A Growing Role for County Government in Water Management and Water Quality
by Roger Steinberg

Traditionally, environmental decisions, including those about water, have been focused primarily at the federal level of government, but this tradition is of recent origin. The late 1960s and early 1970s marked the beginning of the environmental era, resulting in a tremendous increase in public awareness. Following much congressional debate, the Federal Water Pollution Control Act was passed in 1972. The Environmental Protection Agency had been created two years earlier. States were then mandated to implement several aspects of this act, along with similar acts relating to air and solid waste. By the mid-1970s numerous new state agencies had been created across the country to deal with environmental issues. State government thus became a much more active participant in environmental decisions.

Delegation of responsibility to a third level of government, counties, now appears to be taking place. The new county role, however, is one that few people are aware of. The 1985 Minnesota Legislature passed a bill, the Comprehensive Local Water Management Act, that authorizes counties to develop and implement plans for county water and related resources. The discussion generated by the act was valuable in that it created a deliberate debate as to what the role of each level of government should be in water issues.

In order to better understand the expanding role of Minnesota counties in water management, four case studies are presented here, examples of counties that have taken an initiative and become particularly active in concerns over water quality or water management.

Soil and Water Conservation by County Ordinance

In April of 1982 Fillmore County became the first in Minnesota to require land owners with severe water and soil erosion problems to correct those problems. Their ordinance is, in many aspects, unique within the entire United States.

The ordinance requires that a verbal or written complaint alleging excess erosion be submitted to the zoning administrator. Any landowner or an official of the township, the county, or the state may submit a com-
While the ordinance was under consideration several national studies of soil erosion and water quality were published. Local newspapers featured the problem with an in-depth series, generating more interest and concern. Since the ordinance was passed, there have been ten to fifteen cases per year.

**Flood Control through a Joint Powers Program**

In 1978 ten counties in southwestern Minnesota organized under the Minnesota Joint Powers Authority to deal with flooding problems in their area from five tributaries of the Minnesota River: the Yellow Bank, Lac Qui Parle, Yellow Medicine, Redwood and Cottonwood rivers. Their watersheds include land in the ten counties of Lac Qui Parle, Yellow Medicine, Lincoln, Lyon, Redwood, Brown, Blue Earth, Pipestone, Murray, and Cottonwood. The cooperative action of these counties resulted from many years of frustration and numerous efforts to work with federal and state agencies.

The joint powers approach gave the ten counties, collectively, the same legal authorities they had individually. In dealing with water management, these authorities include collecting data for planning, employing staff, office operations, administration of funds, and the legal authority to construct projects. The 1976 state legislature approved the use of state grants issued annually to be used with local matching funds for flood control projects. Minnesota Statute 104 is unique in a number of aspects, but particularly because it was designated for only these specific counties and cannot be duplicated elsewhere in the state without additional legislation. The counties involved had lobbied for several years in attempts to get the legislation passed.

Flooding in southwestern Minnesota has been documented from as early as 1916, but it was during the early 1960s that local frustration with state and federal agencies began. In 1964 the federal Army Corps of Engineers was authorized to do initial investigations of the flooding problems. Plans were promised by a number of dates, con-

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**FOUR CASE STUDIES IN COUNTY WATER MANAGEMENT**

![Map of Minnesota with various land use and conservation areas marked.](map-image)

Photo on page 1: Severe soil erosion, like this near Preston, Minnesota, led to a pioneering county ordinance in Fillmore County.
Flooding of farmlands in southwestern Minnesota is being controlled through a ten-county Joint Powers Agreement.

continually advanced over an eleven year period. In 1971 the Soil Conservation Service (SCS) and the state’s Department of National Resources (DNR) began a new joint study. DNR was given the leadership role. They, like the Corps of Engineers, were not able to meet their original goal for completion.

Concern in southwest Minnesota reached a peak with the severe flooding of the late 1960s. Citizen leaders intensified their efforts and were increasingly vocal with complaints about federal and state involvement and the lack of opportunity for local participation. In 1971 the state legislature, in response, created the Southern Minnesota Rivers Basin Board. It was to become an organizer and advocate for local needs and concerns, eventually assisting with the creation of the Joint Powers Board. A few highly motivated individuals were key to the passage of the legislation. Some spent almost twenty years in efforts to alleviate flooding problems.

Several alternatives to the joint powers approach had been discussed. One was the development of a single, large watershed district for the entire ten-county area. A second was a separate watershed district for each of the five river basins. The joint powers approach was chosen largely because of a distrust and dislike of watershed districts by some county government officials. They felt the districts were an additional and unneeded layer of government, and feared loss of county control if watershed districts with taxing authorities were created. The current Joint Powers Board, consisting of fifty representatives, has delegated authorities to a ten-member advisory committee with one representative from each county. The counties selected the state Soil and Water Conservation Board to administer the annual grants approved in 1976.

Three major water retaining structures have been built since that time. The Joint Powers Committee employs an engineer and two technicians housed with the area SCS Office in Marshall.

The Joint Powers Agreement will end in 1988 and then will need to be rewritten if the effort is to continue. Some potential problems exist, but at present there is no reason to suppose that local involvement will not continue to be needed in pushing for flood control in southwestern Minnesota.

