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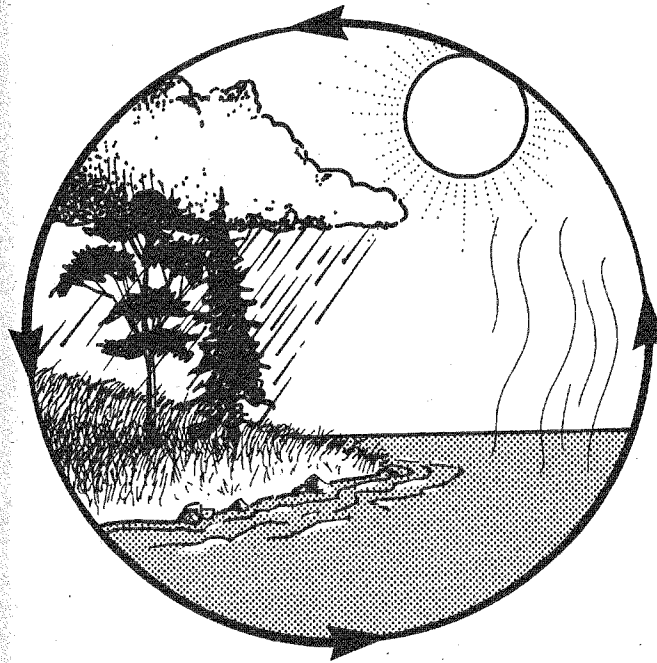


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Summary of the Comprehensive Local Water Planning Process

Under Minnesota Statutes Chapter 110B



Prepared by the Minnesota Board of Water and Soil Resources
in cooperation with the Minnesota Department of Natural Resources

July 1990

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**Summary of the Comprehensive Local Water Planning Process
Under Minnesota Statutes Chapter 110B**

Prepared by the Minnesota Board of Water and Soil Resources
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in cooperation with the Minnesota Department of Natural Resources
July 1990

This book summarizes the local water planning process. It is not intended to replace
The Handbook for Comprehensive Local Water Planning.

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INTRODUCTION

This document has been developed by state agency technical representatives in cooperation with the Board of Water and Soil Resources. It is intended to be used as a planning guide in conjunction with The Handbook for Comprehensive Local Water Planning. It is not intended to replace the Handbook, but to serve as a supplement to that document.

The guidelines and suggestions proposed within are based on experience developed over the past two years in reviewing almost a hundred local water plans prepared by counties and watershed management organizations (WMO's). In all cases, counties and WMO's have sought to develop effective plans to manage their water resources. While most plans will effectively serve that purpose, we believe the experience gained can be useful to the counties which have yet to prepare plans.

The guidelines developed herein can benefit county water planning efforts in a number of ways:

- 1) An improved planning approach can produce plans in less time, with less effort, and at a lower cost to the counties.
- 2) The plan will be better targeted to water resource issues and available funding, and will be easier to implement.
- 3) The planning document itself will be shorter, more readable and be a product that the public can better comprehend and contribute to.
- 4) The plan will be a more effective instrument for obtaining federal and state monies for implementation.
- 5) The plan will more accurately reflect local concern for, and the county's commitment toward, protection of natural resources.

Therefore, we believe county water planning groups have much to gain by incorporating the planning suggestions offered in the following pages.

HOW TO PLAN

A plan is a blueprint on how to get from *here* to *there*. In the case of a local water plan, the *here* is a description of a county's current water situation, including an inventory of water and related land resources, and an understanding of the issues facing the county (problems, needs and opportunities). The *there* is where the county wants to be at a given time in the future (the goals). The goal may be a vision of the future that the county seeks to attain. It can be visionary in a way that captures the imagination of the county's citizenry or it can simply be an attempt to resolve current problems and capitalize on existing opportunities.

