres should be preserved and that they will endeavor to preserve and improve wildlife habitat within the district. Regulations and policies will be adopted for encouraging private landowners to retain non-agricultural land for wildlife purposes, initiating a program of land acquisition of desirable wildlife habitat when funds become available, cooperating with state and federal agencies and others in their habitat development and land purchase programs, and requiring permits prior to any land acquisition for wildlife habitat. The Roseau River WD Overall Plan includes a policy of considering wildlife habitat improvement in all projects. Their actual management plan concerns beaver control. In surveying their annual plans, neither WD appears to have done anything with regard to wildlife management.

Annual reports were also surveyed to determine if the WD's were involved in cooperative efforts with SWCD's or other governmental units. The latter includes the Army Corps of Engineers, Soil Conservation Service, counties, municipalities, DNR, MPCA, and other WD's. SWCD's were frequently relied upon for their technical expertise or for instituting land treatment measures. Only about 32 percent of the watershed districts indicated cooperative efforts with soil and water conservation districts, however. The COE and SCS were also frequently involved with WD's in cooperative projects or studies of proposed projects. WD's functioned as the vehicle through which local interests can apply for federal funding and federal projects. The WD's that coordinated their efforts with counties and municipalities usually did so with respect to review and comment on proposed ordinances and developments. A few WD's were also involved in cooperative studies or projects with counties and municipalities. Generally, this type of cooperation appears to occur most in the metropolitan districts. Interaction with the DNR, MPCA, and MDH generally consisted of reviewing permit applications of these bodies or assisting with implementation of their rules, regulations, standards, etc. Finally, seven WD's have entered into a joint powers agreement on the lower Red River. This is a relatively recent agreement and as yet no concrete results have appeared in the WD annual reports.

Another area of inquiry was the regulatory activity of the WD's. They are authorized under Minnesota Statutes, Section 112.43 Subdivision 1 (17) to adopt rules and regulations to effectuate the purposes of the act. The managers also have a limited authority to adopt ordinances relating to flood plain development, greenbelt areas, and open space areas. Such ordinances are applicable only in the absence of county or municipal ordinances.

Twenty-six of the 35 WD's have adopted rules and/or regulations. Twenty-four have adopted permit requirements. The permit requirements are enacted to ensure compliance with the rules and regulations. In general, the rules, regulations, and permits apply to the following areas: flood control, erosion and sedimentation, water management, wildlife and recreation, pollution, drainage, sanitation and public health, related ordinances, and administrative procedures. The "related ordinances" category refers to adoption by reference of DNR, MPCA, MDH, county and/or municipal rules, regulations, standards, and permit requirements. It also includes some aspects of land use regulation through setback requirements and review of developments and improvements. The regulation activities of the WD's generally reflect the district's statutory purposes. In general, the metro area WD's appear to be involved in more regulatory activities than their rural counterparts. Two of the metro WD's have adopted their own ordinances.

Permits may be denied or made conditional, especially where the district feels it lacks sufficient data to make an informed decision (e.g., irrigation). Applicants may be required to post bond. Time limits may be set for completion of the project, and districts may inspect the work during and after construction to ensure compliance with district standards. Districts have also sought injunctive relief when projects were undertaken without their approval.

The more aggressive WD's appear to have made effective use of their regulatory powers. Several of them process over 100 permit applications per year. Considering the scope of their regulations, they could have an important beneficial effect upon conservation of the resources within their jurisdiction. Cooperation and coordination with local municipalities are high priorities for those districts engaged in comprehensive regulatory activity. Since WD's are not authorized to enact zoning regulations except in a limited fashion, they must interface their efforts with those of local government units where zoning provides the only adequate means of regulation. Cooperative studies and projects and continuous exchange of information and ideas are goals of those districts seeking total solutions to the problems of their area.

Overall plans describe problems of the district, possible solutions, and general objectives. The overall plan functions as a guideline or framework for future activities. Very few of the districts list any specific project plans. Several refer to specific programs, but these were usually for collection of hydrologic data to aid in future decision-making. The overall plans did generally include what were characterized as "specific measures" to be considered for implementation. These measures have included land treatment practices, structural measures of flood damage control, maintenance of drainage systems, and improvement of wildlife habitat and recreational opportunities. However, they were usually only generally referenced and amount to little more than policy statements.

Under Minnesota Statutes, Section 112.47, all works of the district which are to be paid by assessment upon the benefited properties shall be initiated either by a petition filed with the managers or by unanimous resolution of the managers. Many of the WD's state in their overall plans that such projects will be initiated only upon a petition filed with the managers. This would seem to limit the managers' position by placing them in a reactive or passive role. As a consequence, implementation activities may not reflect the scope of overall plans because no petitions may have been received relating to certain areas. This may explain the apparent failure on the part of the WD's in cases where an overall plan includes broad, comprehensive policy statements while actual activity reflects very little involvement or action on a very limited scale only. One possible approach to this problem, as was mentioned in some of the annual plans, is to increase public knowledge of the capabilities of a WD. Several of the districts have ongoing public education programs which they find helpful in increasing public acceptance and understanding of their projects and programs. A second approach may be to foster more aggressive management by watershed district managers through actions and education by the state oversight board, the Water Resources Board.

In conclusion, while it is impossible to assess the actual effectiveness of a watershed district solely by plan review, this analysis can provide insight into strengths and weaknesses of districts generally. Two principal areas of concern were identified. The first of these relates to the lack of specificity and consistency in watershed district overall plans and annual status reports. With regard to overall plans, this may be attributable to the fact that inclusion of sections dealing with proposed works is optional. The problem could also be viewed in terms of the need for development of separate "action plans" pulling together results of district problem assessments and feasibility studies. The retrospective annual status reports clearly do not provide this function while overall plans have been oriented primarily toward providing policy frameworks rather than solutions to specific watershed problems.

The second area of concern is the tendency of many districts to be passive managers of water resources. The comparison of district overall plans with annual status reports leads one to the conclusion that many districts are not aggressively implementing district policies and plans, and some are doing nothing at all. Part of the problem may be attributed to the reluctance of many district managers to initiate their own projects (several district boards have adopted this policy). The lack of interest in or understanding of possible solutions to watershed problems by counties and municipalities may also contribute to inactivity of watershed districts. Two possible solutions to these problems include 1) education of public officials and citizens within districts of watershed problems and the potential of districts for solving these problems, and 2) the selection and education of more active watershed managers by local governments and by the state Water Resources Board.

Review of Soil and Water Conservation District Long Range and Annual Plans

This section reports results of a review of soil and water conservation district (SWCD) long range and annual plans. The purpose of the survey was to determine the scope of the districts activities and their current role in water management. Twenty-one districts were included in the survey sample, with three districts chosen from each of the seven federal regions of the state. The survey itself involved checking the plans concerning eight different areas of interest, including: 1) number and type of staff, 2) participation in the State Cost-Share and Sediment and Erosion Control Demonstration programs, 3) joint powers agreements with counties, municipalities, watershed districts, lake conservation and lake improvement districts, 4) goals and objectives of the long range and annual plans, 5) types of projects undertaken, 6) coordination with other agencies, specifically watershed districts and ASCS county committees, 7) participation in state agency programs, including DNR water permit review, ground-water pumping tests, observation well level monitoring, and MPCA 208 water quality planning, and 8) sources of funding.

SWCD's and the State Soil and Water Conservation Board (SWCB) are authorized under Minnesota Statutes, Chapter 40, Soil and Water Conservation Act. This Act contains the following declaration of policy:

"Improper land use practices have caused serious wind and water erosion of the lands of this state, the runoff of polluting materials, increased costs to maintain agricultural productivity, increased energy costs and increased flood damage. Land occupiers have the responsibility to implement the practices which correct these conditions and to conserve the soil and water resources of the state. It is the policy of the state to encourage land occupiers to conserve the soil and water resources through the implementation of practices that effectively reduce or prevent erosion, sedimentation, siltation and agriculturally related pollution in order to preserve natural resources, insure continued soil productivity, control floods, prevent impairment of dams and reservoirs, assist in maintaining the navigability of rivers and harbors, preserve wildlife, protect the tax base, and protect public lands."

The Soil and Water Conservation Board is the agency charged with overseeing implementation of the policy of Chapter 40. The powers of this Board are specified in Minnesota Statutes, Section 40.03, Subdivision 4. Pursuant to the powers and duties delineated in this section of the statutes, the SWCB examines the districts' annual reports and plans to gather information on implementation of conservation practices and to determine needs for future funding. The SWCB does not actually supervise the districts' activities although it may make recommendations concerning priority uses of, for example, state cost-share funds. The power to approve or disapprove of district plans is specified in Minnesota Statutes, Section 40.03, Subdivision 4, (5) and (13). The requirement of an annual audit is found under Minnesota Statutes, Section 40.03, Subdivision 4 (2).

completed feedlot inventories and are interacting with the MPCA to better manage agricultural and animal wastes. Well level monitoring and ground-water pumping tests are conducted as part of DNR management programs. Flood damage reduction is not a major objective of most of the SWCD's although a few have been involved in P.L. 566 projects.

SWCD's are involved in many state and federal programs and projects. Nearly all the districts are involved in the ASCS Agricultural Conservation Practices program. Many of the districts are included in Resources Conservation and Development projects. Districts have participated in feedlot inventories for 208 water quality planning and in installation of animal waste management systems. A third of the surveyed districts are participating in the rural rainfall monitoring program. Three of the districts indicated having elected to take part in the federal Water Bank program. SCS projects with which districts have been involved, include roadside erosion surveys and a national erosion inventory. Soil surveys are also an ongoing project in nearly all the districts.

Participation in specific state agency programs was also reviewed. Two-thirds of the surveyed districts are involved in DNR water permit review activities. Eighty-five percent of the districts indicated some level of activity in connection with the MPCA 208 water quality management planning program. Districts are apparently not as widely involved in ground-water pumping tests and observation well level monitoring. The districts themselves refer to lack of personnel to adequately handle all their newly-created duties.

The last area checked was the 1978 financial statements. These were reviewed to determine sources of funding and the percentages contributed by the State and counties respectively. The average state contribution to a district was $16,850, this amount comprising an average of 54 percent of the district's budget. County funding averaged $12,360 or 32 percent of the district's budget. Other sources of funding include SCS, ASCS-ACP, and income from services rendered to cooperators.

Three points of conclusion can be reached relating to 1) SWCD areas of emphasis, 2) interactions with watershed districts and other agencies, and 3) the sufficiency of district staff resources. The goals and objectives of the district's plans clearly reflect the policy of the Soil and Water Conservation Act. The districts' main areas of concern are erosion control and water quality management. The districts' objectives and the practices implemented appear to clearly reflect these concerns. The projects undertaken in cooperation with various agencies also reflect district concerns, indicating expansion into new areas involving quantity and related land resources management. Although authorized to enter into joint powers agreements, the districts are only infrequently doing so. Apparently there is no perceived need or incentive to enter into such agreements. In addition, soil and water conservation districts appear to interact with watershed districts much less frequently than might be desirable. In light of the newly enacted responsibilities of the SWCD's, they

appear to lack adequate staff, with insufficient funds to hire full-time personnel. Many districts have only a clerk and a district aide to perform a multitude of duties. They have necessarily depended increasingly on limited federal agency staff in carrying out state program related responsibilities. This raises significant questions where SWCD's are involved in development of state and local water policy.

The powers of district boards are enumerated in Minnesota Statutes, Section 40.07 and include the following authorities and charges: 1) to conduct surveys, investigations, and research to identify water problems and preventive practices, 2) to conduct demonstration soil and water conservation projects, 3) to implement and operate necessary practices for soil and water conservation, including structural measures, with consent of land occupiers, 4) to acquire any rights or interests in real or personal property by option, purchase, exchange, lease, and so forth, and to receive income from such properties, 5) to make available materials and equipment to assist in implementation of land treatment measures, on terms prescribed by the district, 6) to charge for its services, and 7) to develop and revise a comprehensive plan.

The SWCD's are involved in implementation of the policy of Chapter 40. The districts are local governmental subdivisions with authority to plan and implement land and water conservation practices in cooperation with individual land owners and occupiers. All agreements with cooperators are strictly voluntary. Management guidelines are a necessary element of this process. Each district generally formulates a long range plan as a broad overview of their intended activities. Annual reports are then filed to document the districts accomplishments in regard to their long range goals and objectives. Annual plans are filed to indicate upcoming activities and the funding that will be required for implementation.

The contents of the long range plans are specified in Minnesota Statutes, Section 40.07, Subdivision 9. Districts are not required under this section to develop long range comprehensive plans, but they are required to do so to take part in the State Cost-Share program. All the districts reviewed had prepared long range plans and many of the earlier-established districts had updated and revised their plans. The plan itself is required to specify the practices that will be used to implement the state policy discussed earlier. Soil type classifications are to be included along with an analysis of the critical areas of the district most in need of conservation practices. The long range plan is required to be consistent with the statewide framework water resources plan, the statewide water quality management plan, and the SWCB's cost-sharing plan.

In surveying the long range and annual plans of the SWCD's the first area covered was the district's type and number of staff. Most SWCD's have a technician and/or aide. They generally rely on the federal Soil Conservation Service for technical services and skilled personnel. The SCS personnel provide expertise while generally remaining separated from any involvement with the board of supervisors' discretionary duties, with each board remaining responsible for making management and policy decisions. The SWCD's and SCS have a well-established symbiotic relationship and in no instance was any dissatisfaction expressed concerning this type of working arrangement, though problems have been identified in other phases of the management study with perception of this relationship by certain districts. The districts have attempted to increase their own staff where funding allows, especially recently where they have become involved in DNR water permit review and MPCA 208 water quality management planning.

The State-Cost-Share program was authorized in 1977 with emergency funding provided in that year. Most of the districts didn't become involved in this program until 1978 (as indicated by their annual plans and reports). The program funds are used for erosion control and water quality protection. All but one of the 21 districts indicated they were involved in this program. Three million dollars was appropriated to provide landowners erosion control assistance, with the provision that the money not be used for production-oriented systems.

The districts have been for the most part uniformly enthusiastic about this new program. Projects most frequently mentioned were erosion and sedimentation control practices, animal waste management systems, critical area stabilization, and control of stormwater runoff. This program has been especially useful with the most costly conservation practices since funds from other sources may have maximum limits. As an example, the maximum amount an individual landowner or occupier can receive under the federal Agricultural Conservation Practices program is $3,500. A single animal waste management system can cost $14,000.

The Sediment and Erosion Control Demonstration program has been in operation for four years. During this period, 40 SWCD's have been involved in approximately 51 projects. Program funding consisted of $300,000 the first biennium and $501,000 the second biennium. Administrative priorities for distribution of funding give consideration to whether the project is receiving federal funding, the order in which applications are received, whether the project fits the program criteria, and the amount of funding available. Public benefit from a project has often been the deciding factor where two proposals were otherwise equal. This program will be merged with the State Cost-Share program after F.Y. 1979.

Minnesota Statutes, Section 40.12 authorizes the supervisors of districts to enter into cooperative agreements with other SWCD's or any other public agency in the exercise of their statutory powers. SWCD plans were checked for any references to joint powers agreements with units of government, watershed districts, or lake conservation districts. While only one of the districts indicated involvement in a joint powers agreement, at least two instances where joint powers authorities were utilized have been identified: one involving the South St. Louis SWCD with two other SWCD's and the other involving an agreement between the seven metropolitan districts and the Metropolitan Council. In the latter instance, substantial economic incentive through monies made available by the Council was a principal reason the joint powers agreement materialized. District cooperation with watershed districts was only indicated by 14 percent of surveyed SWCD's.