Groundwater Protection from County Activism

Winona County, in extreme southeastern Minnesota, lies over one of the largest aquifers in the Upper Midwest. It is also an area of extremely shallow soils and exposed bedrock. This lack of protective covering, or filtering capacity, along with natural cracks and fissures in the land surface, allows groundwater to be easily contaminated. A complete survey of wells in the county has not been done. Scattered studies, however, consistently show that 40 to 80 percent of farm and community wells are contaminated with bacteria, nitrates, and agricultural or industrial chemicals.

Winona County government has been very active in dealing with its groundwater pollution problem through a multi-faceted approach. Winona was the first county in the state to develop a geologic atlas showing its groundwater resources and their potential for pollution. At a cost of $70,000, the county contracted with the Minnesota Geological Survey for this work. The county is also completing a land use and agricultural preservation ordinance that includes, as a major emphasis, protection of the groundwater. This policy emphasis and the use of zoning as a tool to protect groundwater is a unique approach for county government. The county board has also tentatively approved the passage of a soil erosion ordinance modeled after Fillmore County’s.

The Minnesota Department of Health allows counties that request it and meet certain standards, to take over well construction and inspection from the state. Very few counties have exercised this option. Winona is currently in the process of a
changeover to local control. The county board in the past two years has increased funding in both the offices of Planning and Zoning, and Sanitation. The sanitation program is emphasizing environmental health and groundwater and is in the process of hiring a second sanitarian. Four years ago the county lobbied for, and was successful in receiving, funding under the Federal Rural Clean Water Program to be one of only a few nationally designated areas for rural water pollution studies. In addition, four counties in southeastern Minnesota have formed together to learn more about and explore possible joint actions on groundwater pollution. A Winona County commissioner has chaired this group and the county planning director has served as secretary.

The county has purchased films, slide tapes, and booklets on groundwater pollution. Staff have been active in numerous educational presentations throughout the county. The county board recently sponsored a resource conference; a one day program with emphasis on water quality. Nearly 100 people attended due to a<div class="image"></div>winter storm warning. This was viewed as an example of the widespread citizen interest and concern.

Winona County’s unique efforts to preserve its water quality were undoubtedly spurred on by the severity of problems it faces—from the large number of contaminated wells, to landfills that contaminated groundwater, to toxic waste problems from one industry. In addition, the county has been fortunate in the professional skills and outstanding leadership offered by its sanitarians and its planning director. A local League of Women Voters chapter has also taken a leadership role in citizen education and participation. Winona has been described as a very environmentally aware county. It is one of the most beautiful counties in the state with 40 percent of its land in hardwood forests and with deep river valleys leading to the Mississippi River. Extensive study and policy discussion about the management and problems of the Mississippi have also served to keep water quality and water management issues highly visible in the Winona area. The leadership in Winona County has now taken on the problem as its own. They view the governments in St. Paul and Washington not as total answers, but rather as resources or tools to be used in dealing with their groundwater pollution problem.

Land Use Control for a River Corridor

Project Riverbend is a cooperative management plan developed by six counties along the upper Minnesota River. It is the result of work by Nicollet, Blue Earth, Brown, LeSuer, Renville, and Redwood counties. Together they have created a uniform set of land use controls for the river corridor, in a plan that includes recreational management as well.

In 1977 the Minnesota Department of Natural Resources (DNR) had requested and was granted authority by the state legislature to study a segment of the Minnesota River from Franklin to Le Sueur for possible inclusion in the state’s Wild and Scenic River system. Its objective was to prevent damage that might be caused by uncontrolled development and recreational overuse. The Wild and Scenic Rivers Act prescribes zoning, land and scenic easement acquisition, and recreational management. Between 1977 and 1979 public meetings were held in the six counties bordering that stretch of the river. The DNR plan and the public hearings generated a great deal of controversy. Citizen opposition was loud and focused on the philosophical question of state versus local control. The emotion-charged atmosphere led the DNR to declare a one year moratorium, in 1979, on work towards designation of the river. The moratorium was designed to give counties time to develop an alternate joint plan for river protection. The state senator from Le Sueur County, was instrumental in developing this commitment and working out an agreement between the DNR and the six counties.

A committee was established consisting of two commissioners, one planning commission member, two interested citizens, and the county zoning administrator from each of the affected counties. But the actual work of drafting a multi-county plan was soon delegated to a smaller subcommittee made up of the zoning administrator and one citizen from each county. The DNR regional hydrologist and staff from the regional development commission in Mankato assisted the committee. The zooning administrator from Nicollet County, chaired the committee. Their Project Riverbend Management Plan was approved and adopted in 1981.

Much discussion, under the skilled leadership of the chairman, was required to develop an ordinance that was uniform and acceptable to each of the counties and municipalities with land adjacent to the river. Issues included lot sizes to be allowed for development along the river, sand and gravel mining (a significant industry in the river valley), and timber cutting and the clearing of land for agricultural use. The six county plan does not stress or promote recreation as the DNR plan had. It is, rather, designed to deal with the potential problems that heavier recreational use might bring.

A board of review, with representatives from each of the counties, meets annually or "on call" to discuss planning issues and deal with major ordinance variance problems. An annual report is also required, that is sent to the DNR and the state legislature. At present, very little development is going on in the river corridor. Because of the poor economy, there has been little activity in land sales and thus few requests for major variances for development.

