

**MINNESOTA**  
land use and  
settlement  
**1985**



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# MINNESOTA SETTLEMENT AND LAND USE 1985

Prepared for the Minnesota State Planning Agency

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## A NOTE TO THE READER

Individuals and firms — both public and private — probably will invest ten to twenty billion dollars in new buildings and facilities in Minnesota over the next fifteen years. A similar amount has been invested since the end of World War II.

Such investment results in new patterns of land use and settlement. A new state is emerging from the old. The new investment represents both an irreversible commitment and confidence in the future social and economic health of the state; and it also shapes the state in many ways for several generations to come. For the life expectancy of these structures is measured in scores of years if not centuries.

The new settlement pattern brings some inevitable changes in old ways of life and old ways of using resources. It also presents opportunities for additional change, for preservation of established values, and for continued neglect of long-festered problems. These changes and opportunities require continual examination.

The purpose of this report is to present a view of Minnesota's major land use and settlement patterns in 1985. Historical data were used to project several variables to that date. For most of the projections, recent trends were assumed to continue. In a few cases, potential policy changes result in alternative sets of projections. For sake of brevity, and because the report deals with the future, the word "will" appears in many places. It should always be read with the qualification, "if recent trends persist", or "if the stated assumptions are correct". Thus the picture presented is subject to continual revision and should not be construed as the assured state of the state in 1985.

Indeed the goal of this report is *not* to predict, warn, alarm, lament, or demand. It is to provide material for the kind of public discussion and policy-making which helps to keep Minnesota's quality of life at or near the top in the nation.





## MINNESOTA 1985

This is a look at the geographic patterns of population and major land uses in Minnesota as they may change over the years from now to 1985. Variables projected include population, broad occupational categories, farm land acreage, farm size, and dwelling unit construction.

Projections were made by fitting a straight line to the plot of each variable on a graph covering the period since 1940. Thus the 1985 values indicate where we will be if recent trends continue. They assume that the composite forces of change which dominated during the past three decades will continue to be dominant in the next fifteen years.

These projected trend lines indicate the most probable situation in 1985, as far as that probability can be determined now. But they also suggest lags and problems which will become increasingly aggravated unless some observed trends are changed.

Hence the analysis highlights problems and issues on which policy can and should be set to direct or redirect trends now running. This study is not meant to be a forecast. It is, rather, a look at certain selected issues against the background of the state's changing geography.

Five points emerge strongly.

- (1) Major land-use and population changes are likely to be subtle and unspectacular but inexorable.
- (2) There will be continued increase in the need for state-wide land use policy, zoning, and land purchases which permit specific activities in specific regions or locations.

For example, power generation, intensive agriculture, large-scale residential and non-residential urban developments may well be segregated within specified broad regions in order to control the impact of these developments upon the quality of land, lakes, and streams. The need will keep increasing for public land policies aimed at consolidation or disposition of

- scattered tracts and emphasis on ownership of large, contiguous tracts which have special advantages of either resource quality or accessibility to population.
- (3) The road network is and will continue to be the most important factor shaping the pattern of development and population change. Plans for the prime highway network will be increasingly coordinated with other development plans. The rural feeder road net is undergoing great changes in function and needs review of both physical layout and financing assumptions.
  - (4) The changing geographic patterns of investment provide no indication that local and regional inequities in tax base can be alleviated by spreading industry, trade, or high-value homes. The trend will probably continue to be toward increasing inequities.
  - (5) Although the need for certain policies is clear, many issues could be resolved and results evaluated only with better use of state and local data.

Maps in this study are approximate and suggestive, not definitive. For more precise and detailed maps of current and past patterns, refer to *Atlas of Minnesota Resources and Settlement* (Minnesota State Planning Agency, 1968-69).

This study omits direct reference to most of the social services — health, welfare, education. It deals mainly with physical patterns of population and major land uses. These patterns are the physical framework for all of the activities and services which comprise Minnesota's dynamic society. Continuing work programs of many agencies will aim to improve the quality and impact of social services within the patterns of population and settlement outlined here.

### Gross Changes in Population

Since the end of the Great Depression in the 1930's the size and distribution of America's population have been powerfully influenced by four forces — the continuing high level of federal military-space spending, the explosive birth



rate, the adjustment of both rural and urban settlement patterns to automotive transportation, and the rising affluence and resulting greater range of choice of residential location. All of these forces were initiated or greatly accelerated by World War II.

These have been the major forces in Minnesota just as they have been in the nation as a whole. Their impact is reflected in trends since the 1930's. The same forces will continue; hence they will also be reflected in the population changes over the next fifteen years.

But the Post-World War II era is ended and a new era is in the making. The explosive growth of both total population and school-age population is ended or at least recessed. The next fifteen years will see, instead, an explosive growth of the labor force and young marrieds. New patterns of federal spending, new institutions, and new technologies are getting serious attention.

The change in Minnesota population will reflect these changes as well as the forces which are operating now. The question is what the mix of social economic, political, and technological conditions will be.

Five different sets of assumptions about these conditions produce five different projections for 1970-1985. The past-trends projection has the highest probability. The others are plausible, and they illustrate the range that is possible though less probable. Many other assumptions could be substituted. They would produce still different numbers, but the results would fall within the same range.

**Projection of 1940-70 Net Growth Trends.** Under these assumptions Minnesota will gain 530 thousand people between 1970 and 1985 (Table 1). Net migration into the state will be 20 thousand. Net migration has been outward for six decades. The trend would be reversed under the terms of this projection.

**Continuation or Direct Substitution for Military-Space Expenditures.** The Vietnam escalation sparked a rapid rise in industrial employment, immigration, and growth rate in the Twin Cities and vicinity in the last half of the 1960's. The action had the impact of a federal government program to direct the location of growth. This has been true generally of the high level of military-space expenditures since 1940. Defense-space pro-

Table 1. Gross Changes in Population assuming continuation of 1960's trends.

	Population (thousands)		Components of Change, 1970-85 (thousands) <sup>1</sup>		
	1970	1985	Net Change	Natural Increase	Net Migration
State Totals	3773	4303	+ 530	+ 510	+ 20
7-County Metro	1874	2316	+ 442	+ 283 <sup>2</sup>	+ 159
80-County Outstate	1899	1987	+ 88	+ 227	- 139

<sup>1</sup>Components of Change values for the state are from Robert Hiller, Division of Vital Statistics, Minnesota Department of Health, Personal Communication, December 1970. See *Population Data Book*.

<sup>2</sup>Assumes ratio of metro natural increase to state natural increase will remain as it was 1965-70, approximately 1.12.

grams might be continued or they might be replaced by new expenditures which would have similar geographical or industry patterns in order to minimize problems of conversion. Projection of the growth and migration rates of the last half of the 1960's raises 15-year growth to 774 thousand, net in-migration to 244 thousand (Table 2).

