

WATERSHED PLANNING

Papers presented at the Seminar on
Watershed Planning sponsored by the
Metropolitan Council and the Minnesota
Association of Watershed Districts on
February 15, 1972 at the Sheraton Motor
Inn, Bloomington, Minnesota

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CONTENTS

	Page
Acknowledgments	iii
Foreword	1
Introduction	2
Opening Remarks	4
Albert Hofstede	4
Lawrence Kelley	5
Metropolitan Council, Watershed District and Municipal Water Resource Planning Relationships	6
Frank Lamm	6
Raymond Haik	7
George Hite	13
Questions and Answers	16
Importance of Open Space to Watershed District Planning	19
Questions and Answers	23
Some Comments Concerning Watershed Planning in Minnesota	26
Questions and Answers	33
Watersheds and Their Relationships to the Department of Natural Resources	34
Questions and Answers	41
Soil and Water Conservation Relationship to Watershed Districts	42
Questions and Answers	48
Regional Planning and Watershed Resources	51
Questions and Answers	55
Summary and Round Table Discussion of Major Issues	58

ACKNOWLEDGMENTS

On Tuesday, February 15, 1972 the Metropolitan Council and the Minnesota Association of Watershed Districts sponsored a joint seminar on watershed planning. The workshop type seminar, held at the Sheraton Motor Inn in Bloomington, was designed to help clarify the role and intent of the various governmental and special district agencies responsible for watershed planning. These agencies included municipalities, the State Legislature, county governments, various watershed districts, the Metropolitan Council, the Minnesota-Wisconsin Boundary Waters Commission, the State Planning Agency and the Federal government. Of the nearly 150 individuals that were present clearly 2/3 were representatives of municipalities or the watershed districts, while the remainder were either representatives from the above mentioned agencies or private citizen action groups--like the League of Women Voters, various environmental groups and other such organizations.

Frank Lamm from the Metropolitan Council staff and Ray Haik from the Minnesota Association of Watershed Districts, in conceiving this seminar, had in mind providing an opportunity for concerned individuals to meet and explain their respective positions. In essence it was hoped that before a sense of direction could be provided for watershed planning, an understanding of the position of all the potential participants was needed.

This Bulletin was taken from the transcript of that seminar and concerns itself, at least the first three presentations, with identifying the respective positions of the watershed districts, the Metropolitan Council and the municipalities. All three major positions differ somewhat in approach while recognizing a very real need to grapple successfully with the overriding problem of watershed preservation and management.

A considerable amount of time could be spent thanking all the individuals responsible not only for the successful seminar but hopefully for providing the impetus for an honest coordinated approach to the problem of watershed planning. However, those of you reading this Bulletin who were in attendance at the seminar know full well the contributions provided by the participants and those others will surely be made aware of them as they read the text that follows. Among these people are Larry Kelley and Ray Haik from the Association of Watershed Districts, Frank Lamm from the Metropolitan Council, William Walton, Director, Water Resources Research Center at the University of Minnesota who were largely responsible for conceptualizing and organizing a joint seminar and follow-up program. All of the above individuals as well as: Al Hofstede, Chairman, Metropolitan Council; Arno Haering, Manager, Parks and Open Space Program for the Council; Rey Boezi, Director, Comprehensive Planning for the Council; George Hite, Village Manager for Eden Prairie, whose insight into the role of the municipality in its interrelationship to other governmental units provided immeasurable assistance; Gene Hollenstein, Chief Hydrologist for the Department of Natural Resources; and Earl Terpstra, Assistant State Conservationist for Watersheds and River Basins, contributed to the success of the seminar and whose comments at the seminar constitute this Bulletin.

Some time must be spent thanking those people whose contributions to the success of the seminar were immeasurable. Among those people are Frank Lamm from the Metropolitan Council, Ray Haik and Larry Kelley from the Minne-

sota Association of Watershed Districts, who were largely responsible not only for conceptualizing but also for helping organize and implement this watershed seminar. A considerable vote of thanks must go to those people who contributed time and effort through their comments delivered at the seminar, among these are Al Hofstede, Chairman of the Metropolitan Council; George Hite, Village Manager for Eden Prairie whose insight into the role of the community and municipality and its interrelationship with other governmental units must be recognized as unique, thorough, and reflect a genuine understanding of each of the various roles; also thanks must go to Arno Hering, Manager of the Parks and Open Space Program whose speech concerning the role of parks and open space of the Metropolitan Council and its relationship to the concept of watershed planning outlines the Council's position very well; William Walton, Director of the Water Resources Research Center at the University of Minnesota; Gene Hollenstein, Chief Hydrologist for the Department of Natural Resources; Earl Terpstra, Assistant State Conservationist for Watersheds and River Basins; and finally, Rey Boezi, Director of Comprehensive Planning for the Metropolitan Council. Each of these individuals' discussions outlines the role of his particular agency, governmental unit, and while not trying to point differences, tends to reflect that in fact those differences do exist. It was the hope that by having such a seminar we could: 1) identify the roles of the various agencies and special interest groups involved with the issues of watershed planning, and 2) make some assessment as to how these agencies, groups foresee their future roles as well as future actions they would like to see taken in order to preserve and provide for maintenance and continuation of the watersheds within the area.

The speeches and question and answer sessions that follow hopefully will outline the various viewpoints represented at the seminar and represented in the issue of watershed planning. In reading these comments it is best to note the particular or peculiar position taken by each agency in the context of who in fact that agency represents and how he or she in particular represent that viewpoint.

FOREWORD

The Water Resources Research Center of the University of Minnesota was established for the purposes of encouraging, supporting and coordinating research and education in all aspects of water resources. Among the more urgent water resources problems requiring additional research are those dealing with watershed planning in Minnesota. In view of the great public concern and the urgent need for information on this topic, this Bulletin is being published by the Water Resources Research Center as a public service. It is thus being made available to a wide variety of people concerned with the research, technical, educational, and operational aspects of water resources. This Bulletin contains the proceedings of a Seminar held in the Sheraton Motor Inn, Bloomington, Minnesota on February 15, 1972.

The publication of the proceedings of the Seminar on Watershed Planning is part of the fiscal year 1972 program of the Center Director's office and is related to OWRR Annual Allotment Agreement No.: 14-31-0001-3523.

Publication Abstract:

The objective of the Seminar on Watershed Planning was to gather area leaders representing watershed districts, municipal, county and State government, and private groups in an effort to stimulate further coordinated water resources planning in Minnesota. The following topics were discussed: Metropolitan Council, Watershed District, and Municipal water resources planning relationships; importance of open space to watershed district planning; some comments concerning watershed planning in Minnesota; Department of Natural Resources relationship to watershed districts; soil and water conservation relationships to watershed districts; and regional planning and watershed resources. In particular, the Seminar was concerned with the Metropolitan Development Guide and the overall plans of watershed districts.

Descriptors: *Water Resources Planning/ *Watersheds/ *Institutional Arrangements/ Minnesota/ Environmental Concerns/ Floodplain Management/ Land Use/ Ordinances

Identifiers: *Metropolitan Council/ *Advocacy Positions/ *Joint Power Agreements/ Development Guide

COWRR Field & Group: 06-A, 06-E, 06-G

INTRODUCTION

The objective of the Seminar on Watershed Planning was to gather area leaders representing watershed districts, municipal, county and State government, and private groups in an effort to stimulate further coordinated water resources planning in Minnesota. Hopefully, the results of the Seminar will increase the efficiency of the governmental services the Metropolitan Council and watershed districts are charged with providing. In particular, the Seminar was concerned with the Metropolitan Development Guide and the overall plans of watershed districts.

About 150 people attended the Seminar. The program of the Seminar is given below.

Morning Session

- 8:30-9:00 Registration
- 9:00-9:15 Welcome to Participants
Albert Hofstede - Chairman, Metropolitan Council
Lawrence Kelley - President, Minnesota Association of Watershed Districts
- 9:15-10:00 Metropolitan Council, Watershed District and Municipal Water Resource Planning Relationships
Frank Lamm - Environmental Engineer, Metropolitan Council
Ray Haik - Attorney, Minnesota Association of Watershed Districts
George Hite - Village Manager, Eden Prairie
- 10:00-10:15 Questions
- 10:15-10:30 Coffee Break
- 10:30-11:00 Importance of Open Space to Watershed District Planning
Arno Haering - Manager, Parks and Open Space Program
Metropolitan Council
- 11:00-11:15 Questions
- 11:15-11:45 Some Comments Concerning Watershed Planning in Minnesota
William Walton - Director, Water Resources Research Center
University of Minnesota
- 11:45-12:00 Questions
- 12:00-1:00 Lunch - Cedar Room

Afternoon Session

- 1:00-1:30 Department of Natural Resources Relationship to Watershed Districts
Gene Hollenstein - Chief Hydrologist, Waters, Soils and Minerals, Department of Natural Resources

- 1:30-1:45 Questions
- 1:45-2:15 Soil and Water Conservation Relationship to Watershed Districts
Earl Terpstra - Assistant State Conservationist for Watersheds and River Basins
- 2:15-2:30 Questions
- 2:30-2:45 Coffee Break
- 2:45-3:15 Regional Planning and Watershed Resources
Rey Boezi - Director, Comprehensive Planning
Metropolitan Council
- 3:15-3:30 Questions
- 3:30-4:15 Summary and Round Table Discussion of Major Issues
Frank Lamm - Ray Haik - George Hite

OPENING REMARKS
Albert Hofstede, Chairman
Metropolitan Council

As Chairman of the Metropolitan Council, I appreciate this opportunity to get together with area leaders representing watershed districts, municipal, county and State government, and private groups in an effort to provide for coordinated planning of watershed areas. Under the Metropolitan Council's law, our primary function here is to provide coordination and assistance to all of you who are concerned and involved with watershed planning and protection. With our review and planning responsibilities we see great opportunities to cooperatively plan to both solve and prevent problems. From our unique vantagepoint, we also see that there is a great need for consistency between watershed district, municipal and regional open space, and watershed planning. It is with these thoughts and concerns in mind that we participate in this meeting.

In fact, the Council's concern has gone so far that on October 28, 1971, the Council passed a motion encouraging our members and staff to work closely and cooperatively with the watershed districts in their efforts to plan for the development and protection of their watersheds. Furthermore, the Council has pledged itself to assist the watershed districts in their efforts to identify and protect flood plain and open space areas, and also to assist the districts as they work with various units of local government in the development of municipal flood plains, parks and open space programs and necessary attending ordinances.

The issue of water resources preservation and management is of prime importance at this time. We have seen in the past few years throughout the country what carelessness and mismanagement can do. Those of us in Minnesota, and particularly here in the metropolitan area, have a very real vested interest in preserving our environment not only for its aesthetic and recreational potential but also from a functional and utilitarian viewpoint.

R. Buckminster Fuller, director of the World Game Institute at Carbondale, Illinois, has described environmental problems in space age terms. Fuller likens the earth to a space ship with very finite resources of water, air, fuel and soil. These resources can be exhausted if not conserved and properly used. However, he notes that through careful planning and cautious use of those resources it is very possible that they can be made to last indefinitely.

I am well aware of the magnitude of the task before us. Our task is to plan for the preservation of the watersheds and provide for the general ecological balance. As I have mentioned before, the Council has made its commitment to successfully solving both the existing and potential problems. We recognize that continued destruction of the environment must come to a halt and that in some instances pollution levels must not only be stabilized but reversed.

Working together, I am convinced that we can successfully coordinate the plans and efforts of the watershed districts, State and Federal agencies, county and local governments and, of course, with the various private groups who have to a large degree been so helpful in enlisting the support of the populace at large.

The task before us is no mean feat, but I'm also aware of the potential for success available to us through the efforts of such competent individuals as are gathered here today. While I recognize the magnitude and urgency of the problem before us, I can't help but feel that the commitment expressed by the excellent turnout here today will be sufficient to successfully face the problems at hand.

We ask you to be active participants in today's meeting so that this seminar can be the beginning of a period of even greater cooperation and action by all of us.

Lawrence Kelley, President
Minnesota Association of Watershed Districts

We have all become more keenly aware of the very grave need for more efficient management of our land and water resources during the past few years and for the preservation to the fullest possible extent of the environment in which we live. As we have fitted ourselves into our role as problem solvers in these very critical areas, we have come to realize more and more how much we must depend upon each other regardless of the jurisdiction within which we operate to achieve the goals that are common to us all. That is why it is most encouraging to see the large turnout that we have here this morning and to note the number of organizations that are represented at this Seminar on Watershed Planning.

As President of the Minnesota Association of Watershed Districts, I am particularly pleased, of course, that a number of watershed districts outside the immediate metropolitan area have chosen to participate in this Seminar. While the managers from those watershed districts do not have to contend with many of the problems that are present in urban areas, I am satisfied that there are enough common denominators among all the watershed districts, both rural and urban, to make this a rewarding experience for all who are here.

When we first discussed the possibility of staging this Seminar with Frank Lamm of the Metropolitan Council staff, our purpose was to learn how we could increase the efficiency of the governmental service watershed districts are charged with providing. In particular we sought to identify those items that should be covered in the over-all plans of our watershed districts and to determine how watershed districts can work more effectively with regional planning commissions. Surely the determination of the use of our land and water resources begins on a local level, but in recent years we have become increasingly aware that local land use decisions have regional, statewide and even nationwide implications. Because they are grass roots operated organizations which frequently encompass a number of governmental jurisdictions, we believe that watershed districts can serve a vital role in helping to bridge the gap between municipal governments and regional and State agencies such as the Metropolitan Council, the Department of Natural Resources and the Pollution Control Agency.

What we seek to establish is not a program that will be dictated by regional or State agencies, but instead a program that incorporates the desires of local residents and officials in a plan for land and water re-

source management that is consistent with sound regional resource management objectives. These objectives in turn must reflect the goals and policies which have been established by the State of Minnesota. It is my belief that land and water resource planning must be quite flexible; that it must provide reasonable alternatives in the quest for solutions to specific problems, and that it must reflect concern for the priorities which are established on local, regional and State levels.

I am confident that this historic Seminar, and it is historic--make no mistake about that, will point the way to greater cooperation by all agencies within our State which have a role in the development of land and water resource management policies. I am confident too that out of it will come a new awareness of the unique role the watershed districts can play in the implementation of those policies, and more particularly, in serving as technical advisors to the counties and municipalities within the districts.

But that's enough of what I believe. You have a full program ahead of you. You are about to hear some highly knowledgeable speakers. I urge you to make extensive use of your pencils and pads, and I not only welcome you to this Seminar but sincerely hope that our deliberations will be informative and helpful to you.

METROPOLITAN COUNCIL, WATERSHED DISTRICT AND
MUNICIPAL WATER RESOURCE PLANNING RELATIONSHIPS
Frank Lamm, Metropolitan Council

Our welcoming speakers have set the tone for today's topic. Looking at the agenda that you have before you we certainly hope that you as individuals attending this Seminar will take every opportunity during the course of the question periods after each of the topics that we will discuss today to ask the questions that you feel are most needed or are of most importance to you regardless of the viewpoint which you may represent. Some of the topics which you'll hear today are somewhat confusing in nature, in other words, topics that have more than one solution, more than one viewpoint. I hope with the people that we have chosen to speak today that we're going to cover all the viewpoints. This may not however be so and if you feel that there is some viewpoint that you might have that has not been reflected by any of the speakers, by all means speak up.

I thought before we started the discussion that you might like to know who is in attendance today. Looking around I'm sure that many of you see many familiar faces. We had approximately 150 responses to the invitations which we sent out, we being the Metropolitan Council and the Minnesota Association of Watershed Districts. Of those approximately 150 responses, fully one-third are from watershed districts. Of the people in attendance here today one-third are representatives of watershed districts, one-half are representatives of specific municipalities or perform some function within a municipality if they're not official representatives of that municipality, and the remainder, approximately one-sixth, represent various Federal, State, regional and local organizations. We're happy to see the mix of people that we have gathered here today because we feel it does point out the importance of the Seminar.

The first topic on the Seminar involves planning relationships between or among the Metropolitan Council, individual watershed districts and the local municipalities. We'll be discussing quite a number of potential problems that can perhaps very adequately be solved by watershed districts, or a very major contribution to the solution could be provided by the watershed districts. During the day we hope to tackle at least a number of very specific problems that we at the Metropolitan Council, or on the Council staff, feel are significant. Number one is the relationship of the watershed district in water resource planning and in implementation of that planning with emphasis, of course, within the metropolitan area. Number two is the general discussion of protection of flood plains, wetlands and other water related land areas, from urban development. Number three, hopefully, is to get some kind of concensus, or start on the road to some kind of concensus, on what the regional flood requirements are and should be within the State. As some of the watershed districts can testify, there is a difference between the regional flood plain development or the procedure whereby the regional flood plain is developed in the individual watershed as compared to the State Department of Natural Resources recommendations. Another item that we'll be discussing later on today is a suggested format for watershed district planning, and this is very important to the Metropolitan Council and its staff because we have to review a number of watershed district plans and sometimes the plan we receive are so different in format that it works a great hardship on the staff and I'm sure on other agencies who review and work with the watershed districts in the course of the review of the document. Still another item that we will be discussing today will be sources of help that the individual watershed districts can turn to or at least request to help them in the studies which they are required or which they may do under terms of the Minnesota Watershed Act.

Concerning the first topic, what I would like to do is pose a general question and that is, "Should watershed districts take the initiative in recommending uses of water related lands in the districts or should they mirror municipal zoning or land use requirements?" Within the metropolitan area this whole question is further confused, if you will, by the responsibilities of the Metropolitan Council. However, for the watershed districts who represent areas outside the seven county metropolitan area it could well be that in the future as regional planning agencies are established within your counties that you will be faced with the same State, regional, watershed district and municipal problem that we have here in the metropolitan area. Within this area the Council does have certain planning functions and responsibilities specifically relating to water resources. It's hoped that the discussion today will be valuable to representatives not only of the watershed districts but the municipalities, counties, State, etc. in resolving the true role or the most desired role of the watershed districts. There are a number of reasons why we hope that this discussion will be valuable. Number one is the relationship by districts to proposed regional planning. Another concerns discussions by representatives of the Department of Natural Resources; Water Resources Coordinating Committee, State Planning Agency; and the Soil Conservation Service who we hope will give you some more information over and above that which you have in hand on the programs that are available at the State and district levels.

