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The Comprehensive County Water Planning Process in South Central Minnesota

HENRY W. QUADE and ROBERT A. BARRETT

ABSTRACT—Development of county comprehensive water plans is underway in a majority of Minnesota counties as a result of recent legislation. The planning process requires the fashioning of new relationships and roles for local and state government, agency personnel, and interdisciplinary technical teams. Early water planning efforts reveal significant problems with the adequacy and applicability of existing water resources data. Assessment of citizen attitudes regarding water resource issues was found necessary to link support with policy and develop public education activities. Analysis of water resources data combined with citizen and state agency attitudes has enabled counties in south central Minnesota to formulate goals and objectives for their county plans. County water resources management committees are currently formalizing strategies and implementation models to effectuate plan goals and objectives. The process of developing county comprehensive water plans in south central Minnesota has led to the preliminary conclusions that the process will become ongoing after plans are first adopted and that the relationships of local government, state agencies and technical professionals will evolve into a more constructive partnership for the benefit of water resources.

Introduction

Counties in south central Minnesota have long been aware of the critical need for comprehensive, cooperative planning efforts to preserve, develop, and improve water and related land resources. Area-wide meetings have been conducted by county leaders of most of this area for a seventeen-year period. Joining with county leaders in other southeastern counties and the Association of Minnesota Counties (AMC), these county leaders studied water problems with state and federal agencies. A county/state partnership evolved to create a social-political and legal avenue for comprehensive county water planning. Efforts to gain appropriate authority culminated in June 1985 with the Minnesota Legislature's adoption of the "Comprehensive Local Water Management Act" (*Minnesota Statutes Chapter 110B*). This statute, commonly referred to as 110B, authorizes counties to develop and implement county water and related land resources plans with additional authorization for necessary county implementation.

Previously lacking appropriate state authority, project area counties have been unable to plan for and to develop comprehensive controls to manage key water resources. None of the counties currently has a comprehensive water plan, but selected elements for implementing a plan are in place in most counties. Soil and Water Conservation Districts (SWCD) often have developed partial plans within their authority and resources. Water and sewer plans were prepared years ago in several counties but are not current or comprehensive. All area counties have zoning ordinances but these tend to be dated and were prepared with minimal reference to water. The counties also have additional

authorities including subdivision regulations, shore land standards, flood plain standards, ditch filter strip standards, sewage disposal standards, feed lot regulations, and solid waste plans. These various authorities were developed at varying times, with limited authority and resources, frequently without reference to intercounty water ramifications, and never with a state/county partnership nor on a comprehensive scope to preserve, develop, and improve water and related land resources.

Current water policies at the county level throughout Minnesota were determined largely on a "top-down" basis, with most decisions made at federal or state levels and announced to the county and individual level. Furthermore, current policies were decided on an agency-by-agency basis with frequently conflicting purposes and results. Policies generally were developed in reaction to "problems" on a piecemeal basis. Policies that were adopted at the local level usually were prepared without consultation with adjacent counties within the same watershed.

The Comprehensive Local Water Management Act did not mandate nor provide funding for the development of individual county plans, but over half of Minnesota's counties currently are developing plans. The purpose of this paper is to examine this planning process and focus on initial observations for the 13 counties of south central Minnesota. Project managers from all water planning counties in the state have been meeting monthly for close to two years and the processes used and perceptions observed have been found to be similar throughout the state.

Planning Process Development and Methodology

County commissioners from each of the 13 counties in south central Minnesota signed a joint powers agreement in February of 1987, six months before the project began, indicating the level of local interest in the process. The project is governed by a 13 county joint powers board made up of one county commissioner and alternate from each county.

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Each county also has a Technical Advisory Committee member. These are county technical staff from zoning administrations, SWCD, SCS, sanitarians, or county technical coordinators. A second Technical Liaison Committee was set up with representatives of technical staff from regional, state, and federal agencies. Project principal investigators and management were provided by Mankato State University through the authors of this paper.

The process was divided into five activities. The first three activities were led by Mankato State University and the last two by the individual counties. Activities 1 (Inventory) and 2 (Issues) began immediately and were purposely kept separate. Under "Inventory" all readily available water resources data were collected from state and federal agencies, as well as local sources. Under "Issues," county meetings were held and a questionnaire was sent out to obtain perceptions of the citizens. Activity 3 (Analysis) involved the bringing together of three components: data inventory, citizen perceptions, and agency perceptions in a series of individual county workshops. Activities 4 (Development of County Strategies) and 5 (Development of Final Action Plans for Implementation) are being developed in each county by commissioner-appointed water resources management committees. The first three activities are now completed and are discussed in detail below.