**National "Heartland" Policy.** National statements have both advocated and promised governmental action to arrest the relative shift of population away from the nation's "heartland" toward milder climates or more glamorous places. Such a policy might seek to keep the populations of Minnesota and other Midwest states at least at their present percentages of the national total. In that case, Minnesota's growth would be 850 thousand over the next ten years, net in-migration about 300 thousand.

Different definitions of dispersal would make substantial differences in the impact of a "heartland" policy.

*Dispersal of new jobs at only the national scale* — for example, a policy to maintain a given share of the nation's population and income within the Midwest as a whole but continue concentration at major centers within the region (Table 3).

*Deliberate decentralization within the Upper Midwest and other major regions* — disperse new regional growth to

**Table 2. Gross Changes in Population assuming National Policy replacing Recent Defense Expenditure Pattern without Geographical Realignment of Spending.**

	Population (thousands)		Components of Change, 1970-85 (thousands) <sup>1</sup>		
	1970	1985	Net Change	Natural <sup>2</sup> Increase	Net Migration
State Totals	3773	4547	+ 774	+ 530	+ 244
7-County Metro	1874	2679	+ 805	+ 310	+ 495
80-County Outstate	1899	1868	- 31	+ 220	- 251

<sup>1</sup> Values of change components are calculated on the assumption that 1965-70 net migration rates will persist to 1985. These rates were based mainly on (1) a sharp increase in manufacturing employment in the Twin Cities related, directly and indirectly, to the Viet Nam war and (2) a sharp increase in high-school graduates in excess of local jobs in outstate areas.

<sup>2</sup> Natural increase values from Table 1 are adjusted to take into account the higher net change rates. Adjustment is made as follows:

$A = 1/2 d r$ , where:

- A represents the adjustment added to the natural increase shown in Table 1.
- d is the difference between the net change shown in Table 1 and that shown in Table 2.
- r is the natural increase in Table 1 expressed as a percent.

smaller, non-metropolitan centers throughout the state or wider region (Table 4).

Both the "war-conversion" and "heartland" projections imply a sharp reversal of long-time migration trends — a shift from net outflow to a net inflow of 300 thousand or more in fifteen years. The numbers are plausible. With approximately four percent of the national population making interstate moves in an average year, this would mean a diversion of less than one-fourth of one percent of the national interstate migration stream into Minnesota. Probably more than half of that number would be Minnesota out-migrants who would elect to remain if employment were available.

**Continued National Metropolitanization Without Federal Intervention.** This is a projection of the high out-migration and comparatively slow growth rates which characterized the

1960-64 period in Minnesota. Similar trends prevailed through the "boom" years of the 1920's. At that time modern metropolitan growth, motorization of farming, and migration to mild climates were reshaping the national population

**Table 3. Gross Changes in Population assuming National Policy to arrest "Heartland" Population Decline<sup>1</sup>, with Continued Trend toward larger-scale development.**

	Population (thousands)		Components of Change, 1970-85 (thousands)		
	1970	1980	Net Change	Natural <sup>3</sup> Increase	Net Migration
State Total	3773	4625	+ 852	+ 562	+ 290
7-County Metro	1874	2679 <sup>2</sup>	+ 805	+ 310	+ 495
8-County Outstate	1899	1946	+ 47	+ 225	- 178

<sup>1</sup> Assumes that Minnesota would, under this policy, retain the same share of U.S. population that it had in 1970, approximately 1.85 percent, and U.S. population in 1985 will be 250 million. (National Planning Association, Projection: 252.1 million, U.S. Census "C" projection: 251.0 million, Census "D" projection: 239.8 million.)

<sup>2</sup> Assumes that net migration rate for 7-county metro will be same as 1965-70, + 9.3% per five-year period.

<sup>3</sup> Natural increase values from Table 1 adjusted as explained under Table 2.

**Table 4. Gross Changes in Population assuming "Heartland" Policy with Dispersal of Development.**

	Population (thousands)		Components of Change, 1970-85 (thousands)		
	1970	1985	Net Change	Natural Increase	Net Migration
State Total	3773	4625	+ 852	+ 530	+ 322
7-County Metro	1874	2381 <sup>2</sup>	+ 507	+ 288	+ 219
80-County Outstate	1899	2244	+ 345	+ 242	+ 103

<sup>1</sup> Same assumption as in Table 3 regarding Minnesota share of U.S. Population.

<sup>2</sup> Assumes that most new growth dictated by national policy would be directed outside the Metro area.

*Scenic Areas* include the major regions of rough land and lakes (Figure 25). The prime areas are located where these two resources occur together. *These regions* are the state's half-billion dollar natural showplaces. They are the single most important positive physical aspect of the state's popular image. Management goals for these scenic areas:

- (1) Minimize unsightly features through zoning, site selection, and landscaping – billboards, refuse disposal or storage, erosion, roadside structures.
- (2) Design Highways to blend with the natural landscape.
- (3) Acquire easements to protect panoramic views.

*Mineral Resources* are necessarily strongly localized; mining will never occupy more than a fraction of one percent of the state's land resource. Over nearly a century of operation the mining industry has established a zone of excavation and waste accumulation along the Mesabi Range. In contrast, sand and gravel excavation has been desultory. Management goals might well include the following:

- (1) Expand the zone of mining waste accumulation on the Mesabi carefully and as necessary.
- (2) Prohibit disposal of mining or processing wastes in other areas.
- (3) Establish waste disposal zones adjoining any future new metallic ore mining regions.
- (4) Establish priorities and regulations for future exploitation of untapped sand and gravel deposits.
- (5) Regulate and monitor waste water discharge from mining, quarrying and ore processing operations, especially in the northeastern high-runoff water source region of the state.

**In Summary:**

- America and Minnesota are moving from an era of resource exploitation to an era of resource management.
- Management goals will recognize not only the need for general principles but also the need to apply those principles to specific, unique resource regions, which have no substitutes. Most resource management prob-

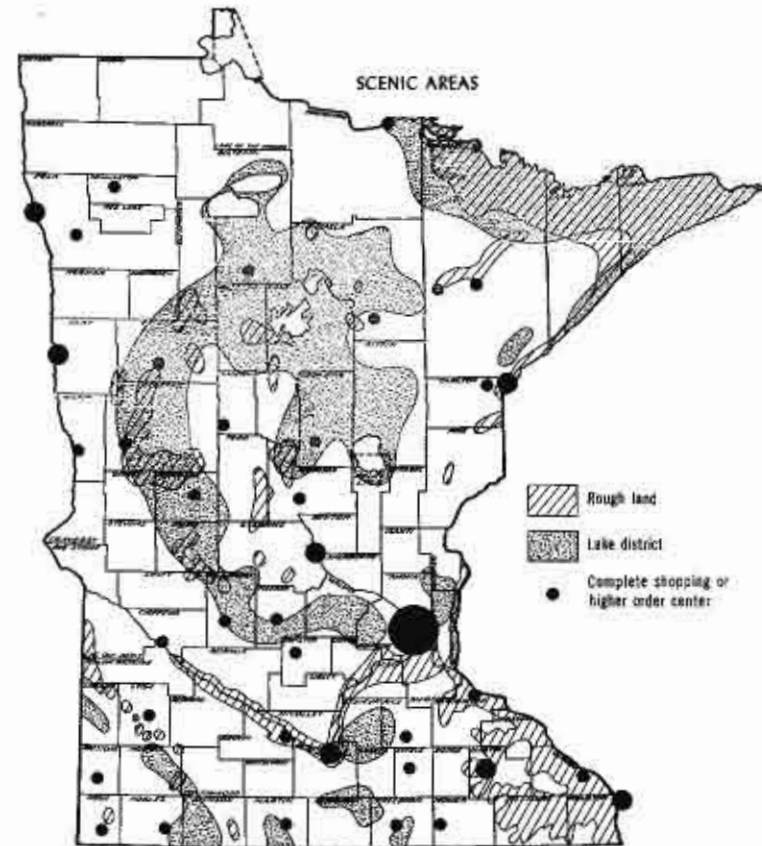


Figure 25. Zones highly generalized from same source as Figures 21-24.