SWCD's are strongly oriented toward land and water conservation practices. Their concern for erosion control is evidenced by objectives relating to erosion control measures, soils surveys, designation of critical area, and public information and education programs. Water quality protection activities are tied in to 208 planning of the Pollution Control Agency and implementation of related management practices. A majority of the districts have

CHAPTER IV

C O N C L U S I O N S

Introduction

This chapter presents discussion and analysis from information contained in Water Planning Board Technical Papers Nos. 5 and 14, as well as from Chapters in other sections of this Final Report, leading to the development of conclusions concerning water management institutions and organization. The criteria utilized implicitly in reaching these conclusions and the subsequent recommendations include:

** Effect on reduction of overlap and duplication of water management functions and programs.

** Compatibility of program objecitves with agency goals and charges.

** Priority given to water management within organization.

** Capacity of institutions for carrying out management responsibilities and operational requirements.

** Performance of institutions in carrying out related programs or options.

** Institutional stability.

** Adequacy of funding methods and sources in support of education, research, data collection, planning, operations, and enforcement.

** Ability to provide (or obtain) and supervise technical planning and engineering services.

** Proximity to important service or reference programs and the ability to obtain input from them.

** Effect on reducing expense of program administration.

** Accessibility of program planning and decision-making to the public.

** Separability of functions.

Water Management at the State Level

ISSUE: To what extent does overlap and duplication exist in state water management?

To answer this question one must first define exactly what is meant by "overlap and duplication." According to Webster, "overlap" means to extend over and cover a part of, or simply, to have something in common. "Duplication" means the state of existing in two corresponding or identical parts. Thus duplication may be considered to be most overt and concrete kind of overlap. When these definitions are applied to water management authorities and activities, it may be concluded that no duplication would exist if the same function is carried out by two different agencies for two different purposes. Overlap would exist, however. An example would be water quality monitoring carried out by the Pollution Control Agency, Department of Health, Department of Natural Resources, and Department of Transportation. MPCA monitors water quality to aid in its protection of water quality standards; MDH monitors water quality to assure safe drinking water, DNR to aid in its management of fisheries, and DOT to assess impacts of highway development. Duplication of water quality monitoring activities might not exist, unless, by chance, monitoring of identical parameters takes place at similar times and places. The overlap of the water quality monitoring function is clear, however. Overlap and duplication are treated jointly in the following discussion, since it was not always possible to determine when identified overlaps might become duplications, without more intensive analysis than was possible.

The search for overlap and duplication of authorities and activities at the state level was made through surveys and interviews with program managers (see Chapter 2), case studies (see Chapter 3), and examination of the statutes (Chapter 3). Identified overlaps are described below, though actual identification of specific problems with overlapping authorities are described under other issues.

** Conflict resolution is currently provided by the Water Resources Board, Environmental Quality Board, and Water Planning Board. The Water Resources Board has authority to intervene in state agency proceedings involving questions of water policy when petitioned to do so. The Environmental Quality Board has authority to resolve conflicts that may arise between agencies involved with programs significantly affecting the environment. The Water Planning Board may be involved to a lesser extent in conflict resolution through its interim charges to direct water planning activities and coordinate public water resources management.

** The Environmental Quality Board is charged with coordinating environmental programs it judges are interdepartmental in nature while the Water Planning Board is charged on an interim basis with coordinating public water resources management.

The EQB involvement has been largely limited to examination of specific actions of major environmental concern, such as a single irrigation project of 640 acres or greater. The WPB has focused on coordinating state policy relating to interstate basin commission activities and on major federal actions, areas not previously addressed by EQB. This overlap would require clarification only should the WPB be extended beyond its present sunset date of June 30, 1980 and should the WPB assume a more aggressive role in coordinating water management activities of the state.

** Both DNR and WPB are charged with preparation of a statewide framework water and related land resources plan, including supply and demand assessment. The WPB effort may be considered an acceleration of initial DNR attempts in plan development, and the two agencies are working together in current efforts. In addition, the WPB effort has placed great emphasis on development of overall state policy and on devising processes to implement proposed policies, whereas the DNR charge tends to be more oriented toward coordinating DNR programs and policies. (See issues and conclusions relating to the role of the state in water planning for analysis.)

** Protection of domestic supplies from pollution in general and critical periods. Both MPCA and MDH may regulate disposal of sewage and pollution of streams and other waters, though MDH generally defers to MPCA in such matters. DNR is also charged with developing and managing water resources to assure supplies adequate to meet long range seasonal requirements of quality and quantity. MPCA and MDH also both have special powers when emergency or critical periods are involved. In addition, MDA has specific charges to contain and control pesticides spills, and to inspect and improve dairy and packing plant water supplies.

** The program for permitting underground storage of gases or liquids includes major quality considerations, but is located in DNR since displacement of ground waters is also a significant issue.

** Protection of the availability of domestic supplies during critical periods. DNR is charged with developing regulations governing mandatory adoption of ordinances by public water supply authorities. MDH is charged with developing emergency plans to protect the public when declining quantities create health risks.

** Both DNR and MDH have legislated responsibilities for regulating well abandonment, though DNR's interest is in identifying potential observation wells while MDH's concern is protection of ground-water quality.

** Both DNR and MDH are charged with requiring submission of well drillers reports containing the logs of materials and waters encountered. MDH additionally requires submission of water samples and, under certain circumstances, water well cuttings samples. DNR may also require submission of pumping tests. DNR requirements are in support of the Water Appropriation Permit program while MDH's are in support of its Water Well Construction Code program. Additionally, both DNR and MDH are authorized to prevent waste by well owners.

** One problem concerns the interaction of the Water Pollution Control program generally, with the Public Waters Inventory and Water Resource Permits programs in the DNR Division of Waters. The definition of waters determining the scope of water pollution control programs refers very broadly to "waters of the state." The public waters programs, however, operate under a definition limited to waters serving at least one beneficial public purpose. The classification of public waters is sometimes confused with MPCA's water quality classifications. The distinction between the two programs is, therefore, potentially unclear to affected citizens. The problem could lead to more than a simple misunderstanding, however. The Pollution Control Agency could require dischargers to install expensive advanced waste treatment facilities in order to protect an aquatic habitat from pollution. The very same habitat could be destroyed by private dredging with no public controls should it not be protected by the public waters designation.

** Another example of this overlap is DNR's permitting of storm sewer systems discharging to public waters. The authority to do so originates in its charge to regulate changes in the course, current, or cross-section of public waters. Should MPCA choose to regulate storm sewers or plans for quality reasons (see Chapter 3 section on non-point source management), the two efforts would require effective coordination to prevent problems with overlapping authorities.

** A significant problem relates to certification of Section 404 dredge and fill permits. These are presently administered by the U.S. Army Corps of Engineers in apparent duplication with the state Water Resource Permits program (DNR permits are issued for works-in-the-bed of public waters). The Clean Water Act of 1977 authorizes the delegation of the Corps' permit authority to the states for all but truly navigable waters. The DNR could take over this program once it has demonstrated the authority and competence to effectively administer it. New procedures defining the relative roles of the MPCA and the DNR would be required since one state agency could be "certifying" actions of another.

** A large number of local agencies are charged with some form of non-point management responsibility. These include soil and water conservation districts, county committees of the Agricultural Stabilization and Conservation Service, Farmers Home Administration county committees (charged with determining eligibility of

applicants for farm operating loans), watershed districts, lake improvement districts, and others. Some of these are formed and operated independent of any formal state influence or guidance. The roles of these agencies appear to be changing with increasing importance being placed on non-point source management, and local water management generally. The number of local water management agencies may also lead to confusion in the public eye with division of responsibilities, making identification of water management problems with the responsible agency difficult.

** The State Soil and Water Conservation Board, the Department of Natural Resources, and the Water Resources Board each provide guidance and a degree of supervision to multi-purpose water management districts at the local level of government. The SWCB administers state programs to and reviews annual and long range plans of soil and water conservation districts. The SWCB also oversees formation of new SWCD's, though the state is currently blanketed with them. The DNR supervises formation of lake improvement districts, a somewhat more limited function. The WRB prescribes overall plans of watershed districts and oversees formation of these districts.

** Although Minnesota Statutes, Section 378.31 established "a statewide lake improvement program" and assigned implementation powers to counties and lake improvement districts, no state agency was designated to staff, oversee, and promote the statewide program. Most state responsibilities in this section were assigned or related to DNR, including 1) coordination and supervision of the establishment of lake improvement districts and 2) the requirement of consistency of local actions with DNR's surface use zoning regulations and its statewide water plan (neither of which have been produced). MPCA's role is restricted to that of consultant in lake improvement district formation, but its administration of the federal Clean Lakes program and statutory pollution control responsibilities suggest a statewide program could also be housed there. DNR has undoubtedly been involved because of the intended comprehensiveness of the lake improvement program, but the probable need and available funding is concentrated on water quality protection and restoration. As a result, the present organization of lake improvement efforts is cumbersome (but not necessarily ineffective) and an aggressive state posture (including promotion and state guidance for lake improvement) appears to have been sacrificed.

Several overlaps of authority were found to exist, as demonstrated by the above list. Many of these can be attributed to the separation of state regulatory functions between quantity, quality, and health components. These interactions are further discussed under the following issue relating to the interaction of quality and quantity management considerations. Overlapping of conflict resolution functions is also mentioned under the issue concerning accountability and enforcement. For both surface- and ground-water management, it is concluded that identified overlaps cannot be condemned outright

as inefficient since they may be leading to constructive advocacy, competition, and cross-checking among the various agencies. These overlaps do tend to require well-coordinated management of activities by the involved agencies if ineffective and inefficient management of resources is to be avoided, however.

CONCLUSION: Several instances of overlap and duplication of state water management authorities exist. The utility or inefficiency of these must be judged on a case-by-case basis.

ISSUE: Does the present institutional structure impede integrated decision-making relating to water quality and quantity management?

Several problem areas relating to decision-making involving quality and quantity management interactions were identified during the course of surveys and interviews with program managers. These were further investigated and discussed in context of the relevant authorizing legislation, state management programs and organization, technical or scientific management factors, and a set of management requirements of the comprehensive, integrated water management program. The following problem areas were considered most directly related to the fragmented division of responsibilities in quality-quantity management at the state level and to the general lack of agency interaction in problem solving and program development.

** Few programs provide a clear and precise statement of purpose. Changes in program direction frequently result from an overturn in supervisory personnel rather than in response to state needs or legislative mandate. Programs do not usually incorporate or formalize interactions with external but related programs, instead relying on the capriciousness of personal contacts and random communication. For example, interaction between MPCA's Lake Studies program and DNR's Lake Hydrology program is presently facilitated only by cooperation of the individuals involved rather than by interagency agreement or procedure.

** Interrelation of programs in implementation may also be desirable. For example, state and matched federal financial assistance to lake management authorities (county, municipality, lake improvement district) could be tied to compliance with shoreland management, adoption of urban runoff abatement measures in municipalities, or achievement of a specified level of farm conservation planning in rural areas. Acknowledgement of and formalizing the interrelationships among scattered lake management programs could serve to achieve mutual objectives more efficiently.

** The fragmentation of lake management responsibilities has spawned several independent data-gathering activities. A Water Planning Board survey of data-collection programs evidenced the need of program managers to access related lake data housed in other agencies, and to be kept informed of planned data-gathering activities. This need concerns not only limnological sampling, which could benefit from standardization of methodology and reporting, but also includes related hydrologic and land use information.

** MPCA has no written policy on diverting effluent discharges. However, diversion is encouraged whenever feasible to reduce treatment costs in protection of lake quality. This diversion of effluent discharges can potentially impact water quantity as well as quality by changing distribution of stream flows. The practice of adjusting effluent standards to give dischargers credit for water conservation is employed by MPCA only when absolutely necessary. It is used as a negotiating tool in cases where a discharger could not meet effluent standards due to economic, technological, or other constraints. MPCA does not promote this practice even though total loading to a water body by a discharger would not be altered and water would be conserved.

** An example of a management problem that could require extensive coordination between agencies is the creosote contamination of ground-water supplies in St. Louis Park. Both MDH and MPCA are involved in quality considerations, with the former being principally concerned since a major domestic water supply resource is involved and the latter because of its charge to control and abate pollution of waters of the state. However, the solution to the problem could very well involve restriction of appropriation permits, a DNR responsibility, in a zone surrounding the contaminated area. Though DNR cooperation would likely not constitute a problem in this instance, administrative efficiency would likely be hampered by the absence of a single administrative entity with final decision-making authority.

** Many well inteference disputes result from interaction of high capacity wells with wells constructed to protect ground-water quality but not availability under stress conditions. The Water Well Construction Code sets standards protecting quality but does not adequately address the issue of quantity. Other states, North Dakota for example, require wells to be drilled with a "best effort to capture" water supplies.

** The Safe Drinking Water Act has forced the Department of Health to move from an educational approach to a more enforcement-oriented policy. This change in policy orientation has attendant problems because MPCA carries responsibility of enforcement activities in the area of raw water supply. Health must oversee all aspects of municipal supplies, but its authority is limited to plan review. MDH may mandate that a sanitary survey be performed, but it has little administrative power to order changes in a waste treatment system as a result of the survey findings. Thus, Health must deal with raw water quality, but MPCA has primary authority over both surface- and ground-water quality.

** Until very recently, there has been little attempt at getting MPCA water quality data into the state water management information system. This has resulted chiefly because available federal funding has been directed more toward satisfying Environmental Protection Agency requirements than overall state water management needs. It has been recommended by the WPB's Data Work Group that MPCA should not bring water quality data directly into the state water management system data base. MPCA water quality information should be connected to the state system, however, an effort which would be facilitated by an explicit state mandate and monetary commitment.

** Several examples relating to monitoring of quality in absence of quantity and monitoring of quantity in absence of quality considerations were identified. For example, MPCA requires quality monitoring of roughly 800 observation wells adjacent to sanitary landfills, but level data is not consistently obtained. Correspondingly, DNR and participating soil and water conservation districts do not collect water samples for quality analysis when monitoring well levels or in conducting pumping tests. Though complete integration of such monitoring efforts might not be desirable, this kind of consideration has received little attention within the existing organizational structure.

Identification of these problem areas was made through analysis of programs and legislation, and surveys and interviews with program managers and administrators. This process and the problem areas identified raise questions that, because of time and manpower limitations, could not be addressed. One example is the question of administrative efficiency of having separate field level personnel monitoring and enforcing interacting programs of the various agencies. Regardless of the answers to such questions, the analysis has shown a need for acknowledging and formalizing relationships in managing quality and quantity aspects of water resources.

CONCLUSION: The present institutional structure can be linked in a number of instances to problem areas in decision-making relating to water quality-quantity management interactions. Means to facilitate identification, recognition, and formalization of interrelationships are needed.

ISSUE: To what extent are means of ensuring accountability and enforcement lacking in state water management?

The issues of accountability and enforcement as defined for this discussion respectively concern a) the means by which state water management agencies are held responsible for their actions, and b) the ability of state agencies to compel the observance of state water management regulations. These issues are grouped in this section because they represent related problems that may tend to undermine successful management of water resources by state government.

Accountability. Discussion of the accountability of state water management agencies is limited to the process for resolution of conflicts (Point A) and the apparent lack of an effective, systematic means for assuring agency compliance with statutory requirements (Point B).

Point A. Three state agencies have authorities in conflict resolution: the Environmental Quality Board, Water Planning Board (on an interim basis), and Water Resources Board. The conflict resolution authority of the Water Planning Board derives from its charges to direct water planning activities and coordinate public water resources management. Its involvement in conflict resolution has largely focused on definition of state water policies concerning interstate and federal water

planning activities. However, the WPB has little overt authority to resolve water management conflicts other than as may be accomplished through coordination and the planning process. Thus, its efforts in conflict resolution have been directed at setting up and proposing mechanisms and policies to avoid and/or resolve future conflicts.

The Environmental Quality Board has explicit authority to resolve conflicts of an interagency nature when programs or problems significantly affecting the environment are involved. EQB also has complementary authority to review programs and suspend agency actions. Its involvement in program review to date has been limited to consideration of pesticedes. The EQB also has water policy conflict resolution authority relating to private and governmental actions that may significantly affect the environment. This responsibility involves review of citizen-generated petitions to determine whether or not environmental impact analyses should be required. Extensive use of this authority has been made and much of the Board's time is occupied by this process.

