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Trade Centers of the Upper Midwest

*by Miriam Goldfein and William Casey**

Though the Upper Midwest has experienced many changes during the past generation, particularly changes in the organization and distribution of its commercial and industrial base, there has been no comprehensive economic study of the region since the early 1960s. Patterns of trade centers within the region—its cities, small towns, and even hamlets—reflect the economic realities on which the life of the area is based. The robustness of these places reveals a great deal about what is happening in the Upper Midwest. Change characterizes all seven Upper Midwest states (Wisconsin, Minnesota, Iowa, the Dakotas, Nebraska, and Montana). Small towns persist—more than 3,000 in the seven states—but they provide a diminished set of functions compared to 1960. Similarly, metropolitan areas continue to thrive and grow, affecting not only their immediate areas but also growing circles of adjacent communities.

What happened during those three formative decades—the 1960s, 70s and 80s? How have the economic functions of towns and cities changed? What do those changes imply for the economy of the Upper Midwest as a whole? A newly published CURA report, *Trade Centers of the Upper Midwest: Changes from 1960 to 1989*, tracks these structural changes and provides a portrait of the way trade centers in the region have responded to national and international trends.

The baseline study used for the new report was conducted in 1961 under the aegis of the Upper Midwest Research Development Council. That report, *Trade Centers and Trade Areas of the Upper Midwest*, written by John Borchert and Russell Adams, examined the extent to which retail and wholesale functions characterized the

*Based on a report by Thomas L. Anding, John S. Adams, William Casey, Sandra deMontille, and Miriam Goldfein.

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region's trade centers. In order to understand the enormous complexity of such a large region and the relationship of places within it, its settlement structure was classified into a hierarchy of centers based on types of businesses and measures of their sales volume. Each place, regardless of its size, formed a trade center at some level of this hierarchy (Table 1).

How the Study was Set Up

The current study began by collecting and analyzing data using the Borchert-Adams framework. Dun and Bradstreet provided 1989 data on the number of business establishments in each Upper Midwest zip code area by Standard Industry Classification. Each zip code served as a surrogate for the trade center it served. The data base was expanded from retail and wholesale businesses, to include a total of eight industry categories (agricultural services, construction, manufacturing, transportation and communications, wholesale, retail, banks, and services). This provided a more complete picture of the regional economic structure.

The data for 1960 also came from Dun and Bradstreet and were broken down into these eight categories for comparison purposes. Since zip codes were not used at that time, researchers manually assigned zip codes to each place. Data for certain industry categories were eliminated because of the difficulty in comparing 1960 with 1989. These were mostly classifications for which Dun and Bradstreet did not collect much or any credit data thirty years ago but for which coverage today is more extensive. They include medical services, legal services, educational services and social services. As part of the verification process, an analysis of the entire 1989 data set was made to determine if its distribution varied significantly because of these reductions. Differences were negligible at all levels of the trade center hierarchy.

Following these preliminary assessments, the 1960 data set was examined to see if in its expanded form, it was still consistent with the trade centers framework detailed in the original Borchert-Adams study. It proved to be compatible and the expanded database was enlarged to include Iowa, Nebraska, and all of Wisconsin. The result was a reconstructed 1960 trade center pattern congruent with the Borchert-Adams study but based on a wider number of commercial activities and covering additional states.

The 1989 data could then be compared with the 1960 data. Each place was evaluated to see if it had moved up or down in the trade center hierarchy. The result of all these procedures was a data set detailing the position of each zip code place within the trade center hierarchy, both in 1960 and 1989. This data set was the basis for further analyses and was used to construct a variety of tables, charts, and maps highlighting changes over the past thirty years.