Project Riverbend raises the issue of local versus state control of recreation and development. Critics have suggested that local governments, being closer to the people affected, may be more subject to political pressures for variances. This will be watching as the plan is tested over the next ten years. At this time, all of the people involved in Project Riverbend consider the plan a success. Starting out in a mood of controversy, it became a successful mix of all levels of government that developed a satisfactory set of compromises.

Common Elements in the Case Studies

In each of these four case studies it was the dedication of a few people who carried the effort to completion. In some cases it was elected officials, in others county staff or private citizens. Their motivations to action were both internal and external. In Winona and Fillmore counties the reaction was to severe problems within the county. Their actions could be interpreted to mean that they did not feel the state was adequately addressing their problem. External causes resulted in Project Riverbend and the Southwest Joint Powers Flood Control Program. Local flood control efforts resulted from the inaction on the part of state and federal governments, from a frustration with the bureaucracies. Interestingly, it was too much state control, or the threat of it, which resulted in a "rebellion" of sorts that led to Project Riverbend.

County Authorities

It needs to be emphasized that under our constitution county governments have no inherent authority. Power at the local level must be delegated by state legislatures. The powers granted must be directly mandated or reasonably implied from legislation. A review of existing legislation shows a large number of areas in which county governments have been mandated direct responsibility or given the potential for action on water management and water quality.

The Community Health Services Act includes several environmental options related to water quality. Counties are mandated the responsibility for solid waste management which directly affects water quality. Public nuisance laws can include water quality. Certain permitting authorities such as those controlling feedlots, well construction, and home sewage systems, can be assumed by counties. A county makes water-related decisions by the emphasis it places on staffing positions such as sanitarians, public health nurses, planning directors, and zoning administrators.

Planning and zoning, that determine land uses, also affect water in numerous ways. Most easy to recognize are regulations regarding flood plains, shorelands, and wetlands. Others, not so obvious, include permits for septic tank locations. These can in turn affect the density and
A group of county commissioners in southeastern Minnesota discusses groundwater conditions.

Types of development occurring in rural areas.

Minnesota Statute 394.22 requires counties to adopt comprehensive plans. These are to include policy statements, goals, and interrelated plans for public and private land and water. Thus water planning is possible by county governments under current law. Some counties, such as Goodhue County, have adopted policy statements specifically for groundwater protection. Other legislation gives Soil and Water Conservation Districts, funded partially by counties, the authority to develop comprehensive plans for conservation of soil and water resources. Watershed districts can be established by Minnesota counties to carry out conservation and water use projects.

Counties can also play a direct role in education by appointing county extension committees, which can recommend to county agents that public education is needed in these areas. The Community Health Services Act also allows for an educational component.

Implications for the Future

It would appear that all the necessary legislative, political, and legal tools are available for a continuing and increased involvement on the part of Minnesota counties. The case studies suggest that the county role in water management is increasing. Three forces seem to be involved in opening up this new role to county government.

The Association of Minnesota Counties is the organization which collectively represents counties in St. Paul. The association, through its policy committee, has in recent years advocated a greater role for counties. They have requested the transfer of environmental health programs from the state to counties. They have asked for advisory committees to deal with state agencies whose decisions affect water, such as the Pollution Control Agency, the State Health Department, and the Department of Natural Resources. They supported passage of the new Comprehensive Local Water Management Act. "Minnesota counties believe that an inter-governmental partnership in environmental protection is achievable," states the association's 1984 platform. Under this partnership they envision the federal and state governments as providing policy direction, funding, and specialized technical and scientific resources, while local government plays a major role in the application of programs at the county level.

Another major force in the increased involvement of local governments, is the broad decentralization of authorities and responsibility currently underway in this country. It is often discussed in terms of the Reagan budget cuts. However, the issue is actually much more complex and far reaching, crossing party lines as it goes back through the support of the Carter administration and into the Nixon years of New Federalism. It has been popularized as one of John Naisbitt's megatrends. There is not space here to adequately explore this interesting public policy shift except to say it does appear to be real.

A third force influencing local involvement is the nature of Minnesota politics itself. Minnesota is recognized nationally as a leader and innovator in the way its local and state governments interact. In few other states is there the intense interest and concern in the running of government.

Since statehood, Minnesotans, particularly in rural areas, have been pioneers in political activism from the populist movement to progressivism. The more recent west-central power line controversy and agricultural demonstrations suggest that activism is very much alive. Nor will one find in many other states a higher concern for the environment and natural resources. A recent Neil Pierce Washington Post article ranked Minnesota number one among states in this regard, based on a Conservation Foundation study.

The implications, for environmentally concerned citizens, of this shift to local county governments cannot be adequately dealt with here. There obviously is no simple answer as to whether the shift is good or bad. It will, however, require a re-thinking and new strategies on the part of those concerned with natural resource issues, such as water quality and water management.

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What was the population of St. Cloud in 1980? That seems to be a fairly simple question, you might think—just look up the answer in the 1980 Census of Population. Page 31 says that the population of St. Cloud city in 1980 was 42,566 people, but page 40 says that the population of the St. Cloud Standard Metropolitan Statistical Area was 163,256 people, and page 42 says that the population of the St. Cloud Urbanized Area was 58,375 people. An apparently simple and straightforward question seems to have at least three different answers, and one is three times as large as the other two. Which one is right? The answer, of course, is that each one is correct, because each one represents a different concept of St. Cloud.