The Water Resources Board conflict resolution process involves intervention upon petition into cases where apparently conflicting statutory policies may require resolution. At the time of this analysis, the WRB had become involved in eleven conflict resolution proceedings since its creation in 1957. Disputes have tended to concern the validity of specific permit decisions by state agencies acting under statutory direction or administrative regulation. The resolution of these disputes may also be provided via hearings under the Administrative Procedures Act (Minnesota Statutes, Chapter 15). Problem areas with the conflict resolution function of the Water Resources Board were found in its nonspecific jurisdiction, lack of authority, and diminished response capacity. All appear to be a result of the enabling legislation of the WRB. Consequently, it may be inferred that it was not the intent of the Legislature to create a board capable of articulating comprehensive, statewide water policy.

The jurisdictional aspects of the WRB's enabling legislation do not consistently correspond to the recommendations of the Legislative Interim Commission on Water Conservation, Drainage, and Flood Control. Contrary to these recommendations, the WRB was not given authority to approve departmental rules and regulations, nor it can be argued was it given full authority and responsibility to determine water policy, since its judgements are not enforceable. Rather, the WRB's water policy role is problem-specific. Like the courts, it has no jurisdiction until a controversy exists and is brought before it. Consequently, this process does not lend itself to a policy planning and development function in order to avoid the inital controversy. Unlike the courts, WRB decisions are unenforceable and without sanction.

The legislative creation of the water policy conflict resolution role for the WRB appears to have been an attempt to regularize conflict resolution by placing responsibility for it in the hands of an administrative agency. Conflict is predictable when two entities are mandated to determine policy in the same area. As the situation currently exists, the Legislature has given broad discretion to various agencies to form water policy through the manner in which they administer

state water programs. At the same time, they have given the WRB power to delay these actions, but little more. The net effect may be to diminish the efficiency of agency administration while leaving their policy unchanged.

In summary, of the three forums for resolution of private-agency conflicts, the environmental petition process of EQB, the intervention process of WRB, and the hearings process of the Office of Hearing Examiners, only the latter two appear to overlap significantly. The Water Resources Board process addresses the apparent conflicts between statutes; however, such conflicts have manifested themselves in the agency permit proceedings which the hearing examiner process also addresses. In addition, the WRB process does not provide permanent solutions to conflicting statutes, a responsibility only the Legislature can meet. This leads one to the conclusion that this process might be logically combined with water planning and policy development functions. These are currently the responsibility, on an interim basis, of the Water Planning Board and, on a broader environmental basis, of the Environmental Quality Board.

The EQB has the most explicit authority in the area of interagency conflict resolution but has used it only once, in part because of its preoccupation with more visible issues. The Water Planning Board's authority emphasizes development of polices to address and minimize conflicts, but does not enable it to direct the resolution of conflicts. The Water Resources Board has proven ineffective in resolution of interagency conflicts, because of the reluctance of agencies to bring disputes to it. Analysis consequently indicates that consolidation of explicit interagency conflict resolution authority with the authority for water policy development and coordination would provide the best combination for addressing interagency conflicts.

Point B. The apparent lack of an effective, systematic means for assuring agency compliance with statutory requirements is reflected in the number of legislative deadlines missed by agencies in water management. A number of examples are listed below.

The failure of DNR to accomplish in a timely fashion its charges to develop a water conservation program (first mandated in 1947), prepare a framework water and related land resources assessment (due November 15, 1975), and develop rules and regulations governing its Water Appropriation Permit program (due first on January 15, 1975, then postponed due on January 30, 1978) represents a major conflict in priorities. It is possible that DNR did not get sufficient funding to do the job that would be desirable, but its failure or inability to direct existing resources toward completion of legislative mandates raises significant institutional questions.

Legislation written to protect or enhance the use of lakes has not been promptly implemented. Several important programs have progressed slowly due either to insufficient funding or staffing, or to the low priority given by responsible agencies to implementation of these programs. Examples include failure of DNR to develop rules for lake improvement districts, surface use zoning, and appropriations from lakes, as well as its failure to complete an assessment of need for lake improvements and to provide criteria for allocation of state aid (refer to section on lake management in Chapter 3).

The Power Plant Siting Act of 1973 mandated that an inventory of sites be compiled and approved by the Environmental Quality Board in 1976. EQB failed to complete and approve the inventory by this deadline or by its extended deadline of January 1, 1979. The EQB inventory has been confounded by the tardiness of the DNR in developing criteria for the establishment of protected stream flow and lake elevation levels.

It is likely that many of these deadlines have been missed by a combination of staff and funding shortages, conflicts in priorities, administrative problems, and unrealistic deadlines. Actual determination of the significance of these factors was beyond the capability of the management analysis. The lack of effective program planning and evaluation functions, and their linkage to the budgetary process may play an important part in hampering administrative and legislative efforts to address these problems.

Enforcement. The ability of state agencies to enforce water management regulations is a related problem of major significance. Explanations for the following listing of enforcement problems are likely similar to those identified in discussion of accountability, with the additional problem of the reluctance of agencies to seek enforcement through the courts, a time-consuming, expensive process.

Enforcement problems are evident in the program to regulate water well construction. Since 1975, the rate of compliance by well drillers in submitting well records required by the Water Well Construction Code has been roughly 50 percent. Compliance with the requirement for submission of water samples has been somewhat less. Numerous complaints are received concerning problems such as improper isolation distance from sources of contamination, and inappropriate drilling methods used for specific types of wells and aquifers. Technical assistance to well drillers is needed to prevent these problems as well as to educate drillers in the proper completion of well logs. MDH appears to be reluctant to use its authority to revoke licenses and court action is both time-consuming and costly.

The thoroughness of permit coverage and reporting in DNR's Water Appropriation Permit program is suspect. Large volume appropriators in at least one category, municipal supply, are without permits. An effective monitoring and enforcement program, including computerization of use reports, cross referencing appropriator lists with other data sources (e.g., NPDES water quality permits, municipal water suppliers, energy facilities, etc.), and enforcement surveys at regional offices, is lacking. This has implications with respect to the capability of the program to moderate existing and potential conflicts in water use.

The abandonment of wells is another identified problem area. The Water Well Construction Code stipulates procedures for the proper abandonment of wells, but there is no redress if the procedures are not followed, and no viable means of assuring compliance during abandonment. The situation might be remedied if county or state governments had the authority to properly fill and seal wells and assess the property owner for the costs.

The Shoreland Management program of the Department of Natural Resources provides an example of enforcement problems of state water management efforts charged to local units of government. Local units of government (counties and municipalities) are required to enforce minimum standards for the subdivision, use, and development of the shorelands of public waters. The mandated controls include regulations governing the type and placement of sanitary waste disposal facilities, the size and length of water frontage of lots suitable for building sites, the placement of structures with respect to shorelines and roads, the alteration and preservation of the natural landscape, and the subdivision of shoreland areas. Shoreland regulations require adoption of ordinances conforming to applicable standards, criteria, and rules and regulations of the Departments of Natural Resources and Health, and the Pollution Control Agency.

Local administration and enforcement of shoreland ordinances varies considerably. Some counties and cities aggressively enforce their ordinances while others do not. The DNR is charged with approving cluster development proposals and reviewing variances, conditional use permits, and inconsistent plats. Required notifications to DNR concerning variances, conditional use permits, and inconsistent plats are often made in a timely manner or not made at all. The Department appears to have no direct enforcement power over local decisions regarding these items, and its only recourse when encountering violations is to appeal local decisions to district court. Possibly the major problem with local program administration is the inability of many local governments to support qualified staff to administer their programs. For example, provisions of the Act that require elimination of nonconforming sanitary systems within five years after adoption of an ordinance have posed problems. A lack of manpower, money, and expertise for upgrading these systems has been noted. As one county related, systems are only upgraded when they have failed or when complaints have been filed. There may also be a need for better education of administrators as well as increased program funding to achieve this and to assist in local program administration. Legislation to allow the Pollution Control Agency to certify inspectors and contractors of individual systems may also be desirable.

Enforcement problems also confront the Pollution Control Agency in operation of its Construction Grants program. According to a recent report of the Legislative Audit Commission, a large number of projects funded under this program have had serious design or construction problems. Operation and maintenance of completed projects by municipalities has also been a problem. Both problems are generally associated with small communities lacking the staff and financial resources to effectively administer and enforce design and construction of treatment systems. Legal action by municipalities or by MPCA has only been pursued in a very few cases, with limitations in staff of the Attorney General's office, uncertainty in MPCA's authority to sue, and contractual ambiguities cited as reasons.

CONCLUSIONS: Improvements are needed in the processes by which water policy conflicts are resolved, by coordination or consolidation of existing mechanisms.

Utility of the water policy conflict resolution process of the Water Resources Board is reduced by the following factors: (a) overlap with the contested case hearings process of Minnesota Statutes, Chapter 15, (b) WRB's ineffectiveness in resolution of interagency conflicts, (c) the non-binding, unenforceable nature of WRB's policy recommendations, and (d) separation of the process from coordination and policy development functions serving to systematically identify and recommend needed changes in conflicting statutes, programs, and policies.

Resolution of interagency conflicts has been hampered by (a) the reluctance of agencies to bring disputes before the Water Resources Board, (b) inaction of the Environmental Quality Board in part because of its preoccupation with more visible issues, and (c) separation from water policy development and water resources coordination functions currently assigned to the interim Water Planning Board.

Effective, systematic methods of ensuring accountability of state water management agencies in meeting statutory deadlines, such as by program planning and evaluation linked to water planning and the budgetary process, are not being utilized.

Enforcement of state water management regulations by state and local agencies is a major deficiency, with qualified staff and funding shortages contributing to the problem.

ISSUE: How can the state encourage local initiative in water resources management?

Several state water management programs place great emphasis on implementation by local units of government. Prominent examples include shoreland and flood plain management, feedlot and septic tank regulation, public waters inventory, non-point source management (e.g., land treatment), and wild and scenic rivers management. Local units of government are also given the option of participating in other state programs, including review of DNR works-in-the-bed and water appropriation permit applications, participation in pumping tests, well log verification, and Water Well Construction Code enforcement. In addition to these responsibilities, local units are authorized to carry out a wide variety of water management activities through soil and water conservation districts, watershed districts, lake improvements districts, and other authorities.

Certain of these state-delegated or mandated efforts are accompanied by state grants, such as through the Community Health Services Act, the State Soil and Water Conservation Board (to soil and water conservation districts and in certain instances to counties), and the Department of Natural Resources (to soil and water conservation districts and counties). With the exception of the Community Health Services Act funding for environmental health program administration, little attention has been given to the burden being imposed on local government in mandating administration of natural resource programs. Limitations in staff, expertise, and funding were consistently mentioned in the Water Planning Board's water management survey as significant problems in local implementation of state water management policies. In addition, state-imposed limitations on tax levies have compounded this problem by reducing local fund-raising capability.

Two joint approaches to facilitating local water management warrant consideration: provision of a natural resources management fund and more effective utilization of local water management institutions in state water management programs and planning.

The economic justification of a natural resources management fund lies in the benefits that would accrue to the state with effective implementation and management of state water resources programs and policies. Because of this there would be a need to identify appropriate planning and management activities warranting state funding. Those activities which would produce the highest return on the state dollar in any given region would receive highest priority. Consideration would also have to be given to criteria for allocating state grants among regions or local units of the state. In line with the overall state return-on-investment criterion, such factors as amount of shoreland requiring management, population growth, development pressure, and severity of resource problems could be considered. From experience gained with the Community Health Services program, program planning subject to state approval and state program effectiveness monitoring would also be necessary program requirements.

More effective utilization of local water management institutions in state water planning and management is by necessity directly linked to the proposed natural resources management fund. State administration of these funds would require assessment of the compatibility of locally-generated program plans with state water management objectives and water resources plans.

The State Planning Agency is currently administering land use planning grants to counties and municipalities under the Land Use Planning Assistance Act. The purposes of these grants are to enable local units of government to better manage land use problems resulting from population trends, potential development in environmentally sensitive areas, major land use changes, and so forth. These grants have averaged approximately $8,000 at a 75 percent state, 25 percent local rate of cost-sharing. SPA's experience in this broad-based grant program and its broad charges relating to natural resources planning and management make it a logical choice for administering the proposed fund to the extent that this fund would be utilized for implementing programs of more than one state agency.

Alternatively, this state function could be handled through existing means of oversight, such as through Water Resources Board prescription of watershed district overall plans or Soil and Water Conservation Board oversight of SWCD's participating in the State Cost-Share program. The Department of Natural Resources would additionally warrant consideration as administrator of the funds, owing to its direct involvement with many of the water management activities that would be eligible for funding. Finally, the interim Water Planning Board (or its successor in water resources coordination) might warrant consideration for administration of the fund under its charge to coordinate public water resources management.

Location of the state administrative function associated with the natural resources program fund obviously depends greatly on any reorganizational moves that may be considered by the Legislature, such as merger into a modified Soil and Water Conservation/Water Resources Board of state-local water management liaison and oversight functions. Should the fund be authorized under the present organizational structure, however, the most logical location of program administration functions might be with the State Planning Agency by virtue of its experience in administration of the Land Use Planning Assistance Act and its broad purview over natural resources planning and management activities.

CONCLUSION: The Legislature should consider initiation of a natural resources management fund targeted at assisting local water management authorities in implementation of state-mandated programs. The State Planning Agency should be designated as the state agency charged with administration of the fund.

ISSUE: Which state agency should be charged with administration of the proposed Statewide Grant-In-Aid Flood Damage Reduction program?

Four state agencies are considered feasible candidates to administer the Statewide Flood Damage Reduction Grant-in-Aid program. These include the Department of Natural Resources, Soil and Water Conservation Board, Water Resources Board, and interim Water Planning Board (or its successor).

The Department of Natural Resources is currently the lead state agency involved in management of flood plains. The state Flood Plain Management, Flood Control Coordination, and Dam Safety programs are located in the Department's Division of Waters. The director of this division is charged by Minnesota Statutes, Section 105.40, Subdivision 8 to make recommendations to the agencies involved and to the Governor as to the desirability, feasibility, and practicability of proposed projects and works of improvement affecting waters within the state. The grant-in-aid program would thus be compatible with the charges and goals of the Department.[1]

Conflicts with Department programs oriented toward preservation could pose problems to those favoring flood control at the discretion of local government. However, these would occur anyway since the DNR administers the permit program governing works-in-the-bed of public waters. An advantage to location of the program within the DNR would be the early detection of projects posing environmental problems. In addition, the Division of Waters houses a great deal of technical

1. Editor's Note: The Legislative Commission on Minnesota Resources funded a pilot grant-in-aid program for flood damage reduction in the Red River basin in 1979. This program includes funding for a state engineer to be located in the DNR Division of Waters. See discussion of the SWCB below concerning a parallel pilot program administered by it.

expertise in service and related water management programs, including programs in surface-water hydrology and public waters management, and a network of regional hydrologists located throughout the state in six regional offices.

The State Soil and Water Conservation Board currently administers the Pilot Flood Damage Reduction Grant-in-Aid program for a portion of the Minnesota River basin. Though the SWCB has experienced certain problems in program administration, such as in hiring a professional engineer and in developing a priority system for allocation of state funds, there appears to be a general satisfaction at the local level with its performance. The SWCB also has responsibility for recommending priorities for planning of small watershed protection and flood prevention projects by the U.S. Soil Conservation Service. In addition, its principal responsibilities, those of assisting, coordinating, and (where state funds are involved) supervising SWCD activities and programs, may also involve considerations relating to flood damage reduction. Control of floods and prevention of the impairment of dams and reservoirs are among the purposes, stated in Minnesota Statutes, Section 40.02, relating directly to the Soil and Water Conservation Board and soil and water conservation districts. The Statewide Flood Damage Reduction Grant-in-Aid program would thus be compatible with the charges and goals of the SWCB.