Table 1. The Trade Center Hierarchy, 1960*

Level	Name	Number	Average Number of Businesses	Typical Examples
0	Metro areas	4	13,535	Mpls/St. Paul, MN Des Moines, IA Milwaukee, WI Omaha, NE
1	Primary regional	18	1,600	Green Bay, WI Sioux Falls, SD Billings, MT Lincoln, NE
2	Secondary regional	34	676	Iowa City, IA St. Cloud, MN Bismarck, ND
3	Complete shopping	189	245	Decorah, IA Rhinelander, WI Red Wing, MN
4	Partial shopping	265	108	Granite Falls, MN Bowman, ND Pocahontas, IA
5	Full convenience	364	62	Grand Marais, MN Eureka, SD Alma, WI
6	Minimum convenience	995	33	Kimball, MN St. Ignatius, MT Exeter, NE
7	Hamlet	2,122	10	Shafer, MN Kamrar, IA Volborg, MT

* Numbers here are for the expanded data set (seven states and eight industry categories) used in the present study and are larger than in the original Borchert-Adams study. The names of levels 1 and 2 are also slightly changed. They were *primary retail-wholesale* and *secondary retail-wholesale* in the Borchert-Adams study.

Table 2. The Trade Center Hierarchy, 1989

Level	Name	Number	Average Population	Average Number of Businesses
0	Metro areas	4	983,869	23,836
1	Primary regional	13	122,845	3,104
2	Secondary regional	60	41,512	1,034
3	Complete shopping	167	12,502	335
4	Partial shopping	275	5,132	140
5	Full convenience	587	2,748	72
6	Minimum convenience	1,049	1,636	35
7	Hamlet	2,036	625	10

What Was Found

The study confirms that the economy of the Upper Midwest can still be described as an eight level trade center hierarchy, as it was in the 1961 study. This hierarchy is based on the economic activities and spheres of economic influence of the almost 4,000 trade centers (Table 2). Not only does the hierarchy continue to exist, but it remains stable despite important internal changes:

- Fewer than 10 percent of the towns and cities moved either up or down within the hierarchy during the period of 1960 to 1989.
- There were, however, significant changes in the mix of business activities handled by the trade centers (Table 3). These changes include: phenomenal growth in the number of service establishments (up 51,696), a decrease in retail establishments (down 11,175), and a

Cover photo: The general store in Volborg, Montana represents the lowest level of the trade center hierarchy, one of more than 2,000 hamlets in the Upper Midwest.

Table 3. Change in Number of Business Establishments by Trade Center Class and Industry Category, 1960-1989

		Agr. Services	Construction	Manufactures	Trans/ Comm.	Wholesale	Retail	Banks	Services	Total Estabs.
0	Metro areas	1,029	6,648	3,348	2,845	6,402	674	450	19,808	41,204
1	Primary regional	411	2,729	1,123	1,709	2,114	1,833	230	8,713	18,895
2	Secondary regional	348	2,787	995	1,279	1,588	1,901	161	5,968	15,045
3	Complete shopping	631	4,905	2,038	2,124	2,889	1,514	214	8,538	22,852
4	Partial shopping	426	2,694	1,287	1,119	2,013	**-2,336**	112	3,359	8,672
5	Full convenience	299	2,246	992	671	1,672	**-3,302**	43	1,739	4,359
6	Minimum convenience	491	3,139	1,100	739	2,378	**-6,444**	52	2,003	3,456
7	Hamlet	445	3,166	1,193	611	1,685	**-5,015**	120	1,568	3,773
		4,080	28,314	12,076	11,097	20,741	**-11,175**	1,382	51,696	118,256

moderate increase in manufacturing establishments (up 12,076). Important changes within the retail category—decline of traditional retailing and increases in the miscellaneous category, particularly in small centers—have altered the character of the retail function. For example, there are many more boutique and antique stores and fewer hardware and grocery stores in 1989 than in 1960.