The Metropolitan Council when it was established in 1967 by the State Legislature was granted certain responsibilities in the field or area of metropolitan planning. I'd like you to get a copy of the "Metropolitan

Council Act" and in it you'll find a discussion of the legal responsibilities of the Council in the area of metropolitan planning. I don't want to get into great detail at this time, however, if you do have any questions as to the role of the Council I would be very happy to field questions after my talk.

What does the Metropolitan Council look for when it receives a watershed district plan? Number one we look for conformance with the Metropolitan Development Guide which is required under the Act to be developed by the Metropolitan Council. The Guide is a series of sections dealing with specific physical and social areas of planning, the sum total of which is a development guide for the metropolitan area. Of specific concern to watershed districts are the existing sections on parks and open space. In our review of the watershed district plans we refer to parks and open space policies and to the system plan contained in that section and to the intent expressed in that section. The Council staff is also working on other sections of the Guide that will be of direct concern to watershed districts. These include a section on surface water drainage and a section on water supply and I would hope that when these sections are developed in draft form that we will have an opportunity to get the comments of the watershed districts, especially through the Minnesota Association of Watershed Districts.

Another review procedure is to take the watershed district plan and compare it to existing known municipal plans to see whether or not it's in agreement with plans which the Council has previously approved or see whether or not it covers areas that are not consistent with the plan, etc. Those plans include not only municipal plans but also county plans for unincorporated areas, soil and water conservation district plans where they are applicable, and other local plans in the watershed district itself.

We also review the plan for conformance with requirements by the State, mainly the Department of Natural Resources. One of the major problems which the Council staff has found in the entire area of watershed district planning is the determination of what constitutes a flood plain and the proper delineation of that flood plain. As many of you undoubtedly know the Department of Natural Resources does have a definition of what constitutes a regional flood plain.

The Council staff also reviews the plan from the point of view of the individual projects presented and we look at those projects from a couple of points of view. Number one, we look at them in relation to the work that the Council staff has done and that consultants for the Council have done relative to pinpointing major problems within the metropolitan area. The Council has had an engineering study done by both the Hickock and Barr consulting firms for the metropolitan area which delineated some of the major surface water problems in the metropolitan area. We also examine the specific problems in the light of the metropolitan development guide requirements to see whether or not projects are consistent with the intent of the guide. Since the changes to the Act were made in the 1971 session of the Legislature, the requirement has been that specific projects recommended by the individual watershed districts within the metropolitan area become the comprehensive plan for purposes of Metropolitan Council review. The review that we of the Council staff give is definitely a positive type of criticism and a two-way street. We're not trying to dictate anything; we are trying to establish a rapport; we are trying to find out what you as a watershed district mean by what you say; we give you an opportunity to un-

derstand what we at the Council mean. Our memorandum on watershed district planning gives information on three general topics, number one, what should the plan contain? number two, a reiteration of the review procedure by which the Council and other organizations review the plan; and number three a suggested draft outline on which I'd like to have your comments.

I hope that we can continue to work with watershed districts through the Minnesota Association of Watershed Districts to develop planning formats that are more or less consistent. I think this will be beneficial to ourselves and to the individual watershed districts.

Raymond A. Haik, Attorney
Minnesota Association of Watershed Districts

My assignment is to discuss the role that watershed districts can play in implementing land and water resource policies of regional councils and the State agencies. My observations and comments are not reflective of any position of a particular municipality or watershed district, but are merely personal observations concerning the role that watershed districts could be assigned.

A watershed district is a special purpose land and water management agency that is between existing municipal governments and regional governmental agencies such as the Metropolitan Council. In attempting to formulate specific functions for a watershed district, it should be noted that whatever they do must be coordinated with the actions taken by local municipalities. There is presently municipal resistance to any loss of the decision-making process, primarily because land use decisions are essentially local and political in nature. Development decisions affecting the land or water resource almost by necessity conflict with status quo non-development uses that are associated with aesthetic, wildlife, open-space and recreational use values. Conflicts arise when the watershed district advances a non-development viewpoint which conflicts with a municipal project undertaken in response to requests of residents. The non-development viewpoint has generally been previously advanced to the municipality; however, that municipality has to weigh other considerations. The result is that persons advancing the conservation viewpoint sometimes feel that the village council is more responsive to development interests than it is to conservation interests.

This same type of conflict can be sensed in the comments of the Metropolitan Council concerning revised overall plans of watershed districts which must pass the scrutiny of the Council. Regional development councils were not in existence at the time most watershed districts' overall plans were prepared, and there was little knowledge concerning regional land and water use objectives. Watershed districts established since the creation of regional development councils will be faced with the question of what to include in their overall plan and how best to arrive at an accommodation between development and non-development interests.

Watershed districts can serve with a great deal of competency and with a minimum of conflict with general purpose municipal governments, and at the same time they can implement the objectives of regional commissions and State agencies such as the Pollution Control Agency and the De-

partment of Natural Resources. As conflicting demands upon a limited land and water resource increase, there will be growing conflict between those who advance a conservation viewpoint and those whose needs require development to facilitate a change in the use of the land and water resource. An example of the conflict in the rural areas is the demand by groups to re-evaluate the laws which provide for the reclamation of land for agricultural purposes. The farmer who desires to make the most economic use of his landholdings could become quite resentful of an overall plan which makes no provision for his ability to join with others to undertake projects which would serve to reclaim wetlands for agricultural purposes. He would also be very upset with any type of a system which provides that the only interest to be protected is the enhancement of the fishery, wildlife and recreational potential of the land resource, even though this enhancement is not associated with public ownership or control of the property. In the city, the development pressures are more obvious, ranging all the way from development for commercial, industrial and residential purposes, and the location of highways, utilities, etc.

Decisions concerning the use of land and water resources are based upon a very subjective and personal value system and these values change and will continue to change as individual desires change. This changing value system is evident when one reviews the original overall plans of watershed districts. The plans had very little discussion of the non-development uses. Rather, they discussed development programs and projects and the primary concern was to facilitate the development of the land resource. This was true whether it involved the possible use of the watershed district as a vehicle for implementing Public Law 566 programs or the development of an overall surface water management program for the urbanized areas of the State. In recent years there has been a noticeable change in the public attitude toward the conservation uses, and overall plans are beginning to reflect the public's changing values.

Since the determination of resource use is a personal and subjective decision, it is my judgment that primary responsibility should rest with the general purpose government that is managed by officials who are elected rather than appointed. I believe that any overall plan should have as an objective the preparation of alternatives with respect to the use of the land and water resources that can be studied and evaluated by the municipalities. It is difficult for me to believe that a watershed district should mandate a specific type of land use or a specific type of project when several alternatives might be available to manage the land and water resource. Thus, in preparing the overall plans, watershed district managers should determine local land use zoning and resource policy objectives for the purpose of evaluating how best the land and water resources of the total basin can be managed to accommodate the programs of the municipalities. Every objective may not be accommodated. For that reason, I believe that the decision as to whether there should be an open-space corridor, a functional recreational use, or a development use of the flood plain as contrasted with a continued marsh and wildlife use is best left with the local elected public official who represents the residents who will ultimately be responsible for the total cost of any overall plan. A landscaped area such as Lake of the Isles or Nokomis is equally as attractive as an undeveloped marsh area.

The second area of potential conflict involves the regulation of development. The role of the watershed district in light of limited financial resources and limited staff, is best confined to that of a technical advisor to the municipality. This advisory role requires certain specific commitments such as inclusion in the overall plan of a flood plain map and flood plain profile and an open-space and recreation map that can be submitted to the municipalities and lastly, a regulatory section indicating how the watershed district's overall plan will be enforced, including ordinances and rules and regulations.

The municipalities should provide information concerning surface water drainage plans as well as land use development plans. Information should be provided with respect to the location of municipal improvements such as sanitary sewer and water installations. Information should be submitted concerning development of lands and the location of streets and highways. Much of the information may not be available but to the extent that it is possible, the overall plan seeks to guide the municipal development. A general land use map should be prepared. In the rural areas, the overall plan should identify the areas that can be reclaimed for agricultural purposes and those to be retained for fishery, wildlife or recreational uses.

In carrying out the regulatory phase, since the general purpose government is already staffed and has a program for regulating development, it is the best governmental unit to police development and insure compliance with the overall plan of a watershed district. To do this requires some uniformity of regulation, and watershed districts can serve a very useful purpose by preparing flood plain and open-space ordinances and soil erosion ordinances which could be adopted by all counties and municipalities. There is another advantage in having municipal governments take on the enforcement program, since the policing and enforcing of development is an expensive procedure and the budgetary limitations of the watershed districts will not sustain the detailed policing of developments. Ordinances and regulatory programs advanced by the watershed district should be prepared in a form that can be adopted as local ordinances.

An alternative would be for the managers to assume certain specific and designated regulatory functions. This would require a procedure whereby the managers would adopt comprehensive ordinances dealing with the flood plain, open-space and land development regulation. This program would require that all municipal developments come to the watershed district managers at an early stage in their formulation and would also require that the managers become more directly involved in the land use decision making. Financial limitations imposed by State law may practicably prevent the districts from enlarging their sphere of activity. They might impose requirements on land use or development and then lack the ability to effectively carry out and police these programs. For that reason, it is my judgment that the present policy should be for the watershed districts to work with municipal and county governments, their planning departments, building departments, and park and recreation departments on the implementation of the overall plan.

An overall plan that provides alternatives will allow the municipality a flexibility within which to arrive at an accommodation between the development interests and the conservation interests that are concerned with the use of the same resource.

In dealing with the assignment as to how the watershed districts can assist the regional councils, it is my judgment that the watershed district's overall plan can be the means by which the generalized land use and development objectives of the regional councils are refined and made more detailed. I envision a system where watershed districts, in their overall plan, would be required to meet minimum criteria of the regional development council with respect to protection of the flood plain, open space and other land and water areas of regional significance. This may require that the watershed districts engage disciplines other than the normal engineering discipline that has been engaged in the past. This could include the retention of a land use planner who would refine the land use guidelines proposed by the regional council and prepare for the overall plan a proposed land use guideline that would be implemented by the municipalities through their specific land use zoning ordinances. In this same connection, it would be advisable for the watershed districts to consider the retention of a person with a wildlife, fishery or recreational background to assist the managers in identifying those portions of the watershed district where these values can be protected and enhanced. The ability to do this is directly dependent upon the financial resources of the watershed district. Financial assistance may be needed from other governmental units or agencies. Such a program would enable the regional council to make funds available to prepare the detailed overall plans.

We have arrived at a time when the various non-development values identified by the regional council can be enforced through overall plans of watershed districts. This leaves only the one conflict with local municipalities; namely, the role that watershed districts should play in enforcing a type of resource development that may not be acceptable to the local governmental unit. For example, the managers may want to preserve a marsh area which the city wants to develop as a golf course or a residential area. It is in this area where we will probably have greatest conflict. What I have stated to date indicates that I believe that since this question is so political in nature and is so reflective of personal subjective values, that for the foreseeable future the primary regulatory and enforcement role should rest with the local general purpose government. I believe that there is need for regulation and I conclude that it can be performed by watershed districts through regulatory ordinances and open-space and flood plain ordinances adopted by the districts but preferably by the municipality. Under either case as development occurs in the municipalities, all such developments can be submitted to the managers for review and evaluation. In the absence of uniformity or failure of the municipality to act, the watershed district ordinances will be the method to control land use and development in conflict with overall plans.

Lastly, one or two comments about how a watershed district could coordinate its activities with State agencies. There has been a renewed public interest, not only in the types of permits that are issued by the Department of Natural Resources, but also in water quality programs of the Pollution Control Agency. Watershed Districts have taken the leadership in many cases in monitoring water quality. We have had a specific statutory role assigned to make recommendations concerning permits by the State Department of Natural Resources. It would be my suggestion that where a watershed district has been established, the Pollution Control Agency and the Department of Natural Resources could be requested to supply written policy as to the objectives which they seek in administering the local re-

source program, and designate the watershed district as the agency to police activities which are presently the subject of permits to be issued by the State agencies. The watershed districts could be the eyes and ears of the State agencies in terms of evaluation of the site, inspection, etc. This would free the State staffs to deal with the larger statewide problems such as the location of natural gas storage sites, the location of major pollution sources, the handling of the water supply needs of municipalities and industry, and the control of discharge from major municipal and industrial installations.

Watershed districts could evaluate all of the miscellaneous type of permits that deal with beach improvement, channel improvement, etc., and they could monitor the discharge from plants and municipalities on behalf of the State Pollution Control Agency. What is lacking is a statement of the State policy to be applied and enforced, and a statement as to whether the State agencies would support a program whereby water quality monitoring and permit inspection could be carried out by the watershed districts.

In conclusion, I believe that watershed districts can expand upon the work of the regional councils and serve as the technical advisor to the local general government concerned with land use and development. They should avoid attempting to become a general operating local governmental unit. We are at the crossroads with respect to this decision and the implementation of present and future regional council programs. Hopefully this will be one of the items that will be discussed at this Seminar.

George Hite, Manager
Village of Eden Prairie

I don't believe there is any political or practical alternative to intergovernmental cooperation as a means of achieving effective planning and management of watershed areas--particularly in urban areas. All of the agencies involved can make substantial contributions to the process but none of them could individually hope to achieve any significant degree of over-all success. In such a situation I believe it is mandatory that all of the agencies involved concur in the general objectives, and that there exists among all the parties a clear understanding of the role or roles each is to play in the process of plan implementation.

All of the agencies that have been identified in this discussion: the Metropolitan Council, the district and the municipality, it is probably the municipality that benefits the most from good water resources planning and management. It is probably also the municipality that holds the key to successful watershed plan implementation. However, despite the benefits to be gained and the opportunity to contribute to a very worthwhile and hopefully successful public endeavor, it is unfortunately often the municipality which is the unwilling party. Let me share with you some of the reasons why I believe such a situation can and has occurred.

Municipalities are general purpose governments. They are charged with the responsibility of providing a vast array of public services and facilities--everything from dog control to development of regional diversified centers. They are the advocates of good transportation, public

safety, environmental protection, recreation opportunities, economic stability, adequate public utilities, health and welfare services and so on. While at any particular time it may seem to some of you that one or more of these responsibility areas is being given undue and particular attention, most municipalities recognize that the long-term interrelationships between these functions is such that each of them must be kept in proper balance with the other. Over a period of time I think you would find if you looked at the record of any given municipality that all these things average out. Few if any of these functional areas is considered to be of continued or overriding significance.

Special and often conflicting advocacy forces are frequently brought to bear on the municipal decision-makers. These forces are political, constituent and professional. The municipality acts in a sense as an arbitrator, always seeking a resolution of these forces to the identification of what the municipality considers to be the general public interest. Watershed districts, on the other hand, are viewed by many municipalities as special purpose agencies. They are considered as special advocates whose sole purpose for existing is to serve a special cause of limited scope. Watershed districts are deemed to be in the same category as the Highway Department, the Airport Commission, the Soil Conservation District, and even the Mosquito Control District.

In their efforts to achieve program balance, the municipalities often view the watershed district as one of those forces trying to upset the balance. A good partnership relationship under these circumstances is difficult to achieve. A good partnership is also difficult to develop because of the manner in which many urban watershed districts are initially created. It is not uncommon for a district to be created in response to petitions supported by those who believe the municipalities involved have not done an adequate job in water resource planning or management. Despite the fact that the petitioners are often correct in their judgment, the district is often created over the objection of one or more of the municipalities, or at best, with their reluctant consent. Such corporate wounds take a long time to heal.

The establishment of a close working relationship between the watershed district and the municipality is sometimes strained by the fact that it is often the municipality that is proposing to utilize floodplains, convert a marsh to a park, or construct a utility in or across a channel. The municipalities feel that the benefit of the proposed improvement more than often offsets the damage to the water resource. This view is not always shared by the watershed district. Most watershed districts rely on municipalities to adopt and enforce needed watershed regulatory matters such as flood plain zones. The municipality is also asked to acquire and otherwise protect water storage areas. Too often the districts press the request without adequate knowledge or understanding of the legal, fiscal, political and staffing limitations within which the municipality must operate. This can be a constant source of irritation between both parties.

Despite these conflict areas, the district and the municipality eventually work out an accord which is based both on mutual and self interest. The municipality generally recognizes that although the municipalities within the watershed are all individually equipped with sufficient powers and resources for successful watershed planning and management, not all are

equally committed to the task. Without such universal commitment and support, the prospect of success is much akin to getting a successful medical exam if the doctor is limited to the portion of your body below the knees. The municipalities also recognize that their normal corporate structure does not generally provide a focus for the interests of water resource management--or for that matter, for the protection or conservation of any natural resource. The planning commissions, industrial development commissions and recreation commissions have been with us a long time. It has only been recently that some urban municipalities have established natural resource or environmental protection commissions. Like the commissions, the watershed district can serve as a knowledgeable and positive force in the over-all municipal decision-making process.