Though the SWCB is located within the Department of Natural Resources for administrative purposes only, this arrangement has facilitated coordination with Department programs and expertise. However, the expertise of regional hydrologists and Division of Waters central office staff has not been utilized in program development to the extent it would likely be if the program were located within the Division of Waters. The SWCB has relied on its close working relationship with the U.S. Soil Conservation Service to obtain much of the technical sevices needed in the pilot program. The SCS has agreed to help train the Board's professional engineer in design of flood retarding structures, while taking responsibility for the design of structures presently being constructed under the program. This arrangement has unquestionably worked to the benefit of the state, though it is uncertain whether SCS would be able to provide a comparable service for the proposed statewide program.

An additional factor that must be considered in connection with the SWCB's supervision of any proposed program is its heavy orientation toward rural/agricultural resource problems. Neither it nor the Soil Conservation Service has been heavily involved in flood damage reduction in urban upstream areas, although SCS and the Minnesota Association of Soil and Water Conservation Districts have shown recent concern for the natural resource problems faced by these areas. To the extent the program fund may be allocated for small urban projects, an organization more attuned to urban as well as rural flooding problems would have an advantage in administering the program.

The Water Resources Board is involved in flood damage reduction somewhat indirectly through its responsibilities for establishing watershed districts and for prescribing overall plans for watershed districts. The WRB's staff has been kept small (two professionals) since many of

the necessary technical services are provided, or intended to be provided, by the Department of Natural Resources. This relationship has worked effectively in the past, though increasingly less so in the last several years. However it brings into serious question the WRB's capability and disposition for aggressively administering identified state-level functions associated with the program.

It is also questionable whether the objectives of the proposed statewide grant-in-aid program would be compatible with the charges of the Water Resources Board. It is not disputed that goals of the Watershed Act provide for conservation of natural resources, including flood control, and that watershed districts are an appropriate local authority for administration of the proposed program. It appears, however, that the WRB's responsibilities relating to resolution of conflicts in water policy may dictate that it remain an independent, impartial agency. Participation in the proposed program could jeopardize this position.

The Water Planning Board is charged on an interim basis with preparation of a statewide framework water plan, direction of state involvement in activities undertaken pursuant to the federal Water Resources Planning Act, and coordination of public water resources management and regulation activities among state agencies. Other responsibilities of the WPB less directly related to flood management as an ongoing function, include evaluation of state participation in the federal-state river basin commissions and evaluation of state laws, rules, and procedures. The present emphasis of the Water Planning Board has been to coordinate resource management programs of other state agencies, rather than to administer water management programs directly. Addition of a resource management program to the agency eventually charged with water resources coordination would represent a departure from the interim WPB's present charge. It would not, however, represent a departure from such a body's overall goal of wise management of Minnesota's water resources.

The WPB has operated with a small central staff (the chairperson and a research director) and a team of water resources planners situated within six departments. While this arrangement has caused certain problems administratively, it has facilitated coordination with other staff of these agencies. However, this relationship has not permitted the WPB to draw on agency staff to the extent that might be desirable in administration of the proposed program. [1]

Based on the above assessment, it is concluded that the State Soil and Water Conservation Board (or its successor) should be designated to administer state-level functions associated with the proposed Statewide Grant-in-Aid program. This would allow the state to take advantage of SWCB's experience in grant administration while maintaining DNR's role in flood plain management through its permitting responsibilities. This conclusion is provisional on the assumption that the program will remain targeted on small flood damage reduction projects (e.g., costs less than $1 million total present value), with major

1. Editor's Note: The 1979 Legislature extended the WPB for an additional year for plan communication purposes and provided for the centralization of staff directly under the Board.

projects funded separately by individual legislative actions and administered by the Department of Natural Resources. It is also recognized that the DNR Commissioner will continue to exercise authorities relating to public waters permits and flood plain management regulations, necessitating maintenance of a close working relationship between DNR and SWCB staff. Projects greater than a specified size should also be subject to priorities developed by the state priorities committee of the Water Planning Board, or successor. This body should establish the size cutoff and make final determination of project priorities in excess of the designated cutoff.

CONCLUSION: The State Soil and Water Conservation Board, or its successor, should be designated to administer the Statewide Grant-In-Aid program in conjunction with DNR and the Water Planning Board, or its successor.

ISSUE: Should the State of Minnesota be involved in water resources planning? If so, why?

The state maintains three major roles in water resources management: protector, developer, and allocator of water resources. As protector, the state has instituted major programs to manage water quality, flood plain and shoreland development, and water supply. As developer, the state has included programs to assist in provision of flood control, wildlife and natural areas, and parks and other recreation areas. The state role as allocator of water resources has included programs to manage appropriation of water and access to water amenities.

Each of these state roles in water management requires the support and guidance that would be provided through water resources planning. Examples of important planning functions that need to be provided -- but are often not being provided -- include:

** To anticipate short- and long-term demands on water resources in the future, and to make periodic changes to estimates of these demands as necessary, based on population and economic forecasts, estimates of water availability, public and private activities, water policies, and so forth.

** To develop and maintain explicit, comprehensive water-related goals and policies to reflect overall state goals and the needs of Minnesotans, and to translate these into objectives utilized by state water management programs. This includes ongoing assessment of needed changes in policies and programs.

** To assure implementation of water resources policies and objectives by water management programs and to monitor effectiveness of policies and programs in accommodating and mediating effects of demands on the resource and of public and private actions.

** To coordinate actions of the numerous state agencies involved in some form of water management, and to integrate water management policies and goals with those of other areas, such as energy, transportation, and agriculture.

** To assure state actions are compatible with approved plans and to resolve differences when they arise by re-evaluating both plans and proposed actions.

** To assure that state plans are effectively communicated to other levels of government and, where appropriate, that units of government comply with the plans and demonstrate how plans may need to be modified.

** To assure that local and regional views are included in development of overall state policy and that these views are "meshed" with individual state agency policies.

** To recommend adoption of water policies and programs and changes in policies and programs to the Legislature.

** To develop and maintain a forum for participation in planning and management decision-making by citizens and interest groups.

The advantages of state commitment to accomplishing these functions would be development of coordinated, prospective management of water resources by the state, and the encouragement of the same by other levels of government. Certainty in water management, presently lacking, would be restored so that federal agencies would understand what the state wants and where it wants to be in the future. Regional and local agencies would better understand the necessity of state actions, be able to anticipate and influence these actions, and would know how and where to communicate problems and request assistance of state agencies.

The Legislature would, likewise, be able to anticipate well ahead of time the needs of state agencies in terms of staff and manpower, and would better understand where all the various requests fit into the overall picture -- if they do. Legislators would also, significantly, have close at hand a good yardstick by which they could measure and assess agency performance. Such plans, when refined and made specific through program and budgetary planning, would serve implicitly to set priorities between programs of the various water-related disciplines.

The disadvantages of such a state commitment would relate to the expense of maintaining qualified technical planning staff, the effort necessary in obtaining full commitment and participation by administrators and managers, and initial cost of setting up procedures for integrating water planning with program and budgetary planning, essential to assuring commitment and implementation of the state water plan.

CONCLUSION: <u>The state should continue the commitment to planning in its management of water resources in order to maintain coordinated, forward-looking, efficient, and effective programs.</u>

ISSUE: What form(s) should the State's water planning effort take?

Each of the state roles in water management requires the support and guidance of certain levels of water resources planning. This may be evident from the above list of functions, some of which are very broad in scope and others of which are program-specific. These levels include a) broad statewide framework studies, b) detailed sub-state planning, c) single purpose and project planning, and d) short-range or crisis studies.

Broad statewide framework water planning is presently being carried out by the Minnesota Water Planning Board. Planning at this level is concentrated on identification of resource problems, demands, and supplies on a statewide basis for use in setting state priorities, evaluating and developing water policies, and establishing procedures for implementing policies, coordinating agency efforts, involving citizens and local and regional governments in decision-making, and communicating results of water management plans. The Department of Natural Resources has also been charged with preparation of a statewide framework assessment. This plan would relate each of DNR's programs for specific aspects of water management to the others.

Detailed sub-state planning involves systematic consideration of alternative ways for meeting projected water demands and solving water-related problems associated with river basins or other regions. This level of planning should utilize the policies and procedures, and follow the priorities developed through framework planning efforts and plans. This would assure that plans and projects identified for specific river basins will reflect overall state needs and priorities. Thus, the situation can be avoided where those basins with completed plans get the lion's share of limited state dollars, simply because they were ready first and not necessarily because they had the greatest need. The Southern Minnesota Rivers Basin Board has been responsible for guiding a comprehensive sub-state water resources planning effort in the Minnesota River basin and in the southeastern watersheds tributary to the Mississippi River. The administration and staffing of this effort has been directed by the Soil Conservation Service.

Single purpose or project planning is directed toward solving specific water management problems. Coordination of each of these with comprehensive framework and sub-state planning is necessary to assure that state policies are implemented and priorities followed. The need for this is evident in planning for a single flood control project in which the state has an interest in assuring its resources are wisely utilized (that is, that the best location and design of the project are selected). A similar need exists, however, in single purpose planning, say, for water supply management. This planning involves consideration of overall resource adequacy for absorbing proposed and projected water appropriations. The pressure in such considerations is to make decisions based on short-term resources capability with little regard for long-term cumulative needs and effects. These effects may go beyond impacts on water availability to such matters as related impacts on water quality, land use, and so forth. Coordination with comprehensive plans is designed to place such impacts and resource management decisions into perspective.

Short-range or crisis water planning studies constitute the fourth level of planning that might be conducted by the state or its subdivisions. This level of planning may be associated with flood or drought, siting of major unanticipated water uses, and other major, unexpected water-related activities. It is essential in conduct of such studies to have a well-defined body of policies and framework of reference by which to evaluate impacts and proposed actions. One example of this level study is contingency planning required of surface-water appropriators. While the state has not conducted contingency planning of its own with reference to the appropriation permit program, it has conducted similar studies through its environmental review process.

Each of these levels of planning is being or has been conducted by the state. However, state efforts have been incomplete and uncoordinated, and largely sporadic, in nature. With completion of the initial framework water and related land resources plan by the Minnesota Water Planning Board, the opportunity will exist to start putting into effect the coordinated, thoughtful, and prospective planning function outlined above. As noted previously, this function would involve coordination and pursuit of each of these levels of planning as may be carried out by state government, as well as local and regional governments.

CONCLUSION: The State should build on its effort in developing the framework plan by initiating and coordinating more detailed studies needed to address water resource problems cutting across agency interests, levels of government, and political boundaries.

ISSUE: What kind of organization(s) should be involved in water resources planning at the state level?

The planning functions needed to support the state as protector, developer, and allocator of water resources indicate a requirement for two kinds of water planning organizations at the state level: the authoritative coordinating body, and individual water planning units located in the major water management agencies.

The authoritative coordinating body is required to provide those planning functions clearly cutting across state agency lines, such as in a) integrating efforts in determining short- and long-term demands on water resources in the future, b) developing and maintaining comprehensive water-related goals and policies, c) coordinating actions of water management agencies, including resolving conflicts between these aencies, d) integrating water goals and policies with those of other disciplines, e) communicating state plans to other levels of government, f) integrating local and regional views into state strategies, and g) recommending adoption of water policies and programs by the Legislature.

Individual water planning units also need to be located in the major water management agencies. These units would concentrate on planning functions primarily directed at supporting agency water management programs. These functions would include such tasks as assessing water availability for demand-supply comparisons, translating overall state water policy and goals to program objectives, assessing effects of these policies on program operation and monitoring effectiveness of water management programs and policies at satisfying water demands and solving water problems. Water policy development must be a continuous, two-way process and, hence, findings or program and policy stortcomings would necessarily be communicated back to the coordinating body.

CONCLUSION: The State should support water planning at two organizational levels, through an authoritative coordinating body and by major water management agencies.

ISSUE: How can the State improve citizen relations and facilitate citizen participation in development of water policy?

The survey of water managers found that citizen relations have signaled significant and sometimes major problems in the way citizen participation is pursued in state water resources management. One need only read the newspapers to learn of major problems encountered in state water management programs because of poor citizen relations. The thesis of this section is not that effective citizen participation can make citizens like state programs they would not otherwise, but that such an effort can provide better understanding and appreciation of the purposes of state water management activities by citizens, and better understanding and appreciation of citizen concerns by water managers. Such understanding might enable each party to work more closely together in identification and resolution, where possible, of their differences.

As might be expected, the survey identified the most significant problems in citizen relations as occurring with land use related water management programs. Major problems were identified with programs for siting hazardous waste disposal facilities, inventory of public waters, and critical areas, coastal zone, and wild and scenic rivers management. The last three of these programs generally experiences problems with citizen perception of the program as usurping local authority. In one case, the Coastal Zone Management program, poor citizen relations effectively killed a program with many potentially significant local benefits. One criticism of the citizen participation effort in this instance was that it was not initiated at the start of the study. Citizens may have consequently felt the program was just another effort to impose state and national desires on local areas. The actual effect of this shortcoming on success of the program could not be determined, however.

Short of outright stopping of state water management efforts, failures in citizen participation and the resulting poor relations with citizens may have negative effects on overall agency posture, as well as on related programs. For example, adverse citizen reaction to DNR was cited as causing initial problems in perception of the Natural Areas program, though these appear to have been cleared up through informational meetings. More significant is the possible effect of causing agencies to act tentatively and inconsistently in their water management activities across the state. An interesting illustration of this might be seen in DNR's Public Waters Inventory program (though many confounding factors exist) when compared to MPCA's effort in identification of Class "D" quality waters. These programs may be seen as running along parallel lines, with one identifying water bodies warranting state regulation of dredge and fill activities and the other identifying water bodies of insufficient significance to warrant protection of water quality standards. DNR's program, however, is cast in a very negative light, and has encountered significant problems with perception of the public. MPCA's effort has, on the other hand, proceeded very smoothly with few problems in citizen relations.

It was considered beyond the scope of the management analysis to analyze citizen participation programs of the state in greater detail than this brief introduction represents. However, it is possible to cite several observations relating to water management program needs in citizen participation: first, the expectations and limitations of citizen input should be defined for each program; second, major target groups should be identified for inclusion into the citizen participation effort; third, the type of effort(s) most suitable for each program should be selected with thought to how lines of communication can best be developed; and, fourth, provision should be made for periodic program review and evaluation based on citizen input for each stage of project or program development. In addition, it has been observed that effective citizen participation programs generally work best when the public has a perceived ally or facilitator, that is, a full time coordinator of all such agency programs one step removed from the pressures of program management.

The Water Planning Board has utilized a citizen participation process involving a statewide water interests advisory committee, series of citizen meetings at the start and draft final plan stages, and a regional forum of citizens committees organized by regional development commissions. The Water Interests Advisory Committee offers a good forum for citizen direction of participation efforts in comprehensive water resources planning. While this forum has not yet been fully developed, a process could be envisioned where the committee would take the initiative in aggressively pursuing citizen input on such major projects as the Upper Mississippi River Master Plan and development of various sub-state water plans.

CONCLUSION: State water management agencies should develop ongoing programs of citizen participation staffed by full-time coordinators one step removed from affected programs.

The State should continue support of a citizens forum like the Water Interests Advisory Committee. This forum should be charged with initiating and coordinating citizen participation in water planning and management activities of the state coordinating body.

ISSUE: What organizational changes, if any, should be pursued at the State level to improve management of water resources?

Organizational alternatives relating to conflict resolution, water resources planning, quality-quantity management interactions, and state oversight of comprehensive, independent, local water management institutions are considered under this issue.