- The trade center hierarchy as a whole shifted with the higher and lower level places moving away from each other over the period (Figure 1). The lowest three classes of trade centers—hamlets and minimum and full convenience centers—occupy a less important position within the regional economic system than they did a generation ago. The highest three classes—metropolitan areas and primary and secondary regional centers—play a far more dominant role than they did a generation ago.
- To the extent that individual places moved up or down the trade center hierarchy, it was a function of both large-scale economic forces and small scale influences, such as individual business successes and local planning efforts.

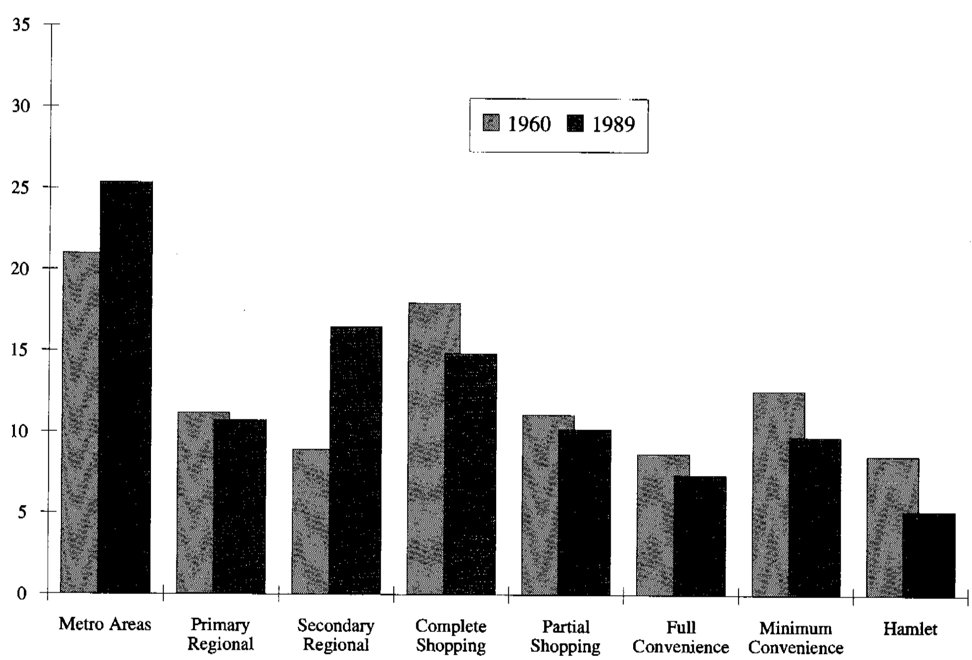
For the most part, economic growth has been steady throughout the Upper Midwest as a whole, but this growth has been unevenly distributed, both geographically and within the hierarchy:

- The greatest concentration of growth occurred in the eastern third of the Upper Midwest. This is where most of the higher level trade centers are located, as well as the four metropolitan areas. Because the trade centers in this portion of the region benefited from the major trends affecting the Upper Midwest, growth in these cities was robust.
- The four metropolitan areas and the seventy-three regional centers captured most of the increase in the number of business establishments (Figure 2). In fact, most places that moved up the hierarchy lie within a 100-mile radius of one of the four metropolitan areas.
- The trade centers that moved down the hierarchy are, for the most part, in areas that suffered from drought and agricultural reorganization (western Iowa, southwestern Minnesota, and eastern Nebraska).
- Agricultural services, transportation and communication businesses, retail establishments, banks, and service industries grew mainly in the higher level trade centers.
- Average numbers of establishments in manufacturing, construction, and wholesale business showed growth at all levels of the trade center hierarchy.
- Some lower level trade centers, which might have had a difficult time surviving change during the period, continue to exist for several reasons: agriculture remained important, new natural-resource-based economies developed, tourism and recreation replaced previous natural-resource-based economies, and local innovation and entrepreneurship offset the larger trends in some towns and cities.