The keys to successful municipal district relationships are in my view the following:

1. There must be a general accord as to the purposes, objectives and policies of the district. The district's over-all plan is a logical vehicle for developing such an accord. The municipalities must be involved in the development of this plan to a much greater extent than they have been previously. I know that in some instances this may require some of the watershed districts to force action out of municipalities to get them to participate. But I do believe that there should be a recorded public commitment by each of the municipalities to the plan. Without that, the plan frankly doesn't stand much chance of success. Getting such universal consent may require some compromise, but in the arena of local government, this is to be expected. If one's objectives are well founded and sufficiently broad, the evolutionary process of reaching a succession of agreements can be a very productive method of objective satisfaction.
2. The ability of a district to serve as an effective spokesman for good water resource management within the municipal decision making process must be formally recognized. Municipalities, I believe, should establish the watershed district as their official advisory unit in water resource matters. The district for its part should recognize and capitalize on this opportunity to work within the municipal government structure.
3. I believe the district should utilize the assets of the municipality to the purpose of watershed plan implementation and be willing to add support to those assets where needed. Most urban municipalities have considerable experience in the processes of plan implementation and development regulations. The staffs of engineers, planners, inspectors and attorneys are important assets which the district should utilize. Development regulation is an every day way of life for municipal government. There is considerable expertise that can be brought to bear on the districts behalf. In some instances, such as water quality analysis, requiring the services of a qualified specialist, the district should be prepared to supplement the available municipal assets. The district should also be prepared to provide financial assistance to municipalities involved in land acquisition for watershed purposes.
4. The regulation of land use has long been a prerogative and responsibility of municipal government. Municipal government has extensive experience in this very difficult area. While mistakes have been made and will probably continue to be made in the future, I believe the record is

generally good and is improving. Part of the improvement is a result of the input in assistance municipalities are now receiving from new sources such as the watershed districts and the Metropolitan Council. It would be my suggestion that the districts recognize the experience and ability of municipalities in land use regulation. The districts should proceed to strengthen this process through support rather than replace it.

5. In those situations where a municipality cannot or will not provide the services the district needs to implement the over-all plan, the district should then be prepared to act on its own. This can be a very difficult situation, particularly when the affected municipality could but will not provide these services. The other municipalities in the district should support the district in this effort and I think this is a key item because it is obviously the other municipalities that would be among those benefiting from the districts action in the wayward community.

6. Both the district and the municipality must be sensitive and understanding of the attitudes, objectives and limitations of the other. This requires some work. We must both make a conscientious effort to seek out and evaluate the things that motivate each of us. Now this is the most difficult of all of the things I've suggested. It isn't sufficient to simply to read the newspaper or council minutes or from the municipality's point of view to read the watershed district minutes to understand really what's going on and what's motivating the action that the other agency takes. It is going to require that you get out, meet the people involved, ask the appropriate questions, and see if you cannot learn to the best of your knowledge just what things are motivating them and under what limitations they are performing. Until we understand that, and I'm speaking both to the district and to the municipality, there is frankly little hope of any meaningful inter-governmental relationship between the watershed district and municipalities.

Questions and Answers

Question - Frank Lamm Specifically let's address ourselves to the relation of the watershed district to planning of, let's say, an open space nature, because this is one where there is a conflict or perhaps the delineation of the flood plain, something of this nature. What is to be the responsibility of the watershed district? Does the watershed district do something innovative, something new, and present it to the municipality, to the water resources board, to the Metropolitan Council in the case of the metropolitan area, to the Department of Natural Resources, counties, soil and water conservation districts, etc. for their comments; or do they reflect merely the individual municipality views on a certain subject?

In most cases there is no conflict, however, in some selected instances such as the open space question there is potential conflict. I would like to answer the question that I raised by saying from at least my point of view, representing an individual on the Metropolitan Council staff, I would recommend that the watershed districts initiate some planning to look at the watershed as a whole because they are uniquely capable of doing so; then make such recommendations in their open space and green belt maps and their flood plain maps as they feel are necessary to properly protect and use the waters within their district. I feel that this is entirely within the realm of the watershed district and I'd like to hear Ray Haik's views on my comments.

Answer - Raymond Haik I think it's important that there be an accurate flood plain map and that there be an accurate flood plain profile, but too often I've seen people behave as though the map and profile are ends in and of themselves. I think that if watershed districts were to say a total land mass is going to stay just the way it is and nothing is going to happen to it we would not get the kind of dialogue we need for the larger questions within a municipality. There are some very sincere people who believe that using a flood plain for a park or for a golf course or for a parking lot for example, is not unreasonable. When you're talking about a flood plain under the standards that we have to use now of a 100 year frequency, 99% of the time that land mass is going to be available for some functional use. Local people know a lot about what they like or don't like, this is a subjective thing, it's continually changing. Right now we have a great deal of public support for protection of marshes and open spaces. That's a public support that is now being felt by the municipalities and is being responded to by municipalities by the creation of natural resources and environmental commission. There is a group of people who live in a municipality who say wait, we want to participate in the decision making process. You have to accept that local attitude. Maybe we should be striving for a mix; a flood plain could have a variety of uses. In a commercial and industrial area a parking lot properly landscaped may be desirable.

Question - Should watershed district overall plans include alternative solutions for floodplain management?

Answer - George Hite I think the watershed district has the ability and responsibility to provide a series of alternative solutions to flood problems. As all of you know, whether you represent a municipality or watershed district, in the area of protecting flood plains there is no single solution that could be easily identified as the only solution. There are a number of alternate solutions, some more or less acceptable to you depending on your particular point of view. I think the district should be prepared to identify each of the alternate solutions, make a recommendation to the municipality as to which of the alternate solutions it feels is the most appropriate for the municipality to adopt but then leave that decision to the municipality. The decision has to be made with a broader perspective than perhaps the watershed district can bring to bear on a particular problem. I'm not suggesting that it's a pragmatic situation within a local municipality, although local politics are hardly pragmatic at all, but nevertheless I do believe that on each of these decisions there has to be brought to bear some attitudes that it's difficult for a watershed district to bring to bear by itself.

Question - Isn't it reasonable to ask the watersheds to ask the municipality to prepare their land use plan within that watershed and submit that plan to the watershed for suggestions and modifications? I'd rather have the planning process come from the municipality as it relates to the Metropolitan Council Development Guide and the goals of the watershed, but as far as the uses of land within the watershed, I think the plan should come from the municipality and if the watershed district has problems with it or the Council then there should be modifications.

Answer - George Hite My impression of the question was that it related to flood plain zones not to general land use and the question was if the watershed district determines that an area needs to be set aside as a flood plain

zone should it make that determination on its own or what should be the process. My response was that they should have the input in the decision but the decision should be made by municipality so I think we would agree in that area.

Frank Lamm The Metropolitan Council desires municipalities to take initiative in their own municipal planning, but many municipalities built within or without the metropolitan area do not have effective municipal plans and this is where the problem begins. In those cases where the municipalities do have plans then it's just a matter of resolving those areas where there is some kind of a conflict. I think that a watershed district reflecting their own views can be a very effective inputer into a municipal plan as well, it's a two-way street.

Question - The Watershed Act requires the watershed district to prepare an over-all plan. The over-all plan no matter how agreeable it is, is a series of recommendations, most of which require a petition from a municipality or citizens and a hearing to decide whether the plan is going to be put into effect. My question is, is it desirable to have the regional planning council have the authority, the State authority, to be one of the petitioners? The council does not now have that particular authority, the municipality does have it and the citizens have it.

Answer - Frank Lamm Speaking from my own personal standpoint, I would say that the Council would encourage those portions of the plan which it recommends. I don't personally see the Council initiating petitions.

George Hite I feel the petitioning ought to be left to those who are going to pay the bill. If the metropolitan agency is prepared to participate financially in the project then they should be among those allowed to petition but only under those circumstances. The question I think, however, highlights a concern I have about overall plans and the attitude that most watershed districts have about their plan. As I view it, the project portion of the overall plan is the least significant portion of the plan, as a matter of fact, I'm not even sure it needs to be included. Districts that look at their overall plans as simply lists of projects that they propose to undertake I think have misjudged the whole idea about what an overall plan ought to be.

Raymond Haik I'd say that if you are going to pay the bill, then you ought to be able to make a petition and if you aren't going to pay the bill then you ought not to be able to make a petition.

Frank Lamm I think the Council would be in a position to endorse a number of individual projects and could go before a watershed district board and request that a project be initiated for instance for purchase of land in an area which has been indicated in the plan for an open space purpose. I don't see the Council initiating the petition in the legal sense. I think what we would have to do perhaps is go before the watershed district and request that a petition be initiated but I don't see us being the legal initiator of the petition.

IMPORTANCE OF OPEN SPACE TO
WATERSHED DISTRICT PLANNING
Arno W. Haering, Manager, Metropolitan
Open Space Programs, Metropolitan Council

What is Open Space

Open space is the natural environment. Open space is a back yard. It is the street right-of-way through our communities. It is a small garden surrounded by the mass of a city. Open space is a boulevard median strip. It is a neighborhood park, or the view from the top of a hill. It is the side yard requirement in a zoning ordinance. Open space is a marsh; a lake; farm fields; airport noise zones; cemeteries; and utility easements. It is the open area around you wherever you are.

Benefits of Open Space

The retention, design, and use of open space can serve many functions, and satisfy various needs. What is not always clear are the relationships between the many uses of open space...or for that matter, the conflicts either.

An example of one open space benefit is the function of conserving natural resources. This can take many forms, such as the preservation of forest lands--which in turn protects our fresh supply--and prevents flooding and erosion of fertile top soil. Conservation of stream and river flood plains also provides sanctuary for wildlife.

A second benefit--or function of open space--is the basis it provides for recreation. Man's eternal quest for open space to satisfy his recreational pursuits is reflected throughout history--and natural resources provide the basic or initial ingredient for hunting, fishing, hiking, skiing, or simply sitting beside a placid stream.

If we take the total amount of open space given use and retain certain natural resources for the benefits they provide; use certain natural areas for recreational purposes, we then have another benefit of open space, its ability to shape urban structure and confine urban development into more meaningful land utilization.

In the past we have done a poor job of conserving various natural resources. We haven't done too badly in providing recreational facilities, and only lately have we become aware that we can better design the open space, our environment--around us where we live, work, and play.

An Open Space Plan--What Should it Include

Well, what do we do about all that? As planners we have suggested, and the Metropolitan Council has stated in its Open Space chapter of the Metropolitan Development Guide, that an open space plan and program should reflect efforts to preserve natural resources and simultaneously, satisfy rapidly increasing needs for recreational outlets. To address this, the Open Space Plan for this seven county area is divided into three elements:

1. "Protection" open space
2. "Recreational" open space
3. "Amenity" open space

Let me spend a few moments with each of those. "Protection" open space involves safeguarding man from both the normal effects of nature and from the effects of shortsighted human alteration of the natural environment. "Protection" elements are defined and identified by physiographic, geologic, vegetative, and hydrologic characteristics. The amount of land that should be preserved as "protection" open space does not depend upon demand as does recreational land. Rather, the preservation of such areas as open space depends upon their intrinsic unsuitability for urban development and their uniqueness as natural resources. These elements, which are of greatest benefit if kept free of any development, are those necessary to assure proper functioning of the natural systems, such as the hydrologic system. Some of these natural resources are:

- . marshes/swamps
- . floodplains and certain drainage ways
- . aquifers and water recharge areas
- . steep slopes
- . certain unsuitable soils
- . mineral deposits
- . water bodies

The water carrying channels must be kept open and encroachment must be prohibited. Water bodies, flood plains, and natural water holding areas must remain if the anticipated population in this urbanizing region is to live in balance with nature. Development must not be allowed on excessive slopes and where soils, bedrock, or high ground water tables are not compatible with building. The filling or drainage of wetlands, removal of top soil, or damming or relocating of any water course should not be allowed if the balance of nature cannot be maintained.

The impact of urbanization on the area's natural resources can be determined by analyzing detailed soil interpretations, by examining topographic and hydrologic maps of the area, and by using aerial photography. From these sources, the natural resources that must be preserved can be identified, and further, become the basis for an Open Space Plan. Then direction can be given to various land uses to achieve that plan.

So that metropolitan urbanization does not deplete or destroy valuable wetland resources, and to offset problems of pollution and public health, it is essential to protect those areas that are not adequately drained, or which are subject to periodic or potential flooding. It becomes necessary to apply appropriate land use regulations if the natural resources are to be preserved.

"Recreation" open space allows people to relax in a pleasant environment, participate in sports, learn about their environment, and to enjoy nature. Recreational open space are those areas specifically designed and developed to allow and encourage the public to participate in various activities. There are several components to a Recreation System:

1. park areas
2. play areas

3. trails
4. recreation centers or special purpose areas

- . stadiums
- . zoos/botanical gardens
- . ice arenas
- . golf courses
- . boat ramps/beaches

5. historic sites
6. nature areas

"Amenity" open space includes open spaces which are purely aesthetic and those which are a result of Man's development of an area. If we take out certain natural resources and those areas that should be developed as parks, this is that "other" open space I mentioned earlier--the boulevard median strips, the airport approach zones, transportation corridors, solid waste disposal sites, utility easements, and so forth.

It is my intention this morning to emphasize that the natural environment is the basis for an open space plan and subsequent programs. If the natural resources in this metropolitan area are preserved--retained, certain other open space will result.

Metropolitan Council Goals/Policies (Framework for Local Activity)

The Metropolitan Council's chief open space goal is to implement the Metropolitan Open Space Plan. It further seeks to have proper authority and commitment for carrying out the Plan. I do not mean the Council should necessarily have the authority, but that there be general authority that allows the plan to be implemented. Another goal of the Council's is to ensure sufficient financial capability--to carry out the plan. Let me say this in another way; the Council has two objectives--1) to protect natural resources and 2) to develop and implement a program for "Recreational" open space.

I would draw your attention to the Parks and Open Space chapter of the Metropolitan Development Guide adopted by the Council on my son's birthday-- June 25, 1970. It contains long-range policies as general guidelines to ensure proper planning for the use of open space in the seven county metropolitan area. The text specifies a wide range of open space related problems and deficiencies that can be corrected if the counties, cities, villages, towns, school districts and the watershed districts and private developers implement the parks and open space policies.

What's Been Done in the Past

In terms of preserving certain natural resources, not much! As a result of recent legislation, communities must now delineate and regulate land use in flood plains. Bloomington has recently adopted flood plain regulations. Orono has adopted an ordinance "relating to marshes, wetlands and lands abutting meandered lakes and watercourses." Lino Lakes, I understand, now prohibits development in those same kind of areas. Coon Rapids and Afton are in the process of adopting similar provisions. There is beginning to be some action.

In terms of developing park sites, we have been a little more active. Although money for "necessities" like streets, sewer, fire engines usually comes before expenditures for park acquisition and development, there is normally not much money left over.

Enabling legislation allows local governmental units to preserve various natural resources through applicable ordinances and those communities can also operate a park system.

The Metropolitan Council does not have authority to regulate land use, or authority to operate a park system. I will note a small exception to land use, however, and that is the responsibility given the Council under the Airport Zoning Act, which requires the Council to develop land use guidelines for a 3-5 mile radius around the new major airport. The communities within that area must actually respond to those guidelines by making appropriate amendments to additions to their own ordinances.

In the past two Legislative sessions, attempts were made to seek enabling authority to create a Metropolitan Park Reserve Board. If the bill would have passed, that Board would have had the responsibility to acquire and operate an area-wide park reserve system.

So presently, natural resource protection, and park acquisition and operation, continues to be a fragmented activity carried on when someone is so inclined and easily shelved when a higher priority can be identified. And of course, we always hear--you can't tell that man he cannot fill that marsh, or build on the slope, or live in the flood plain--whv, that's his property and its his right to do what he wants. Well, lets remember that when your "right" restricts my "right", we get a law and in terms of preserving certain natural resources, that law is long overdue!

Previous staff work has included surveys of various types of open space in the region, and the identification of major park and open space resources meriting preservation in relation to urban development. A set of regional open space policies have been approved by the Council that address recreation and protection open space. During the past year, the staff produced a new open space classification system and has conducted further inventory work. These efforts were designed to lead to expansion and refinement of the open space policies, system plan, and program during 1972. Because the Open Space chapter of the MDC, and the review of plans and grant applications are the major management tools available to the Metropolitan Council in affecting open space preservation, or development, plan refinement is viewed as a high priority work item. An important part of the plan that needs special attention in 1972 is an implementation element. Therein lie four issues that must be resolved before we can positively move forward.

Open Space Issues

Those issues are:

1. What should be the responsibilities of various units of government for implementing a Metropolitan Open Space Plan?
2. Is enabling legislation appropriate for implementing an Open Space Plan or any component thereof?

3. Are there obstacles, legal or otherwise, to implementing an Open Space Plan?

4. Are various funding sources sufficient, or appropriate, for carrying out various elements of an Open Space Plan?

All of these issues must be resolved at the Council level during 1972.

To provide a broader base of public participation in the regional open space decision making process, the Metropolitan Council is currently reorganizing its Open Space Advisory Board. Several "task forces" will also be added under the Board, to assist the staff and the Council in plan refinement and implementation activities.

What Does All This Mean to the Watershed Districts

It means that the staff, the Open Space Board, and the Council need your help in resolving those issues, and in supporting the answers. It means that you, as individual districts, must consciously address the policies in the Open Space chapter of the Guide. It means you must advocate, not simply advise. It means that in your Act, where it states you "may," you "shall" under sub-paragraph 15, prepare an open space map of the lands that should be preserved.

We must better support each other. We must provide more technical assistance. We must work with you to develop more uniform ordinance provisions. We are on the same side, our perspectives have just been different.

Questions and Answers

Question - It has been suggested both by the present speaker and former speakers that the overall plan should include a section on parks and open space. If you do that, in effect are you not suggesting zoning and if that be the case, should the watershed districts be the proper agency for zoning or should the local units of government?

Answer - Arno Haering I have more than a passing interest in zoning. I'm sorry if I implied that the watershed districts should be responsible for recreational open space, I didn't mean to imply that. I think that they should essentially concern themselves with natural resource preservation or identifying those areas. Where recreational sites have been indicated perhaps on a community plan or on a regional park plan the district should recognize those and build them into its overall plan at least for identification. They should work toward preserving that site or holding it until it can actually be developed. Communities can zone the same way that they do to create residential districts, commercial, industrial districts, they can create a conservancy district or low wetland flood plain district, and regulate land use accordingly in that district. As a district you can adopt ordinances subject to approval by the communities within your watershed or those communities can independently.