Inventory (Data)

The inventory component of county water planning requires the gathering of readily accessible water-related information on 55 topics, as required and outlined in *The Handbook for Comprehensive Local Water Planning* (1). The presumption was that local policy decisions could be made based on existing data. What was anticipated to be a straightforward process of gathering information has become a monumental problem for both the counties and the state agencies.

Our inventory process found that water resources data often are outdated, incomplete, non-integrated, inappropriate in scale, non-accessible, exist in a multitude of electronic and hard-copy formats, and most importantly, do not address local questions. This is true for local, regional, and state data bases. In the rule writing process for 110B, it had been presumed that great amounts of data had been collected in the past and that this would allow us to answer our questions and determine if our local perceptions were supportable. It is now painfully clear that local questions should have been asked first and then data bases developed to provide answers.

Since the local level of government is where many of the policy decisions must be implemented, it is imperative that data be developed to fit local questions. The local officials recognize that the "data" are based on the reality of monitoring and sampling networks and even the best networks are not a panacea because water resources systems are complex. However, state and local agencies must strive to obtain not the best possible decisions with limited data but rather the best possible decisions with the best possible limited data. The quality and quantity of data should not be used as an excuse for ignoring important questions.

The mindsets of the state and local agencies are in a very real "dynamic tension." State agencies are straining to get good data (improved monitoring and sampling networks with an eye toward modeling) and then to manage the data for maximum useability (compatibility). This represents a top-down process. The local agencies with their question-first

mindset, feel that data should be collected and managed (integrated) in response to their questions.

Even before the completion of their county water plans, over half of our project counties have begun to collect groundwater quality data to answer their number one concern (see Issues Section). In Brown and Nicollet Counties, over 2,800 wells were tested for nitrate and coliform while the county plans were being developed. Under the local leadership of Community Health Services, the participation rate has been up to 80 percent per township and all participants have signed a waiver allowing the information to be used for research. All wells showing high levels of contamination are being retested, demonstrating a responsive process.

Another example of the local mindset of question first and then collect data is the issue of agricultural drainage wells (category of EPA Class V Injection Wells). Because of citizen concern about drinking water quality, the joint powers board unanimously supported local efforts to survey these "illegal" wells, a task in which federal and state government have not been successful. Local water managers/citizens want data collected to answer the question of how these wells impact groundwater quality in south central Minnesota. In the data-collecting process in this example, as in the county well testing programs, the educational components are not a side or fringe benefit but are equal in perceived value to the inventory data base.

From the inventory process required by comprehensive county water planning, it is clear that the present Minnesota water resource database system is inadequate for county water planning. What needs to evolve is a partnership of local and state agencies. The local agencies are best equipped to provide pressing questions that need to be addressed and to gather data. The state agencies have expertise that the local agencies need, as well as a broader geographic framework. Both should contribute questions, database requirements, and education so that ultimate implementation of county water plans will be feasible and meaningful.

Issues (Perceptions)

The identification and assessment of water resource issues were accomplished through a set of activities under the comprehensive county water planning process. What we presumed would be a mixed pattern of locally important water issues instead was a remarkably consistent regional pattern of water issue priorities.

County officials and staff gathered issues data in summer 1986 to assess the scope of water resources issues. Open meetings of interested county citizens and groups were conducted in fall 1987 to take testimony on the variety and severity of local water problems and to administer an attitude survey developed in 1972 by Robert Moline of Gustavus Adolphus College. The readministration of the Moline survey allowed us to examine citizen attitudes over a sixteen-year period.

Based upon these activities, we developed a citizens' attitude survey with review from the project policy committee, technical committee, and technical liaison committee. The citizen attitude survey questionnaire was mailed to 200 geographically stratified households in each of the 65 county commissioner districts, to 75 local officials and group representatives from each county, and to a senior-level class in a high school in each county. Of the 14,300 survey forms distributed, a 29 percent (4,127) response rate of usable

replies was received for analysis during a 30 day period in May 1988. Response rates were approximately proportionate for rural-farm, rural non-farm, and urban households in each county.