The preparation of a plan follows a logical sequence:

- 1) Gathering information on existing resources and resource management programs (data collection) — Find out what you have, and who's doing what.
- 2) Resource assessment — Determine the condition and adequacy of existing resources and management programs.
- 3) Issue identification — Identify problems and opportunities which the county wishes to address.
- 4) Issue prioritization — Determine which issues are in the most critical need of attention.
- 5) Development of goals and objectives — Determine the end result the county wants to achieve.
- 6) Formulation of actions — Develop specific steps for solving problems and taking advantage of opportunities, while meeting goals and objectives.

The county's plan might be organized as follows, incorporating the elements outlined in the Handbook for Local Water Planning:

- 1) Inventory, description of existing management programs, background information

- 2) Resource assessments and implications
- 3) Issue identification and prioritization
- 4) Goals, objectives and actions
- 5) Implementation program
- 6) Appendix containing data which is not needed in the body of the plan.

The plan should be written in such a way as to make it evident that the issues and associated goals, objectives and actions are logically supported by a combination of data, resource assessment and public/professional input.

Such a plan can be simple, short, very direct and still contain all of the elements that will allow the county to successfully address its water resource management mandate.



DEVELOPING THE PLAN

A. DATA ASSEMBLY

Data includes inventory information, descriptions of existing management programs, and other background information. It includes Information Items 1-55 in the Handbook, but not the Assessments and Implications discussions.

Data elements play an important role throughout the plan. However, the utilization of data has been an area which has caused considerable confusion in the plans prepared to date. A number of problems have become evident:

- 1) Some of the data required in the rules seems to have limited usefulness in the plan.
- 2) Even where data is relevant, many plans have failed to use the data to develop issues, goals, objectives and actions.
- 3) The data provided by agencies had been collected for a specific purpose and was structured by the database manager to meet specific program needs. The data may not transfer well to local water planning purposes.
- 4) Interpretation of the data -- data users often have no idea why or how data was collected, how it was used, and if it has any limitations.
- 5) No data is available to support some issues.

In many plans, data was included because it was required, not because it necessarily contributed to the plan. Data needs to be considered in light of its relationship to water resource issues and the planning process. Data that does not help identify or describe problems or opportunities can be inventoried and described, but an attempt to "shoehorn" irrelevant data into the planning process should be resisted.

Data included in the main body of the plan should represent a summary of relevant data which will help to identify issues and opportuni-

ties. Enough data, tables, maps, etc. should be included to provide the reader with a clear picture of the situation. Data that is especially useful tends to be that which summarizes or otherwise illustrates trends. Some of the Information Items required in the Handbook entail extensive amounts of data, the bulk of which should be placed in the Appendix.

Some issues may have little or no data to support their importance or viability. A lack of data should not prevent further assessment of water resources issues, and may not require a major data gathering effort. Water resource experts in various federal, state and local agencies have considerable background on water resource problems and could assist in obtaining information relevant to a particular problem. In the absence of data, the informed opinions of experts is sufficient.

Data may often be available locally to fill gaps remaining after information in the data packet and other sources is exhausted. For example, the county Soil and Water Conservation District has comprehensive and annual plans which would be very useful. DNR has fisheries management plans for lakes, wildlife management area plans, public access plans, etc. These sources can provide more detailed and up-to-date information than some statewide data sources.

The objectives of data assembly should be:

- 1) **To Help Identify Water Resource Issues:** Relevant and existing data should be assembled to identify water resource issues. This should be thought of as an effort that parallels the public participation component of issue identification described on the next page. Data which is required by the Handbook but which is not particularly relevant or useful should be put in the Appendices.
- 2) **To Measure the Scope and Severity of Water Resource Issues and Problems:** As an example, if water quality is the issue, data that provides a direct measure of contamination in lakes, rivers and aquifers should be used, such as test well data. Data that measures related, contributing factors should also be used, such as information on the number and size of feedlots, runoff potential, distance from sensitive water resources, etc.