The Water Planning Board has identified several programs which are separated from the agency whose principal charge relates to the functions these programs provide. In many cases, this division of responsibility or fragmentation has occurred with the intent of better serving other programs within a given agency (e.g., small stream flood investigation in the Department of Transportation), or better serving an agency's constituency (e.g., pesticides control in the Department of Agriculture). The Water Planning Board has not evaluated the operations of these programs sufficiently to recommend program transfers at this time, but offers the following list for further executive and legislative review.

** The weather modification program in the Department of Agriculture is separated from the State Climatology Program housed in the Department of Natural Resources.

** The pesticides control program in the Department of Agriculture is separated from the water quality management program of the Pollution Control Agency.

** The Department of Natural Resources is charged with assessing lake improvement needs though most needs appear to be related to water quality.

** The water well construction code program located in the Department of Health has major importance as a water quality protection program but is separated from pollution control functions of the Pollution Control Agency.

** Regulation of the storage of liquids and gases underground is a program potentially affecting ground-water quality but is located in the Department of Natural Resources since displacement of ground waters is also a concern.

** The Pollution Control Agency program providing certification of federal actions (under section 401 of the Federal Water Pollution Control Act Amendments of 1972) has consistently involved PCA certification of federal permit actions relating to filling of wetlands, an area in which the Department of Natural Resources has primary concern.

** The U.S. Army Corps of Engineers "Section 404" permit program concerning wetlands filling overlaps with the public waters permit program for works-in-the-bed of public waters which is located in the Department of Natural Resources. This federal program could be transferred to the state for all but truly navigable waters, though federal review procedures would continue to apply on all permit applications and legislative changes to the public waters permit program might be required.

** The small stream flood investigation program of the Department of Transportation is separated from the hydrology and flood plain management programs of the Department of Natural Resources.

** The ambient water quality program of the Department of Transportation for assessing effects of highway construction and runoff on water quality is separated from the water quality management program of the Pollution Control Agency.

** Water quality monitoring programs of the Department of Natural Resources directed toward fishery management concerns are separated from water quality monitoring functions of the Pollution Control Agency.

** Water supply quality monitoring of the Department of Agriculture for dairy and packing plant operators is separated from water supply testing programs of the Department of Health.

** Power plant siting and energy needs certification programs are separated in the Environmental Quality Board and Energy Agency, respectively.

** The Minnesota Geological Survey has assumed an increasing role in the assessment of ground-water supplies in separation from quality programs of the Pollution Control Agency and quantity programs of the Department of Natural Resources.

** The State Soil and Water Conservation Board program for flood control assistance in Area II of the Minnesota River Basin is separated from the flood plain management program of the Department of Natural Resources. (In addition, the flood damage reduction assistance program approved for the Red River Valley area by the 1979 Legislature will operate through the DNR.)

** The aquatic nuisance control program of the Department of Natural Resources permits the amount and type of chemicals used in aquatic plant control, but is separated from the water quality program of the Pollution Control Agency and the pesticides control program of the Department of Agriculture.

Conflict Resolution. Two alternatives are available to the state in dealing with the problem of water policy conflict resolution. The first alternative is to maintain the specific conflict resolution function within the Water Resources Board, but with certain modifications in law to assist the WRB in carrying out this function. The second alternative is to shift water policy conflict resolution to the body also charged with water policy planning and development. This alternative would include the options of the Environmental Quality Board, a body modeled after the Water Planning Board, and a citizens board. (The Department of Natural Resources can be dismissed as an option since it could not be expected to represent the interests of other agencies unless these were transferred to it in a major reorganization.)

The existing Water Resources Board conflict resolution process requires a petition from an involved party to start an action. Thus, the WRB's scope of responsibility pertains only to existing conflicts. The WRB cannot address policy problems which appear likely to arise in the future but which might be avoided by present action, nor is it able to substantially affect the situation after the hearing process is concluded. Although binding determinations could assure impact after the hearing process, the value of this solution should be weighed carefully against the cost in terms of administrative efficiency and agency policy-making.

If conflict resolution authority is to be retained by the WRB, the Legislature should consider a more specific definition of the Board's role in water policy conflict resolution. This might include delineation of specific categories of conflicts in which the WRB might become involved; use of a state hearing officer and specifically defined quasi-judicial procedures; and imposition of binding determinations, sanctions, or other means of insuring that decisions are carried out. Alternatively, the WRB might be charged with providing annual reports to the Legislature containing proposed statutory modifications to deal with problems uncovered in policy dispute hearings. For example, much of the controversy currently associated with the WRB proceedings might be reconciled by clarification of certain ambiguities in the statutes. These include:

1) What is the effect of the use of the word "lake basin" in section 105.42 and does this create a partial exemption from permit requirements for Chapter 106 public drainage projects?

2) Does the public waters designation procedures as interpreted by the DNR in 6 M.C.A.R. 1.5200 coincide with legislative intent? and

3) What effect does the "subject to existing rights" language in section 105.38 have with regard to water bodies on land that has been assessed for benefits under Chapter 106?[1]

Shifting resolution of water policy conflicts to the body also charged with water policy planning and development would be an effective means to link identification of conflicting statutory and program policies with development of new policies. The options for housing these combined functions include the Environmental Quality Board, Water Planning Board-model, and a citizens board.

The Environmental Quality Board might assume an expanded conflict resolution process under its current program review authority. This option would vest conflict resolution authority in a board composed of agency administrators and citizens, providing access to substantial technical expertise in water management. In addition, the involvement by top agency administrators would increase the likelihood of implementing the Board's decisions within agencies.

1. Editor's Note: Public waters legislation passed by the 1979 Session of the Legislature addresses the first two points of ambiguity.

The Water Planning Board-model option would place the water policy conflict resolution function in a multi-agency water-oriented board. Use of this type of body for water policy conflict resolution would have advantages of an ongoing direct focus on water resources planning and policy development, areas closely linked to water policy conflict resolution. In addition, it would also have access to technical expertise, staff support, and citizen input.

The citizen board option would provide a conflict resolution forum removed from narrow agency interests, but combined with comprehensive planning and policy development (in contrast to the existing Water Resources Board process). Such a board would have disadvantages in its lack of a positive forum for interagency coordination, the possible difficulty in getting state agencies to participate in board functions and to comply with board determinations (which are problems with the current Water Resources Board process), and the possibility that a larger staff would be required for the board to actively pursue resolution of conflicts (since agencies seem less inclined to bring disputes to non-agency boards).

Clearly, the state must provide for the orderly identification, development, and implementation of comprehensive water policy if it is to avoid continual conflict and ambiguity. The solutions to these problems lie in the explicit and orderly definition of the water policy roles of state agencies and organization. This suggests a reduced need for the Water Resources Board's conflict resolution process should identified statutory ambiguities be clarified, should interagency conflict resolution be routinized in the water resources coordinating body, and should water policy be developed on a systematic, coordinated basis and become routinely integrated in water management decision-making.

Water resources planning. The organizational options for housing comprehensive state water resources planning include the Department of Natural Resources, the Environmental Quality Board, an agency modeled after the Water Planning Board, and a citizens board.

The following requirements should be met by the entity carrying out policy planning and coordination functions. It should (1) provide a forum for representation of all major state water management agencies, (2) have authority and capability to develop comprehensive water-related goals and policies, (3) have authority to undertake and administer funding of water resources planning activities of an interagency nature, (4) have authority to determine which activities are of an interagency nature, (5) have authority to resolve conflicts in water policy, (6) have authority to represent the Governor on federal and interstate commissions relating to water policy planning, and (7) have authority to coordinate public water resources management activities of the state.

The Department of Natural Resources has been charged with the development of a framework water and related land resources assessment and with administration of a wide range of water management programs. However, the DNR lacks the means for providing a meaningful forum for

representation of other major state water management agencies. In addition, in the past the DNR has not demonstrated the willingness to give systematic, ongoing long-range water planning sufficient priority to meet legislative mandates. For these reasons, the DNR is not an appropriate candidate for coordinating water planning, although it must play a major role in water planning.

The Environmental Quality Board (a board combining citizens and agency leaders) satisfies the criterion of providing a forum for representation of the major state water management agencies, though it does not include direct representation of either the State Soil and Water Conservation Board or the Water Resources Board. The EQB currently administers programs relating to water resources management through its environmental impact assessment process, program review authority, critical areas planning, power plant siting, environmental permit coordination, and environmental conflict resolution authority. The EQB is also charged with preparation of long-range environmental policy plans. Most EQB authority has been directed toward highly visible "firefighting" activities, such as environmental assessment and the siting of power lines and power plants. Long-range policy planning has not been effectively addressed by the EQB and there is an acknowledged tendency for this function to be given low priority in relation to its other more visible and pressing charges. The EQB does not currently have the staff technical capability to carry out the identified water resources planning and coordination functions, though it could develop this capability with the transfer of staff which has been directed by the Water Planning Board. Whether EQB's primary environmental and firefighting focuses would tend to divert this staff from water planning charges, as has happened with its current long-range policy planning effort, is uncertain.

The Water Planning Board (a body composed of agency officials) was created on an interim basis and charged with preparation of this statewide water and related land resources framework plan by June 30, 1979. Among its other charges are coordination of public water resource management and regulation; assurance of participation of the public and all units of government in state water planning activities; direction of state involvement in federal water planning activities; evaluation of state participation in the federal-state river basin commissions; and evaluation of state laws, rules, and procedures in public water resources management.

Any body which retains these functions would satisfy the criterion of providing a forum for interagency representation of the major state water management agencies. A coordinating body chaired by an independent appointee of the Governor would provide a full-time, visible advocate on behalf of water resources with direct ties to the Governor. This person could serve as the Governor's representative on interstate basin commissions, direct state response to federal policy initiatives, and direct state pursuit and utilization of special funding sources.

The primary shortcoming of a body like the WPB with regard to the identified characteristics of the authoritative water planning body would be its insufficient authority to resolve conflicts in water resources management. As noted, the Board's authority is limited to coordinating public water resources management. In addition, should a coordinating body other than the EQB be designated to carry out the identified functions in an ongoing capacity, procedures for coordination would need to be developed. One possible approach would be to authorize the head of the coordinating body to make recommendations the EQB for initiating and resolving policy conflicts.

A citizens board also warrants consideration as the body charged with directing state comprehensive water resources planning and policy development. The Southern Minnesota Rivers Basin Board provides an example of a citizens board with a similar charge. This board has functioned successfully, although with nearly complete reliance on staff of federal agencies. It has maintained close contact with the Legislature and has not been burdened by the conflicting charges facing agency heads participating on interagency boards. This has enabled the board to propose and advocate, independently of narrow agency interests, such programs as the state pilot flood damage reduction grant-in-aid and forestry assistance programs. The Board has not been successful at getting commitment of time and staff by state agencies to its planning efforts despite legislative mandates to this effect. This raises questions concerning the ability of a citizens board to coordinate water resources management activities of the state. Other experiences with citizens boards in Minnesota such as the Water Resources Board, Pollution Control Agency Board, and the Metropolitan Council, might be drawn upon to design a board minimizing weaknesses.

Water quality-quantity management interactions. The alternatives presented in this section do not represent an all-inclusive list of means for solving water quality-quantity management problems. Suggested options do not for the most part offer immediate solutions to water problems. Instead, the focus is on options for setting up processes to deal with problems. Five categories of options have been identified. These include a) miscellaneous coordination options, b) planning and budgeting, c) the authoritative coordinating body, d) incremental reorganization, and e) major reorganization. The goal toward which each category of options is directed is to get water management efforts working as one program. By examining options for setting up processes, it is believed that the state will be better equiped to address quality-quantity problems arising in the future as well as those identified in the management analysis.

The category of miscellaneous coordination options includes two alternatives targeted at processes for solving specific, existing institutional problems. These alternatives would generally be required should organizational and planning options discussed below not be implemented, or should it be judged desirable to consider these in the interim.

In the first alternative, an interagency agreement defining clearly the lines of responsibility in ground-water management would be developed by the Departments of Natural Resources and Health, the Pollution Control Agency, and the Minnesota Geological Survey. Beyond this, the agreement would include mechanisms for active interaction

of agency field personnel in enforcement of ground-water management programs. In addition, provisions would be included for acquisition of data by one agency for another. For example, MDH staff in environmental field services could assist the DNR in acquisition and verification of water appropriation data. Where appropriate, joint training sessions of water well well contractors could be organized to meet training needs of DNR and MPCA as well as MDH. Finally, the agreement would specify the mechanism and timetable for ascertaining which quality and quantity monitoring sites could be integrated.

In the second alternative, the interagency agreement would be utilized to implement joint criteria, standards, and plans for identifying and managing ground- and surface-water resources during emergency or critical periods. The Division of Emergency Services would also be involved. Consideration could be given to including either the Environmental Quality Board or the successor to the Water Planning Board (if other than EQB) in this process as final review authorities, since major environmental quality and water management concerns would be involved.

The options for planning and budgeting include mandating preparation of program plans annually, development of long-range plans, and linkage of these plans to operations through the budgetary process. Each of the agencies involved in water management -- with particular emphasis on the Departments of Natural Resources and Health, and the Pollution Control Agency -- could be charged with preparation of program plans for submission to the selected coordinating body and the Legislature. The model for these program plans would be those currently prepared by the MPCA in meeting federal program requirements. The selected coordinating body would be responsible for identifying conflicts between programs or priorities, and for assuring consistency with state framework plans. Once more specific comprehensive or special purpose (e.g., DNR's water conservation program plan) plans are developed, consistency with those plans would also be required. Budgetary requests would be carried forward by individual agencies through program plans.

The authoritative coordinating body would satisfy identified needs for a single administrative entity with final decision-making authority in cases where two or more agencies have jurisdiction. An authoritative coordinating body could also serve to review and reconcile agency program and long-range plans (see planning and budgeting options above) in the context of a comprehensive viewpoint. If effectively implemented in conjunction with planning and budgeting options, the authoritative coordinating body would supplant more radical reorganization options discussed below.

The options which should be considered to fulfill this function are the same as those noted to fulfill the water resources planning function -- the Department of Natural Resources, the Environmental Quality Board, a citizens board, or a body modeled after the Water Planning Board.

The DNR is charged with the administration of a wide range of water management programs. It could be assigned the duty of assuring coordination of its programs with all other state water and related

land resources programs. However, the DNR does not have authority to resolve conflicts among agencies and does not have a strong record in interagency coordination. The assignment to a single agency of the authority to resolve disputes between it and other agencies raises serious questions of equity.

The EQB is presently charged with coordinating state programs it determines are interdepartmental in nature, as well as resolving agency conflicts with regard to programs, rules, and permits. It has not fully utilized this authority, however, due in part to its preoccupation with more visible environmental concerns.

A citizens board could remove the resolution of conflicts among agencies from the narrow boundaries of agency interests. However, the separation of such a board from agencies may make the achievement of interagency coordination difficult and increase the difficulty of achieving agency compliance with citizen board decision.

The Water Planning Board has been charged on an interim basis with coordinating public water resources management and regulation activities, though it has not had the EQB's authority to resolve conflicts. A body modeled after the Water Planning Board would have the advantage of a direct focus on water resources, as opposed to the EQB's more general environmental focus.

Options characterized as incremental reorganization would include a) placement of both the Safe Drinking Water and Well Construction Code programs into the Pollution Control Agency, and b) placement of only the Water Well Construction code program in the MPCA. The first option would create a "little Environmental Protection Agency" structure, facilitating state interaction with the federal Environmental Protection Agency. It would solve one major problem identified by the management analysis: the separation of domestic supply-quality regulation from regulation of the sources of pollution. One significant problem, however, would be separation of the program regulating public water supplies from non-public supply regulation and from other health programs (e.g., food sanitation inspection).

The second option, placement of only the Water Well Construction Code program in MPCA, would avoid this problem. On the positive side, this option would place a program with major pollution control functions in the MPCA, while at the same time fostering on the MPCA a more balanced focus between surface- and ground-water pollution control (a problem identified in the management analysis). The reception of this option by those most directly affected, the water well contractors of the state, would bear on the feasibility of the alternative.