lems are also problems of land acquisition or land use control; management policies must be developed with reference to specific places and regions.



## Transportation

The Prime State-Federal Highway Net will continue to be the framework for new growth and development throughout the state. Outside the Metro district, this network has set the locational pattern for 600 thousand new non-farm residents in the past four decades and will set the pattern for another 200 to 300 thousand by 1985 (Figure 26).

The prime network is comprised of the highways which directly link each Complete Shopping or Wholesale-Retail center with all others in Minnesota or in the adjacent counties of the bordering states and Ontario. It provides a network that criss-crosses the major contiguous growth region in the southeastern one-third of the state. It reaches and crosses all other contiguous growth regions. Outside of those regions, every growing place is located on the prime highway network.

The network also intersects most of the scenic regions of the state, although the access it provides to scenic regions is accidental and incomplete (Figure 27). Highway - scenic corridors which are most-traveled, longest, and most outstanding in the Midwest are the "Hiawatha Valley" and Lake Superior North Shore.

There will be growing recognition of the need in these two corridors for coordinated development of highway, recreational waterway, riding trail, and hiking trail. Interchanges between these parallel modes within the corridor would provide parking, stables, docks, feed, food, fuel, restrooms, campgrounds, and motel facilities.

Major scenic corridors in which scenic highways are least developed are the Minnesota Valley and the heavily-rolling glacial moraine and lake region, centering on the Leaf Hills, between Alexandria and Detroit Lakes.

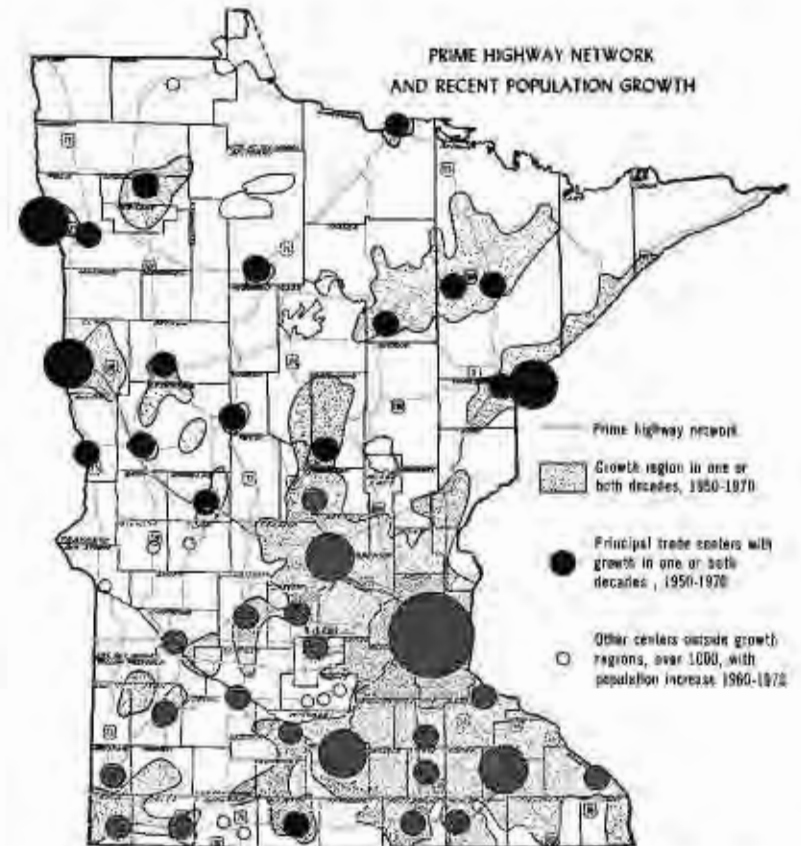


Figure 26. Note that cities shown are only "Complete Shopping" or "Wholesale-Retail" centers, plus the nine growing places over 1000 population outside the Contiguous Growth Regions (pp. 12-13). Numerous growing places, smaller than complete shopping centers but over 1000 population, within the Contiguous Growth Regions, are not shown.

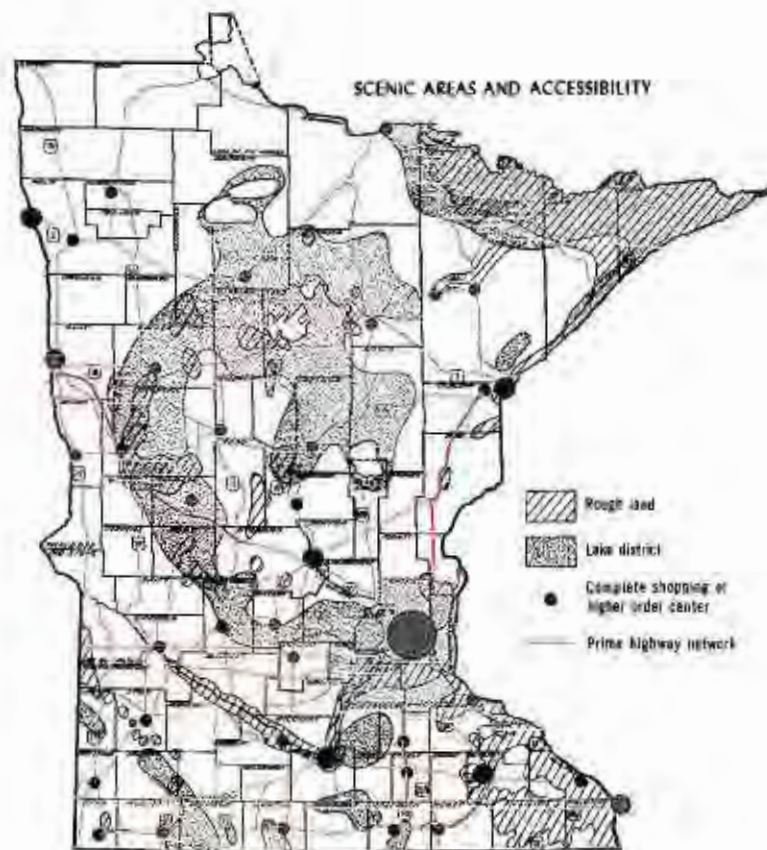


Figure 27. Scenic areas are highly generalized from Atlas of Minnesota Resources and Settlement.