The evolution of the trade center hierarchy is largely explained by four major trends that affected the Upper Midwest during the past thirty years:

- **The population of the Upper Midwest continued to migrate from rural to urban areas**—from smaller cities and towns to larger ones, further up the trade center hierarchy. This movement was essentially a redistribution of people since the overall population of the region remained relatively stable, increasing only about 16 percent during the 1960-1989 period, a rate of growth significantly lower than the national rate of 39 percent.
- **Retail business activity consolidated**

Figure 1. Change in the Distribution of Business Establishments in All Industry Categories, 1960-1989 (in percents)



into larger establishments which were most often located in higher level trade centers, the larger cities of the region. Larger discount shopping establishments became a major and growing factor across the region in the last half of the study period.

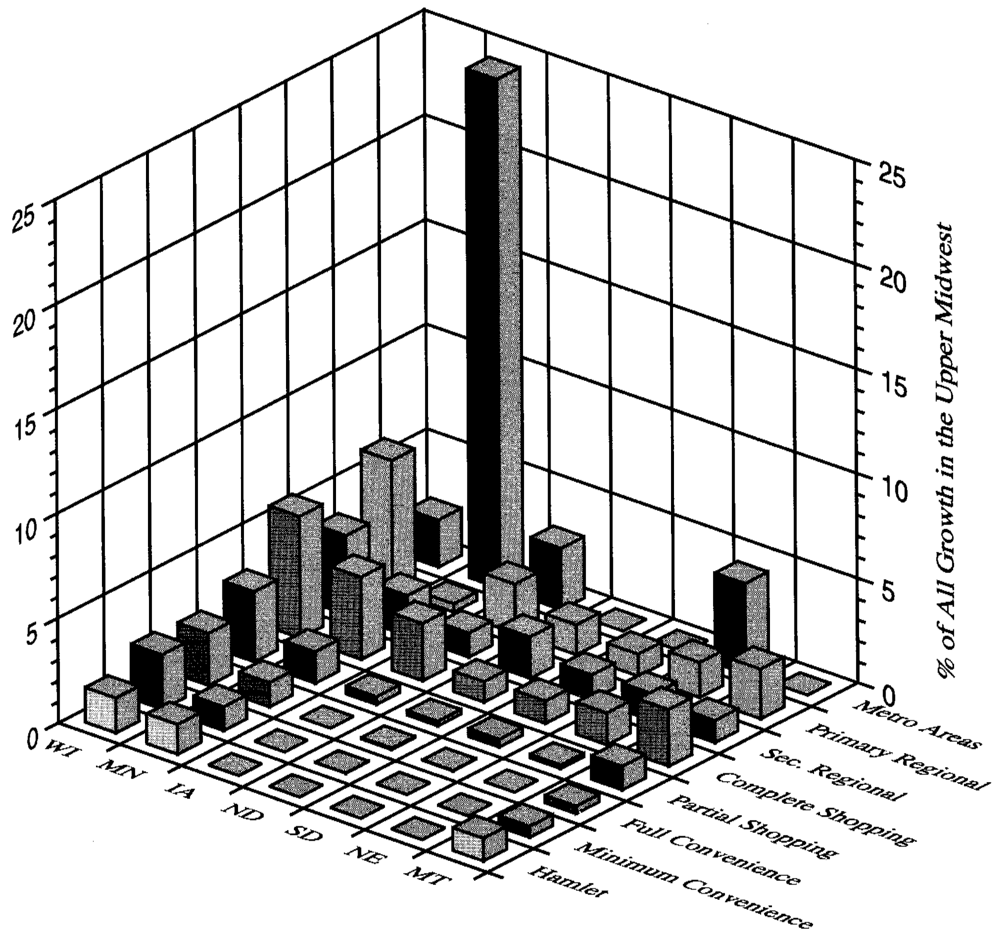
- **There was exceptional growth in the service sector** of the United States economy, including the Upper Midwest. This new activity was found in all levels of the trade centers, but it grew most in the region's larger cities and its four metropolitan areas.
- **Agriculture continued to consolidate its activities.** The number of farms in the region decreased during the 1959-1987 period by 37 percent, as operations adopted new technology and as land ownership and capital were consolidated. At the same time, agricultural service industries tended to concentrate in larger cities as a result of changes in transportation and marketing.