Finally, the major reorganization options would bring quality, quantity, and health aspects of state water programs together under direction of a single agency. The three major options are: a Department of Waters, an expanded Department of Health, and a new "super" department.

The Department of Waters option would consist of an independent agency combining the present Pollution Control Agency, the DNR Division of Waters, and Water Well Construction and Safe Drinking Water programs of the Department of Health. This combination would place all major water-related programs covering surface and ground waters into one agency. Also added to this agency would be the air and solid waste programs of the present MPCA, keeping pollution control functions together. This arrangement would provide a strong, unified governmental voice for management of water resources at the state level. A decision to opt for this alternative would place greater emphasis on integrated water management, rather than on the ties of certain water programs to health or conservation goals. One concern with this option would be the absence of other water agencies capable of checking decisions of the proposed agency.

The expanded Department of Health option would combine all major ground-water programs in that department. The MDH would operate programs in water appropriation, ground-water hydrology, underground gas and liquid storage, ground-water pollution control, and ground-water quality monitoring under this option. This option would also place all water supply functions including both quantity and health aspects in MDH, since splitting of surface- and ground-water appropriation permitting functions would be clearly untenable. This option favors integration of ground-water and water supply programs within the health goal at the expense of water conservation programs in DNR and pollution control programs within MPCA. It would not address, effectively, coordination problems with surface-water quality programs of the MPCA and DNR and is consequently not considered to be an attractive alternative.

The "super" department option would combine the programs of the Department of Waters option with other conservation programs in the present Department of Natural Resources. This alternative would result in nearly total integration of quality, quantity and health-related water programs with other natural resource conservation programs. The arrangement looks promising on paper and has been tried in several states, including Wisconsin, with varying degrees of success. One major question that might be asked is whether such a department could be effectively administered, or whether it would break down into a loose confederation of poorly-coordinated agencies.

State oversight of comprehensive, independent local water management institutions. Organizational options for state oversight of comprehensive local water management authorities include a) strengthening the existing functions carried out by the Department of Natural Resources, State Soil and Water Conservation Board, and Water Resources Board, and b) consolidating these functions in a single unit. The functions addressed by these alternativees include: SWCB approval of SWCD annual and long-range plans, expenditure of state cost-share and grant-in-aid funds, and approval of changes or additions of SWCD's; WRB approval of watershed district formations and modifications, appointment of initial watershed managers, and prescription of overall plans; and DNR supervision of the formation of lake improvement districts. Consideration of organizational alternatives in this area is warranted in response to the existence of overlapping functions at the local level, problems in coordination at both

local and state levels, and the potential utility in sharing of staff at the state level. In addition, improvements in the state oversight function may be especially desirable should the state choose to initiate the proposed statewide flood damage reduction grant-in-aid and natural resources management fund programs.

The option of strengthening existing arrangements would concentrate on increasing the capability of these agencies for assisting local water management authorities and for assessing compatibility of local plans and projects with state policy and objectives. The option would a) provide increased staff and technical capability to the three agencies, and b) mandate that memoranda of understanding between these agencies explicitly define areas necessitating interagency exchange of information and cooperation, as well as procedures for obtaining same.

Increased staff and technical capability are required a) to augment DNR's current commitment to watershed, soil and water conservation, and lake management liaison functions, b) to provide technical, economic, and engineering assistance through the proposed flood damage reduction grant-in-aid program, and c) to enable biennial review of overall plans and closer, more regular contact with watershed districts. Memoranda of understanding between these agencies are warranted because of a) the variable quality of technical support provided by DNR to WRB, historically, b) the necessity of close working relationships between all three agencies in administration of the statewide grant-in-aid flood damage reduction program, and c) the need to encourage more effective coordination between local water management districts through coordinated state actions and policies. Each of these measures would be directed toward improving the assistance and guidance given to local water management districts, and toward assuring compliance with state policy and plans in conjunction with this new local emphasis in water management.

The advantages of this option are the strengthening of traditional ties between state boards and their respective districts; an increased service function provided by the state boards and by the DNR, resulting in an increased input for local authorities in management of the state's water resources; and, to the extent that agreements between the state agencies could be made effective, facilitation of a coordinated state approach to local comprehensive water management. The disadvantages of the first option lie in its expense of administration and its failure to fully address at the state level the overlapping authorities of the local level. Expense of administration is likely to be higher than that of the second option because sharing of staff between the agencies would likely be precluded. The memoranda of understanding between the agencies could provide for sharing of staff, though it is doubtful that this mechanism could effectively acheive such integration, given the likely differences in agency priorities and objectives.

The second option would consolidate state oversight of comprehensive local water management authorities into a single agency. The functions currently carried out by the State Soil and Water Conservation Board, the Water Resources Board (with the exception of its water policy conflict resolution process), and the DNR supervision of lake improvement district formation would be consolidated. The essential requirement of this organizational proposal would be that representatives of both boards, or their constituencies, be included in the

governing structure of the new agency. One possible model would be a board similar to the current SWCB with addition or substitution of informed non-governmental citizens, such as serve on the current WRB. Another variation would be to include representatives of existing watershed district boards. The main concern would be to avoid creating a board with an obvious slant toward one or the other type of district, while keeping the size of the board at a workable level. Location of the board for administrative purposes might be most appropriately with DNR, given its charges in comprehensive water management, although there would be some justification for giving such a board independent status.

Advantages of the second option include a) reduced expense of administration of state oversight functions, including consolidation of staff, b) increased visibility of and emphasis on local authorities and opportunities for implementing water management programs; and c) a unified state approach to and advocacy for comprehensive local water resources management. In addition, this option is likely to encourage coordination among local entities.

The disadvantages of this option principally concern the perceived weakening of ties between existing state boards and local water management districts. There must also be the recognition that a "forcing together" at the state administrative level will only begin to address problems with overlapping districts at the local level. Significant problems could initially develop in getting unified action from a diversely constructed board. In addition, inclusion of the DNR lake improvement district function in a consolidation of oversight functions would separate this function from the state's technical expertise in lake management. However, this function is currently separated from lake expertise located in the Pollution Control Agency and the alternative would have the desirable effect of giving DNR and MPCA equal access to decision-making in state supervision of the formation of LID's.

Summary. Organizational options have been described relating to state water policy conflict resolution, water resources planning, water quality-quantity management interactions, and state oversight of comprehensive, independent, local water management authorities. In some cases, sufficient information has been gathered to warrant selection of a specific alternative. In other cases, the magnitude of the alternative may necessitate more thorough investigation and, most importantly, full public debate of the options.

CONCLUSIONS: The water policy conflict resolution process of the Water Resources Board should be discontinued by the Legislature since (a) identified statutory ambiguities can be resolved only by the Legislature, (b) systematic development of water policy would address the same concerns before they become conflicts, (c) interagency conflict resolution can best function linked to water resources coordination activities, and (d) utility of the WRB process has been reduced by a number of factors (see conclusions under "Accountability and Enforcement").

Identification of conflicting statutes and program policies should be linked with water policy development and water resources coordination functions to enhance resolution of interagency conflicts.

The Water Planning Board provides the state with an interagency board with direct focus on water resources issues, and with a highly visible advocate on behalf of water resources. The Board should be charged on an ongoing basis with directing state water resources planning and policy development.

The state should initiate program planning and evaluation functions within each water management agency. These should be linked to water resources plans and be made an integral part of the budgetary process.

The state should reevaluate major reorganizational options for a Department of Waters and a super Department of Natural Resources within five years after initiating agency program planning and evaluation functions.

The Legislature should consider formation of a legislative commission to study consolidation of state functions relating to oversight of local independent, comprehensive water management districts.

Water Management at the Regional Level

ISSUE: What water management functions should be carried out at the regional level?

Three functions were identified as possible regional responsibilities in water resources management: serving as a forum for citizen participation in state water planning programs, coordinating local water management efforts with state programs and regional needs through comprehensive regional planning, and administration of regionwide water management projects.

The regional function in serving as a forum for citizen participation in state water planning programs is currently utilized in two major state efforts. These include the water quality management "208" planning program of the Pollution Control Agency and the framework water and related land resources planning program of the Water Planning Board. The regional organizations carrying out this function are the regional development commissions. RDC's have organized citizens committees to review and comment on informational packages of the MPCA and on technical reports of the WPB. The regional goal of these efforts is to ensure that regional and local viewpoints are incorporated into each state plan.

RDC's responding to the Water Planning Board's Water Management Survey indicated concern that the state Water Quality Management Plan would not adequately reflect regional considerations. Skepticism was also expressed that the citizens committees were only being utilized in the 208 effort for appearance's sake. Many commissions tend to feel that in any balancing of state versus regional interests, regional

interests will inevitably lose out. No regional concerns were expressed with the WPB framework water planning effort, though this could be partially attributed to the timing of the Board's survey. It should be recognized that prior to the 208 citizen participation effort there had been no comparable, concerted effort to involve local, regional, and state agencies in such a planning process.

From the state perspective, this regional function has served very positively in communicating the views of both regional governmental units and citizens. This conclusion stands for both the water quality management and framework water and related land resources planning efforts. Problems indicated by the regions may stem in part from the large volume of technical material they have been expected to review, the lack of attention given by state planners to straightforward, concise presentation of this material, and the possible failure to adequately define the boundaries of this process.

The regional coordinating and comprehensive planning function concerns the needs a) to establish regionwide priorities for proposed water management projects which may receive state or federal funding, b) to ensure that these priorities are compatible with existing water resource plans for the area, and c) to ensure that these plans and priorities are coordinated and compatible with comprehensive regional plans. These needs would be facilitated by an active citizen participation program at the regional level, as discussed above. The principal utility of satisfying these needs at the regional level would be to assure coordination of locally-designed projects at some sub-state level, as well as to set priorities within a region at the regional level, rather than at the state level. The integration of activities at solving or reducing water management problems with activities targeted at other resource areas, such as land use and transportation, would also be well served by this regional function.

With respect to the proposed Statewide Flood Damage Reduction Grant-in-Aid program, for example, regional screening of projects would reduce the possibility that local units would have to commit resources to project evaluation without prior indication whether a project might receive state funds. Also, depending on the degree to which this regional function is considered desirable, recommended priorities could be made advisory or binding on the state for specific water management programs. Were the regional role in setting priorities to become binding in the proposed statewide grant-in-aid program, for example, the state role could be limited to setting priorities for distribution of state grants among the regional authorities. Other state responsibilities, such as the protection of environmental amenities through permit programs, would still remain at the state level.

The third identified regional function is administration of regionwide water management projects, particularly projects for flood damage reduction. A regionwide project may be defined as one which has hydrologic impacts occurring geographically in more than a single local unit of government, or one that requires multiple components to deal with a flooding problem systematically in more than one administrative area. This type of project is exemplified by the Area II Region of

the Minnesota River basin. Currently, regional decisions are made by Area II Minnesota River Basin Projects, Incorporated, a flood control corporation representing a ten-county joint powers board. This regional authority is responsible for carrying out the following operational requirements of flood damage reduction projects:

** Submission of requests for state grants-in-aid for specific projects;

** Demonstration that the proposed project is consistent with its plan for flood plain management;

** Conduct of a comprehensive evaluation of the positive and negative environmental effects associated with the project (with the assistance of a state engineer);

** Assumption of responsibility for project operation and maintenance;

** Assumption of responsibility for the acquisition of lands and rights-of-way required for the project; and

** Securing the necessary financial obligations from participating counties to meet the regional/local cost-sharing requirement of the program.

The requirement relating to plan consistency is needed to ensure conformity with Minnesota's Flood Plain Management Act. Requirements relating to project operation and maintenance, land rights acquisition, and financing have traditionally been carried out by project sponsors of federal and state flood damage reduction programs. Assignment of these requirements to a higher level of government would represent unnecessary interference and would reduce the incentive of regional sponsors to develop economically efficient projects. Assignment of certain of these requirements by the regional sponsor to local units of government could also be considered (e.g., responsibility for operation and maintenance, land rights acquisition, and so forth). However, determination of regional project priorities and submission of requests for state grants-in-aid would necessarily remain regional requirements. The responsibility for project evaluation rests to some extent at all three levels of government. Depending on the degree to which the regional role is necessitated by hydrologic factors, project evaluation could rest principally with state and local levels. The regional role would focus on assisting local units in meeting state requirements and on integrating local plans into a coordinated and comprehensive plan. The regional role in setting project priorities would also necessitate project evaluation at this level.

CONCLUSION: Three water management functions should be carried out at the regional level. The functions of serving as a forum for citizen participation in state water planning programs and regional coordination with comprehensive planning should be carried out statewide on an ongoing basis. The third function, administration of regionwide projects, should be carried out only where necessitated by hydrologic conditions.

ISSUE: What organization(s) should be assigned the responsibility for carrying out these functions?

Four types of regional authority are considered potentially feasible for carrying out identified regional functions. A fifth type of authority, the Metropolitan Council, is considered an appropriate candidate in the seven county metropolitan area, exclusively, but is not discussed separately below. The four types of authority include regional development commissions, water management boards similar to the Lower Red River Water Management Board, boards similar to the Southern Minnesota Rivers Basin Board, and joint powers agreements between counties.

Regional development commissions were established in Minnesota under the authority of the Regional Development Act of 1969 (Minnesota Statutes, Sections 462.381 - 462.396). The twelve regional development commissions cover the entire state outside the jurisdiction of the Metropolitan Council. Four mandatory responsibilities given RDC's include:

** To develop a comprehensive plan for the region in cooperation with the subregional planning agencies, the State Planning Agency, and local units of government;

** To review and comment on long-term comprehensive plans of local governments within the region ;

** To review plans of independent boards or commissions within the region and to suspend plans which conflict with the regional plan; and

** To review and comment on applications of governmental units for loans and grants from state or federal government.

In addition to these mandated responsibilities, the Act authorized RDC's to engage in other activities, including the following:

** To conduct research;

** To develop regional information and data collection systems;

** To provide technical assistance and services to local units of government;

** To coordinate civil defense and flood plain management;

** To participate in proceedings of the Minnesota Municipal Board; and

** To designate one of its members to serve without a vote on any other multijurisdiction planning board or council within the region.

Regional development commissions have broad powers to raise revenues, with each RDC having access to three sources of funding. First, the commissions are authorized to levy a property tax in the region of no more than one-sixth of one mill. Second, in anticipation of collection of taxes, the commissions may borrow money on a short-term basis. Third, the commissions may have access to various federal and state planning grant programs and to the regional and local assistance fund of the State Planning Agency (the state appropriation in support of regional development commissions was approximately $2 million in the F.Y. 78-79 biennium).

Despite the broad planning powers of the RDC's and their ability to raise funds by a variety of means, the operational requirements for administration of regionwide projects are not consistent with the objectives or capability of the RDC's. Specifically, the RDC's often have little expertise in resource development, they are not currently authorized by law to undertake specific natural resource-related projects, and their boundaries do not in general coincide with any single watershed or group of watersheds in the state. Regional development commissions do have major assets that could be effectively utilized in setting of regional priorities: the mandates to develop a comprehensive regionwide plan (though this has been inconsistently implemented) and to assure compatibility of plans of local independent boards, and the statewide coverage provided by commissions.

The institutional structure currently being utilized in Area II of the Southern Minnesota Rivers basin in conjunction with the Pilot Grant-in-Aid Flood Damage Reducation program is a ten-county joint powers agreement (as noted above). The authority for joint exercise of powers is contained in Minnesota Statutes, Section 471.59. The statute authorizes cooperative exercise of any power common to the governmental units entering into an agreement. Joint powers agreements must state the purpose and the method in which joint powers will be exercised. Since there are no other limitations on the specific objectives which these agreements can be used to accomplish, nor upon the type of governing authority to be used, joint powers agreements represent a comparatively flexible type of institutional structure. While joint powers agreements have no specific authority to tax, the law permits the parties to such an agreement to make disbursements from public funds to achieve the objectives of the agreement. Thus, the ability of a joint powers organization to raise funds is limited only by the taxation powers of the individual members.