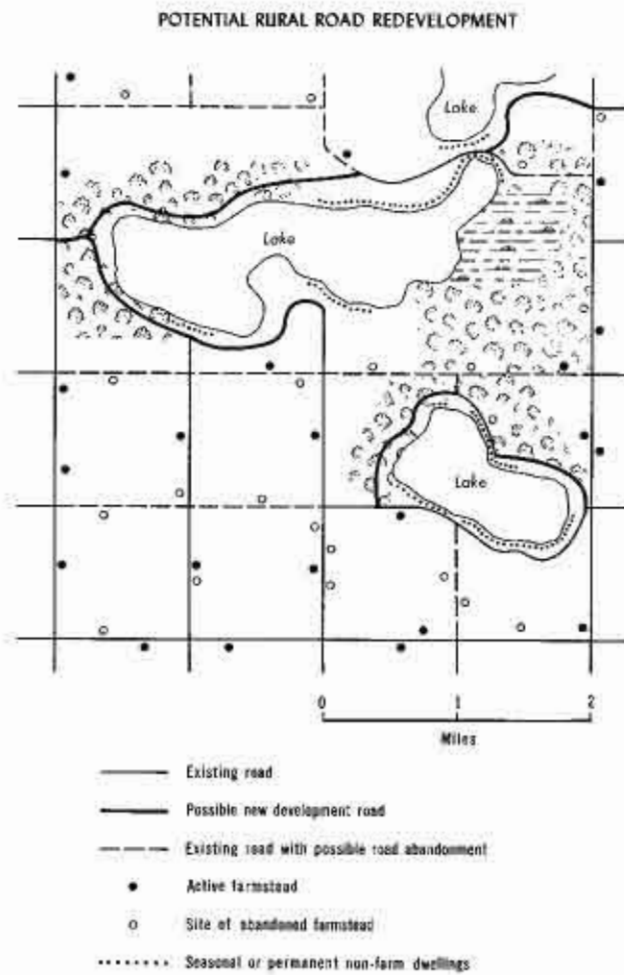
The feeder network of township, range, and section line roads will continue to change in function (Figure 28).

- In the Contiguous Growth Regions the rural roads serve increasingly as commuter routes. Many may no longer be needed as farm-to-market roads; although, outside the Metro district, they may still be subsidized by the state on the theory that the farm-market link is their chief function. As commuter routes, these roads have increased the accessibility of the rural labor force to new employment in the industrializing non-metropolitan areas. They have eased the transition for thousands of farm families and rural communities during the agricultural revolution of the past four decades. Thus, as a practical matter, *rural road subsidies have served as rural economic redevelopment subsidies in the Growth Regions.*
- In the non-growth areas the number of farms has declined by one-third or more, full-time farms by one-half or more. There has been commensurate decline in the amount of rural road mileage actually needed to serve the remaining farms. The trend will continue.
- In the lake regions new non-farm development may well be slowed, blighted, or misdirected because the rural road network, based on original land survey lines, is seldom compatible with the pattern of lake shore.

In summary, the *prime highway net is the framework for major investments and job growth. It is and will continue to be literally a Development Road system.*

The feeder network is an essential supplement to the prime net; but there will be increasing recognition that it may: (1) needlessly subsidize some rural suburban development today and in the future; (2) encourage costly and blighting development of lakeshore in some places while diverting investment to second-choice sites in other places; and (3) include excessive mileage in areas of greatly reduced population and number of farms.





**Figure 28.**





*Urban Clusters* (see p. 14) are products of the highway system. The prime highway net connects major centers of employment, trade, services, and non-agricultural production. The feeder net ties in all rural residential areas and farms. The road network will continue to permit these regions to become consolidated labor markets and job markets; and it will continue to encourage the development of the countryside and sustain small towns between the chief urban centers.

*These urban clusters are, in a sense, the state's "new cities."* The new transportation and communication network is transforming existing rural settlements into low-density metropolises.

There may well be growing recognition of the advantages of experimental decentralized urbanization in this way and in these places.

- Historical momentum — opportunity to mesh new projects with an ongoing evolutionary process, accelerate and direct it.
- Opportunity to use the diversity of backgrounds, resources, and interests which already characterize the different centers in each region.
- Presence in each region of the full-range of urban management needs:
  - (a) core area blight and abandonment (older, rail-oriented business districts and their environs).
  - (b) extension of road and utilities to new growth areas.
  - (c) housing for low-income and elderly.
  - (d) pollution of regional lake and stream basins.
  - (e) regional road networks and transportation service — to reduce the impact of employment fluctuations at any one center through increased interaction among all centers in the region; to insure diversity, range of opportunity, flexibility; to guide new residential, commercial, and industrial development.
  - (f) regional organization of local governments which can develop and entertain community debate and controversy, make plans, decisions, and investments within this regional framework.

*State contribution to this experimental urbanization will grow.* So far there has been enabling legislation and assistance in organizing and funding. Further aid is likely to be directed to: (a) experimentation with new technology or new organizations to provide necessary transportation and utilities to low-density areas — a technology of dispersed cities; (b) coordination of state highway development with plans for regional links, corridors, and feeder networks; and (c) coordination of decisions on location of state facilities with regional patterns of growth and development.

*Private entrepreneurs may well lead in regional integration as they have thus far in rural reorganization.* Regional groupings, ownership, and management are likely to play an increasingly important role in retailing, distribution, land development, finance, broadcasting, and newspaper publication.

*"Growth Center" or "Dispersed City"* will become a policy question of growing importance in the urban clusters. Some hold that resources must be committed to one selected city to bring it up to a population of at least a quarter million so it can support culture, education, and service appropriate to urban life. Others contend that all cities today have become more than ever multi-centered collections of specialized locations and districts, linked by multi-focused transportation networks; each Minnesota Urban cluster and its region already has 200 thousand population or more (including neighboring state portions of Southwest, Northwest, and Winona regions).

*The emerging answer so far in Minnesota is the "Dispersed City"*. The state investment pattern has encouraged it. For example, the highway network links each center directly with all others. It is not hierarchical, as the rail passenger system was, or the airline and bus networks are today. Neither state investment in higher education facilities nor the location of other state employment reinforces the pattern of urban centers in a consistent way (Figure 29). Private investment also has pushed the Dispersed City. For example, some of the major centers of industrial growth have not coincided with major centers of trade and services (Figure 30). Thus far the pattern reflects historical momentum, diverse resources and backgrounds of different communities, and diversity of needs and tastes.