Frank Lamm At this date I feel that the watershed district should be recommending land uses in those areas which are the responsibility of the watershed district and this is primarily true not only in the metropolitan area where the Council is doing planning on a metropolitan level as well as the municipalities doing something on an individual municipality basis, but this is also true outstate where at present the watershed districts do not have the response from a regional or multi-municipal level other than county. I think the bigger picture is very necessary and I think the watershed district function is to make recommendations based on the best available knowledge and based on their own single purpose or limited scope and that scope is as defined in the Minnesota Watershed Act.

Question - I would suggest the watershed district should define the floodplain. We have State policy compelling municipalities to enact ordinances in conformity with State regulations. It would be proper for watershed districts to suggest what kinds of land uses can be employed within those floodplains. It seems to me that watershed districts would be over reaching themselves in telling municipalities that this land zoning is what ought to be. I think this should be a function of the Metropolitan Council and should not be an area that watershed districts concern themselves with. I can see all kinds of problems if a watershed district in its overall plan starts telling villages, and cities and townships what uses they should be putting to floodplain land.

Answer - Frank Lamm I hope you realize what we're talking about when we discuss zoning or land use. We have been limiting our discussion to open space versus some type of development.

Arno Haering We have several model provisions, one for how quarrying ought to occur. We have some model provisions that a conservancy district could amend into a zoning ordinance. We will have additional model provisions by fall and we do hope to work with local communities to get more uniform provisions.

Question - I'd like to discuss a real situation. It involves a development in the village of Shoreview where a mobile home developer came in and wanted to build a mobile home park in the flood plain of Rice Creek. The village refused to give him a permit so he took it into court and the court has granted him permission to go ahead with that development unless the council appeals the case to the Supreme Court of the State of Minnesota. Now other municipalities, we happen to be right across the road, are not in favor of this development and I'm sure that the Rice Creek Watershed District is not in favor of the development. I know both Anoka County and Ramsey County are not in favor of that particular development. Now what do we do at this point?

Arno Haering In this seven county area there are, I believe, some pretty bad opinions handed down on land use. I think that the evidence supplied by the opposing community perhaps was not sufficient. I don't know what you can do at this time. It does point out one problem though, we have 200 and some municipalities in this seven county area and they all conduct business their way and they don't look beyond their self interests sometimes.

Question - It's the judge we have to worry about here and not the community. Shoreview was opposed to it and they did not grant the permit. Along that same line, is there not a new law that provides when if one municipality didn't like the decision of rezoning that another municipality had they can ask for a review by the Metropolitan Council?

Answer - Arno Haering I believe you probably could, but I don't know what affect that would have after a ruling had been handed down, I suppose you could appeal.

Question - But I wondered if it wasn't worth mentioning to the people here, a law recited by George McClintok in a hassle on some rezoning in three communities around Lake Minnetonka in an area involved in rezoning for townhouses. The municipality that was involved with the townhouse had their decision appealed by another community.

Answer - Arno Haering Very likely.

Question - I'd just like to offer a comment. I think you give an unfair impression about that "may have been a bad decision." The pressure to lead to that decision started a long time ago and I would just like to know what the local assessment policy is in that community, what is the local taxation policy, and what is the local subdivision regulation policy. In many cases we have a situation where we have imposed some substantial special assessments against property owners to finance "comprehensive sewer programs or water programs" and this amounts to taking money from somebody without any say on his part in a large measure under the premise that he's going to be able to obtain the fruits of that improvement. In many cases these are area-wide assessments. The Hennepin County assessor and Arno and I have spent some time with the Judge on behalf of the watershed and the Metropolitan Council. He said that the area kind of approach is to further and foster development. That is why the watershed district, at least in our area, is trying to stop right at the point of beginning and to go to the municipalities that are now growing and say look now if you really don't want to develop that marsh, or that flood plain, or that open space area or that steep slope, then you had best in your assessment policy, in your planning policy, and in your development policy not impose that financial burden on that man. We can't always cry and weep saying it's a bad decision. Maybe it's a good decision because it is going to force us to think through on how we want other people to finance our programs and this is where general government really has a problem. Everybody wants sewers and water but they don't want high density development because they don't like to have a lot of people moving in. They want single family residential development. We may want a dedication to wetlands, a dedication to open space, and a dedication to steep slopes, but the practical community politics are that people don't want a high residential apartment next door.

Question - I'm vitally concerned with this question because I'm one of the managers of the newly formed Rice Creek Watershed District. Now I don't know whether we're coming in after the barn door has been locked or not. I've been exposed to this problem. I've been told about it and in fact one of our managers was instrumental in fighting it and bringing it into the courts. He wanted to know if there was a conflict of interest on his part in becoming a manager and I told him I didn't think there was. But at

any rate, this is a real tough nut to be thrown into our lap just in our formative stages. But maybe it is a good one at that because it would get us off our duffs and get going on it in a great big hurry. I'm glad it was brought out in the open at this meeting because we're going to need help and I don't know what stage this matter is in now, whether it is going to be appealed or whether the time for appeal is up or not, but we're going to have to take a good hard look at it and I hope it's not too late.

Answer - Frank Lamm I'm not familiar enough with the problem to know whether or not the effects of this development on the flood plain and the effects of the flood plain on this development were clearly brought out, if not this is possibly an avenue for reconsideration as far as the permit is concerned now that the watershed district is in existence. Before I answer any other questions I would like to allude to the Metropolitan Council responsibility in inter-municipal concerns. Where the Metropolitan Council does feel that a particular problem has a substantial affect on Metropolitan area development, then it can review and make recommendations. The Council may attempt to mediate and resolve differences of opinion which exist among the participants in a hearing. This is brought out in section 6, subdivision 7 of the Metropolitan Council Act.

Question - Does the Council have a legal task force to assist in these areas?

Answer - Arno Haering I mentioned that the Council is in the process of restructuring its open space advisory board. One task force of the board will be a legislative task force or one concerned with legislation that allows for implementation of natural protection open space plan. That has not been appointed yet but we hope within a month to create the task force.

SOME COMMENTS CONCERNING WATERSHED
PLANNING IN MINNESOTA

William C. Walton, Director, Water Resources
Research Center, University of Minnesota

Information in the document entitled "A Compendium of Agencies and Organizations Concerned With Major River Corridors in the Twin Cities Metropolitan Area," prepared by the Metropolitan Council in September 1969 indicates there are about 138 organizations with water and related land resources programs in the Twin Cities Metropolitan Area as follows: Federal - 20, Interstate - 2, State - 21, Regional - 4, Special Districts - 19, Counties - 7, Municipalities - 18, and Interest Groups - 47. Several of these organizations have major planning and coordination responsibilities. Statutes pertaining to these responsibilities and the Minnesota State Planning Agency, Department of Natural Resources, Water Resources Board, Soil and Water Conservation Commission, Metropolitan Council, Minnesota-Wisconsin Boundary Area Commission, and Federal-State River Basin Commissions are as follows:

State Planning Agency "Chapt. 4 Sec. 4.10 STATEWIDE PLANNING: PURPOSES. In order that the state benefit from an integrated program for the development and effective employment of its resources, and in order to promote the health, safety, and general welfare of its citizens, it is in the

public interest that a planning agency be created in the executive branch of the state government to engage in a program of comprehensive statewide planning. The agency shall act as a directing, advisory, consulting, and coordinating agency to harmonize activities at all levels of government, to render planning assistance to all governmental units, and to stimulate public interest and participation in the development of the state.

Department of Natural Resources Chapt. 105 Sec. 105.39 AUTHORITY AND POWERS OF COMMISSIONER. Subdivision 1. Water Conservation Program. The commissioner shall devise and develop a general water resources conservation program for the state. The program shall contemplate the conservation, allocation, and development of all the waters of the state, surface and underground, for the best interests of the people. The commissioner shall be guided by such program in the issuance of permits for the use and appropriation of the waters of the state and the construction, reconstruction, repair, removal, or abandonment of dams, reservoirs and other control structures, as provided by sections 105.37 to 105.55.

Water Resources Board Chapt. 112. Sec. 112.46 (OVERALL PLAN) The [watershed] managers shall, within a reasonable time after qualifying, adopt an overall plan for any or all of the purposes for which a [watershed] district may be established. The overall plan shall be composed of narrative statements of existing water and water related problems within the district, possible solutions thereto and the general objectives of the district. The overall plan may also include as a separate section any proposed work or projects. The separate statement of proposed work or projects or petitions for projects to be undertaken pursuant to the overall plan shall be considered as a comprehensive plan of the district for all purposes of review by the metropolitan council under section 473B.06, subdivision 6, if the district is within the metropolitan area. A copy of such plan shall forthwith be transmitted to the county auditor of each county affected, the secretary of the [water resources] board, the commissioner, the director, the governing bodies of all municipalities, any soil and water conservation district having territory within the district and the metropolitan council if the district is within the metropolitan area. Upon receipt of such copy the commissioner, the director and the council shall examine the same and within 60 days thereafter, unless such time is extended by the board, the director and the council shall transmit to the board recommendations in connection therewith, a copy of which shall be transmitted to the managers, the county auditor of each county affected, the governing bodies of all affected municipalities and any affected soil and water conservation districts. Within 45 days from receipt of the director's and the council's recommendations the board shall have a hearing on the proposed overall plan, the provisions of this chapter relating to notice, time, and place of hearing upon a nominating petition governing. After such public hearing the board shall, by its order, prescribe an overall plan for the district. A copy thereof shall be transmitted to the managers, the county board of each county affected, the commissioner, the director, the governing bodies of all municipalities affected, any affected soil and water conservation districts and the council whereupon said plan shall become the overall plan for the district. Said plan may be amended upon a petition submitted by the managers therefor, and the board shall have a hearing thereon, in the same manner as in the original overall plan proceeding. The managers and the board shall review the overall plan for the district at least once every two years after the board originally prescribes the overall plan and shall make such amendments thereto as may be deemed advisable.

Soil and Water Conservation Commission Chapt. 637 Sec. 8 Subd. 3. [PRELIMINARY PROGRAM PLANS; APPLICATION FOR FEDERAL OR OTHER AID; COOPERATION WITH OTHER AGENCIES; REPORT AND RECOMMENDATIONS TO THE COUNTY BOARD; ADOPTION OF IMPROVEMENT WORK PLAN.] After adoption of the resolution recommending the improvement work unit and program as provided in subdivision 2, with amendments thereto, if any, the board or boards, when the board or boards of county commissioners by resolution so directs, may make or cause to be made such further surveys and studies as may be necessary and thereupon make or cause to be made a preliminary general plan for carrying out the program for the improvement work unit as set forth in the resolution or any part thereof, with cost estimates therefor. The board or boards, at the direction of the county board or boards, may make application for federal aid, state aid, or aid available from any other source for the works embraced in the program or any part thereof under Public Law 566 or any act amendatory thereof or supplementary thereto or any other applicable federal or state law, and may take all steps necessary to determining whether such aid will be available and the amount thereof. The board may consider how the cost of the works of improvement or any part thereof above prospective federal or other aid may be met from the funds of the district or from the proceeds of assessments on benefited property or otherwise, and make estimates therefor. If the cooperation of joint action of any adjacent soil and water conservation district or any other public agency is desirable for any purpose under the program or in connection therewith, the board, at the direction of the county board or boards, may negotiate with the authorities concerned for such cooperation or joint action as authorized in Minnesota Statutes, Chapter 40, and acts amendatory thereof, or as otherwise provided by law. Upon completion of the foregoing steps as far as necessary, the board or boards may make and file a report, summarizing its findings thereon and its recommendations for further action on the program or any part thereof. The board or boards shall make the plan together with the preliminary general plan for the improvement work unit available to the county board or boards and to all other public agencies and persons concerned, and may give such publicity thereto as the district board deems advisable. The report shall contain substantially the same engineering information required by Minnesota Statutes, Section 112.49, Subdivisions 1 and 2. The board or boards shall transmit a copy of the report and preliminary plan to any regional development agency created by Minnesota law for the region in which each project is located, and in those cases where the plan involves a project for which a permit is required from the commissioner of conservation under Minnesota Statutes, Chapter 105, or for which proceedings will be instituted under Minnesota Statutes, Chapter 106, to the commissioner of conservation and to the water resources board. The water resources board shall review the report and plan and, if it concludes that the plan is inconsistent with systematic administration of state water policy, shall report its conclusions to the board or boards and the commissioner of conservation within 60 days after receiving the report and plan. Thereafter the board or boards may modify and retransmit the report and preliminary plan to the water resources board, or may request a hearing on the report and plan before the water resources board. The water resources board shall hear the matter in the same manner, and follow the same procedures, as provided in Minnesota Statutes, Sections 105.76 to 105.79, for the hearing of cases where it consents to intervention proceedings. Except where the water resources board concludes that the report and plan are inconsistent with the approval of the county board or boards, may adopt and sponsor the improvement work unit and a program of work for the unit.

Metropolitan Council Chapt. 473B. Sec. 473B.06 Subd. 5. DEVELOPMENT GUIDE. The metropolitan council shall prepare and adopt, after appropriate study and such public hearings as may be necessary, a comprehensive development guide for the metropolitan area. It shall consist of a compilation of policy statements, goals, standards, programs, and maps prescribing guides for an orderly and economic development, public and private, of the metropolitan area. The comprehensive development guide shall recognize and encompass physical, social, or economic needs of the metropolitan area and those future developments which will have an impact on the entire area including but not limited to such matters as land use, parks and open space land needs, the necessity for and location of airports, highways, transit facilities, public hospitals, libraries, schools, and other public buildings.

Minnesota-Wisconsin Boundary Area Commission Chapt. 1 Sec. 131 Subd. 1. COMPACT; PURPOSE AND INTENT. In order to conduct studies and to develop recommendations relating to the present and future protection, use and development in the public interest, of the lands, river valleys and waters which form the boundary between this state and any other state party to this compact; and

In order to assist in co-ordinating the studies, conservation efforts and planning undertaken by the several departments, agencies, or municipalities of the states parties to this compact with respect to such lands, river valleys and waters; and

In order to assist in the participation by states parties to this compact in federal programs which relate to the present and future protection, use and development in the public interest, of such boundary lands, river valleys or waters;

This state hereby solemnly agrees:

To co-operate with any neighboring state party to this compact for the purposes of, and subject to the limitations provided by, this compact;

To establish a boundary area commission;

To consider, and to promote the consideration by its municipalities of, the recommendations of the boundary area commission with respect to:

- (1) Joint regional planning for the development of boundary areas;
- (2) Measures for controlling air and water pollution, maintaining water quality, and controlling water use;
- (3) Programs for control of soil and river bank erosion and the general improvement of the river basins;
- (4) Diversion of waters from and into the rivers;
- (5) Restrictions and regulation of land use development designed to preserve the scenic and recreational attributes of the river basins;
- (6) Other restrictions, regulations or programs the commission may recommend to the party states.

Federal Water Resources Planning Act of 1965 Public Law 89-80 89th Congress, S. 21 SEC. 201. (a) The President is authorized to declare the establishment of a river basin water and related land resources commission upon request therefor by the Council, or request addressed to the Council by a State within which all or part of the basin or basins concerned.

(b) Each such commission for an area, river basin, or group of river basins shall, to the extent consistent with section 3 of this Act--

(1) serve as the principal agency for the coordination of Federal, State, interstate, local and nongovernmental plans for the development of water and related land resources in its area, river basin, or group of river basins;

(2) prepare and keep up to date, to the extent practicable, a comprehensive, coordinated, joint plan for Federal, State, interstate, local and nongovernmental development of water and related resources: Provided, That the plan shall include an evaluation of all reasonable alternative means of achieving optimum development of water and related land resources of the basin or basins, and it may be prepared in stages, including recommendations with respect to individual projects;

(3) recommend long-range schedules of priorities for the collection and analysis of basic data and for investigation, planning, and construction of projects; and

(4) foster and undertake such studies of water and related land resources problems in its area, river basin, or group of river basins as are necessary in the preparation of the plan described in clause (2) of this subdivision."

It should be noted that the creation of an Upper Mississippi River Basin Commission is presently under consideration.

These statutes give mutual planning and coordination powers to organizations. Attempts are continuously made to improve interdependent relationships between local-State regional-State-Interstate-Federal-State regional planning and coordination activities. Because the planning process is open ended and involves the advocacy system, it is difficult and perhaps impossible to establish and maintain a clear, neat hierarchical structure for planning.

Theoretically, whole plans are supposed to materialize through the compromise system involving individual advocacy plans of all layers of government. The whole plan is supposed to be discovered after due consideration is given to all possible advocacy plans. The order in which advocacy plans are molded into a whole plan has a lot to do with the nature of the whole plan. Advocacy plans and therefore the whole plan constantly changes in response to ever changing goals, values and attitudes. In recent years, considerable progress has been made at various levels of government towards the formulation and periodical revision of advocacy plans and whole plans. But, much remains to be accomplished in bringing reasonable order to the planning process.

The statutes cited earlier outline plan review procedures. Theoretically, the frames of references for the plan review process are the adopted policies and plans of all layers of government. But some comprehensive frames of references are just beginning to emerge. For example, Minnesota has not adopted a statewide water and related land resources plan nor a comprehensive set of water and related land resources policies. The State does not have an advocacy plan against which state-regional plans can be weighed and with which Minnesota can meaningfully participate in Federal-State regional planning activities. The Metropolitan Council, Special Districts, and Federal-State regional planning organizations are in some ways ahead of State government in making progress towards the preparation of advocacy plans.

The Water Resources Coordinating Committee, State Planning Agency in its publication entitled "Alternative Programs and Projects for Managing Minnesota's Water and Related Land Resources through the Year 2020" states that "The State must make decisions concerning the following existing planning policy questions before a statewide framework water and related land resources plan can be prepared:

Should the State endorse and promote Federal-State regional framework water and related land resources plans which have been prepared largely by Federal agencies acting as representatives of the Souris-Red-Rainy River Basins Commission, Great Lakes Basin Commission, Upper Mississippi River Comprehensive Basin Study Coordinating Committee, and Missouri River Inter-Agency Committee? Should the State endorse Federal-State plans in which the impacts of programs and projects on the State's environment have not been adequately identified and analyzed?