The United States Bureau of the Census defines and uses terms and concepts quite precisely, but the resulting numbers, such as those for the population of St. Cloud, can easily confuse anyone who does not clearly understand the definitions of the concepts on which they are based. Let's examine some of the key concepts and definitions that are used by the Census Bureau, and see how they work out in Minnesota.

The simplest and vaguest concept is place. A Census place is a concentration of population. Most places are incorporated as cities, towns, and villages. The Census Bureau publishes a "head count" of the total population for every incorporated place, no matter how small it is. The honor of being the smallest incorporated place in Minnesota in 1980 went to Funkley, in Beltrami County, which had eighteen people. Funkley was crowded for the honor by Tenney, in Wilkin County, which had nineteen, but neither could hold a candle to Cottonwood, South Dakota, an incorporated place seventeen miles east of the famous Drugstore in Wall; Cottonwood had a total population of only four people in 1980.

The Census Bureau also publishes head counts for unincorporated places that have a population of 1,000 persons or more, which it calls Census Designated Places (CDPs), but Minnesota had none in 1980.

A place officially becomes an urban place, by Census definition, when its population reaches 2,500 people, and the entire population within its corporate limits is automatically transferred from the rural category to the urban category.

The cutoff figure of 2,500 persons is arbitrary. Walter F. Willcox first used it in his supplementary analysis of the 1900 census, it was officially adopted in the census of 1910, and ever since then it has remained the basis for the distinction between urban and rural, but to this day no one knows why Willcox originally chose it.

In 1980 Minnesota had 180 urban places, but 88 of these were parts of larger places, such as Bloomington and Edina in the Twin Cities. In fact, seven of the ten largest urban places in Minnesota in 1980 were part of the greater Twin Cities (Table 1).

<table>
<thead>
<tr>
<th>Table 1. LARGEST URBAN PLACES IN MINNESOTA, 1980</th>
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<tbody>
<tr>
<td>Population</td>
</tr>
<tr>
<td>Minneapolis</td>
</tr>
<tr>
<td>St. Paul</td>
</tr>
<tr>
<td>Duluth</td>
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<tr>
<td>Bloomington</td>
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<tr>
<td>Rochester</td>
</tr>
<tr>
<td>Edina</td>
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<tr>
<td>Brooklyn Park</td>
</tr>
<tr>
<td>St. Louis Park</td>
</tr>
<tr>
<td>St. Cloud</td>
</tr>
<tr>
<td>Minnetonka</td>
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</tbody>
</table>

In 1980 the state had a total of seventy-one free-standing urban places with 2,500 to 10,000 people and twenty-one free-standing urban places with 10,000 to 50,000 people. On average these places have grown continuously since 1940, although at a decreasing rate (Table 2). At first glance growth seems to have "turned around" in the places of 2,500 to 10,000 during the 1970s, because they grew at a rate of 20.4 percent, nearly double the national growth rate of 11.4 percent and more than three times their own growth rate of the 1960s, but a closer look reveals that most of this growth was concentrated in seventeen "dormitory" towns. Fourteen are within twelve miles of the outer edge of the Twin Cities, and three more are equally close to Rochester or to St. Cloud. The population nearly doubled in these dormitory towns, but it grew only modestly in places farther from metropolitan centers.

A place officially becomes a metropolis when its population reaches 50,000 people. The threshold is just as arbitrary as the cutoff figure of 2,500 that divides urban and rural. No one seems to know why it was originally chosen for use in the Census of 1930, but it has now been around for so long that people have become accustomed to it, and they feel uncomfortable if anyone suggests changing it.

Many federal funding programs have been available only to places that qualify as metropolises, and many business planners have based their decisions about marketing, sales, and investment on the perceived buying power of metropolitan areas. The economic advantages of designation as a metropolis have been so great that places close to the population threshold have urged that it be lowered. In 1972 the definition was relaxed to permit the designation of smaller places under a very complex set of rules. The threshold population of 50,000 people has generally been maintained, but these places no longer have to live in a single incorporated place. An incorporated place as small as 25,000 people can now form the nucleus of a metropolis if the place and its contiguous densely built-up area form a single community of at least 50,000 people.

For example, in 1980 the city of St. Cloud had only 42,566 people, but the inclusion of the incorporated suburbs of Sauk Rapids (5,793 people), Waite Park (3,496 people), and Sartell (3,427 people) added...
up to a total population of 55,282 people, which was enough to achieve designation as a metropolis. In contrast, Mankato (28,651 people) and North Mankato (9,145 people) together still fell short of the minimum threshold.

A metropolis is the central city, or nucleus, of a Standard Metropolitan Statistical Area (SMSA), which consists of one or more counties that have a high degree of economic and social interaction (normally defined by a specified high level of commuting) with the central city. The name was officially changed to Metropolitan Statistical Area (MSA) in 1983. In 1980 Minnesota included all or part of six SMSAs: Minneapolis-St. Paul, Duluth-Superior, St. Cloud, Rochester, Fargo-Moorhead, and Grand Forks (Table 3). These six SMSAs had a total population of 2,631,933 people or 64.6 percent of the total population of the state, and the Minneapolis-St. Paul SMSA alone had just over half of the state total.