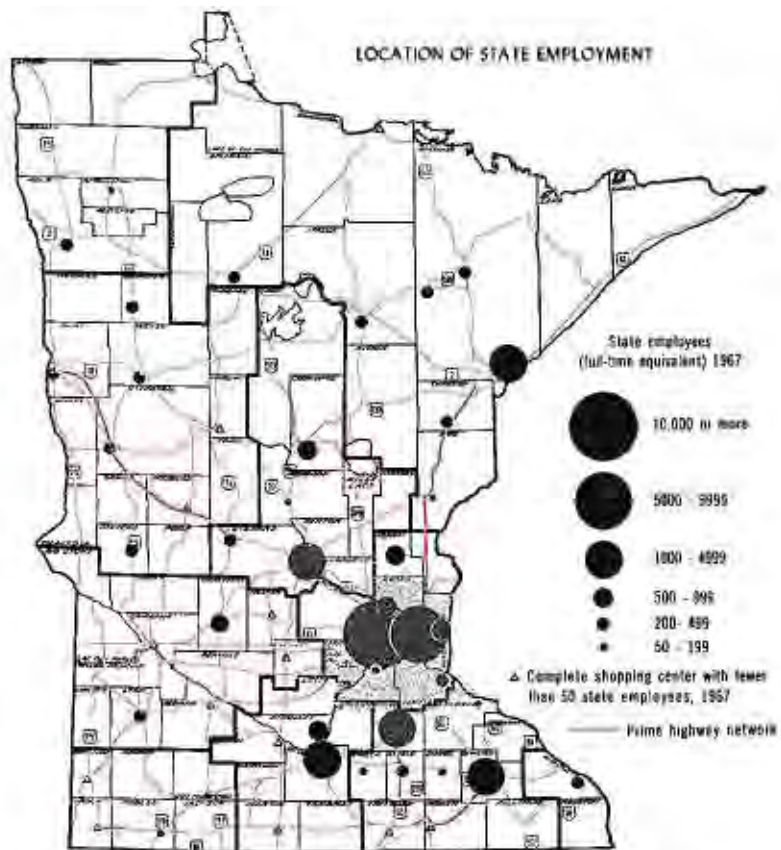


Figure 29. Source of employment data: U.S. Census of Governments.

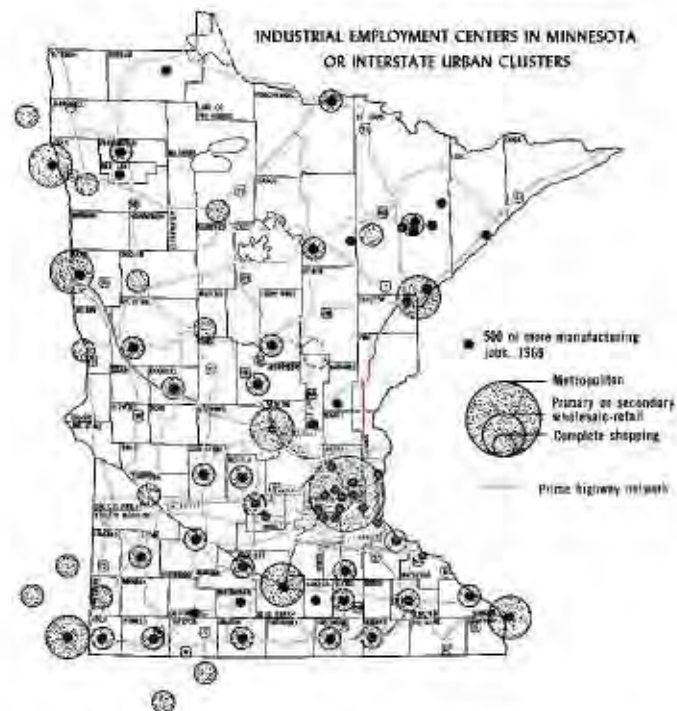


Figure 30. Source of employment data: U.S. Census.

About three thousand miles of rail line could be considered excess and abandoned. The remaining network would still meet the following criteria; and even that system might well exceed the basic need (Figure 31).

- Major foci and connecting points with the national network for Minnesota rail lines will continue to be the Twin Cities, Duluth-Superior, Fargo-Moorhead, Omaha, Chicago-Milwaukee.
- All Complete Shopping and Wholesale-Retail centers in the state will continue to have direct rail routes to the same major foci (above) as at present. These lines are the basic regional network.
- In addition, all places with 1000 or more population which now have rail service will continue to have at least one tie to the basic regional network.
- The Iron Ore system in northeastern Minnesota will remain intact.

The possible pattern shown here assumes no restrictions on system mergers. If the existing corporate structure were preserved, the pattern would be somewhat different but would not necessarily include more mileage.

The abandoned rights-of-way might well be incorporated, with abandoned rural roads, into a trail system for snowmobiles in winter, for hiking, bicycles, or horses in summer.

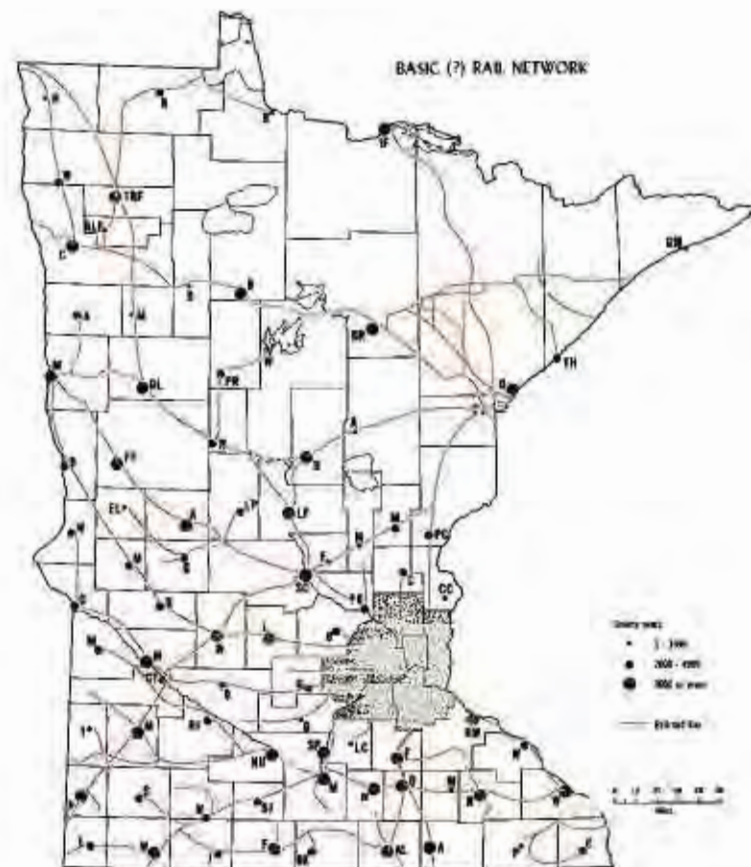


Figure 31.



*The major water transportation corridors are also the prime highway-scenic corridors* — the Lake Superior North Shore and the Hiawatha Valley. Hence the interchanges between highway, rail and water freight transport will continue to be developed within these corridors. Increasing efforts are likely to keep these industrial interchanges from using more frontage or more widely dispersed sites than they do now.