Joint powers agreements between counties are not considered suitable for carrying out regional citizen participation and coordination functions, since these require permanent, ongoing organizations. This organizational alternative is considered feasible for administration of regionwide water management projects, however.

The advantages of joint powers agreements, flexibility of structure and ease of access to member reserves, must be weighed against several disadvantages. The first is that joint powers are relatively fragile institutions whose stability depends upon the on-going agreement of all members. In that respect, it would be difficult to work

out cost allocation arrangements acceptable to member governments. The Area II corporation experienced difficulties in this, but did arrive at a formula satisfactory to all members (backed by the incentive of a 75 percent state-cost share on projects). A second disadvantage of joint powers agreements is related to the assumption of liability required in regional cost-sharing of approved water management projects. Since there is no statutory requirement that joint powers agreements be maintained in perpetuity, the state would need to ensure that the terms of the initial agreement require members to meet ongoing responsibilities for operation and maintenance of constructed projects. If this is not done, the state could be forced to assume this responsibility should the agreement be terminated during the operational life of a project. The Area II Corproation has circumvented this difficulty by transferring the responsibility for operation and maintenance of completed projects to counties or other local governments.

Water management boards are a variation of the joint powers agreements discussed above. The major distinctions are that they are composed of watershed districts and that they have independent taxation power. The only such board currently in existence is the Lower Red River Management Board. Under Chapter 172, 1976 Laws of Minnesota, member watershed districts were empowered to levy an ad valorem tax of two mills or less on each dollar of assessed taxable property for the construction and maintenance of projects of common benefit to the districts. The Act also permitted the Board to institute joint projects and to enter into agreements with the State of North Dakota and the Province of Manitoba to assure integration of its projects with the purposes of these governments.

The chief advantages of water management boards patterned after the Lower Red River Board are:

** Greater familiarity with water resource related problems;

** Geographical boundaries that conform closely with actual watersheds;

** Specific taxation authority of member districts for water-related projects; and

** Statutory recognition of the prototype board.

Clearly, this structure could not be employed in carrying out regional citizen participation and comprehensive plan coordinating functions, without major changes in regional government and existing regional planning charges. Water management boards are, however, considered suitable, if not desirable, for administration of regionwide projects for the reasons listed above. A significant drawback of the water management board concept is that, unlike counties, watershed districts have not been organized for the entire state. However, it should be noted that (a) most portions of the state subject to severe flooding are already organized into watershed districts, and (b) legislation providing for the establishment, purposes, and governance of watershed districts is currently in existence under Minnesota Statutes, Chapter 112.

A fourth alternative for carrying out identified regional functions is the river basin board. The model for this concept is the Southern Minnesota Rivers Basin Board, the statutory authority for which is contained in Minnesota Statutes, Chapter 114A. The Board was established to serve as the regional organization for guiding the creation and implementation of a comprehensive environmental conservation and development plan for the Southern Minnesota Rivers basin. Other powers and duties of the Board include:

** Adoption of planning guidelines and regulations designed to prevent the impairment of destruction of air, water, land, or other natural resources in the basin;

** Development and coordination of a system to enable units of government located in the basin to carry out those activities necessary to prepare a basinwide plan; and

** To foster and promote the implementation of the plan by the various federal, state, and local units of government in the area.

The Southern Minnesota River Basin Board has been generally effective in meeting its overall statutory charge. However, significant drawbacks would be associated with the use of similar boards to carry out the operational requirements for administration of regionwide projects. These include the lack of taxation powers and the lack of authority to undertake the construction of natural resource-related projects.

River basin boards do provide an attractive alternative to regional development commissions for carrying out regional functions of a) serving as the forum for citizen participation in state water management programs and b) for coordinating water-related activities with comprehensive plans. These boards would have advantages of alignment on a river basin basis, representation of both local and regional levels, and a focus on comprehensive water resources planning and management. The tie into planning and development of other resource areas such as energy, land use, and agriculture would be less balanced, however, than presumably would be the case with RDC's actually charged with such comprehensive planning. Use of river basin boards may be especially appropriate for focusing state, regional, and local attention during conduct of major river basin studies. As such, these boards would appropriately function to advise the state water planning coordinating body identified previously (see conclusions concerning the role of the state in water planning).

CONCLUSIONS: Regional development commissions should be assigned responsibility for providing the forum for citizen participation in state water planning programs. They should also be given responsibility for coordinating water management project proposals with comprehensive regional plans, and recommending priorities to appropriate state agencies.

River basin boards modeled after the Southern Minnesota Rivers Basin Board should be formed on an ad hoc basis as major river basin studies are developed by the state water planning coordinating body.

The state should not exclude any type of regional authority from administering regionwide projects, provided they can satisfy operation requirements for administering such projects.

Water Management at the Local Level

ISSUE: Do overlapping authorities at the local level create problems in local administration of water management programs?

Numerous local units of government may be involved directly in management of water resources, including both general purpose units (counties, municipalities, and townships) and special purpose districts (watershed districts, soil and water conservation districts, lake improvement districts, lake conservation districts, water and sewer authorities, sanitary districts, drainage and conservancy districts, public drainage authorities, and county committees of the U.S. Farmers Home Administration and Agricultural Stabilization and Conservation Service). As one might expect from this large number of authorities, several areas of overlap may be found. As a general rule, these appear to have resulted from legislative efforts to make the means of solving specific problems more readily accessible. Analysis of these overlapping authorities is focused on two general purpose units, counties and municipalities, and three special purpose districts, watershed districts, soil and water conservation districts, and lake improvement districts. In addition, discussion of drainage and conservancy districts, the forerunners of watershed districts, is also presented.

Counties are authorized to pursue a wide range of health, safety, and general welfare objectives. They may construct and operate water control structures, undertake projects to change the course, current, or cross-section of waters, construct water and sewer system for lake improvement, and so forth. Counties have authority to eminent domain in specific circumstances for specified purposes, such as for acquisition of existing water control structures and construction of public drainage systems. Counties may adopt ordinances, enact regulations, and issue permits relating to shoreland and flood plain management, water surface use, works-in-the bed of public waters, among other areas. They also have general ad valorum taxing authority subject to levy limits, except relating to lake improvement districts, and authority to assess property benefited by works of improvement relating to water resources.

Counties may play a special role in formation of watershed districts, lake improvement districts, and public drainage authorities, including initiating or acting on the formation, and appointing the managing boards of such districts. The specific involvement and function of counties varies in each instance, however. Counties also have major involvement in designation of public waters, shoreland management, and flood plain management in conjunction with DNR. Additionally, they may become involved in structural flood damage reduction, enforcement of water well regulations, and certain other health-related functions.

Municipalities perform many of the same functions with generally similar authorities as counties and, in addition, supercede the authority of counties within their boundaries. They have more specific authority than counties in certain areas, such as in flood damage reduction for which they may acquire lands for flood control structures by condemnation, and make assessments against benefited property owners at their own volition.

Soil and water conservation districts are generally authorized to protect soil and water resources and implement any necessary practices in the district to reduce and prevent soil erosion, sedimentation, agriculturally-related pollution, and so forth in order to preserve natural resources, insure continued soil productivity, control floods, prevent impoundment of dams and reservoirs, preserve wildlife, and maintain navigability of streams and harbors. SWCD's are given only limited authority to implement practices and projects, however. Except through authority shared with counties or other units of government, districts are limited to development of projects and initiation of works on a strictly voluntary basis. SWCD's are governed by elected supervisors and presently blanket the state.

SWCD involvement in water management programs has traditionally focused on application of land treatment measures and development of conservation plans for management of soil and water resources. This role has been expanded recently with initiation of the State Cost-Share and Demonstration Erosion Control programs for application of land treatment practices. SWCD's have played a new role in assessment of sources of non-point pollution as part of the state's water quality management (208) planning effort. Districts have also recently acquired important functions in conjunction with regulatory programs of the Department of Natural Resources. They are authorized to advise DNR on irrigation soil suitability and compatibility with SWCD long range plans, assist in the conduct of pumping tests, and advise the Department on water appropriation and public waters permits. Districts also may be involved in assisting counties in public waters identification and in serving on hearings units charged with resolving disputes in public waters designation.

Watershed districts are authorized, generally, to conserve natural resources through "land utilization, flood control, and other needs upon sound scientific principles for the protection of public health and welfare." They may be established for such purposes as flood damage reduction, drainage and navigation improvement, reclaiming or filling wet lands, providing and conserving water supplies, providing for sanitation by regulating the use of streams for waste disposal, control of soil erosion and siltation, and regulating improvements by riparian landowners affecting the beds and shores of lakes, streams, and marshes. Their charge thus includes nearly every phase of water resources management. Watershed districts are also given a wide range of authorities in areas of regulation, permits, ordinance adoption, and initiation of works of improvement. These authorities are sometimes qualified and in some cases made subservient to other units of government (especially counties and municipalities in the area of ordinance adoption). WD's have authority of eminent domain, taxation, and assessments, though each is qualified to certain conditions. Watershed districts are governed by appointed boards of managers. With occasional exceptions, they follow natural watershed boundaries. Watershed districts are formed upon petition to the Water Resources Board and currently cover less than one-third the area of the state.

Watershed districts are currently involved in a variety of water management activities, reflecting the full spectrum of authorized functions. The activities of a given district vary according to its location and needs perceived by the board of managers. These activities may range from provision of flood control and management of drainage systems in both urban and rural settings, to regulation of various related land resource activities. In many cases, watershed districts assume the function of meeting operational requirements of federal water resources projects, especially those for flood damage reduction. Watershed districts have not generally provided the systematic advisory and support services for state water management programs that SWCD's have. This appears largely attributable to their lack of coverage statewide.

Watershed districts are the "modern" version of drainage and conservancy districts, the latter authorized under Minnesota Statutes, Chapter 111, a statute first enacted in 1919. The purposes and authorities of each type of district are similar, though watershed districts appear to be potentially somewhat more comprehensive and flexible, with more powers and better access to funding. Only three drainage and conservancy districts still exist in Minnesota, having chosen not to take advantage of the improved watershed authority offered by Minnesota Statutes, Chapter 112. These three districts are each involved to some degree with the operation and maintenance of federal flood control projects. It is clear that the functions of these districts can be accomodated under Minnesota Statutes, Chapter 112, the "Watershed Act," and it could be concluded that these districts should be required either to transfer their authority to this chapter or to transfer ongoing maintenance responsibilities to the affected counties. Repeal of the drainage and conservancy district section of Chapter 111 could be viewed not only as a step in updating state statutes, but as a move in the direction of reducing the various types of local districts involved in the management of waters.

Lake improvement districts are authorized, generally, to improve the natural character of lakes and shorelands by protecting lakes from the detrimental activities of man and from certain natural processes. While only two currently exist, they may be formed by either counties or municipalities and given several of the authorities held by these units. LID's may construct and operate water control structures, undertake projects to change the course, current, or cross-section of public waters, improve navigation, develop comprehensive plans to carry out these and other activities, and assess benefited property owners to pay for projects. LID's may exercise eminent domain only through counties or municipalities.

The overlapping authorities of these special and general purpose districts are evidenced in the summaries provided above. They include broad overlaps in flood damage reduction, drainage, shoreland management, non-point source pollution control, and nearly every other phase of water management. To some extent, these overlaps may be seen as constructive, enabling districts to take advantage of their special authority or focus to implement and advocate proper management of water resources.

Four general types of problems may be at least partially attributable to the overlapping of these authorities. These include shortages in qualified staff and resources to support this staff, problems with public awareness and perception of the various special purpose districts, inconsistent statewide coverage of water management authorities, and limitations to the fund-raising abilities of the various districts. Each of these problems was identified by local authorities in the Water Planning Board's water management survey. Most were also described by managers at the state level through surveys and interviews.

Problems relating to shortages in qualified staff appear to be most pressing with counties and soil and water conservation districts. Both units have assumed major roles in water resources management over the past ten years. Most of these functions have originated from the state level of government, including in the case of counties, many state programs in which county administration and enforcement is mandated. Administration and enforcement of shoreland ordinances has been hindered by these shortages in such areas as inspection of septic tanks, for example. In the case of SWCD's, staff shortages may tend to overemphasize district reliance on federal Soil Conservation Service staff in state program implementation and review. In overall response to this burden, a natural resources management fund has been proposed (see "Water Management at the State Level"). The question that is raised here is whether the proliferation of local management authorities may tend to contribute to shortages of qualified staff, either by competition for staff or by inefficient use of local resources, generally, as a result of the scattering of functions.

Watershed districts expressed no problems relating to staff availability, probably since they tend to rely heavily on consultants. Lake improvement district problems have not appeared since the few LID's in existence have not yet developed program direction.

Several watershed districts and a lesser number of soil and water conservation districts identified public awareness and perception as major problems. This may tend to constitute more of a problem in the metropolitan area where water management has generally low visibility. Problems were linked to insufficient funding of education and citizen participation functions, as well as to the number of local water management authorities.

Inconsistent statewide coverage of local water management authorities primarily concerns the incomplete coverage of watershed districts. This situation has occurred intentionally, because watershed districts are formed only upon petition to the Water Resources Board by interested counites, municipalities, and under specified conditions by citizens. The WRB reviews the merits of petitions, holds hearings on possible formation of districts, and decides whether or not formation is warranted. The special characteristics of watershed districts are designed to facilitate comprehensive management of water resources and have been made available only on a selective basis where judged appropriate by local government, or citizens, and by the state. The intention is creation of the authority only where needed, such as when water management problems cross political boundaries. The resulting effect may be to significantly limit the utility of watershed districts, since their incomplete coverage has tended to render them ineligible

for assumption of local water management activities in conjunction with statewide programs. Examples illustrating this tendency include programs relating to flood plain zoning, and consultation with DNR on issuance of water appropriation and public waters permits.

Limitations to the fund raising abilities of the various districts, including both special and general purpose kinds, can be a significant deterrent to effective management of water resources. As noted under the previous issue, existing tax limitations have in certain cases hampered local units of government in raising the local share of flood damage reduction projects. This has led counties, in this instance, to seek state funds in support of local objectives. The net result may be increased state overview of local initiatives and potentially decreased efficiency of constructed projects, since economic incentives for developing more efficient projects may be reduced with state cost-sharing in excess of direct state benefits. Limitations to fund raising abilities may also tend to discourage allocation of limited resources to important comprehensive water management planning functions, such as for conduct of needs analyses and feasibility studies. In the long run, this might contribute to oversimplistic emphasis on single purpose projects to the possible exclusion of more efficient solutions to water problems.

In conclusion, four broad problems may be identified with local water management authorities: shortages in qualified staff and resources to support this staff, problems with public awareness and perception of the various districts, inconsistent statewide coverage of water management authorities, and limitations to the fund-raising abilities of the various districts. Each of these problems tends to be aggravated by the number of general and special purpose districts existing at the local level of government. Accordingly, the state may wish to study in greater depth the feasibility of organizational changes in water management authorities at the local level of government. Important study issues should include: district relationships with counties and regional planning authorities, whether watershed or political boundaries should be followed, whether districts should be governed by appointed or elected managers, technical and administrative staff requirements, appropriate size, and the nature and extent of state oversight desirable.

CONCLUSION: Problems with shortages of qualified staff, public awareness, inconsistent statewide coverage, and limitations in fund raising ability may be aggravated by the number of general and special purpose districts involved in local water resources management.

The state should study in greater depth the need and feasibility of organizational changes at this level of government.

ISSUE: Which local authorities should be eligible to participate in the proposed Statewide Flood Damage Reduction Grant-In-Aid program?