SMSAs are officially designated for the production, analysis, and publication of an enormous range of statistical data by federal agencies. The regulations that control the definition and designation of SMSAs are not determined by the Census Bureau, which has only the power of moral suasion, but by the most feared agency in the entire federal bureaucracy, the Office of Management and Budget, which has the power of the purse strings, and thus has little trouble in securing cooperation from other federal agencies.

SMSAs (and now MSAs) are formally and officially designated for all federal statistical purposes, but their boundaries may change over time, and there is nothing to prevent others from defining their own metropolitan areas, so it is a good idea to ask which metropolitan area someone is talking about when he or she starts tossing numbers around.

Take the Twin Cities metropolitan area as an example. Between 1949 and 1972 the official federal definition recognized a five-county area (Anoka, Dakota, Hennepin, Ramsey, and Washington), but in 1966 the Minnesota legislature established a seven-county Metropolitan Council area that also includes Carver and Scott counties (Figure 1). Then in 1972 the federally defined area was expanded to ten counties by adding Chisago and Wright counties in Minnesota and St. Croix County in Wisconsin, and in 1983 it added Isanti County to make an eleven-county MSA. The Metropolitan Council area established by the state has remained unchanged.

Each of these four different metropolitan areas had its own slightly different rate of population growth between 1970 and 1980: 5.0 percent in the five-county area, 5.9 percent in the seven-county area, 7.5 percent in the ten-county area, and 7.8 percent in the eleven-county area. The actual increase ranged from 91,185 persons in the five-county area to 155,182 persons in the eleven-county area.

These comparisons illustrate one of the advantages of SMSAs—their size is sufficiently large to be useful in comparing counties and other small areas. The size also allows for the inclusion of suburban areas within the SMSA, which is a significant advantage in urban planning.

Table 3. POPULATION OF METROPOLITAN PLACES IN MINNESOTA IN 1980

<table>
<thead>
<tr>
<th>Standard Metropolitan Statistical Area</th>
<th>Urbanized Area</th>
<th>Central City</th>
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</thead>
<tbody>
<tr>
<td>Minneapolis-St. Paul</td>
<td>2,070,271</td>
<td>1,787,564</td>
</tr>
<tr>
<td>Duluth-Superior</td>
<td>222,229</td>
<td>102,434</td>
</tr>
<tr>
<td>St. Cloud</td>
<td>163,256</td>
<td>58,375</td>
</tr>
<tr>
<td>Rochester</td>
<td>92,006</td>
<td>60,473</td>
</tr>
<tr>
<td>Fargo-Moorhead</td>
<td>49,327</td>
<td>32,669</td>
</tr>
<tr>
<td>Grand Forks</td>
<td>34,844</td>
<td>8,545</td>
</tr>
<tr>
<td>La Crosse</td>
<td></td>
<td>3,879</td>
</tr>
</tbody>
</table>

Figure 1. TWIN CITIES METRO AREA

7
part that happens to be included within an arbitrary set of corporate limits. The boundaries of the urbanized area change as the city changes, and new boundaries must be drawn for each census. These boundary changes limit the comparability of data for urbanized areas from different censuses, but a map of the urbanized area of a metropolis at consecutive censuses gives an excellent idea of the way in which the metropolis has grown (Figure 2).

In 1980 Minnesota contained all or part of seven urbanized areas (Table 3). The number of urbanized areas was one greater than the number of SMSAs because the urbanized area of La Crosse spilled over into Houston County, but the county was not tied closely enough to La Crosse to warrant its inclusion in the La Crosse SMSA.

Six of the seven urban fringe areas had relatively few people, but the urban fringe of the Twin Cities had 28.1 percent of the total population of Minnesota in 1980. Between 1970 and 1980 the Twin Cities urban fringe added 256 square miles and 186,340 people, which was equivalent to 69 percent of the total population increase of the entire state (Table 4).

Table 4. THE URBAN FRINGE OF THE TWIN CITIES

<table>
<thead>
<tr>
<th>Year</th>
<th>M²</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>616</td>
<td>960,043</td>
</tr>
<tr>
<td>1980</td>
<td>872</td>
<td>1,146,383</td>
</tr>
</tbody>
</table>

A very high percentage of the state's population growth during the 1970s was concentrated at the outer edge of the Twin Cities urban fringe, and in the exurban areas just beyond. The areas of most rapid growth straddled the boundaries between metropolitan and nonmetropolitan areas, and they also straddled the boundaries between urban and rural areas, because census definitions and political boundaries simply have not been able to change fast enough to keep pace with the galloping growth of the suburbs and exurbs.

Some of the most rapidly growing suburban and exurban areas in Minnesota were still classified as rural in 1980. The people who live in the urban fringe are classified as urban by the Census Bureau. Those who live beyond the fringe, in areas that have less than 1,000 persons per square mile, are officially classified as rural, but they are also classified as metropolitan if they live within an SMSA. In 1980, for example, 56.0 percent of the people, and 98.9 percent of the total area, of the St. Cloud SMSA were officially classified as rural; the comparable figures for the Twin Cities SMSA were 8.7 percent of the people and 78.7 percent of the area.