Agencies will be under increased pressure to preserve the Lake Superior coast between Two Harbors and Pigeon River. Further water-side ore processing and shipping facilities are likely to be under pressure to use vacant or redeveloped shoreline in existing industrial-trackage zones at Duluth or Two Harbors. Those now operating may well be considered non-conforming uses in the future.

Further heavy industrial developments along the Mississippi are also likely to be under growing pressure to use vacant or redeveloped frontage in the existing towns rather than spread into open lands within the designated Memorial Hardwood Forest.

#### **Land use Changes and Local Tax Base**

Data from the 1967 Census of Government are compared with Sales Management magazine's 1967 estimates of personal buying power (net personal income) for each county. Numbers are only approximations; but important patterns are apparent.

- Direct local government expenditures per capita were \$400 to \$500 in most high-expenditure counties, \$200 to \$300 in low-expenditure counties (Figure 32). Low spending per-capita tended to be in non-metropolitan counties with many parochial schools (areas centered on St. Cloud and New Ulm). High numbers appear in northeastern and metropolitan counties plus scattered rural west-central counties.
- Direct local government expenditures per dollar of personal buying power were generally lowest in counties with highest income (Figure 33). Local government expenditures per capita vary less than personal income from one part of the state to another.

Local taxes collected for local use show the same geographic pattern (Figure 34). Northern, west central, and southwestern counties made the greatest local tax effort per dollar of personal income.

- \$440 million were transferred to local governments from state and federal sources (mostly state). These funds were distributed according to need — mainly for welfare, education, and roads. Transfers averaged as little as 2 cents per dollar of local personal buying power in Dakota county, as high as 19 cents per dollar in Aitkin county (Figure 35).
- Sources of state aid funds are closely related to income. The total amount transferred to local units was equal to about 4 cents per dollar of buying power for the state population as a whole.
- Assume that payment into the state and federal aid pool came from each county at that average rate. Counties whose combined local governments received transfer payments less than 4 cents per dollar of local buying power were net benefactors to the aid programs. Others are net beneficiaries from the programs. Balances show net outflow of 1 or 2 cents per dollar of local purchasing power for some relatively high-income urban counties, moderate to high net inflow in many rural western and northern counties (Figure 36).

*Thus many counties whose local governments receive high subsidies from the state also tend to make exceptionally great local tax efforts. They are high cost from the point of view of both the local and the state taxpayers.*

Some of the high cost may well be the result of small county population. Number of full-time local government employees (and amount of equipment needed for them) is significantly higher in relation to population for counties under 10 to 25 thousand than it is for more populous counties.

But the higher cost is more related to the state's effort to maintain minimum standards of living, education, and accessibility for all residents regardless of wide variations in local ability to pay.

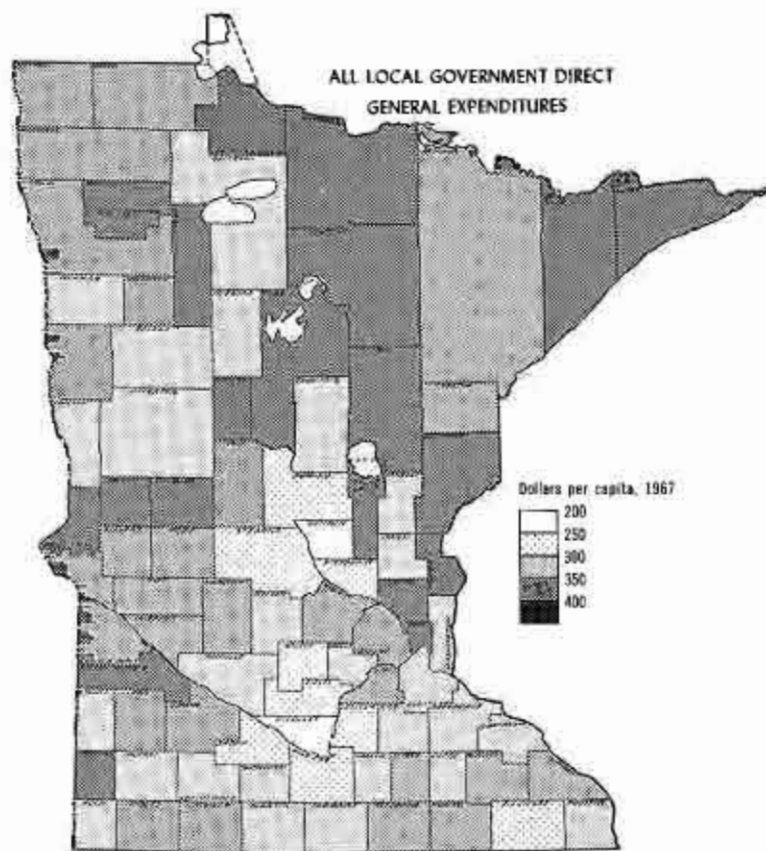


Figure 32. Data from U.S. Census of Governments, 1967.

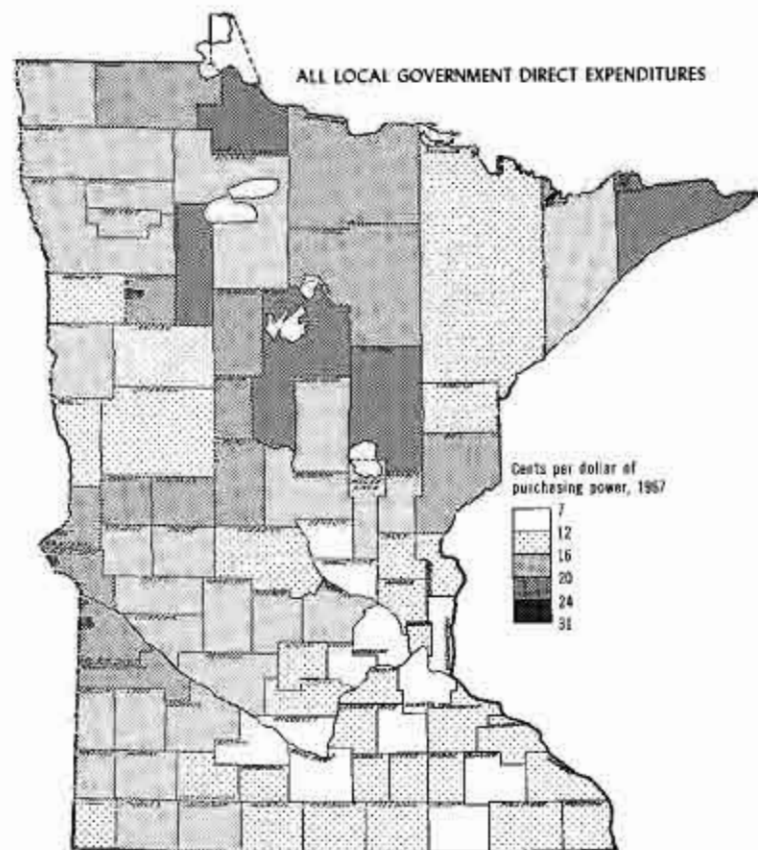


Figure 33. Data computed from U.S. Census of Governments and Sales Management, 1967.