Should the State endorse Federal-State plans which are predicated on the planning policy that further development of both urban and rural flood plain areas is to be encouraged by constructing dams and other structures to reduce existing and potential flood-plain damages?

Should the State endorse Federal-State plans which are predicated on the planning policy that Minnesota will store flood waters behind a series of large dams on the Mississippi and Minnesota Rivers, thereby:

- Permitting further development of flood-plain areas along the mainstem of the Mississippi River downstream from the State?
- Providing low-streamflow augmentation for pollution control along the mainstem of the Mississippi River downstream from the State?
- Providing low-streamflow augmentation for navigation purposes on the Mississippi River and Missouri River beyond the border of the State?

Should the State endorse Federal-State plans which are predicated on the planning policy that the U.S. Bureau of Reclamation should divert large quantities of water from Minnesota and the Rainy River to irrigate large tracts of land in North Dakota and to dilute, from authorized irrigation projects in North Dakota, return flows which will discharge into the Red river and cause a serious water-quality problem?

Should the State endorse Federal-State plans which are predicated on the planning policy that secondary treatment of wastes will be deemed adequate during the next 50 years and that most future water-quality problems will be solved by providing low-streamflow augmentation through dams and reservoirs constructed by the U.S. Army Corps of Engineers and U.S. Soil Conservation Service?

Should the State endorse Federal-State plans which are predicated on the planning policy that water-borne transportation should be further subsidized and expanded, in part, by deepening the navigation channel in the Upper Mississippi River from 9 to 12 or possibly 15 feet and extending the navigation channel with a 9-foot depth up the Minnesota River to Mankato?

Should the State endorse Federal-State plans which are predicated on the planning policy that most future water-supply problems will be solved by utilizing surface water impounded behind Federal dams?

Should the State postpone acceptance or rejection of Federal-State plans until impacts on the environment of recommended programs and projects are carefully analyzed and the State decides what regional responsibilities are reasonable for Minnesota to accept?

Should the statewide framework water and related land resources plan be predicated on the following planning policies?

- Declare environmental quality and protection as the number 1 priority in selecting programs and projects.
- Keep impacts on the environment to a minimum in selecting programs and projects.
- Keep Federal influence on State policies to a minimum in selecting programs and projects.
- Do not fully accept regional responsibilities associated with reducing by structural means flood damages beyond the boundaries of the State, providing low-stream flow augmentation for pollution control and navigation purposes beyond the boundaries of the State, and diverting water from the State to irrigate lands in North Dakota.
- Solve existing and future flood damage problems chiefly through non-structural measures such as reasonable flood plain zoning, flood proofing, etc., and by constructing local protection works such as levees, floodways, and channel improvements.
- Solve existing and future pollution problems chiefly through construction of advanced waste treatment plants and limited low-streamflow augmentation.
- Restrict navigation improvements within the State on the Upper Mississippi River to maintenance and improvement of existing 9-foot channel and associated structures.
- Select recreation programs and projects tailored to the State's landscape regions."

Thus, the preparation of a statewide framework water and related land resources plan has been postponed until the Legislature provides further policy guidance.

Until recently, the average citizen regretted the deterioration of the State's environment but accepted it as the necessary price of progress. Now citizens are asking if the kind of progress experienced is all desirable, whether it can be achieved differently, and whether it is worth the sacrifice of environmental assets. Many traditional assumptions are being questioned, and attitudes toward population growth, economic expansion, and the use of our natural resources are no exceptions. The State is in the process of translating these new values and attitudes into an effective long-range broad policy to achieve the goal of a satisfactory environment and economy in the future.

In conclusion, I suggest that there is urgent need for all levels of government to seek improved institutional arrangements for planning and coordination in the water and related land resources field. More attention should be given to ways and means for clarifying the relationships between emerging local-State regional-State-Interstate- and Federal-State regional plans. Additional consideration should be given to the early completion of a statewide framework water and related land resources plan involving the planning efforts of such organizations as the Metropolitan Council with the cooperation of appropriate local, State, Interstate, Federal, and private organizations and Interest Groups.

Questions and Answers

Question - How do you view the watershed districts, how would you view the watershed districts as an organization in implementing a statewide priority of guidelines?

Answer - William Walton As I understand it, watershed districts can both plan and implement plans. Watershed districts can not implement plans except by petition. Their efforts may be hampered until their plans fit in with other planning efforts. I believe watershed districts have got to improve their participation in Federal-State regional planning activities. The Metropolitan Council must have the watershed district people involved in their planning from the very beginning. People tend to be parochial and are reluctant to consider regional aspects of planning.

Question - Who is the advocate for the environment? Who is our spokesman for protection of those natural elements of our environment that whatever your economic need is, whatever your political persuasion is, that has just got to be protected because that is one of our responsibilities as human people on this planet?

Answer - William Walton There are so-called 53 Interest Groups that have major concern with the environment in Minnesota at the present time. They spend about a quarter of a million dollars a year and their membership totals about 25,000. These are advocates of environmental quality of which you are one. In the last decade the number of advocates of which you speak has more than doubled. There are people who share your broad ecological

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view of the world and there are many that do not have your insight. I would suggest that we are making hard slow progress in the environmental quality field and we're going to make more. It is unfortunate that we do not know what the present status of environmental quality is in the State of Minnesota.

WATERSHEDS AND THEIR RELATIONSHIPS TO THE
DEPARTMENT OF NATURAL RESOURCES
Gene Hollenstein, Chief Hydrologist, Division
of Waters, Soils and Minerals, Minnesota
Department of Natural Resources

Watershed Districts can play a vital role in providing local viewpoints and management efforts compatible with statewide policies and programs for wise use and development of our water resources. In order to perform these functions, however, there is a real need to provide improved communication and cooperation between those organized districts and the other State agencies who may be involved, particularly the Department of Natural Resources which is the State agency charged with major responsibility for water resources management through Minnesota Statutes 105 and related laws and the PCA which is responsible for pollution control programs.

There has not been sufficient communication in the past and the Department of Natural Resources had not provided the necessary State guidelines and insured the required cooperation. There are several reasons for this and of course there is adequate cause to look to both parties for a failure to adequately communicate.

I believe one of the major problems is created by the statutes themselves and the fact that there are conflicting policies and programs reflected in parts of the statutes. In addition, there are too many agencies of the State which are involved in various aspects of water resources activities without any concerted attempt to provide an overall basic framework administered by a single State agency.

The Watershed Act as established under Minnesota Statutes Chapter 112 provides for the establishment of watershed districts as public corporations, as agencies of the State to "carry out the conservation of the 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 natural resources..."

Section 112.36, relating to "Establishment of Districts." Was written into law in 1955 and subsequently amended in 1957, 1959, 1961 and 1969 provides that a watershed district may be established for any or all of the following conservation purposes: (Please note that I have emphasized the word conservation which relates to wise use and development of our resources.)

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 water thereof.
6. Diverting or changing 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 purpose 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 preventative or remedial measures for the control or alleviation of land and soil erosion and siltation of watercourses or bodies of water affected thereby.
11. Regulating improvements by riparian landowners of the beds, lands, and shores of lakes, streams and marshes by permit or otherwise in order to preserve the same for beneficial use.

Obviously the Watershed Districts have broad powers and responsibilities and could provide many essential services to the residents of the districts.

In order to provide a framework for understanding the relationships of the Department of Natural Resources and the watersheds it is necessary to examine the major Statutes which give responsibility to the State through the Commissioner of Natural Resources, these duties are enumerated in Minnesota Statutes Chapter 105 relating to the general conservation of water resources of the State and to shoreland management and Minnesota Statutes Chapter 104 relating to flood plain management within the State.

Chapter 105 provides that the Commissioner shall have administration over the use, allocation and control of public waters, the establishment, maintenance and control of lake levels and water storage reservoirs and the determination of the natural ordinary high water level of any public waters. The law also provides that the State through the Commissioner shall control the appropriation and use of surface and underground waters of the State. The Commissioner is also given authority in Chapter 105 to provide State guidelines criteria and standards for shoreland management of the shorelands abutting lake and streams in all unincorporated areas of the State. The Department promulgated statewide standards for shoreland management in 1970 and these standards provide controls for the area of lots and lengths of water frontage suitable for building sites, the placement of structures in relation to shorelines and roads, the placement and construction of sanitary and waste disposal facilities, designation of types of land uses, preservation of natural shorelands through the restriction of land uses and provisions for variances as well as a model ordinance. To date 15 counties have enacted ordinances which have been approved in compliance with State standards and at least 12 other counties have prepared ordinances which are presently being reviewed. The law provides that counties must adopt shoreland ordinances by July 1, 1972 which meet State standards. It appears that the majority of counties will be in compliance by July 1. Under provisions of Minnesota Statutes Chapter 104 the Commissioner of Natural Resources is responsible for initiating and implementing a statewide program for the management of flood plain areas of the State. The Commissioner of Natural Resources promulgated rules and regulations for flood plain management in 1970. These standards include criteria for determining

the flood plains uses which may be permitted without creating an unreasonable public hazard or unduly restricting the capacity of the flood plain to carry the regional flood. In addition the standards provide for variance procedures and for establishment of criteria for alternative or supplemental flood plain management measures such as flood proofing, subdivision regulations, building codes, sanitary regulations and flood warning systems. The key to implementing a flood plain management program is the determination of technical data to delineate flood plains and floodways of watercourses. After these data are obtained and properly evaluated the community involved then works with the State in establishing the floodway and structural and nonstructural flood plain measures.

In addition to these varied responsibilities and authority the Commissioner is charged with devising and developing a general water resources conservation program for the State which shall contemplate the conservation, allocation and development of all the waters of the State, surface and underground, for the best interests of the people.

I have been asked to provide Department viewpoints on several specific aspects of water resources activities today.

First, the Department procedures regarding flood plain management and a recommendation concerning the role of Watershed Districts in the program. One of the greatest contributions that the watersheds can provide is in the acquisition of flood plain information to enable the proper delineation of flood hazard areas. Another important area is assistance in preparation of suitable maps which accurately show the flood plain limits and portions of the flood plain. Finally, the Watershed Districts can provide valuable assistance in coordinating the efforts of all local governmental units within the watershed to assist them in developing comprehensive local flood plain management plans including structural and nonstructural alternatives to watershed flooding problems.

A good example of this type of effort is contained in Chapter 662, Laws of 1971 which amended M.S. Section 112.43 by adding (14) and (15) as follows:

- (14) Prepare a flood plain map of the lands of the district which are in the flood plain of lakes and watercourses, which map shall be made available to the counties and local municipalities for inclusion in flood plain ordinances and shall be in conformity with State regulations setting standards and criteria for designation of flood plain areas.
- (15) Prepare an open space and greenbelt map of the lands of the district which should be preserved and included in the open space and green belt land areas of the district, which map shall be made available to the counties and local municipalities for inclusion in flood plain and shoreland ordinances.

These types of provisions provide for cooperative efforts and should serve as welcome additions to the local units of government involved in the specific programs. There is a need for further delineating other cooperative services to local governments within the districts.

What are the types of information required for Flood Plain Studies?

Field survey data needed includes survey cross-sections whenever:

1. There are significant changes in the cross-sectional area of the flood plain.
2. There are conditions which could cause retarding of flood flows or changes in the character of flows.
3. There are significant changes in the slope of the stream bed of water surface.
4. There are restrictions or constrictions in the flood plains as a result of bridges, road grades or other natural or artificial encroachments on the flood plain.
5. Reasonably spaced intervals are needed to provide basic control.

It is difficult to set any specific number of cross-sections because of the variable nature of flood plains and watershed characteristics. Spacing also depends on possible local changes anticipated within the flood plain and on stream slopes. And spacing can reasonably be expected to range from 1200 feet to one half mile.

The most desirable hydrologic evaluations of flood flow characteristics are those based upon recommendations of the Federal Water Resources Council as delineated in their Bulletin 15. However, where inadequate stream flow records exist other generally acceptable hydrologic techniques may be utilized. All hydrologic methods are coordinated by an inter-agency agreement.

It is essential to obtain water surface profiles which will properly reflect flood storage and flood discharge conditions. The water surface profiles are calculated by the standard step-backwater method utilizing acceptable engineering principles of open channel hydraulics. In order to save time and detailed computations the Department utilizes a digital computer program developed by the U.S. Corps of Engineers Hydrologic Engineering Center.

After obtaining the necessary field survey data and evaluating flood flow characteristics and calculating water surface profiles it is necessary to delineate the flood plain based ideally on detailed topographic maps generally at a 2-foot contour interval with 500-800 feet per inch horizontal scale. Aerial photographs or suitable street maps or field survey maps may also be used in some instances.

Current flood plain delineation studies for Bassett Creek, Riley-Purgatory Creek and Nine Mile Creek Watersheds are currently being reviewed by this Department. Two other flood evaluation studies involving significant reaches of the Mississippi River and Minnesota River in the 7 county metropolitan area are presently being prepared. The Minnesota River study is being carried out in cooperation with the Lower Minnesota River Watershed District.

The second major area of discussion involves the relationship of Department of Natural Resources programs and policies to general watershed planning and overall watershed district activities.

It appears to me that there is a need to insure that if watershed districts are to be encouraged in the future they must be of sufficient areal extent and regional importance to be able to provide for a comprehensive

management program. A district established to take care of a few specific water problems of a minor stream may not, and most probably will not, give proper consideration to the effects of certain programs and policies on other adjacent areas and the major stream to which it is tributary. It is obvious and understandable that such a district will be primarily concerned with its immediate problems and will not adequately concern itself with the larger regional picture.

It is recognized that in many instances watershed districts were established primarily to solve certain special problems such as drainage, flooding or water level maintenance. While there is nothing in the law requiring that watershed districts be established for total water resources management it is advisable that proper consideration be given to a total approach to management rather than "piecemeal" attempt to solve only one particular problem. Certainly many watersheds have discussed that the solution to a particular problem may involve numerous other aspects of management in the long run.

It is for this reason that watershed districts must be established based on more substantial boundaries and with greater recognition of the need for a more regional type of program. Existing small watershed districts which do not readily meet the regional program requirements could be assimilated into larger watershed districts as functional subwatersheds and their goals and objectives could be adjusted to fit regional and State policies and programs. Last but not least it appears that there is a need to insure that there is a better defined role of watershed districts as coordinators for city, village, town or county water resources programs.

If you recall when I enumerated the legislatively authorized responsibilities of watersheds contained in Minnesota Statutes Section 112.36 I listed 11 conservation purposes.

A careful examination of this section will disclose that there are contradictions in the purposes involved and that there is a need for a reassessment of this entire section.

For example: The beginning sentence states "a watershed district may be established for any or all of the stated purposes. Obviously there is a need to better relate the purposes for establishment to a total comprehensive water resources management program for a watershed. There is also an obvious need to provide language which insures that the watershed program will be compatible with and complementary to existing statewide water resources management policies and programs and further that as new statewide water resources management policies and programs are developed there is a need to insure that the necessary changes or additions will be made to watershed district programs.

If watershed districts are to be allowed to be established for only certain vested interest purposes there are bound to be serious problems involved in making the watershed districts good local management agencies.

Let's look again at the purposes for which a district may be established:

1. Control or alleviation of damage by flood waters. This purpose as stated would probably be construed to be adequate in regard to the Minnesota Flood Plain Management Act contained in Minnesota Statutes Chapter 104 but it would perhaps be better to alter the language to reflect the coordination of flood plain management efforts and assistance in preparation of nonstructural flood plain management measures and construction of structural flood plain management works.

2. Improvement of stream channels for drainage, navigation and any other public purpose. There is certainly a need to better explain the meaning of "improvement" and to better define "public purpose." The effects of changing natural conditions of stream channels are becoming more apparent today with the new emphasis on environmental preservation and enhancement of natural areas and accordingly the purposes must be revised to reflect such concerns. There is a need for caution, however, in the respect that there must be allowed reasonable development with careful concern for the environment and with proper mitigation to reduce any damaging effects in those instances where there exists no other alternatives except alterations of stream channels.

3. Reclaiming of wet and overflowed lands. This language reflects the early thinking concerning land use practices which were once considered necessary for shoreline development in many areas of the State. This purpose must be changed to more properly provide for wise use and development of low lying lands adjacent to lakes and streams. The development must be adjusted to fit the resources and the resources must not be altered unwisely to fit the development.

4. Providing water supply for irrigation. There is specific legislation in Minnesota Statutes Chapter 105 relating to water appropriation and use for irrigation which delineates the role of soil and water conservation districts in these endeavors. It appears that this specific purpose might be readily omitted especially if one considers the intent of purpose (7) relating to water supply.

5. Regulating the flow of streams and conserving the waters thereof. Here again, there is a need to recognize the watershed district role as a regional coordinator and to reflect the need for a comprehensive regional water resources management program. This purpose could perhaps be better stated as assisting in implementation of a regional streamflow management program to reduce damaging effects from high flows and to assure dependable low flow in the public interest.

6. Diverting or changing watercourses in whole or in part. This purpose again reflects the early thinking concerning the need for making major adjustments in watercourses to permit development. The concept, as such, is no longer acceptable from a total environmental viewpoint and this purpose should be eliminated or drastically revised. It is recognized that there may be, in a few instances, a need for making major alterations and diversions but such projects should be kept to an absolute minimum and should not be allowed unless there are no other reasonable or feasible alternatives and unless there is substantial mitigation of the undesirable and irreversible effects.

7. Providing and conserving water supply for domestic, industrial, recreational, agricultural and other public use. The concept expressed in this purpose is excellent but again the emphasis should be placed on establishment of a coordinated program for wise use and development of the water resources of the district to insure reasonable utilization of these resources for water supply for various uses including domestic, industrial, recreational and agricultural purposes. There should be a provision for establishing recommended priorities of development and use compatible with State regional and local needs, policies and programs.

8. Providing for sanitation and public health and regulating the use of streams, ditches or watercourses for the purpose of disposing of waste. Again, there is a need to assure that the district role is compatible with the proper State agency policies and programs and that the efforts will be to coordinate and assist other local units in implementing such programs.