- 3) **To Provide a Summary of Existing Conditions and an Indication of Future Trends:** While individual data items provide a lot of useful information to the planner, when it is aggregated and summarized it can provide a better picture of what the issues and problems are, and if it can be compared to similar data from the past or projected into the future, it can be used to predict trends which should be planned for.
- 4) **To Provide an Inventory of Water Resources Information:** An inventory of water resources information will not only provide a catalog of available water resource information, but it will suggest areas where such information is lacking or inadequate. Water resource data sets should be briefly described and an indication of the utility of the data, or lack thereof, should be included.

Effective use of data can reduce time and cost of plan preparation, increase the effectiveness of the plan and enhance the county's opportunity to acquire Federal and state funding for action programs.

One way of structuring the data presentation might be as follows:

1. **Physical Environment, Land Use and Development** — Precipitation data, geology and water resources, soils, vegetation, topography, land use, utilities, and land ownership.
2. **Water Quantity Information** — Both groundwater and surface water availability and use.
3. **Water Quality Information** — Both groundwater and surface water conditions.
4. **Special Land Uses and Conditions** — Karst areas, sand plains, buried valleys, eroding lands, irrigation, drainage, and pollution sources.
5. **Related Land Resources** — Wetlands, floodplains, shorelands, water-based recreation lands, fish and wildlife habitat, and unique features and scenic areas.

B. RESOURCE ASSESSMENT

Assessments of resource data and discussion of the implications of those assessments are required under the Rules for Local Water Planning, 9300.0700, as follows:

- Subp. 2 A. (6), Implications of surface water quantity information (Handbook page 40)
- Subp. 2 B. (4), Implications of ground water quantity information (Handbook page 42)
- Subp. 3 A. (4), Implications of surface water quality information (Handbook page 46)
- Subp. 3 B. (2), Implications of ground water quality information (Handbook page 49)
- Subp. 4 A. (2), Implications of sedimentation on water resources (Handbook page 50)
- Subp. 4 A. (3), Assessment of the effects of land use cover on runoff (Handbook page 51)
- Subp. 4 B. (2), Implications of irrigation on water use (Handbook page 52)
- Subp. 4 C. (2), Assessment of the effects of ditches (Handbook page 53)
- Subp. 4 D. (4), Implications of pollutant sources (Handbook page 56)
- Subp. 4 E. (2), Implications of special geologic conditions (Handbook page 57)
- Subp. 5 A. (4), Implications of wetlands for present and future uses (Handbook page 59)
- Subp. 5 B. (4), Assessment of the adequacy and enforcement of floodplain ordinances (Handbook page 62)
- Subp. 5 C. (3), Assessment of the adequacy and enforcement of shoreland ordinances (Handbook page 63)
- Subp. 5 D. (4), Assessment of the adequacy of water based recreation lands (Handbook page 65)
- Subp. 5 E. (6), Assessment of the adequacy of fish and wildlife habitat (Handbook page 68)
- Subp. 5 F. (2), Implications of unique features and scenic areas (Handbook page 69).

Assessment is a critical link between the data assembled in Step A above and issue identification, discussed in Step C below. The data, and especially the summaries of the data as discussed above, provides the raw facts about a particular problem or issue. An assessment, however, analyzes the data to provide an understanding of the problem and can lead to possible solutions.

The present condition of water and related land resources, as evidenced by the data, as well as the adequacy of existing management and

regulatory programs, will form the basis of many of the issues to be addressed in the plan. Assessment will also help determine the severity of the problems identified, thus helping in the setting of priorities in the action planning and implementation phases of the planning process.

Note that the Rules require a discussion of the implications of many of the information items. This should include an analysis of how existing resource conditions and management programs will impact the attainment of goals identified by the county, and what challenges will be faced in dealing with the identified problems.

Assessments and discussions of implications need not be lengthy, but should be detailed enough to facilitate the development of issues and goals, objectives and actions.

An example of a wetlands assessment and implication section for a hypothetical county follows.