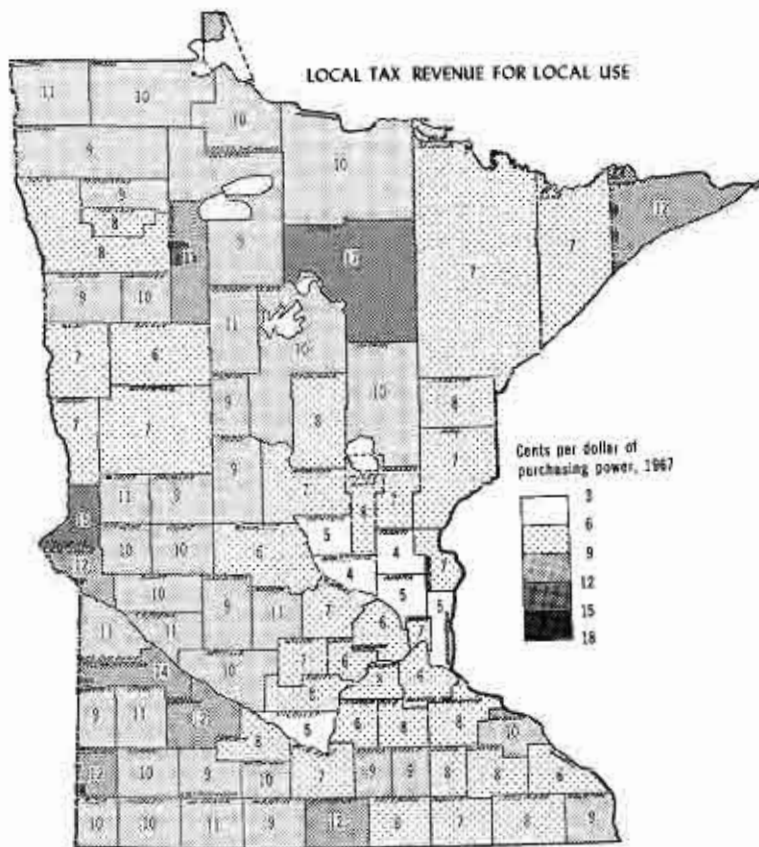


Figure 34. Sources: same as Figure 33.

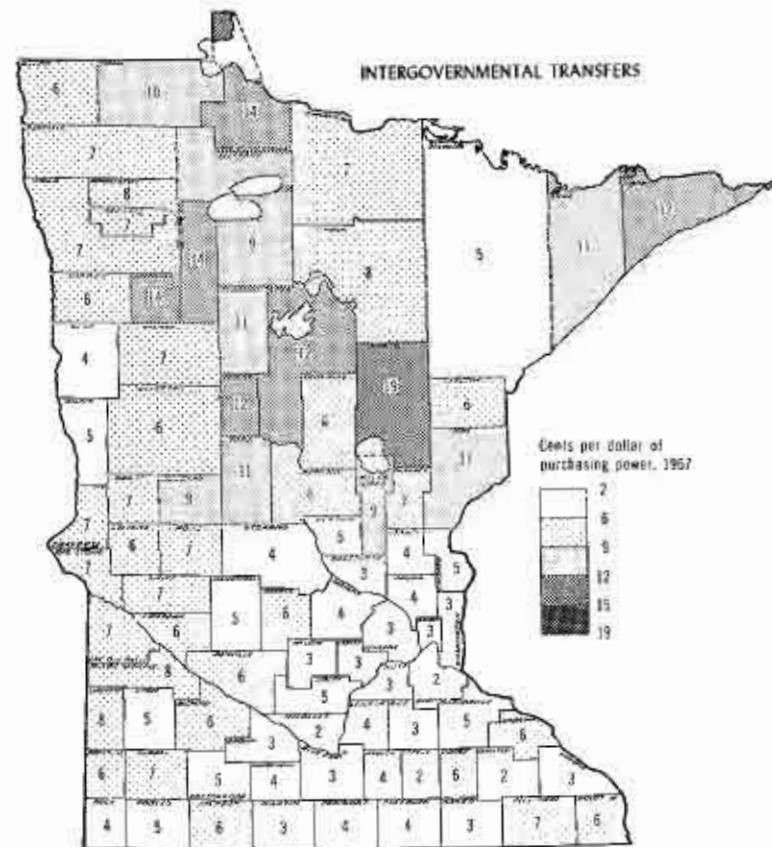
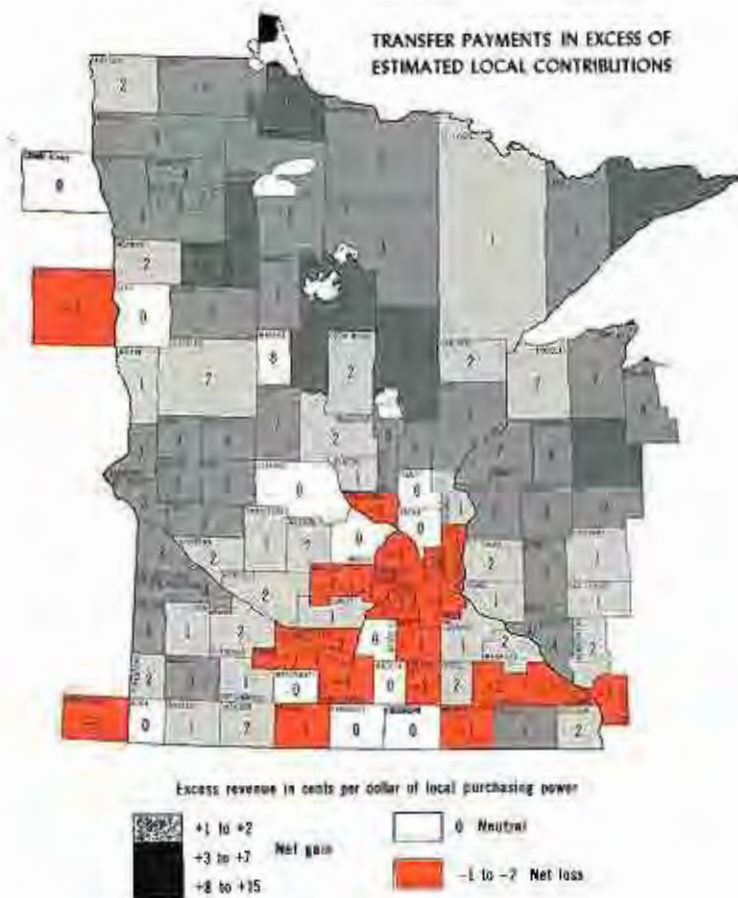


Figure 35. Total state and federal payments to local governments, by county, per dollar of purchasing power in each county. Approximately 95 percent of the total came from state sources. Data from same sources as Figure 33.