9. Repair, improve, relocate, modify consolidate and abandon, in whole or in part drainage systems within a watershed district. The actual implementation of this purpose within the existing framework of Chapter 106 relating to drainage is not exactly clear. There is obviously a need to provide a coordinate regional approach to management of drainage systems as well as to insure that there is a State viewpoint and management role. The drainage statutes, chapter 106 must be revised to better provide for State and regional considerations.

10. Imposition of preventative or remedial measures for the control or alleviation of land and soil erosion and siltation of watercourses or bodies of water affected thereby. Since this area seems to most directly involve specific functions of the Soil and Water Conservation Districts and since those Districts are now directly involved with the U.S. Soil Conservation Service in local programs and efforts it seems most reasonable that this purpose should be altered. It is suggested that the purpose might more adequately be one of assisting the Soil Conservation Districts in implementing such programs.

11. Regulating improvements by riparian landowners of the beds, banks and shores of lakes, streams and marshes by permit or otherwise in order to preserve the same for beneficial use. This purpose is obviously essential and necessary but the role should be one of assisting State regulations and assuring that any proposed developments are compatible with State regulations and State regional and local management programs. The major role could be one of advising, recommending and assisting in enforcement of such activities and in aiding establishment of local ordinances and controls to supplement and complement State controls where necessary and applicable as in control of marsh lands.

Essentially what I have attempted to say is that there is a real need for proper consideration of the purpose and intent of watershed districts and a careful assessment of their future role in water resources management. If it is essential that there be a regional management effort, it seems that watershed districts could serve this role through a redirection of responsibilities and a recognition of their goals and objectives as coordinating and assisting agencies for cities, villages, towns and counties within a State agency program of water resources.

It is suggested that the section on powers and duties of Managers of districts and other pertinent sections of the Watershed Act be carefully reviewed and revised as needed to reflect this need. We cannot have a good water resources management program in Minnesota unless we have a comprehensive cooperative program involving local, regional and State agencies. The State should perform its proper role of overall statewide policy and program development and should establish guidelines for such policy and program implementation.

Regional agencies such as perhaps the watershed districts, should provide basic approaches to water resources management compatible with the State policy and programs and should provide additional overall basic guidelines for cities, villages, towns and counties.

The cities, villages, towns and counties should be able to develop their policies and programs within the framework of State and regional guidelines with major cooperation and assistance from the proper regional and State agencies.

The Department has initiated this effort by preparing draft guidelines relating to policy on issuance of permits under Minnesota Statutes Chapter 105 and copies of the draft will soon be submitted to watershed districts and other local units of government and the private sector for review and comment. Guidelines on Department policy relating to Water Resources Development and standards for review of district plans are now being prepared and should be available for review and comment by June of this year. The Department will be engaged in the preparation of a statewide water and related land resources management program during the next few months and this program will hopefully provide the basic framework which will help to further guide local governmental units in comprehensive resource management efforts. It is hoped that the watershed districts will join with the Department and other State and local agencies in carrying out vigorous statewide and local programs of resource management in the best interests of the people of the State. The challenge is before all of us and we must all meet the challenge in a united effort. The Department of Natural Resources will be pleased to discuss any aspects of resources management and will gladly accept any constructive comments and assistance which watershed districts may wish to offer. In summary I read you these words from Second Corinthians in the Bible.

"He who sows sparingly will also reap sparingly and he who sows bountifully will also reap bountifully."

Questions and Answers

Question - Primarily in the determination of the regional flood for purposes of flood plain designation do you have any criteria other than what the Department of Natural Resources has presented in the past to the effect that 100-year regional flood would be the commonly used flood based upon existing development conditions?

Answer - Gene Hollenstein We are working on a new publication on standards for flood plain delineation and we're working over this whole area. Obviously when you get into rural areas we're going to have to look at flood plain management in a little different light and it's not going to be entirely

possible to apply the same types of principles to wide open agricultural land that you apply to the urban area. I think we'll probably still stick essentially with the hundred year regional flood in terms of the urbanized areas where you've got great densities of population. When we get into the rural areas I think there might be a new concept approached as how to handle this. We're working on this now on an experimental basis, getting into watershed modeling.

Question - In your review of watershed district plans do you require some proof as to what was utilized as the basis for flood plain management?

Answer - Gene Hollenstein Yes, we would want to be involved, hopefully as soon as possible so we can go through a step-by-step evaluation of the procedures being used and the techniques employed so that we make sure that it is compatible. Otherwise the entire structure of the flood plain management program can be subject to criticism if some techniques are used which would not be acceptable on a standardized basis.

Question - So you would request that information prior to the development of the overall plan?

Answer - Gene Hollenstein It would be most helpful if we could get it, right.

SOIL AND WATER CONSERVATION
RELATIONSHIP TO WATERSHED DISTRICTS
Earl Terpstra, Assistant State Conservationist
for Watersheds and River Basins,
U.S. Soil Conservation Service

The role of the Soil Conservation Service in water and related land resource planning and development has been geared to assisting individuals and local units of government in carrying out programs and projects for resource development. Our programs, as with most Federal programs dealing with water and land resource planning, require a form of State-Federal-local partnership or cooperation in their administration and management.

I would like to spend just a few minutes reviewing the history of the Soil Conservation Service. The Soil Conservation Service was established as an agency of the Department of Agriculture by Public Law 46, 74th Congress, on April 27, 1935. Under this law, as amended, the Soil Conservation Service, through local Soil and Water Conservation Districts, assist individual landowners and land users in urban and rural areas. Groups and communities are also assisted in improving their environment through wise land and water planning. Their goals are soil and water conservation, control of stream pollution, developing water for municipal and recreational use, and accelerating the total natural resource development of the area. Individual landowners with assistance from the Soil Conservation Service carry out resource planning and development based on the principal of using land within its capability and treating it according to its needs. They are assisted in designing and installing measures to control erosion, improve the conservation use and management of the land, develop wildlife areas, and improve woodland areas. Assis-

tance is also given to urban and suburban residents interested in controlling erosion, developing wildlife habitat, improving drainage, and similar measures. Local governmental officials as well as contractors and architects are given technical assistance in planning sites for public facilities, developing land use regulations, evaluations for resource plans, and measures for controlling urban erosion problems.

Programs that the Soil Conservation Service has responsibility for or provides assistance on in Minnesota include: technical assistance to individual or small groups of land users, soil surveys, PL 566 watersheds (which I will talk more about later), resource conservation and development projects (RC&D), river basin studies, conservation needs, and technical on-site assistance in conjunction with the Rural Environmental Assistance Programs. This last program is administered by our sister agency, the Agricultural Stabilization and Conservation Service.

I would like to confine the remainder of my remarks today to Public Law 566. The Watershed Protection and Flood Prevention Act (PL 566), the so called small Watershed Protection Act, was passed by Congress in 1954 and has since been amended several times. These small watershed projects are designed to protect, improve and develop the water and related land resources of a watershed up to 250,000 acres in size, through a project type undertaking. They include a combination of soil and water conservation measures on the land and structural measures such as dams, levees, channels, diversions, pumping plants, etc. These projects bridge the resource development gap between soil and water conservation practices on individual farms and the large Federal projects for water resource development in major river valleys. Small watershed projects complement and are not competitive with or a substitute for the larger public works projects. PL 566 is a program to assist people within a watershed with a common problem. It enables the U.S. Soil Conservation Service to furnish technical and financial assistance for flood prevention. Subsequent amendments to PL 566 allowed assistance for agricultural water management (irrigation and drainage) and recreational assistance. These projects are locally initiated, implemented and maintained with Federal assistance. They all require local sponsors.

First of all in our discussion about Public Law 566, we should perhaps define the term watershed. A watershed may be defined as the area which flows to a stream or lake. Watersheds, of course, vary in size. Each watershed is made up of smaller watersheds and these in turn are made up again of still smaller watersheds. Some watersheds exist entirely within the boundaries of a single farm.

A raindrop explosion at its point of impact on bare soil is the beginning point for surface water flow and soil erosion process. It thus is the point where effective soil and water management must start. Good management should continue as the water flows on through the watershed to an outlet. Between the point of rainfall impact and the eventual outlet, water should be managed in a way that it serves all principal beneficial uses including flood damage prevention, drainage, irrigation, recreation, fish and wildlife, and municipal and industrial water supply.

Good watershed projects must be based on good land use and soil conservation practices on the land of the watershed. It would seem impossible to do an adequate job of managing water through the use of dams, channels, or other measures so long as erosion of this type exists within the water-

shed. Such erosion contributes to a filling up of downstream channels and to the lowering of the quality of the water resource of the watershed. Unchecked, seemingly minor rills and gullies may become even more of an inconvenience. They also are sources of large volumes of sediment that settles in and fills channels and lakes.

Farmlands are not the only source of sediment flowing into streams and lakes. In some watersheds, highway erosion contributes more to the problem than does farmland. Erosion from subdivisions, shopping centers and industrial parks are also a major source of sediment in certain areas. Many streambanks are bare and are subject to much cutting. When this occurs they are a source of sediment which flows downstream to be deposited.

What are the consequences of such erosion insofar as our streams and lakes are concerned? Much of the natural scenic beauty can be lost. Areas once desirable for fish habitat can become so filled with sediment that travel with a boat is difficult.

In Minnesota, it is policy that all watershed projects using Public Law 566 assistance must include soil and water conservation districts as a local governmental unit sponsoring the project. Soil Conservation Districts can provide assistance to land users in developing conservation plans and installing and maintaining soil and water conservation practices. It should be stressed that the district program is based on the voluntary cooperation of landowners. Soil and Water Conservation Districts promote good land use. This means using the land for purposes for which it is suited and includes, for example, the growing of row crops and small grains only on lands adapted for their production. There are many soil and water conservation practices that have important beneficial effects in the management of soil and water. They serve to reduce soil erosion, they facilitate the infiltration of water into the soil, and they serve to improve the quality of runoff water. A good vigorous growth of grass on lands in grass is very important in this respect.

In many watersheds, there are lands which should be replanted to trees. A grass waterway to carry a concentration of water is a most important practice. The failure to use this practice in some areas may result in the development of an inconvenient and sediment producing gully.

Minimum tillage is an effective erosion control practice. Its use results in comparable or higher yields than those obtained when the seedbed is prepared in the traditional manner. The rougher surface conditions promote greater infiltration of water into the soil.

Contour farming, used in its proper place, is an effective practice. Cultivation using this practice results in shallow furrows and ridges around the slope. Contour strip cropping provides for alternate strips of hay and either row crops or small grains. This practice is adaptable over a wider range of conditions than is the contour farming practice.

A terrace can be thought of as an eutroph on the land. With terracing, water in surface flow is carried off the land without reaching an erosion velocity. Over winter cover crops provide protection to the soil during most critical erosion period - during the time of spring breakup and heavy early spring rains. Cover crops are also very important as a temporary measure to minimize erosion of the developing urban area.

Well managed woodlands provide a much more desirable soil and water management situation than do poorly managed woodlands. Recreation ponds are very popular. A pond can be an asset to the homesite and it provides family recreation in the form of fishing.

Many of our Minnesota soils, in their natural state, were wet. Artificial drainage measures were and are needed to develop and improve them for agricultural purposes. Tile drainage and open ditch drainage practices are both in use for removing surplus water from Minnesota soils.

Up to this point, we have been illustrating the importance of land use and conservation practices in a water management program. Now, let's look more closely at the water management structural aspects. Our first concern in the management of water undoubtedly must be that of assuring ample quantities for domestic use. The soil and water management measures we have been discussing for the most part certainly have a beneficial effect on the replenishment of the groundwater supply.

Every year we hear and read stories about floods. The floods that usually make the big bold headlines are those that cause damages in cities. Actually, over the nation, more land is flooded and more actual damages occur as a result of flooding in agricultural areas and in rural communities. Floods that occur during the growing season cause considerable damages in the loss of crops. They also result in reduced yields and in the loss of soil fertility. Early spring floods may delay farmers in the normal tillage operations. Soils are then frequently worked under unfavorable conditions, planting is late, substitute crops may be planted or lower than normal yields may result.

Flooding over farmlands often takes a heavy toll in damages to fences and in the use of labor and machinery for debris removal. Floods are also a source of weed seeds that are deposited on farm land. Floodwaters that encroach upon building sites create extensive damages. This results in damages to foundations, motors and storage materials. The lives of farm livestock often are threatened. Roads and bridges are frequently closed to travel resulting in much public inconvenience and complicating the process of marketing of farm produce. Floodwater damages occur to roads, to railroads, and to bridges. The repair of such transportation facilities requires the expenditure of large amounts of monies. Everyone has a direct interest in the prevention of such floodwater damages.

In the management of surface waters we must not overlook the importance of providing and maintaining needed water for wildlife purposes. The matter of assuring adequate waters for fish habitat is equally important.

In planning for the installation of water management measures, there is need to think in terms of using the water for as many beneficial uses as possible. This water storage typifies such multiple use - fishing, other recreation and irrigation.

The first structural measure considered to abate flooding is that of temporary storage of water in a dam. The rate of flow permitted to flow through the structure is controlled by the size of the inlet area. Downstream flows are thus controlled. The outlet channel can then handle the flows designed to pass through the structure. Public Law 566 funds provide for all of the construction costs for flood prevention purposes. Public Law

566 funds also provide for the engineering costs for surveys and for the preparation of design plans. Local organizations must obtain and pay all costs for getting needed land rights for the location of the structure and for floodways. Local organizations must also pay the cost of issuing invitations to bid and for the administration of construction contracts.

In many watersheds the topography of the watershed does not permit the construction of floodwater retarding structures. In other watersheds sufficient structure sites are not available to entirely eliminate flooding using such structures. In these watersheds improvement of channels to assist in preventing floods or for drainage purposes or for combined flood prevention and drainage purposes may be included in projects using PL 566 assistance. In such instances, the local organizations must assume all costs for land rights and for the administration of construction contracts.

The cost sharing of Public Law 566 funds for channel improvement varies with the purpose of the improvement. Public Law 566 funds pay all of the construction costs for floodwater capacity and 50% of the construction costs for the capacity needed for drainage flow and provides for the engineering cost. Local costs consist of 50% of the construction cost for drainage capacity, land rights costs, and costs for the administration of construction contracts. Construction costs for channel improvement in which cost sharing is provided for Public Law 566 funds include the necessary clearing of the construction work area. Excavation work and leveling of the spoil are also cost shared construction items. Also included as a construction item that is cost shared by Public Law 566 funds is the provision of needed inlets to safely lower surface water into the channel. Costs for the seeding of channel banks, berms, and the inside slope of the leveled spoil are also cost shared. Frequently, channel improvements require changes in bridges. If the bridge can be underpinned the cost is a part of the construction in which Public Law 566 funds can cost share. If the bridge must be replaced, the cost is entirely a local cost. All costs for farm crossings are local costs.

Channels which include as construction features surface water inlets and seeded banks certainly will be subject to less future deterioration. Developments for fish and wildlife and recreation purposes can be included in a project if the project contains flood prevention, drainage, or irrigation structural measures. Cost sharing of Public Law 566 funds for fish and wildlife or recreational developments includes 50% of the construction cost, 50% of the costs for land acquisition and 50% of the costs for surface facilities needed to enable public use such as access roads, sanitary facilities, and water supplies. Note particularly that cost sharing is provided for up to 50% of the cost for land rights. Such cost sharing for land rights is available only if the facilities serve a fish and wildlife or recreational purpose. Land rights costs for all other purposes are a 100% local cost.

In considering the management of water for all beneficial uses, the possibility of storing water for municipal or for industrial water purposes should not be overlooked. There is no Public Law 566 cost sharing or engineering assistance for such development. However, long term low interest loans may be made to finance such developments in a project. The cost for operation and maintenance of all facilities installed with Public Law 566 assistance must be borne by local organizations.

It should be added that before Public Law 566 funds can be provided for construction, a determination must be made that the construction represents a feasible investment. It must be shown that the benefits for the dam, channel, or levee, if constructed will out-weigh the costs. Benefits such as reduced floodwater damages, property enhancement, and recreation must be greater than the cost for installation and operation and maintenance.

Frequent reference has been made to the responsibilities of local organizations in carrying out such projects. These responsibilities include (1) initiating action for such assistance, (2) such organizations must have authority under State law to operate and maintain water management measures, (3) they must have authority to obtain the necessary land rights including the right to use eminent domain if necessary, and (4) they must have authority to make agreements with the Federal government. So much for the authority that they must have. In Minnesota, the following units of government have such authority: counties, organized watershed districts, soil and water conservation districts using the joint powers agreement in which the county commissioners give them this authority, and Department of Natural Resources. In addition, soil and water conservation districts must act as sponsors in all watersheds to the extent of working with landowners to promote the carrying out and maintenance of the land treatment program. Cities, towns, villages and townships may also co-sponsor watersheds.

The Governor of Minnesota has designated the State Soil and Water Conservation Commission to act for him in receiving, assigning priorities, acting on and forwarding all applications for assistance under Public Law 566. This Commission, as you no doubt know, was placed under the Department of Natural Resources by the last legislative session. The Commission is composed of nine members, five of whom are elected supervisors of Soil and Water Conservation Districts, four members are ex officio members composed of the following:

1. Director of the Agricultural Extension Service of the University of Minnesota
2. Dean of the Institute of Agriculture of the University of Minnesota
3. Director of the Pollution Control Agency
4. Commissioner of Agriculture

The Commission also coordinates and prepares the notification of intent form and submits it to the State Planning Agency and all others who have a need to know about applications for assistance. They assist in resolving any conflicts noted during this clearing house procedure. They initiate and conduct a preliminary field review of all applications. Based on the preliminary field review, the application is then either accepted or rejected by this Commission. The approved applications are submitted to the Soil Conservation Service State office and upon acceptance by the Soil Conservation Service the State Soil and Water Conservation Commission will place the application on the priority list. During the planning process the Commission coordinates the activities of the Soil and Water Conservation Districts involved, assists in public meetings, and works to resolve any conflicts that might arise. The Commission acts very effectively to provide liaison between the individual Soil and Water Conservation Districts which must co-sponsor or sponsor all applications for PL 566 and other State agencies which might have an interest in such a project. You can see that the watershed program requires a great deal of cooperation between the individuals involved, the Soil and Water Conservation Districts, legal sponsors, State Soil and Water Conservation Commission, the Soil Conservation Service, and other State and Federal agencies.