In 1980 nearly four hundred thousand people lived in the rural parts of the six metropolitan areas in Minnesota (Table 5). Rural people comprised 14.1 percent of the total metropolitan population, and metropolitan areas contained 29.1 percent of the total rural population of the state. Obviously it is quite incorrect to assume that rural is synonymous with urban, or that rural is synonymous with nonmetropolitan.

It is equally incorrect to assume that rural is synonymous with farm, because only 23.3 percent of the rural people of Minnesota lived on farms in 1980. But what is the rural population if it is not the farm population? In 1980 29.9 percent of the rural people of the state lived in incorporated places of less than 2,500 people, too small to be classified as urban, and most of the rest lived in two kinds of areas at the edges of cities: 1) the outer parts of SMSAs that have less than the minimal density of 1,000 people per square mile required for inclusion in the official urbanized area; and 2) the fringes of places that do not have the minimal population of 50,000 people required for metropolitan status. Urban fringes are not delineated for places that have not attained metropolitan status, and the people who live on the densely settled fringes of such places are classified as rural, but they

Figure 2. TWIN CITIES URBAN FRINGE
will instantly and automatically be transferred to the urban category if the place attains a population of 50,000 people.

The rural population is defined only by default. It consists of the leftovers, of whatever remains after the urban population has been identified, and it probably is foolhardy to try to understand, interpret, and explain the leftovers until you have a very clear and precise idea of what they are left over from. The reclassification of places and areas can generate some dramatic population changes that may be more apparent than real.

Lyon County, in southwestern Minnesota, shows how small and simple changes can reproduce impressive, but misleading, results merely because numbers are shifted from one category to another when a place passes a certain population threshold. The total population of Lyon County has grown steadily for a century, but the rural population declined between 1910 and 1930 when first Marshall, then Tracy, passed the 2,500 mark, and their populations were transferred from the rural to the urban category (Figure 3).

The farm population of Lyon County reached a peak in 1930, and then started a long, slow, steady decline, but Marshall, the county seat, has continued to grow handsomely. The nonfarm population outside the boundaries of incorporated places has grown slowly since 1930, and the nonurban incorporated places, those that have less than 2,500 people, have continued to grow slowly, if somewhat erratically.

The city of Tracy is the place that has been struggling. The population of Tracy reached a peak of 3,085 persons in 1940, but since then it has been declining. Bells went off when it dropped from 2,516 persons in 1970 to 2,478 in 1980. The entire population of Tracy was instantly and automatically transferred from the urban to the rural category, the urban population of Lyon County dropped 10.0 percent, despite the continued growth of Marshall, and the rural population increased by 18.3 percent, all because Tracy had lost thirty-eight people. Of course these dramatic changes will be reversed if Tracy can manage to add two and a half people a year during the 1980s.

Conclusion

The lines between rural and urban places, and between metropolitan and nonmetropolitan areas, have got to be drawn somewhere, if one assumes that these concepts still have any value. The cutoff points are bound to be arbitrary. The figures of 2,500 and 50,000 people are as good as any, and they have been around for so long that we have gotten used to them.

People must familiarize themselves with the concepts and definitions on which all Census data are based in order to keep from misusing and abusing the great treasure trove of statistical information that is made available to us by one of the world’s finest data collecting and publishing agencies.

Anyone who uses Census data must begin by learning the definitions that are printed at the front or at the back of every volume in which these data are published.

John Fraser Hart is a professor of geography at the University of Minnesota.

Whoops, Our Numbers Slipped

Over the past year CURA has been working with the University’s Printing Department to computerize our typesetting operations. Having fumbled through a great many problems we were humbled enough to hardly blink at all when we discovered in the July 1985 CURA Reporter that our new technical wizardry had succeeded, in one of the tables, in slipping the first number of one line up to become the last number on the previous line. Our proofing should have caught this before publication, but didn’t. So our apologies to Paul Reynolds and Steve West. The table showing the distribution of their study sample (top of page 2) should have read:

<table>
<thead>
<tr>
<th>Number of Firms</th>
<th>Industrial Category</th>
<th>Percent of Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>102</td>
<td>Producer Services</td>
<td>19</td>
</tr>
<tr>
<td>24*</td>
<td>Consumer Services</td>
<td>4</td>
</tr>
<tr>
<td>123</td>
<td>Distributive Services</td>
<td>22</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>not:</th>
</tr>
</thead>
<tbody>
<tr>
<td>24* Consumer Services</td>
</tr>
<tr>
<td>23 Distributive Services</td>
</tr>
</tbody>
</table>

Who knows what will happen next? Could it be that we will actually start saving time and money, as promised?
K-12: What the Data Show About Public Education in Minnesota

by Thomas R. Peek

Minnesota has been drawn into the debate about the quality of public education sweeping the country. Minnesotans have assembled commissions and task forces, initiated reform proposals, and lobbied state and local officials for change. At the University of Minnesota an ongoing study has been examining Minnesota's public education system in the elementary and secondary schools. The joint CURA/College of Education study has identified four major problems with the current Minnesota system: fiscal constraints, teacher dissatisfaction, financial disparities, and changes in the students. To date, the education debate has paid little attention to these issues.