There is no indication that these inequalities in local ability to pay will decrease. Geographical distribution of private investment (hence tax base) probably will become more uneven. Spreading industry, trade, or high-value homes is not a feasible way to alleviate the affects of local inequities in tax base.

"Have" and "Have Not" communities are mingled statewide and within every region, including the Twin Cities metropolitan area. The need for statewide pooling of resources affects all places.

Figure 36. Data computed from same sources as Figure 33.

## Summary

### *Some policy needs are clear:*

- Encourage innovation in the financing, marketing, and manufacturing of new housing to meet the housing needs of projected population growth.
- Encourage a non-metropolitan transportation system which
  - (1) maintains and improves the prime highway network;
  - (2) facilitates development plans and land-use zoning within each of the urban clusters;
  - (3) eliminates redundant rural roads, builds needed new roads for development, finances roads on the basis of use or planned development investment;
  - (4) defines the basic railway network and encourages its use as part of an integrated system.
- Encourage planning for whole urban districts with respect to the location and operation of public recreation, health, welfare, and waste management facilities. Correlate these plans with state and regional highway plans.
- Encourage correlation of possible out-state new city development with the dispersed urbanization process now taking place in the urban clusters.
- In public land ownership and development policy give priority to (a) large, contiguous management units, (b) major natural resource concentrations, and (c) accessibility to population.

### *Some policy questions are raised:*

- To what extent and for how long should local government services in high-cost areas be subsidized?
- Should Minnesotans — public and private — encourage federal government policies which will help to maintain the state's recent rate of population and economic growth?
- Should public investments aim to reduce the Minneapolis-St. Paul metropolitan area share of total migration into and within Minnesota and increase the share of the state's population in the out-state urban regions?

- Should measures be sought to control the trend toward farm enlargement? If such measures are sought, should the goal be to speed the enlargement process or to retard it?
- Should measures be prepared to ease the task of consolidating the dispersed land holdings which comprise the typical family farm, if such consolidation should become necessary to keep Midwest agriculture competitive with other regions?
- Should the state's pollution control regulations and standards prevent economic development where the local environment cannot accommodate the anticipated waste load?
- Should the state encourage long-range plans for development of major new water storage reservoirs to avoid probable future water shortages in the Twin Cities metropolitan area, and possibly also in the main agricultural region? If so, what are the criteria for reservoir location?
- Should public transportation policy include the development of a network of trails which permit people to make pleasure trips across country on foot, horse, bicycle, or snowmobile without using the highways?

### *These policy issues lead to further, more specific questions:*

- How much of what kind of land is used where for what purposes by how many people?
- How much new housing is needed where, by whom, and in what priority?
- What is the explanation of high-cost (in relation to personal income) local governments? Do they reflect geographic concentrations of low-income and needy people? Do they reflect the high cost of services in sparsely-settled areas?
- What is the income level and geography of the *people* (rather than the local governments) who are beneficiaries in the present system of taxation and transfer payments from the state to counties, municipalities, and school districts?
- How much of the state's basic income is earned by the Twin Cities metropolis? How much is redistributed

within the state and by what process? And to what extent are the resources needed to earn that basic income dependent upon the size and quality of the metropolis? In any state investment policy, do the Twin Cities represent the fatted calf or the goose that lays golden eggs? Is the presence of a large and growing metropolis in the national system of cities a net asset or a net liability in the state's economy?

- What is the mileage and condition of the roads and railroads which are not needed either now or in the foreseeable future? Could these rights-of-way be converted to a state-wide trail system?
- What is the present degree of integration of rail, truck, water, and air freight? What are the trends and their causes?
- What is the present availability, need, and feasibility of public transportation links throughout the non-metropolitan urban clusters?
- Within the non-metropolitan urban clusters, what are the likely needs for land and buildings for new public health, educational, and recreational facilities; for private industrial and commercial facilities? What are the potential locations for these?
- What is the long-term character of growth-rate variability? Are the *Growth Regions and urban clusters*, for practical purposes, *permanent features* simply with different frequency and magnitude of variation in growth rates? How does the *variation in growth rate* affect planning for financing, building, and rebuilding an area?
- What are the "birth, death, and net increase" rates for different types of businesses within the urban clusters? What are the trends and forecasts?
- What are the industrial vital statistics for the urban clusters and regions – "births, deaths, in-migration, out-migration, net increase, life expectancy"? What trends and outlook?
- What are the most delicate and the most receptive areas for waste discharge, storage, and treatment?
- What are the feasible procedure and timing for building major "interchange" facilities (motel, restaurant, indoor recreation, parking, marina, hostel, stables, picnic

and camping areas) along the Mississippi "Hiawatha valley" and North Shore of Lake Superior? What are the best sites?

- How can planning of regional *public* facilities (highways, education, health, recreation) be better coordinated with planning for *private* facilities (industry, trade and services, housing). At present, regional or community "plans" mainly describe public regulations. *Private* firms and individuals actually *plan and build* most of the community – local, regional, or state. How can the private firms be included as part of the community in the development of a community plan? What can be done to assure that public community plans consider private plans and constraints? And to assure that private construction and development plans include, from the outset, public goals and plans?

*To answer these questions once is not enough.*

They require repeated monitoring to show whether policies and practices are working as expected. Monitoring requires observations which are periodic, accurate, comparable, and closely enough spaced – both geographically and chronologically – to provide the necessary record of performance.

Series of observations are needed in the following broad classes:

- physical quality, use, and ownership of land
- value of land and improvements
- personal and corporate income
- construction and demolition
- population number and characteristics
- migration numbers and characteristics of migrants
- traffic flow and purposes for all modes of transportation
- governmental revenues and expenditures for both programs and operating units
- business and industrial establishments by size and function
- quantity and quality of water flow through lakes and streams.



These broad classes include many sub-classes. They include the data which must be obtained to answer the policy questions raised above.

Most of these data series already exist within local governments, school districts, state agencies, and private directories. Each series is collected to carry out the provisions of a regulation or a law, or to monitor the location and performance of a particular type of industry of business.

But the information is seldom used to answer policy or planning questions. The data collected by different agencies lack comparable definitions, are not reported at the same time, are not summarized in the same way, are not quickly and easily available. A few key items need to be added to the existing series — notably information about migration; and coverage needs to be increased substantially in some series — for example, stream and lake quality.

Hence a final *policy* called for is encouragement of current

efforts to *make data more useful and more intensively used for state planning and management.*

The main needs for these data series will continue to be the different, special management purposes of each of the agencies that collect each type of information. These agencies are dispersed among various state offices and many county and municipal office buildings across the state. Furthermore, although their data must be combined for broad policy questions, it is more often needed by individual agencies for their own special purposes; and the daily operational uses commonly are not closely related to one another — for example, industrial location surveys and the reports of game wardens; crop and livestock reporting and motor vehicle licensing.

Hence a final *policy question*: To what extent should collection, processing, storage, and analysis of data continue to be decentralized? To what extent is a single central data bank called for?