Example of an Assessment and Implication:

Seventy-eight percent of the original wetland acreage in the county has been drained and/or filled. Most of the remaining wetlands are located in the headwaters area of the river system that has its origins in the western half of the county.

The headwaters area is an extensive wetland complex with a mosaic of wetland types and sizes interspersed with grasslands and some forest cover. As such, it provides an excellent variety of habitat types for wildlife and an important spawning area for the population of northern pike in the river system. This wetland complex also stores a considerable amount of water during and after storm events, thereby reducing peak downstream flood flows.

The county's remaining wetlands are distributed throughout the county, but in general are in fairly close proximity to the river system that runs the length of the county. Approximately half of the remaining wetland acreage qualifies for protection under the DNR's Protected Waters and Wetlands Program. The remaining wetlands are not protected because their size

and type characteristics do not meet the criteria of the DNR's program.

The county is presently losing wetland acreage, primarily wetlands types 1, 2, and 6, though the rate of loss has subsided somewhat in recent years. Indirect loss of wetland acreage is also occurring due to moderate to severe erosion and sedimentation problems filling wetlands in some areas.

Historical and current wetland losses in the county have several implications, including reductions in: 1) flood control capabilities, 2) available fish and wildlife habitat, 3) surface and ground water quality due to the lost wetland filtering capability, and 4) the natural and aesthetic landscape characteristics that wetlands provide.

Opportunities do exist for halting the loss of wetland acreage in the county and to manage our wetland resources more efficiently. The safeguarding of wetlands not presently protected by state and Federal efforts is a first step and is proposed in the plan. Restoration efforts in wetlands areas that have been converted to other uses is also advocated in the plan. Erosion and sedimentation problems, particularly in those areas that directly affect the county's wetlands, are also addressed in the plan through a variety of prescribed land management practices concentrated in specific subwatersheds.

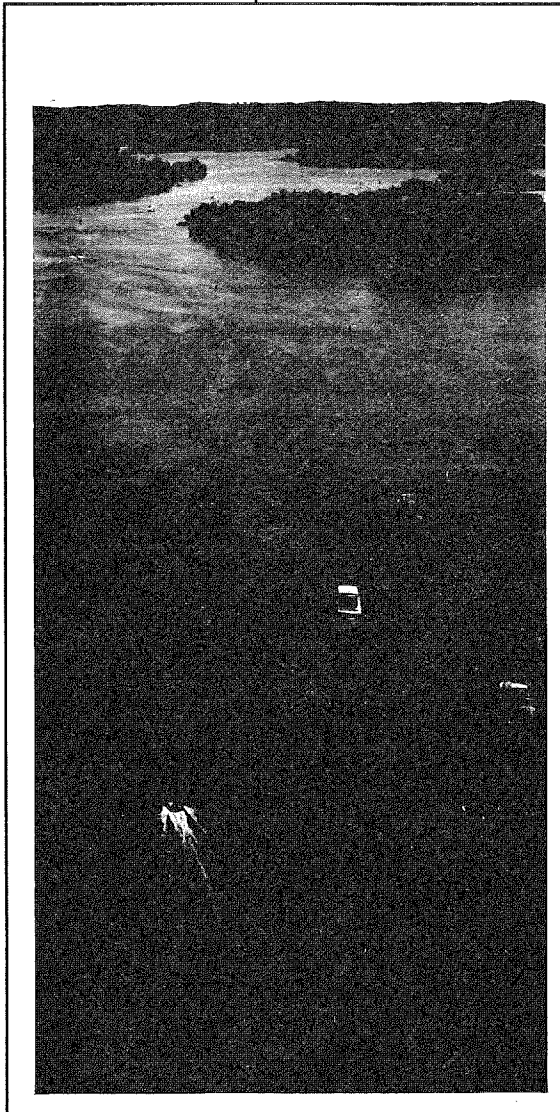
C. ISSUE IDENTIFICATION

A good plan rests on a foundation of clear issue identification. An issue has been defined as a problem or an opportunity that has a significant

influence on the way an organization (county) functions or on its ability to achieve a desired future, and for which there is no agreed-upon response. An example of a problem-type issue is: "Recreational use of rivers is threatened by water quality concerns." An example of an opportunity-type issue is: "Economic development can be advanced in the county by promoting water-based recreational opportunities on those lakes and rivers that are currently under-utilized."