Minnesota Schools Asked To Do More With Less

During the 1970s and early 1980s Minnesota's school system contracted significantly as a result of demographic, political, and economic trends. First, public school enrollments declined at a rate greater than that of the nation. The decline reflects a drop in the number of school age children. Second, public education, like other public institutions, faced increasing costs, primarily, but not exclusively, as a result of inflation. Third, the schools were hit hard by fiscal constraints in the early 1980s, resulting from a financial crisis in Minnesota state government which disrupted state education aid programs, while, at the same time, federal aid to public education was diminishing.

Figure 1 shows how a ten-year pattern of school financing was disrupted beginning in school year 1981-82. The results were a retrenchment at the local level and significantly greater reliance on local property taxes for funding schools.

At the same time, numerous federal education programs were consolidated into an education block grant and a number of programs were significantly reduced, including funding for aid to the disadvantaged, child nutrition programs, and vocational education aid.

The contraction of Minnesota's public education system has caused significant changes in the system itself:

- Minnesota's total K-12 educational expenditures dropped 16.5 percent in real dollars between 1972-73 and 1982-83—a bigger decline than in most other states, including all midwestern states (Table 1). Minnesota's expenditure rankings (a comparison with other states) slipped. Even measured in per pupil expenditures in constant dollars (to account for enrollment declines), Minnesota's 21.8 percent increase during the period was below the national average and was a smaller increase than in all other midwestern states. In addition, expenditures for Minnesota elementary and secondary education have become a much smaller portion of the state budget, having dropped from 40 percent to 27 percent between 1971-73 and 1983-85.

- Minnesota experienced a net loss of about 5,000 licensed staff between 1973-74 and 1982-83, reflecting two trends—declining enrollments in the 1970s and fiscal constraints in the early 1980s.

- With tenure and seniority protections in place, staff reductions have resulted in hiring fewer new teachers, laying off newer teachers first, and filling fewer retirement-created openings. As a result, the median age of Minnesota's licensed staff increased from 35.4 in 1973-74 to 41.5 in 1982-83.

- Salary increases gained by Minnesota teachers during the 1970s and early 1980s were not sufficient to keep up with inflation, diminishing their purchasing power by 7 percent between 1972-73 and 1982-83. This occurred despite the fact that those teachers remaining in the system after the fiscal crisis were older, with more experience and training, and therefore entitled to higher average salaries.

- The number of schools in Minnesota declined by 18 percent between 1971-72 and 1982-83 as a result of two trends—declining enrollments and fiscal constraints.

During the same period, Minnesota schools were asked to take on substantial additional responsibilities. They were required to foster racial integration, eliminate sex discrimination, and improve access for the handicapped. They broadened the age group they were serving through community education and through early childhood
and family education programs. They were asked to provide special programs for gifted and talented children. All of these changes increased public school responsibilities, expanding the role of public education in Minnesota life.

Teacher Dissatisfaction is Apparent

The national literature on public education has identified a variety of factors leading to teachers' dissatisfaction with their jobs. To what degree do Minnesota teachers face the same circumstances? Minnesota teachers' salaries are slightly higher than those in most other states. The average teacher salary in Minnesota was $22,296 in 1982-83 compared to a national average of $20,531 for the nation as a whole. But teacher salaries, both in Minnesota and nationally, have failed to keep up with the inflation of the last decade. How these salaries rank with those of other Minnesota professions was not determined here, but relative to comparable professions nationally, Minnesota teachers fare only slightly better than their national counterparts. In addition, the career ladder for teachers in Minnesota is similar to what it is nationally. Beginning salaries are lower than virtually all other professions requiring a college degree and salary ceilings are reached much sooner and at a much lower level than for other college-educated workers.

A recent survey of Minnesota public school teachers revealed that 58 percent are dissatisfied with their jobs, one-third are satisfied, and just over 9 percent are highly satisfied. The factors these teachers identified as contributing to dissatisfaction include their pay, the amount of work they do, the lack of chance for advancement on the job, the way school policies are put into practice, and the lack of praise they get for doing the job.

Significant Financial Disparities Continue to Exist

A major aspect of the reform movement of the late 1960s and early 1970s was improving educational opportunity by trying to minimize financial disparities among Minnesota's school districts. In 1971, a constitutional court challenge of the state's school finance system, Van Dusart v. Priest, reinforced the belief held by some that reliance on local property wealth for funding public schools was creating unequal educational opportunities for Minnesota children. As a result of this concern (and the concern about rising local property taxes) Minnesota's school finance system was reformed. The state's contribution to school district revenue was increased by substantially raising the foundation aid level and placing a limitation on taxes that a district could raise against real property. Additional property tax relief was also provided.