Citizen attitudes on major water resource issues were measured for issue importance, issue urgency, and a composite issue priority. The priority rankings of citizen attitudes on water issues of the south central Minnesota counties are reported in Table 1. Analysis of the county rankings reveals a common assessment of water priorities throughout the region with remarkably slight variation by county. Citizen perceptions of water priorities clearly stress issues of water quality over water quantity. This confirms the results of the Moline survey administered over much of this same project area 16 years earlier (2). This consistent pattern of citizen concern for water quality over time becomes more significant when considering the contrasting water quantity conditions of the regional drought during the 1988 survey and regional flooding during the 1972 Moline survey.

The early gathering of data regarding citizen perceptions of water issues enables county officials to bring citizen attitudes to bear early in the planning process and to use them when evaluating resources information, expert recommendations, feasibility factors, and other water resource planning process factors. Consequently citizen attitudes can be taken into account throughout the planning process; this contrasts with, in our opinion, the more typical pattern where citizens' attitudes usually are unsystematically represented and communicated, typically near the conclusion of planning activity just prior to formal approval of a proposed plan. This early data gathering offers the potential to strengthen the value, quality, feasibility, and implementation prospects of a plan.

The comprehensive county water planning process embodies a spirit of a local-state partnership. Citizens and local officials should become key partners in future water resources planning and have equal places at the planning table alongside technical experts and state and federal interests. The south central Minnesota experience is corroborated by Luther Gerlach, an anthropologist from the University of Minnesota. Gerlach critiqued the water planning process utilized to ameliorate 1988 drought consequences for metropolitan Twin Cities interests. He found the planning strategy neglected citizen attitudes of northern Minnesota and this led to conflict and resistance. He urged water planners to consider the human dimension of water issues rather than treating water only as a physical resource (3). Gerlach advised that "there are no more docile publics, even in the Soviet Union (4)." The global nature of growing citizen concern about water resource issues is manifest locally in the board rooms of Minnesota counties and state legislature hearing rooms.

Analysis (Mindsets)

In many planning processes, the analysis of the relationship between data (technical) and perceptions (sociopolitical) is a moot point because the plans are generated from the top down. Professional staff (agency or consultants) often spend years developing a plan and then present it (share it) with the local citizens for approval. The presentation is intended to educate the local population. Local government decisions are often staff driven because of the role of staff. The public is put in a position of fighting staff (local, regional, state, and/or federal) as well as elected officials.

The process of comprehensive local water planning was designed to eliminate this mindset in that it was locally driven (bottom up), proactive rather than reactive, truly comprehensive in scope, and perhaps most important of all, a partnership of all concerned. After a year of inventory of data and perceptions of both citizen and agencies, the elements were brought together in one-day county workshops. In the morning, the three mindsets were presented: 1) the technical appraisal of data availability and quality; 2) the local sociopolitical perceptions and attitudes, and 3) the agencies' professional staff positions. These represent the three mindsets needed in the partnership for comprehensive local water planning. In the afternoon, smaller topic groups were established to begin to identify goals and objectives. Local participants were asked to weigh their initial perceptions of needs, problems, and opportunities against the available data and agency staff positions.

Many participants in the small group discussion recognized the necessity to develop better mechanisms of two way transfers and interfaces between each of the three mindsets. The process used for analysis did not remove the dynamic tension between mindsets but did help to educate all as to the roles of each in this natural resource partnership.

Conclusions

This paper represents a midpoint assessment; no county has completed its plan as of this date. What is clear at this point in the 110B process is that these are not just another set of plans. First, the concept of "partnership" as initiated by the local interests has already dramatically changed the roles of state and local agencies. Second, the plans have not been a project, but rather have evolved into an ongoing process.

The state agencies are faced with a dramatic change in their role. Some agency personnel feel that this is a relinquishing of their role, but in reality it is a changing. Gerald Willet, the Executive Director of the Minnesota Pollution Control Agency, in a discussion of new approaches needed for water quality gains in the 1990s, signaled the need for agency role change in addressing nonpoint source pollution. "The traditional top-down regulatory approach, which serves well in controlling pollution from large, distinct sources, will not work on nonpoint sources. These are different issues and different times, and they call for different approaches. Water quality improvements in the 1990s will take a combination of multi-level cooperative efforts, technology, and education (5)." County water planning has clearly shown that these observations extend to all aspects of water resources management, not just nonpoint source pollution.

The 110B process has resulted in four new mindset changes within the local community.

1. They have to develop a partnership with state agencies. This is going to involve communication skills and the development of trust.

2. They have to develop a new relationship with water resources data. Historically the state has been the provider and local interests, the passive recipient. For the first time, not only are the local officials asking for data they need, but they are starting to generate their own. How will they handle, manage, and use the data?