Distinctions should be made between issues (resource problems and opportunities) and actions (activities that are designed to address issues). For example, the following statement is not an issue: "The county lacks the staff expertise to deal with water quality problems." Staffing and funding are solutions which can address specific water resource issues. The issue here is poor water quality and/or water quality degradation; obtaining the funding and staff expertise necessary to deal with the problem are actions which should be part of the implementation plan.

The issue identification process should be open to all water-related resources issues, including not only direct water issues such as water quality and supply, but related issues which affect water such as land use practices, and "dependent" uses such as fish and wildlife. The Handbook for Comprehensive Local Water Planning should be consulted for additional information; the first portion of Chapter 6, titled Identifying Problems and Opportunities, provides guidance in this area. One way of structuring the Issues section of the plan might be to organize them into the following general water resource categories:



1. **Ground Water Quality:** Sub-issues include abandoned wells, leaking storage tanks, chemical use, non-point source pollution, etc.
2. **Surface Water Quality:** Sub-issues include sedimentation, erosion, wetland protection, non-point source pollution, poorly functioning on-site sewer systems, chemical use, streambank erosion, etc.
3. **Ground Water Quantity:** Sub-issues include water allocation, well interference problems, etc.
4. **Surface Water Quantity:** Sub-issues include flooding, structural water control measures, wetland protection, drought contingency planning, etc.
5. **Water-based Recreation:** Sub-issues include providing public access to lakes and rivers, surface water crowding, shoreland development problems, promotional opportunities, etc.
6. **Fish and Wildlife:** Sub-issues include loss of critical habitat and species, developing additional fish and wildlife habitat, wetlands protection, etc.
7. **Related Land Use:** Sub-issues include agricultural and urban land use practices, bluffland protection, buffer strips along waterways, shoreland development problems, unique features and scenic areas, etc.

Many of the sub-issues listed above will fall under more than one general water resource issue area, and under the jurisdiction of many agencies.

The process of issue identification can be addressed through a variety of approaches. Public meetings provide an opportunity to identify issues that reflect the public interest and to gather public support for subsequent actions needed to address issues and opportunities. Opinion surveys and citizen committees can identify pertinent issues. Water resource professionals can provide valuable assistance in identifying current issues as well as those looming on the horizon.

Both resource data assessment and public and professional input must be used to accurately identify issues of importance.

A lack of data regarding resource problems may sometimes be thought of as an issue, but in most cases the need for data should be a part of the solution (actions), and not an issue itself.

Issues identified must be judged as to their significance or urgency, since water resource management is an ongoing process and all issues cannot be successfully addressed in a short time frame. Many issues will take decades to resolve, during which time new issues will arise. Staff and revenues are limited, requiring agencies to address critical problems and opportunities immediately.

Issues can be sorted in several ways. They can be ranked by the public through public meetings or by county water planning committees, with the assistance of knowledgeable county officials and resource professionals.

There are many systems for ranking issues. These include:

- **Three-tiered System:**

Urgent: issues of a crucial nature that must be addressed immediately. These would be issues where important opportunities could be lost through inaction or where serious threats to public health or sensitive resources are possible if they are not addressed.

Moderately Important: issues that are important and will be dealt with as funds and personnel become available.

Other: issues that are not crucial to human health or resource protection.

- **Numerical Ranking System:**

Rank issues within categories in consecutive order of importance.

In ranking issues, two criteria which might be applied are:

- 1) How critical is the issue?