During the 1970s and early 1980s, the legislature modified the finance system in ways that again increased reliance on local property taxes as well as increasing expenditure and tax rate disparities. These changes were particularly significant during the state's financial crisis of 1981 and 1982. Recent studies show that these modifications have significantly undermined the effort to minimize financial disparities among districts. In fact, the levels of disparity in per pupil revenues and expenditures in the early 1980s remained virtually the same as they were in the early 1970s when the dis-

Table 1. CHANGE IN ELEMENTARY AND SECONDARY SCHOOL EXPENDITURES, 1972-73 TO 1982-83*

<table>
<thead>
<tr>
<th>State</th>
<th>Total Expenditures (percent change)</th>
<th>Per Pupil Expenditures (percent change)</th>
<th>Per Pupil Expenditures as a percent of Per Capita Income (percent point change)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINNESOTA</td>
<td>-16.5</td>
<td>21.8</td>
<td>3.4</td>
</tr>
<tr>
<td>Iowa</td>
<td>-3.3</td>
<td>30.6</td>
<td>6.4</td>
</tr>
<tr>
<td>Kansas</td>
<td>14.0</td>
<td>49.5</td>
<td>7.6</td>
</tr>
<tr>
<td>Nebraska</td>
<td>-5.7</td>
<td>37.3</td>
<td>7.6</td>
</tr>
<tr>
<td>North Dakota</td>
<td>25.0</td>
<td>61.8</td>
<td>9.4</td>
</tr>
<tr>
<td>South Dakota</td>
<td>-5.7</td>
<td>30.3</td>
<td>4.9</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>2.0</td>
<td>34.3</td>
<td>7.4</td>
</tr>
<tr>
<td>UNITED STATES</td>
<td>-1.6</td>
<td>28.8</td>
<td>3.7</td>
</tr>
</tbody>
</table>

*Based on constant 1972 dollars.
public education. Without question that is a central goal for most, perhaps the primary goal of the system, and it should be at the heart of any reform considerations. However, in addition to academic achievement, there are other, non-academic goals that have also been important to public education and around which much of what happens in the schools revolve. These non-academic goals include proper socialization, surrogate parenting, and opportunities for non-scholastic experiences. Reflecting these goals are numerous school activities including formal and informal student counseling; ongoing student disciplinary action; special education; extracurricular activities; and regular classes in health, sex education, drug education, drivers education, and other areas. These activities give the school many more dimensions than just those of an academic learning center.

The failure to fully appreciate the non-academic functions of public education has important implications for school reform. For example, responding to the problems of the changing student will involve the non-academic aspects of public education. Indeed it is possible that, given the changing student, academic improvement can be achieved only through strategies associated with the non-academic activities of the system.

Minnesota has a tradition of continually reexamining and reforming its public institutions and there are few institutions where this is as important a task as with the public schools. This makes the current debate about the schools critically important to the future of the state and its citizens. Therefore, it is essential that the debate be based on a realistic assessment of the condition of the system and the challenges it faces now and in the years to come. Similarly, ongoing reform must reflect careful consideration of actual deficiencies and emerging problems and a clear understanding of the possible implications of particular reforms. The criticisms of the current debate outlined here should not encourage complacency about the schools. Rather it is hoped that they make a constructive contribution to the current efforts to make Minnesota's schools better than they have ever been.

Thomas Peek is an administrative assistant with CURA and principal staff person on the education project. A large portion of this article is a highly condensed version of the project's third publication, *Minnesota K-12 Education: The Current Debate, The Present Condition*. Readers interested in more detail are referred to that publication, which also contains a history of how the Minnesota public education system developed and a policy framework for the current system.
New CURA Publications


Results are presented from a survey conducted for the Harrison Neighborhood Association (Minneapolis) in the fall of 1984. From a survey of the entire neighborhood, 25 percent responded. These residents consider their most serious problems to be crime, jobs and activities for youth, housing conditions, and general neighborhood appearance. The neighborhood's assets are its location near downtown Minneapolis, the quality of its parks, affordability of its housing, and the good and improving relations among neighbors. The survey forms a basis for the neighborhood association in planning present and future activities.


What happens to the workers when a plant is shutdown? Four case studies in Minnesota are explored: Knudson Trucking, Farmhand, Tonka, and Munisingwear. Because each case was different and only four were studied, few conclusions could be drawn except to note the lack of centralized and organized information on plant closings in Minnesota. The amount of advance notice given and the roles of the company management, the workers, the community, and the state in planning for the shutdown are followed through each of the case studies.


The article carried by the same name in this CURA Reporter was published separately for a conference last spring. A limited number of extra copies are still available.

CURA publications may be ordered by phone (612/373-7833) or on the CURA Publications Order Form included in this CURA Reporter.

CURA-Related Publications


This article is a rewriting of Ms. Pyle's work done with CURA in 1981-3. Her study of urbanization in rural areas of Olmstead County and how this affects prime farmland was presented in a series of three CURA Reporter articles. Pyle is now an assistant professor of geography at West Virginia University. A limited number of reprints of her article are available through CURA (phone 612/373-7833).

"Hmong Refugees in Minnesota: Sex Roles and Mental Health," Joseph Westermeyer, Mayaka Bonafuex, and Tou Fu Vang, Medical Anthropology 8 (Fall 1984): 229-245.


The studies reported in these two articles on the Hmong were partially funded by CURA.

Photos on pages 1 and 3 courtesy of the Agricultural Extension Service, University of Minnesota.

Photo on page 5 courtesy of the Rochester Post Bulletin.

Photos on pages 10, 13, and 14 courtesy of the Center for Youth Development and Research, University of Minnesota.

Maps on pages 2, 7, and 8 and diagram on page 9 prepared by the Cartography Lab of the University of Minnesota's Department of Geography.
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