In order to fulfill the local operational requirements of the proposed grant-in-aid program, local units of government sponsoring flood damage reduction must have the following statutory powers:

** To acquire lands, and secure easements and rights of way for the specific purpose of flood damage reduction;

** To construct flood damage reduction projects, whether or not these projects may be part of an area-wide program;

** To raise funds for the purpose of flood damage reduction, either by (a) assessing benefited property owners on a project by project basis or (b) using existing forms of taxes generally utilized for local public works projects; and

** To coordinate or direct the implementation of non-structural measures in conjunction with structural project components or, where structural measures are not proposed, independently.

Of the various types of local units under consideration (counties, watershed districts, soil and water conservation districts, and municipalities), watershed districts have the clearest mandate to carry out all of the above operational responsibilities. These powers are specifically granted in Minnesota Statutes, Chapter 112. Two problems are associated with assigning local operational requirements to watershed districts. Much of the state is not currently represented by watershed districts. Consequently, limiting local operational requirements to this type of body would lead to the temporary exclusion of certain areas of the state from the proposed program. The second problem is related to financial obligations that must be assumed by local units of government. While watershed districts have the power to levy taxes, existing tax limitations could in some cases hamper districts from raising the necessary revenues to meet the local cost-sharing requirement.

In fact, this problem does not apply to watershed districts alone, but may be viewed as a more general problem of government in carrying out local and regional operational requirements. For example, the Area II Corporation has found it necessary to request that the Legislature raise the tax levy limitation in member counties in order to meet the cost-sharing requirements of the current program. The Legislature would have to confront this problem in considering any proposal to expand the current Pilot Grant-in-Aid program statewide.

Local operational requirements could also be carried out under joint powers agreements between soil and water conservation districts and counties. The joint powers structure would be useful since neither soil and water conservation districts nor counties have all the desired powers to conduct local operational responsibliities. Under the joint powers agreement, the joint governing body would acquire

from soil and water conservation districts the right to acquire land, easements, and right of way, and to assess project costs against benefited property owners. Coupled with the more general authority of counties to levy taxes, these powers would be sufficient to meet most local operational requirements of the program.

The shortcoming of this arrangement would be the lack of explicit statutory authority to condemn lands for the purpose of flood control, since neither counties nor soil and water conservation districts have this, though counties may have such authority under Minnesota Statutes, Section 106.021 under certain circumstances. An advantage of this type of arrangement is the statewide coverage of soil and water conservation districts. However, the state would again need to ensure that the joint powers agreement contained provisions binding participants to meeting on-going operational needs.

Municipalities would also be viable candidates for meeting local requirements in areas not covered by watershed districts. The authority of municipalities to acquire lands for the purpose of flood control, to build and maintain flood control structures, and to assess taxes against benefited property owners is contained in Minnesota Statutes, Chapter 429. One foreseeable difficulty would be that effects of structures on flood flows often range beyond that area controlled by individual municipalities. In that event, however, a city might enter into a joint powers agreement with affected counties to obtain the needed coverage.

Watershed districts appear to provide the most desirable characteristics of the local authorities strictly from the standpoint of flood damage reduction. However, counties and municipalities are lead local agencies in flood plain regulation while soil and water conservation districts provide expertise in land treatment measures for watershed protection. It is likely that a comprehensive solutions to flooding problems will require coordinated efforts by each of these organizations. Because of their comprehensive charge and design, watershed districts would be especially suited for leading and coordinating local efforts, though they would necessarily defer to other authorities in zoning regulation and certain watershed protection matters. Counties, municipalities, and the various joint powers agreements could also assume full responsibility for the local operational requirements of the proposed grant-in-aid program on a case-by-case basis, where watershed districts do not exist.

CONCLUSION: Where they exist, watershed districts should be the designated authority for assumption of local operational requirements in the proposed Statewide Flood Damage Reduction Grant-In-Aid Program. Where non-structural alternatives are included, watershed districts should coordinate activities with counties or municipalities, as appropriate. Counties, municipalities, and various joint powers boards may assume both structural and non-structural functions on a case-by-case basis in areas not covered by watershed districts.

CHAPTER V

R E C O M M E N D A T I O N S

The Management Work Group makes the following 19 recommendations in six areas of water management:

Accountability and Enforcement

RECOMMENDATION ONE: INTERAGENCY WATER POLICY CONFLICT RESOLUTION SHOULD BE CARRIED ON BY THE WATER PLANNING BOARD.

An interagency water policy conflict may be defined as one involving two or more agencies unable to reach a mutually acceptable course of action in a timely fashion concerning a matter of water policy in which each agency has a specific legislative mandate. This may include matters related to planning and regulatory decisions, or interpretations of the legislative intent of statutory language. The Water Planning Board should be authorized to resolve conflicts involving water policy upon its own initiative or upon petition of involved agencies where it deems a matter of water policy is at stake and a timely resolution would not otherwise be forthcoming.

The Legislature, in granting the Board authority in resolution of water policy conflicts, should clearly distinguish this function from the environmental conflict resolution process of the Environmental Quality Board. Regulations developed and modified by each board should clearly define areas in which water and environmental policy are the predominant concerns to be handled by the WPB and EQB, respectively.

RECOMMENDATION TWO: THE PROCESS FOR WATER POLICY CONFLICT RESOLUTION CURRENTLY CARRIED OUT BY THE WATER RESOURCES BOARD SHOULD BE DISCONTINUED BY THE LEGISLATURE.

Interagency water policy conflict resolution presently under authority of the Water Resources Board should be administered by the Water Planning Board. Resolution or private-state conflicts should continue to be handled through the Office of Hearing Examiners and the courts.

RECOMMENDATION THREE: THE STATE SHOULD INITIATE PROGRAM PLANNING AND EVALUATION FUNCTIONS WITHIN EACH WATER MANAGEMENT AGENCY. THESE SHOULD BE LINKED TO WATER RESOURCES PLANS AND BE MADE AN INTEGRAL PART OF THE BUDGETARY PROCESS.

Program planning should include development of work programs setting out activities and specific objectives to be achieved by program managers during the course of each fiscal year. Objectives should be

clearly tied to appropriate sections of the Framework Water and Related Land Resources Plan. Program evaluation should include evaluations of the effectiveness of water resources management and regulation activities in order to measure the degree to which legislative goals are being met and to identify means of improving program effectiveness. Agencies charged with carrying out water management programs should be required to perform biennial evaluations and provide biennial reports to the Legislature detailing findings and recommending actions. Such reports should be submitted in conjunction with and supportive of agency budget requests.

RECOMMENDATION FOUR: THE WATER PLANNING BOARD SHOULD SERVE IN A REVIEW AND ADVISORY CAPACITY TO AGENCIES AND THE LEGISLATURE CONCERNING THE COMPATIBILITY OF AGENCY PROGRAMMING AND BUDGETARY REQUESTS WITH THE FRAMEWORK WATER AND RELATED LAND RESOURCES PLAN.

The Water Planning Board should review current programming and future planning of state water management agencies to identify areas of potential conflict with the Framework Water and Related Land Resources Plan. The Board should work with affected agencies to resolve such conflicts and, to the extent practicable, coordinate its findings with agency budgetary requests. The Board should report its findings to the Legislature on the compatibility of agency programming and future planning with the framework plan on or before November 15 of each even numbered year.

RECOMMENDATION FIVE: THE LEGISLATURE SHOULD INITIATE A NATURAL RESOURCES MANAGEMENT FUND TARGETED AT ASSISTING LOCAL WATER MANAGEMENT AUTHORITIES IN IMPLEMENTATION OF STATE-MANDATED PROGRAMS. THE STATE PLANNING AGENCY SHOULD BE DESIGNATED AS THE STATE AGENCY CHARGED WITH ADMINISTRATION OF THE FUND.

State Level Organizational Considerations

RECOMMENDATION SIX: THE WATER PLANNING BOARD SHOULD RE-EVALUATE MAJOR REORGANIZATIONAL OPTIONS FOR A DEPARTMENT OF WATERS AND A NATURAL RESOURCES SUPER DEPARTMENT WITHIN FIVE YEARS AFTER INITIATING AGENCY PROGRAM PLANNING AND EVALUATION FUNCTIONS.

This recommendation is linked to recommendation number three. Each agency should be given a reasonable period of time to place into effect the coordination and accountability mechanisms represented by the linkage of program planning and evaluation functions to water plans and the budgetary process.

RECOMMENDATION SEVEN: THE LEGISLATURE SHOULD FORM A SPECIAL LEGISLATIVE COMMISSION TO STUDY AND MAKE RECOMMENDATIONS CONCERNING CONSOLIDATION OF FUNCTIONS OF THE STATE SOIL AND WATER CONSERVATION BOARD, THE WATER RESOURCES BOARD (EXCLUDING THE WATER POLICY CONFLICT RESOLUTION PROCESS), AND THE OVERSIGHT OF LAKE IMPROVEMENT DISTRICT FORMATION BY THE DEPARTMENT OF NATURAL RESOURCES.

This recommendation should be carried out simultaneously with recommendation nineteen concerning the need and feasibility of organizational changes at the local level of government. It is expected that the study will provide a highly visible and authoritative means for examining technical, social, and political aspects of merging the functions of the Water Resources Board, Soil and Water Conservation Board, and to a limited extent, Department of Natural Resources. The Work Group recognizes, however, that while a joint study of state oversight and local management functions is necessary, action may prove desirable at the state level regardless of the action recommended at the local level.

Statewide Flood Damage Reduction Grant-in-Aid Program

RECOMMENDATION EIGHT: THE STATE SOIL AND WATER CONSERVATION BOARD SHOULD BE DESIGNATED TO ADMINISTER THE STATEWIDE FLOOD DAMAGE REDUCTION GRANT-IN-AID PROGRAM IN CONJUNCTION WITH DNR AND THE WATER PLANNING BOARD.

State Water Resources Planning

RECOMMENDATION NINE: WATER PLANNING AT THE STATE LEVEL SHOULD BE SUPPORTED AT TWO ORGANIZATIONAL LEVELS, THROUGH AN AUTHORITATIVE COORDINATING BODY AND BY WATER MANAGEMENT AGENCIES.

The authoritative coordinating body should be charged with directing state involvement in activities relating to the federal water resources planning act and comprehensive interagency water planning efforts, coordinating public water resources management and regulation activities, resolving interagency conflicts in water policy (see Recommendation One), and evaluating and recommending improvements in state laws, rules, and procedures in the area of public water resources management and regulation.

An interagency Priorities Committee should be established to assist the coordinating body in identifying state and federal program priorities. The Committee's state-related functions should include: 1) initiation of review of new state program proposals for areas with identified water-related problems, 2) prioritization of new planning, analysis and research proposals for which state funding has been requested, and 3) provision of input to the Legislature in regard to state program proposals for Minnesota (see Recommendation Four for description of proposed Water Planning Board function to which these relate).

Water planning by major water management agencies should be directed toward support of agency programs and objectives, and should include program planning and evaluation (see Recommendation Three) as well as program-related resource planning functions.

RECOMMENDATION TEN: THE WATER PLANNING BOARD SHOULD BE CHARGED ON AN ONGOING BASIS WITH CARRYING OUT FUNCTIONS OF THE AUTHORITATIVE COORDINATING BODY DELINEATED ABOVE. THE CHAIRPERSON OF THE WATER PLANNING BOARD SHOULD BE DESIGNATED ON AN ONGOING BASIS AS REPRESENTATIVE OF THE GOVERNOR ON FEDERAL-STATE BASIN COMMISSIONS.

RECOMMENDATION ELEVEN: THE WATER PLANNING BOARD SHOULD BUILD ON ITS EFFORT IN DEVELOPING THE FRAMEWORK PLAN BY INITIATING AND COORDINATING MORE DETAILED STUDIES NEEDED TO ADDRESS WATER RESOURCE PROBLEMS CUTTING ACROSS AGENCY INTERESTS, LEVELS OF GOVERNMENT, AND POLITICAL BOUNDARIES.

RECOMMENDATION TWELVE: STATE AGENCIES INVOLVED IN WATER MANAGEMENT SHOULD DEVELOP ONGOING PROGRAMS OF CITIZEN PARTICIPATION STAFFED BY FULL-TIME COORDINATORS NOT DIRECTLY INVOLVED WITH AFFECTED PROGRAMS.

RECOMMENDATION THIRTEEN: THE WATER PLANNING BOARD SHOULD CONTINUE SUPPORT OF A CITIZENS FORUM LIKE THE WATER INTERESTS ADVISORY COMMITTEE. THIS FORUM SHOULD BE CHARGED WITH INITIATING AND COORDINATING CITIZEN PARTICIPATION IN WATER PLANNING AND MANAGEMENT ACTIVITIES OF THE BOARD.

Regional Water Management

RECOMMENDATION FOURTEEN: THREE WATER MANAGEMENT FUNCTIONS SHOULD BE CARRIED OUT AT THE REGIONAL LEVEL. THE FUNCTIONS OF SERVING AS A FORUM FOR CITIZEN PARTICIPATION IN STATE WATER PLANNING PROGRAMS, AND REGIONAL COORDINATION WITH COMPREHENSIVE PLANNING SHOULD BE CARRIED OUT STATEWIDE ON AN ONGOING BASIS. THE THIRD FUNCTION, IMPLEMENTATION OF REGIONWIDE PROJECTS, SHOULD BE CARRIED OUT ONLY WHERE NECESSITATED BY HYDROLOGIC CONDITIONS.

RECOMMENDATION FIFTEEN: REGIONAL DEVELOPMENT COMMISSIONS INCLUDING THE METROPOLITAN COUNCIL, SHOULD BE CHARGED WITH RESPONSIBILITY FOR PROVIDING THE FORUM FOR CITIZEN PARTICIPATION IN STATE WATER PLANNING PROGRAMS. THEY SHOULD ALSO BE GIVEN RESPONDIBILITY FOR COORDINATING WATER MANAGEMENT PROJECT PROPOSALS WITH COMPREHENSIVE REGIONAL PLANS, AND RECOMMENDING PRIORITIES TO APPROPRIATE STATE AGENCIES.

RECOMMENDATION SIXTEEN: RIVER BASIN BOARDS SIMILAR TO THE SOUTHERN MINNESOTA RIVERS BASIN BOARDS SHOULD BE FORMED ON AN AD HOC BASIS AS MAJOR RIVER BASIN STUDIES ARE DEVELOPED BY THE WATER PLANNING BOARD.

RECOMMENDATION SEVENTEEN: THE STATE SHOULD NOT EXCLUDE ANY TYPE OF REGIONAL AUTHORITY FROM IMPLEMENTING REGIONWIDE PROJECTS, PROVIDED THEY CAN SATISFY OPERATIONAL REQUIREMENTS FOR ADMINISTERING SUCH PROJECTS.

Local Water Management

RECOMMENDATION EIGHTEEN: WHERE THEY EXIST, WATERSHED DISTRICTS SHOULD BE THE DESIGNATED AUTHORITY FOR ASSUMPTION OF LOCAL OPERATIONAL REQUIREMENTS IN THE PROPOSED STATEWIDE GRANT-IN-AID FLOOD DAMAGE REDUCTION PROGRAM. COUNTIES, MUNICIPALITIES AND VARIOUS JOINT POWERS AGREEMENTS MAY ASSUME THIS FUNCTION ON A CASE-BY-CASE BASIS IN AREAS NOT COVERED BY WATERSHED DISTRICTS.

RECOMMENDATION NINETEEN: THE SPECIAL LEGISLATIVE COMMISSION (SEE RECOMMENDATION SEVEN) SHOULD BE DIRECTED TO EXAMINE AND RECOMMEND CLARIFICATION AND IMPROVEMENTS IN AUTHORITIES AND RELATIONSHIPS OF LOCAL WATER MANAGEMENT AGENCIES.

This analysis should be conducted in conjunction with study by the special Legislative Commission of the consolidation of state oversight boards under Recommendation Seven.

The Work Group recognizes the need to clearly define the functions of local water management authorities, and the desirability of consolidating these functions where feasible. It is proposed that the Special Legislative Commission hold hearings throughout the state while working with the Water Planning Board on technical aspects in developing recommendations to the Legislature on these matters.