- 2) How feasible are possible solutions? (i.e., who should perform the action, what will it cost, and when can it be initiated)

D. GOALS AND OBJECTIVES DEVELOPMENT

Goals and objectives form the linkage between issues and the actions. Since issues change over time, the primary goals and objectives focus should be on high-priority issues — those that the county intends to address in the near future.

Goals and objectives are hierarchical in nature with the goal being the more general and longer-term target. A goal states clearly what the county wishes to accomplish over the long-term; the objective sets near term targets to accomplish the goal. An analogy can be made with a football field: the goal line is the ultimate goal which the players are striving to reach; the ten-yard line markers are the objectives which must be reached, one by one, if the goal is to be attained; the plays are the actions used to reach each objective.

For example, a goal might be to reduce phosphorus levels in county lakes to a given standard. One objective that would help achieve this goal might be to have all on-site sewer systems upgraded by a specific date. Other, related objectives necessary to achieve this goal would also be identified. Then, actions could be planned to accomplish each of the objectives.

Goals must be clear and achievable. For example, the following goal is neither clear nor specific enough for a county water plan: "All lake water quality should be improved." Goals should address these questions:

- 1) What is the ultimate result that is desired?
- 2) Is the result achievable in a reasonable period of time?

Objectives break the goal down into smaller, manageable bites and should be more specific and should be measurable. They should address the following questions:

- 1) What are the parts of the goal that can be identified as short-term activities which will help achieve the goal?
- 2) What standards must be attained?

Using the above example, the Goal might read:

"Phosphorus levels are to be reduced to meet state water quality standards by the year 1995."

Objectives to achieve this goal might include the following:

- 1) Upgrade all on-site sewer systems by 1995.
- 2) Adopt and enforce buffer strip requirements along streams, ditches and lake-shores.
- 3) Ensure that municipal treatment systems meet discharge standards.

E. ACTION PLAN

Actions are the specific steps a county will take to address its priority issues and are used as a means of accomplishing objectives which deal with those issues. Using the example from the previous page, if the objective is to insure that all on-site sewer systems are upgraded, the action step might indicate locations that are to be targeted in a given time period.

Actions should be specific projects, programs or activities which have a good likelihood of being achievable in the short term. That is, they are likely to be funded and/or to be achieved within the existing programs of an agency or organization. Identifying realistic actions increases the chances that a plan will bring results. Towards the end of developing a meaningful plan, counties should state actions that require accomplishment as a measure of success. The actions should use proactive language, require effective activities, or propose specific programs to deal with the issues. Actions such as encourage, promote and facilitate often will not go very far in addressing complex water resource problems,

and allow no measure of accomplishment. Such actions may have less chance of receiving state or federal funding support. There are a number of issues where consideration should be given to teaming educational efforts with immediate and direct action such as regulation, and enforcing existing regulations.

Establishing Priorities

The actions should be prioritized to reflect the urgency of the problems they are intended to address, as well as the resources which can be expected to be available for addressing them. Priorities should reflect the rankings established in the Issue Identification step discussed previously. By incorporating estimates of costs and time and money available, priorities can be established using the same methods used for the issue rankings.

F. IMPLEMENTATION PROGRAM

The purpose of the Implementation Program is to state how and when the plan will be carried out to meet the objectives and achieve the actions identified. It will identify the agency or organization that will perform each action, provide a cost estimate for each, and lay out a schedule of when each will be undertaken. A brief description of these steps follows:

- 1) Who will perform the action? Actions may be accomplished either by the county or by other agencies or organizations. The amount of staff and financial resources necessary (and available) must be considered. Please note that the Handbook states that if actions require the cooperation of other agencies or local units of governments, the plan must indicate whether commitments for that assistance have been obtained.
- 2) What will it cost? While detailed cost estimates may not be possible or practical at this stage, "ballpark" estimates should be made so that a realistic implementation schedule can be developed. Grandiose plans may look impressive, but if they can't be funded, goals will not be achieved.

- 3) When will it be initiated? Based on project costs and funds and staff available, the county should develop an implementation schedule that accomplishes the most important objectives first.