3. Although we have consistently equated local with county in this paper, 110B inherently is also regional. Plans must be hydrologically sound and consistent with neighbors (i.e., watersheds and aquifers). Regional implementation will often be the solution to a local problem.

Table 1. South central Minnesota citizens attitudes concerning water resource issues
(Priority ranking of water issues by county).

ISSUE	COUNTY													
	All Counties	Blue Earth	Brown	Cottonwood	Faribault	Freeborn	Jackson	LeSueur	Martin	Nicollet	Sibley	Steele	Waseca	Watonwan
Purity of Drinking Water Supplies.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pollution of Underground Waters.....	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Pollution Effects of Waste Disposal Sites.....	3	3	3	3	3	4	3	4	4	3	3	3	3	3
Surface Pollution Entering Streams,Rivers and Lakes.....	4	5	4	4	4	3	4	3	3	4	4	4	4	4
Changes in Industrial Practices Affecting Water Resources.....	5	4	5	8	6	5	7	5	6	5	6	5	5	5
Changes in Agricultural Practices Affecting Water Resources....	6	7	7	7	7	6	6	6	6	7	7	6	8	8
Soil Erosion.....	6	9	6	5	5	7	6	9	5	9	5	8	8	6
Inadequate Septic and Sanitary Sewer Systems.....	8	6	8	6	8	8	8	7	8	6	8	13	6	7
Improvement of Fish and Wildlife Habitat.....	9	8	9	9	10	11	11	8	10	9	9	7	11	10
Proper Construction, Maintenance and Abandonment of Wells.....	10	12	11	10	9	9	9	10	9	11	11	9	7	8
Management of Protected Lakes, Wetlands and Streams.....	11	10	12	10	11	10	10	11	11	8	10	10	10	11
Protection of Lake and Stream Shorelands.....	12	11	13	12	14	13	13	12	12	13	14	11	12	12
Protection of Unique and Scenic Areas.....	13	13	15	14	13	12	14	15	13	11	15	14	13	14
Water Quality/Quantity Effects from Ditch Systems.....	14	14	14	15	12	14	12	14	14	15	12	15	14	15
Drought and Water Shortages.....	14	15	10	13	16	16	15	13	15	16	12	12	15	13
Changes in Energy Production Affecting Water Resources.....	16	18	17	16	15	15	20	17	16	14	17	16	17	16
Restoration of Drained Wetlands.....	17	15	16	19	17	17	18	16	20	17	16	18	16	18
Development Adjacent to Lakes and Streams.....	18	17	19	17	19	19	19	18	18	19	17	19	18	17
Changes in Recreational Development Affecting Water.....	19	19	18	18	18	18	21	18	17	18	19	17	19	19
Ditching and Tiling of Land.....	20	20	20	21	20	20	16	21	21	20	20	20	20	21
River and Lake Water Levels.....	21	21	22	20	21	22	17	20	19	21	21	21	22	20
Drainage Difficulties with Rail and Highway Beds.....	22	22	25	22	22	21	24	23	23	23	25	22	21	22
Flood Plain Protective Measures.....	23	23	21	23	24	23	23	22	24	22	23	23	24	24
Inadequate Availability of Water-based Recreation.....	24	25	23	25	25	24	25	24	22	25	22	24	23	25
Flooding Problems.....	25	24	24	24	23	25	22	25	25	23	24	25	25	22

* Based upon a stratified geographic survey of households in south central Minnesota counties with 4,127 households responding to the survey administered by Mankato State University during April and May, 1988.

4. Educational activities will be critical and cannot be, as in the past, based solely on state agency regulations. The local scale is the appropriate education vehicle that can succeed in being proactive and truly comprehensive. Individual citizens can recognize their part in the solution rather than just identifying the problem and letting someone else solve it. South central Minnesota was the first region in the State of Minnesota to fund a water quality cluster extension agent with a charge to facilitate water planning education. The advisory board for this cluster agent is made up of county commissioners and county technical personnel from the joint powers planning group.

Comprehensive county water planning is clearly not just another plan but rather a new process. Because of the mindset changes discussed above, the local participants are clearly enthusiastic about their new initiatives. The individual county plans include the continuation of the new county water resources management committees. These local committees are already involved in data collection, data repository, implementation strategies, and new relations with state agencies. The 13 county joint powers board has selected county commissioners to bring concerns directly to state legislators through a legislative liaison subcommittee of the policy committee.

It is the opinion of the authors that the key to the 1990s will be partnership. Comprehensive County Water Planning is not just another plan, but represents such a partnership.

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