We are quite enthused about this program because to us it appears to be one answer to a complete soil and water management program within any given watershed. At attempt is made to adequately treat all the land upon which rainwater falls to the extent this is possible. It is never possible to entirely solve flooding problems in this manner, however, so reservoirs and in many cases stream channel improvements are still a necessary part of the PL 566 program. It also, as you heard, provides an opportunity for utilization of reservoirs for other uses such as recreation, fish and wildlife, municipal and industrial water, to the extent of water availability. PL 566 also provides the tools to consider non-structural measures such as floodplain management, flood proofing, green belts, and other land management tools which might prevent further problems from occurring in the future.

Questions and Answers

Question - I wondered whether these soil and water conservation districts in metropolitan areas in the face of growing urbanization development serve a very vital purpose? How many counties have a soil and water conservation district?

Answer - Earl Terpstra Every county but Ramsey County in the entire State of Minnesota is organized as a soil and water conservation district. We are hopeful that our people will be able to keep up with the times in the urban areas. As you know as of July 1 all cities in the State of Minnesota in organized watershed districts automatically become a part of these districts. We're staffing up with people qualified in dealing with the problems in metropolitan areas. Our long range plan provides for us to furnish even more technical assistance in this area providing solutions to what is commonly referred to as sediment, one of the greatest pollutants by volume in the country.

Question - Can a municipal corporation get assistance in meeting problems from soil and water conservation districts?

Answer - Earl Terpstra Yes, within the extent that we have available resources. We're hoping to modify our technical guides which then would be available to developers, to consultants, and others having need to know about some sediment reduction measures that they can implement without our help. There is presently underway joint meetings with the State soil and water conservation districts and the Minnesota Association of Watershed Districts to work out on a State level some ways in which the soil and water conservation districts and watershed districts could work together to carry out total watershed programs.

Question - Any P.L. 566 project that we would like to put in we can't go far enough downstream to get enough benefits to make it pay. In other words, I don't know how many miles you can go legally, but 4 or 5 miles below the structure is as far as you can go to pick up benefits for building that structure and you might have to go 15 or 20 miles in order to reach the flood plain where the damage is really done. So P.L. 566 is absolutely no good to us out here in the western part of the State. This sounds kind of rough on you but this is actually the truth and we need real help from

everybody to change that law. Benefits occur all the way down to Minneapolis for any water that we can hold back in the upper reaches of the Lac Qui Parle River and the Yellow Medicine River. We can't get Federal funds, we can't get State funds, we can't finance it ourselves and the only thing that will work would be P.L. 566 small dams, but we can't go far enough down to pick up benefits. If you could get legislation to change P.L. 566 where you could go downstream as far as the mouth of the first river or something like that you'd have some benefits and then you could show enough value to build all of these structures. We need at least 50 of those in our area, now that sounds like a lot but I bet it could be more than that. Any one of those would stop a certain amount of water which would never get to Mankato and flood anybody.

Answer - Earl Terpstra I don't know what I can add to that.

Question - Regarding pollution due to siltation, in our watershed this is one of the things that we deal with in a smaller manner. Also our State association has looked into this aspect of watershed responsibility. Several weeks ago the legislature entertained someone from Iowa to talk about possible legislation in that area and also I believe the White House came out last week also with some pronouncement in that area. How do you view legislation in this area?

Answer - Earl Terpstra I guess my only comment would be that I think this is one area where perhaps more legislation is needed. Sediment is one of the things that our economics have an awful job putting dollar values on. What is the value to fish downstream by keeping the sediment up in reservoirs? We really don't know. If we could put a value on this it might help. With regard to the land treatment, there is a proposed law in the hopper now in Washington that would permit a program similar to the great plains conservation program in PL 566 watersheds in which you make contract with landowners to cut the sediment down that is coming off from their farms and furnish so much money each year to do this. This I think would also be a step in the right direction of keeping the soil and water both as much as you can in place, up in the upper reaches of the watershed.

Question - But legislation is required as a vehicle to accomplish programs.

Answer - Earl Terpstra We've made great strides but whether this has been a great enough stride I don't know. There are people that feel it hasn't, that we need a little bit more incentive perhaps from the legislative standpoint.

Question - Does there have to be a dollar value shown on all kinds of legislation, don't they consider other values at all?

Answer - Earl Terpstra Not on the legislation itself but on each project. Before you can build a dam the economists have to come up with benefits for building that dam that are greater than the cost for building.

Question - Do they just consider dollar benefits, is that the only benefit?

Answer - Earl Terpstra Yes.

Question - Is there any movement afoot to change that?

Answer - Earl Terpstra A lot of the economists themselves would like to see this changed, but how big a movement this is I just can't tell you.

Question - We've got some land that is in soil bank that has tile in it and we think that maybe P.L. 566 could help plug the tile up to make this into wildlife.

Answer - Earl Terpstra I don't know if we could do that but we could put a structure on it if this was possible and cover it with water. P.L. 566 cannot provide assistance in draining any land that is not in crops, so any land that is not in crops that you want left that way I think it would be up to you as a district to perhaps see that this is done.

Question - I would like to say that as a watershed district our board has been considering these ditches that have been put in for drainage and I am sure that many of you are opposed to drainage. Let me say this in favor of drainage, if you drain the slough or pothole that slough will accept a lot of water, a lot of rain, after it has been drained without running any water out the tile because the water level is lowered to say 5 feet. It will take a lot of rain before the soil is so saturated that any water runs away. The first three or four inches of rain you get very little runoff but then if you get another three inches on top of that, almost all of that will run off. On land that isn't drained and your soil is full and you get a big rain every bit of it runs off. So from that standpoint drainage does help flooding. We have looked at these ditches that drain water into the rivers and we have seriously thought of putting some kind of a structure to hold back water two or three days or even a day in order for the flood crest to pass and then we can let the water out. We're too young a watershed yet to say if we can get by with this or if we can make it work, but we are looking at it and that also would help flooding.

Question - What specific help could you give watershed districts in the planning stages or in the detailed study stages before it gets to a point of specific projects which might be actually constructed by some organization other than the watershed districts themselves?

Answer - Earl Terpstra I think to answer that question I'll use the example of the Middle River-Snake River. We went on a preliminary field review of this watershed last fall, probably some 8 to 10 years before they can hope for any construction assistance from us. While we were up there we saw some possible things that they might be able to do such as running field surveys. Soil surveys are another activity that can be explored locally. Those are three areas I think of that pretty much would apply to any watershed in the State.

REGIONAL PLANNING AND WATERSHED RESOURCES

Rey Boezi, Director, Comprehensive
Planning, Metropolitan Council

I'm not an expert in water resource management although I'm certainly interested in it. I'm going to discuss the broader scope of regional planning and its interface with water resources.

The Metropolitan area, according to latest population projections, is slated to grow from about 1.8 million people now to 2.5 million people in 1985 and 3.2 million people in the year 2000. It's inescapable that this is going to put more pressure on our streams and watersheds as urbanization occurs. I don't think we can assume without a concerted effort that we're going to save or properly utilize these streams and watersheds if it's not done overtly.

At the present time we are preparing a plan for the area to the year 2000 at the municipal level and we will be conferring with a number of local governments to check on their comprehensive plans and private developments which we might not know about in terms of where our growth is going to occur and programs to cope with it. This plan has been called a metropolitan development framework for total development and it is being pursued this year along with important plans for transportation. It will include a policies program and a systems plan. It will be important in helping to frame-up how we see this area growing in the next 20 to 30 years and what we are going to need to do to cope with growth.

I want to concentrate on three areas in which the Council's functions have a direct interrelationship with watershed district's functions. The first area I'd like to discuss is the comprehensive plan review. Under the Council Act we review county and municipal plans and in doing this we look at a number of elements. We also confer with other units of local government who might be interested, like neighboring municipalities, counties, and watershed districts as well as school districts and others. Watershed district plans can be taken into account in doing the review both in terms of where development should occur and where it should not occur. Long-range comprehensive plans of the communities describe how the community sees its land use and this has a direct bearing on such things as flood plain protection and retention of storm water holding areas. There is a role to be played by the watersheds in seeing what parts of the community plan may be in conflict with their plans and vice versa. The Council must understand what the watershed districts are concerned with in reviewing their plans. Not all of these comprehensive plans can be expected to have all of the problems resolved when they come to us. The extent then that we have a series of functional plans like watershed plans to aid us in our review we can do a better review. This is one area where the watershed districts plans are very important and relevant.

We have 60 days in which to accomplish the review and offer advice to the communities. In addition, recently we've added a series of statements to our reviews basically related to the sewer plans. We have more or less stated the following as a kind of a suggestion to the communities: that the Council urges watershed districts in the communities to implement and put into effect ordinances to protect flood plains and to manage their water resources. We basically see this as a watershed and municipal function.

Turning then to the sewer plan review, the Metropolitan Sewer Board has to approve community comprehensive sewer plans before they can connect to the metropolitan system and before they can proceed in building their local system. Again, we go through a series of reviews on sewer plans and the Council advises the Sewer Board in terms of development and how we see these sewer plans in relation to the comprehensive plans of the communities, to metropolitan plans, and to watershed districts plans. We look at a number of different things which directly affect watershed district and water resource planning. Physical features to be noted for instance in these sewer plans include the following: 1) existing and proposed streets and highways, rivers, streams, other drainage ways, ponds, lakes, wetlands, and all other water ways; 2) drainage, including area or sub-area boundaries, area in acres, drainage direction, points of concentration, ponding areas, potential and proposed; 3) contours on not less than a 10-foot interval; 4) existing zoning and land use; 5) projected ultimate zoning and land use; 6) and areas designated as open space. Communities have been encouraged to adopt flood plain and wetlands ordinances to insure that development of flood plain and protection areas within a community will not occur. The Council intends to continue advocating these controls in the sewer plan reviews. The Council would like to solicit comments from watershed districts on municipal sewer plans and particularly the local environmental problems. To the extent that municipal ordinances for flood plain management and protection are already adopted and to the extent that the watershed plans are already adopted this aids greatly in the review of the sewer plans.

Under the A-95 federal review process, we review subsidized Federal assistance programs and these include four categories: 1) subdivisions having 50 or more lots involving any Department of Housing and Urban Development mortgage insurance programs; 2) multi-family projects having 100 or more dwelling units under any HUD mortgage insurance program or conventional or turn-key public housing program; 3) mobile home courts with 100 or more spaces; and 4) college housing providing under the debt service or direct loan programs for 200 or more students. The Council reviews applications for assistance under these programs and we check the consistency of the proposed projects with area-wide development plans and identify any major environmental concerns. We only have 15 days for review. If the project appears to be positively consistent with the Council's area wide development plans and goals the staff urges its support. If the project appears to involve no major conflict with area-wide development plans and goals the staff urges its support. If the project appears to conflict with Council's area-wide development plans and goals the staff rejects support. The projects are reviewed as far as watershed districts are concerned with these policy statements in mind.

I'm going to try to show the importance of the policy statements and how they can be used in actually applying them to projects. There is a housing policy called number 24, it's part of the housing section of our metropolitan development guide. It relates to the natural hydrology and the physical features in developing new residential complexes. In our open space component to our guide there are two policies which are important in this regard: No. 10, relates to managing or prohibiting development in those areas that perform important protection functions in their natural state; and No. 21, which encourages high quality locational and design standards for both public improvements and private development to insure compatibility with the natural surroundings. To date the Council has cited several residential

development proposals to the HUD office as conflicting with area-wide plans and goals because of these policies. I will just briefly describe these projects. One was a 200-unit mobile home court in a northern suburb in a storm water retention area and flood plain. The feeling was in this case it did encroach upon the flood plain and was not consistent and therefore our recommendation to HUD was that this not be supported with a HUD mortgage. The other one was a 176-unit apartment project in a southern suburb on a creek where the site was situated in a flood plain. A number of questions about encroachment on the flood plain were major concerns. Again we stated this was not consistent to the overall plans. A third one was a high-rise apartment project situated in the flood plain of the Mississippi River. We stated because of the encroachment and the filling there was danger of flooding and of destroying the natural environment.

The Council will continue to review these applications with the above policies in mind and in particular with the overall plans and flood plain designations of the watershed districts and community plans completed to date. However, since we only have 15 days to do these reviews, it is obvious that we are going to have many more plans in hand when we do reviews because of the difficulty of getting around to every one who might have an interest in a given project.

I think that these three examples show you areas in which we are now working and in which the balance between development, environmental quality, and the use of water resources is currently underway. We have to make decisions now, decisions may be improved, to the extent we can develop more definitive statements of the goals, policies, programs of watershed districts and municipalities, including the municipalities ordinances to insure flood plains. These are important in our considerations and we definitely want to take them into consideration when doing reviews. Intergovernmental cooperation is important. We have a hierarchy of various agencies working in a checks and balance kind of arrangement. It is difficult and to some extent it is a matter of public judgment and private concern what measures protect the environment and what do not. What is an encroachment and what isn't an encroachment? What will contribute to downstream flooding and what won't contribute to it? The pendulum is swinging from a position in the communities at earlier dates that growth is good and we should proceed as fast as we can in getting bigger, having more population, more industrial and commercial development to the position that not all development is good, not all development should be pursued regardless of the effects on the environment. Much of what we have talked about today has to do with an attempt to balance public and private interests in such a way that on one hand we're not using environmental concerns to block developments which would appear to be basically sound, but on the other hand not to assume that every private development is good because it is development. It becomes difficult to balance a development against kinds of values which are hard to pin down, that is cover and wildlife habitat and against things like siltation and runoff. Development of a stream that may be good in one community may have adverse affects downstream.

It is important for public agencies to state as clearly as they can what their policies are in these areas. Policies should be subject to community and public discussion, but after they have been adopted they should be interpreted as objectively as possible and pursued very vigorously. We do have conflict, some issues are neither black or white. Often the grey area is where most of the public decision making has to occur.

As an example of a conflict, let me describe a certain case history. In the case of Grey Cloud Island the issue became partly whether the need for gravel extraction was more important than the preservation of the island. It also became a question do we need the gravel to build our buildings for concrete, how are we going to return land to recreational use or perhaps a combination of housing and recreational uses so that although the land may not be like it was originally, it still has value and attractiveness.

We have run into problems in the sewer area where attempts to alleviate water pollution problems resulted in extending sewers into areas before we would have for development purposes. In the case of St. Bonifacius, we ran an interceptor out to take care of needs that perhaps in another location would have been taken care of by a small treatment plant initially. The reason for that particular decision was the over-riding necessity to get sewage out of a receiving stream of Lake Minnetonka to be consistent with our policy to sewer around the lake and close down all the treatment plants that were located on it. The problem involved how do we keep the interceptor from being used prematurely for development when it was basically extended for health reasons and for environmental considerations. Under the sewer act we are not only charging communities for what they are using but for the reserve capacity that is located in the pipe. You're going to say that you should not use this pipe for 10 or 15 years yet you're charging communities for the use of the pipe for reserve capacity.

You have a similar example at Forest Lake. To protect a drinking water source at St. Paul's water intakes and to protect a lake and stream we decided not to put sewage in the chain of lakes, Forest Lake, and Sunrise River. The only alternative apparently was to extend the interceptor in the White Bear area into Forest Lake. This action would open up potentially a long linear development corridor between Forest Lake and Hugo. What do you do with the reserve capacity? These are real questions.

The best way to build sewers might be as a gravity system, yet some gravity systems might go down stream beds and tear up the beds or change the character of them to the extent that the streams are no longer natural. How do we balance off the costs of routing sewers through a different location as opposed to pumping as opposed to using the gravity system which is the most efficient and the cheapest. These are kinds of questions that we are wrestling with at the metropolitan level. Different kinds of knowledge are needed when you go from the macro scale to the micro, from the broader considerations to the watershed. Many decisions are made on a day-to-day basis that we don't know about and certainly are in no position to check on. Many of these decisions taken one at a time don't seem very important. When a whole series of individual decisions are made with respect to a stream over say a 10-mile course they can have rather adverse effects taken in the aggregate. In the case of Minnetonka, each individual treatment plant probably wasn't doing much damage, but taken in the aggregate plants had an appreciable adverse effect on the quality of the lake.

In the review of sewer plans and housing plans proposed for Federal subsidy of one kind or another, we're going to need a more articulated plan clearly stated in terms of what the objectives are, what is to be protected, what isn't, what is a reasonable encroachment and what isn't a reasonable encroachment. These are matters of judgment, but they're ones in

which I think the statutory authority is fairly clearly laid out and in which public officials are going to have to take stands. Establishing the rules of the game I think is one of the more important things to do in dealing with private development or communities.

Questions and Answers

Question - We're from New Germanv, and we're hooked up with the Metropolitan Area. We had to put in sewers and we had the waste pond system. How many years will it take before we will have to hook up to the metropolitan sewer?

Answer - Rey Boezi The sewer law indicates that we can create a service area within our jurisdiction. We do not have to all at once provide service in all areas within our jurisdiction. Your area is outside the area of our plan for extending service to the year 2000. I'm not saying that won't change over time, but as it stands it's going to be many years before we would be extending some kind of a service system to your area.

Question - Is every community represented on a watershed board?

Answer - Frank Lamm Yes, there are representatives from most municipalities. I would like to have Mr. Kelley talk specifically if he would about the legal make-up of the watershed district and maybe answer your particular question.

Answer - Lawrence Kelley Under the Watershed Act the watershed district is created through the process of a petition which may be initiated and on which the State Water Resources Board holds a public hearing. I guess the best way I can illustrate what I'm talking about is to go back to my own watershed district, the Minnehaha Creek. The prime impetus for the creation of our watershed district was the flooding of Minnehaha Creek and the extreme amount of damage that resulted in 1965 in Edina and particularly in the City of Minneapolis. A petition was presented for the creation of this watershed district and the hearing was held by the Water Resources Board which then ordered the establishment of the district. Now all watershed districts throughout the State are governed by boards of managers, there are five managers on each district, and these districts are financed through a tax levy, and in the case of our own watershed district the maximum amount we can raise through a special levy is \$75,000 which is used for administrative expense. Out of that \$75,000 we pay all the costs of operation for our engineering consultants, our attorney, and so on.

Question - Can the original petition be initiated by any one community or does there have to be more than one community within the watershed involved?

Answer - Lawrence Kelley No, that petition can be initiated by one community, by a governmental body.

Question - Is there any action necessary by a local county board approving or disapproving a watershed district being formulated?

Answer - Bill Boyer The county commissioners recommend individuals to become managers and names and resumes are submitted to the Water Resources Board. They are chosen by the Water Resources Board to serve for the first year and after that they are appointed by the county board.

Question - Could the territory of the watershed district be something different than the geographical watershed?

Answer - Lawrence Kelley So far as representation on the board of managers is concerned, the managers are selected from the various county commissioner districts, and in the case of our own Minnehaha Creek Watershed District, the five managers come from five different separate and distinct areas within the district.

Question - But they need not be each individual municipality?

Answer - Lawrence Kelley No.

Question - If I lived in an area and my property abutted a creek and I wished an improvement who do I petition, the water district or the municipality?

Answer - Lawrence Kelley It depends upon what the improvement is, what the project is. The watershed district board of managers after receiving the petition may call for a public hearing on that particular project before it orders the project completed or whatever the correct terminology is, but there does have to be a public hearing and initiation by a petition.

Question - One man could not initiate a petition, he would have to get a group of neighbors or get the city to represent him, one person cannot petition?

Answer - Lawrence Kelley A group of freeholders or a governmental body within the watershed district may initiate a petition.

Question - Who would issue the bond if this project is of great extent?

Answer - Raymond Haik The watershed district has authority to issue bonds.

Question - I just might relate a problem that we've had in Hastings. We're at the confluence of three rivers, the Vermillion, the Mississippi and the St. Croix, and in 1965 we had a problem due to flooding. We had something like 110 homes in Westwood area in the southwest area of the city that was inundated. We requested 42 separate agencies and governmental units for assistance in what could be done in the Vermillion River. Two governmental units replied, one was the county because they had a county shop in Hastings. Together we reconstructed a new bridge. The city paid 45 percent of \$130,000 bridge to take care of county roads and we constructed a \$40 to \$60 thousand dike system to protect residential areas. The Corps of Engineers then came in and said we could help you, we could build a flood protection project through one mile of the Vermillion River and it will protect the residential areas over a 100-year flood storm frequency. The county engineer and I and the Corps of Engineers worked along with our planning commission to put some aesthetics into the reconstruction and after 5

years of development we got to the point where we held a hearing. At the hearing these 42 governmental units came out of the woodwork and reacted negatively to the project that the 3 units had worked on for 5 years. If this is the type of thing that we're confronted with in the metropolitan area, what can we do?

Answer - Lawrence Kelley One small comment I would offer on what you said earlier in your remarks, it's just one of the facts of life that county boards do not always look with favor upon watershed districts. This is not true of all county boards, however, and we can point to many which are very satisfied to turn the administration of the particular kinds of problems with which watershed districts are concerned over to those districts. But, there are many county boards throughout the State who rather feel self-sufficient and do not see a need for a watershed district.

Question - I wanted to pursue something that Ray Haik said in his presentation if you wouldn't mind I'll read it from his text and I think it's a point that should be considered by the watershed districts. "I envision a system where watershed districts and their overall plan were required to meet minimum criteria of the regional development council with respect to protection of a flood plain, open space and other land and water areas of regional significance. This may require that watershed districts engage disciplines other than the normal engineering disciplines that have engaged in the past. This could include the retention of a land use planner who have refined the land use guidelines proposed by the regional council and prepare for the overall plan proposed land use guidelines that would be implemented by the municipalities through their specific land use and zoning ordinances. In the same connection it would be advisable for the watershed districts to consider the retention of a person with a wildlife, fishery, or recreational background. The ability to do this is directly dependent upon the financial resources of the watershed district. Financial assistance may be needed from other governmental units or agencies. Such a program would enable the regional councils to make funds available to prepare the detailed overall plans." I understand the restrictions that watersheds have in terms of the amount of money that is available, but I wonder whether any consideration has been given to pooling the resources of all watershed districts let's say in the State of in this metropolitan area so that a core staff of several people of the type that Ray indicated could be employed jointly. As I said, we certainly are not in a position and apparently you aren't to have people in the field on a day to day basis helping to develop policies and programs. I throw this idea out because I feel it has a great deal of merit and I wonder whether anybody has any response to that.

Answer - Larry Samstad Our watershed district started out its program in cooperation with the Metropolitan Council considering the fact that they envision planned formats, inventories, and certain criteria. Each engineer in each watershed district is creating a different program for its own watershed. They're being inventive, they're being creative, there is new thinking and new ideas coming out of these plans. To put one group together to let's say work for every watershed district would mean that one group would then control the thinking of all watershed districts. As we went through this program we step from the local to the State and then from the State to the Federal and found that the greatest problems were at the Federal level where there is the greatest amount of control. Could the Metropolitan Council take broader attitudes towards the overall plans of districts rather than set minimum criteria?

Answer - Rey Boezi In terms of creativity thinking, I don't think I was suggesting one engineering firm. I think of multiple engineering firms, multiple law firms. What I was suggesting is that on a day to day basis that there is a need for planners and environmentalists to be available to each of the districts to help them with some of the general policy questions, day to day land use suggestions and proposed developments and proposed land use changes. It is now difficult for watersheds to keep up with events given the fact that staffs are part time.

SUMMARY AND ROUND TABLE
DISCUSSION OF MAJOR ISSUES
Frank Lamm, Raymond Haik and George Hite

Frank Lamm - I would like to ask at this time that you individually, representing watershed districts, municipalities or whatever organization you do represent write to the Metropolitan Council expressing your feelings one way or another on any of the matters that were presented today. The Council, in reviewing its parks and open space section of the guide and in development of the surface water drainage and water supply sections of the guide, would welcome the early expression of any position which you or your individual organizations may have. There are many policies, many statements that are made in the development guide which have to be strengthened, which have to be reexamined, which have to be more perfectly stated. You as users of the guide and as people, key people, in the area of development within the metropolitan area especially have a right and really almost a duty to present to the Council your positions.

We have heard a lot of discussion from a lot of people today, one of the items that was brought out over the course of the day was protection of open space. There was an attempt made by Council staff to explain more in detail exactly what this meant and I think it is an extremely important concept and one that the Council uses to a great extent in the review of many of its plans. One of the major reasons for this meeting today is the review of watershed district plans by the Metropolitan Council. This was one of the concerns that the Council staff had in the comprehensive sewer plans of a municipality and the comprehensive plans of development of a municipality. The Council staff has to get to the municipalities and watershed districts and other people in the planning process within the metropolitan area a better definition of what protection of open space really means in light of the type of planning and implementation that the individual municipality and watershed district have been involved.

I think development has been used in two senses today, one is urban density development consisting of residential, commercial, industrial type construction, and the other one is development in its broader sense which means any change in the existing condition of the watershed, flood plain, or marsh. The development guide does allow some development in its broader sense in the flood plain and in other areas that have been designated as primary protection or as protection open space areas. The question as to how much and when and why however, is something that is critical and that's the thing that we want documented. Natural conditions in flood plains and other important natural resources needs all the protectors that they can muster, there are plenty of developers kicking around and probably not enough

protectors and the Council staff has been endeavoring to be the protector. I would hope that we haven't gone overboard.

We've been exposed to problems of watersheds. Is there any solution to the problem between the Metropolitan Council and the watershed district type solution? Can we speak of the joint powers agreement? Can the county board itself handle the problem on its own or is the watershed district the best solution or the court of last resort?

George Hite - I think it makes a difference whether you're in an urban or rural area and my reaction to your question is from the urban point of view. I don't think there's any single agency, whether it be a municipality, Metropolitan Council, or watershed district that in itself is going to be able to do much in the area of effective watershed planning or management. I strongly believe that it's got to be at least a tri-party if it's going to work. I think where we have relied on either the municipalities or the watershed districts alone to attempt to accomplish the job we've had our greatest difficulties and frustrations. As I said this morning I feel strongly that it's got to be a combination of interests because the municipality has some cards it can play effectively in this game. I think the watershed districts do represent an interest that has not been adequately represented in the municipal way of doing things previously and should be better represented. I view the watershed as a positive kind of force that can be brought to bear on the municipality to see that we do have meaningful and effective watershed management.

Raymond Haik - I'd like to share that observation for two reasons. I've seen enough personal examples of where the joint power agreement fails. What's wrong with having a new government if the idea is to develop some expertise in how better to manage the land and water resource. I think my own personal experience is and my personal belief is that municipal governments are here to stay and anyone who thinks that watershed districts are going to be able to move in as heavy and as strongly as a lot of citizens believe they should will end up with a system that will not work because there has to be an accommodation of various viewpoints. Maybe the watershed district should be a little bit more aggressive but if you try to go too far you may not have the capability of performing and you may end up with a lot of fancy definitions and objectives that are never implemented. We could define open space protection and other things at length, but it still is going to take some governmental agency to impose that regulation on a property owner. The watershed district combines some planning, with some regulation and implementation authority. There isn't any other governmental agency that has all three of those ingredients.

There are different people in every area with different value systems. You have to accommodate and listen to all of them and that takes time. I think we'd be making a very serious mistake to remove watershed districts and try to centralize actions for example in the Metropolitan Council. It is my judgment that by so doing we could create more suspicion and the Council has enough problems without trying to take on other functions. People are development oriented and we're trying to reverse that system overnight and it isn't going to work overnight. It is a slow process.

George Hite - I think a tougher question though is what do you do in a situation where you have a reluctant municipality. An urban watershed is likely to encompass a number of municipalities, some totally committed to

your cause, some reluctantly committed and some totally opposed. This last group can be really an achilles heel and what do you do? As I suggested earlier today, I believe the watershed district has some real responsibilities here to move in and get the job done in those situations and I think the other municipalities, particularly those who are committed to your cause, have a responsibility of moving in behind you and assisting you. You're going to be on real shaky grounds if you try to go into that municipality on your own. There can be a criticism of the districts in the urban areas, I'm not sure it's a fair criticism, it's that they have been somewhat reluctant to go in and do a job in the so-called wayward community when in fact there is really nobody else to get the job done. I'm talking about establishing flood plains and regulating land uses within areas and protecting the marsh areas that need to be acquired. If you have a specific project that you'd like to undertake, not an overall plan, but a specific project, a dam or what have you, I think that is possible to use the joint power agreement, although I would shudder to think that might be undertaken without some kind of an overall watershed plan first, but it has been done and could be done.

With respect to the fiscal disparities bill, I don't think any of the municipalities involved has the slightest idea what the fiscal disparity bill is going to do. There are all kinds of initial gut reactions to it but nobody really knows for sure, although I have detected in a couple of communities not so much in my own yet, that some of the old gung ho attitude about industrial development has been diminished to some extent and I happen to think that's a very positive kind of thing. A lot of municipalities though, I can speak for Eden Prairie in particular, long ago recognized that in terms of economic return people rather than industry was going to be the taxable asset of the future. With more and more of our revenues based on per capita distributions you begin to look at people as tax resources as well as tax users and so the aroma of industrial tax base for tax base purposes is not nearly as strong today as it was five years ago. In some communities, I can think of a neighbor community, Minnetonka, there is some great appeal to that but they're in a position where they really have to look at it from that point of view. On zoning powers, I think we've got more than we can handle right now. I think if we were all using the powers we have effectively, we'd be in pretty good shape. I don't really see the need for any additional powers. In terms of preservation of wetlands and things of that nature, what we need is money.

Raymond Haik - Each community views any kind of overall plan from their own vantage point. I think the only community that has adopted any good flood plain regulations to date has been the community of St. Louis Park. All the flood plain mapping has been completed and we're now trying to look at the second phase of that project. The watershed district managers have learned a lot; they spent a considerable amount of money in terms of engineering studies and in preparing model ordinances.

George Hite - Let me add one comment about joint powers arrangements. I think as I indicated there are some problems when not everybody is committed, but another problem as I see it is under a joint powers arrangement you still have the same players playing the game. They have structured themselves a bit differently. You've still got municipal types and if they aren't municipal types they are not likely to be appointed under the joint powers arrangement. You're not getting the kind of input that I think a watershed district can develop. The municipal players are in a sense in a

compromising position because they are representing the municipality first and watershed interests second. The watershed district, because it is somewhat autonomous, in a much stronger manner an advocacy that many municipalities including those that I've worked with have not seen fit to give much priority in the past.

Frank Lamm - It's true that the joint powers people are the people most involved in protecting their vested interest, but by the same token if you don't have a very strong watershed district it seems to me that a very small number of municipalities can cause the exact same problem in a watershed district as they can in the joint powers organization. There have been a lot of problems, historically with individual municipalities and their relationship to individual watershed districts and I haven't heard once of a municipality backing down on its position. It seems to me that the watershed district kind of resolves its thinking to that of at least a majority of municipalities.

George Hite - Most municipalities have developed a very graceful manner of changing their mind and developing a different perspective or attitude about something that is very hard to detect I'll admit that, but I can assure you that it occurs and is occurring more frequently now than it has in any time I've been in this business.

Raymond Haik - From personal experience I do know that watershed districts have had a very strong influence on municipalities and again it's a matter of how many lawsuits do you want to get in to. Some of the watersheds should be a little more aggressive or maybe a little bit more public. If you are trying in the long run to develop a three cornered approach regional, watershed, and municipal then you're best off sometimes not publicizing fully some of the differences that you've had. Citizens' groups tend to think that the publicity is the key. The best thing is to be aggressive and have a plan and if the managers are serious about it then they ought to go to court about it. In some cases they've been prepared to do just that.

Frank Lamm - Regardless of how effective the watershed districts are there are only a relatively few watershed districts in the metropolitan area. So regardless of how effective their planning is we've got to add their efforts municipal planning efforts. Municipalities don't want and don't feel and rightly so that the watershed districts should usurp their planning responsibility. What we're pushing for at the Council is that the watershed districts should step into the breach in the cases where the municipalities have not done their planning. There are very many municipalities within the metropolitan area which have not done their comprehensive planning, that have not done their surface water drainage plans or other functional plans at the municipal level, have not done their comprehensive sewer plan even though it is required by law. We've been very, very lenient about this, but it is seriously affecting the proper planning and proper development within the metropolitan area. Municipalities just have got to get on the ball and provide that planning function.

Raymond Haik - I think maybe the watersheds ought to be hiring the planning disciplines and some of those other disciplines. Watershed districts maybe should upgrade their sites a bit and come up with generalized land use plans and regulatory plans.

George Hite - If the districts really want to make a significant contribution to the municipal process they might offer to take on the storm sewer bit. All of you who have been involved in this relationship between a watershed district and municipality for some time I think would agree with me that the situation is vastly better today than it was 5 years ago. The system we have is working if you're decent enough to take a broad enough perspective of the question. I think it's working and working well and working better and to those who might suggest a revolutionary change such as the watershed district doing the land use planning, I really think that you may be doing your long range objectives a disservice by giving that point of view too much attention, I think what we've got is working and I think it will work a lot better in the years ahead.

Raymond Haik - The principal function of a watershed district as I sense it is to spend a few dollars on developing an attitude toward how you can use the land and water resource from a nondevelopment viewpoint and how you at the same time can take some practical problems and blend them into a plan where one county downstream doesn't get penalized at the expense of an upstream plan. You can develop a philosophy on management of water resources that can accommodate more than maximizing land use development. The overall plan can accommodate aesthetics, recreation, and wildlife.

Our State has historically separated dirty water functions from clean water functions, we have the Pollution Control Agency and the Department of Natural Resources, we have watershed districts and sanitary districts. I don't think that it's clearly defined in the Watershed Act that districts are to get into the water quality regulation business. You can find very little substantive authority that would put districts in a position of managing waste water and treating it. I also know that watershed districts in fact have been getting involved in water quality programs, primarily because the citizenry of the district have come in and asked them to do that. There is a legitimate function they can play.

Watershed district plans can be implemented by a municipality saying we think that this project is included in your overall plan, will you review our plans and specifications and give us a permit to do this? The municipality or the property owner sometimes comes in and says we think that this project is included in your overall plan and we would like you to do it and then the watershed district does it. That's one advantage of the watershed district plan. You have some very severe limitations imposed upon the types of projects that can be initiated by the managers. If you have a project that involves a situation exclusively within a municipality a petition has to be initiated by the governing body of that municipality.

Watershed districts can assess property, they can assess municipal corporations, they can assess to the extent they can define the benefits to the State. There are funds available.

George Hite - As I understand the law it says that a project can be initiated in a couple of ways. One is a petition, but that has to be signed by 25 percent I think of the freeholders, affected property owners, and if anybody can develop a petition for storm sewer improvement, which is basically what we're talking about, that has anything like 25 percent of the affected property owners on it I'd like to meet them. I just don't think that is a practical alternative. The other device is to get the municipality to

petition and so it becomes the municipality really that is the instrument here of getting a project accomplished. They have to be convinced that the improvement is needed and if it's going to result in assessments against other municipalities they're not going to suggest it even until they've gone out and done the necessary homework with those municipalities. I think it would be quite unusual to find an individual municipality petitioning for an improvement with resulting costs against other municipalities unless there had been some kind of prior arrangement made. From a practical point of view I think that the projects need to be worked out with the municipalities, they may choose to use the watershed district as an implementation tool once they've reached some kind of an agreement.

I think that if you have a situation where the communities that are involved are all committed to the cause on a continuing basis, that's the key, not just today but forever, and are willing to apply the necessary resources that you ought to approach it on the joint powers basis but you've got a very unique situation and you ought to capitalize on it.