All four of these trends contributed to the shift in the trade center hierarchy, increasing the number and relative importance of the higher level centers, while at the same time diminishing the importance—in some cases, threatening the survival—of smaller towns and cities, especially those outside the rings of economic influence of the four metropolitan areas.

However, there were four countervailing forces that tempered the larger, more powerful trends:

- **There was inertia against change** stemming from the long-standing historical settlement patterns of the Upper Midwest. These patterns date back to the nineteenth century and the early exploitation of natural resources—fertile land for farming, vast acreages for ranching, abundant forests for lumbering, and rich mineral deposits for mining. The existence of well-established smaller communities created an understandable lag in the shift of economic activity toward larger trade centers.
- **Agriculture remained strong** despite its continuing consolidation. In their consolidated forms, farming and agribusiness continued to be essential elements in the economy of the region.
- **The forest products and mining industries remained important** to many towns and cities of the region despite a general decline in other natural-resource-based economic activities. These industries provided sufficient economic activity to support some of the lower level trade centers.
- **Some new natural-resource-based activities emerged** during the period, including accelerated development of fossil fuels in the western Dakotas and eastern Montana and a burgeoning tourist industry located in various trade centers throughout the Upper Midwest, but particularly in portions of Minnesota, Montana, and Wisconsin. These gains have, in some cases, preserved towns and cities formerly reliant on farming, ranching, lumbering, and mining.

Figure 2. Growth in Number of Business Establishments by State and Trade Center Class, 1960-1989 (in percents)



These findings raise several critical questions for the future of the region:

- To what extent will the overall trend toward centralization of critical functions in larger trade centers, such as health care and education, continue nationally and in the Upper Midwest?
- If these trends continue, what will be the social and economic impact on the region, especially for trade centers at the bottom of the hierarchy?
- What new types of problems and opportunities will emerge in the higher level trade centers—metropolitan areas and regional centers—as they continue to grow and become more dominant in the region and increasingly provide services formerly found in smaller centers?
- Will an number of smaller trade centers—hamlets and convenience centers—become places with limited functions and services, towns and cities where people simply reside? Will people in these small centers rely on larger cities for employment and important goods and services and expect their place of residence to supply only convenience goods and services?
- What will the extraordinary aging of the population in the smaller centers of the region mean to the continued successful operation of these centers as places to live, work, and do business?
- How many smaller trade centers will eventually lose their economic viability, even as places to reside, given their diminishing number of functions and services and the increasing maintenance costs of the existing infrastructure?
- Is it possible and desirable to develop policies aimed directly at offsetting these trends in order to slow future change in the region, thereby preserving and enhancing to some degree the older settlement patterns?
- Or, should policies be developed to minimize the impact of the larger trend or in other ways ease the transition for communities undergoing change, thereby facilitating an easier, more orderly transition for the people living there?
- Given the potency of the larger trend, what are the appropriate roles for public policies—in economic development,

agriculture, transportation, and intergovernmental finance—either to accommodate or slow the transition currently underway?

- To what extent have changes already taken place that require a fundamental restructuring of how public and private goods and services are provided in the smaller centers and rural areas of the region?
- Finally, it is time to face squarely the question of the value the larger society places on the human resources in the region's smaller places and rural areas. Are their contributions to the fundamental strength of the states, the region, and the nation valued highly enough?

This report provides an updated economic profile of the Upper Midwest. The composition of businesses has changed remarkably over the past three decades, responding to changing demographic patterns, consumer behavior, delivery systems, and worldwide economic forces. Understanding these structural changes is a crucial element in answering many of the public policy questions that are being raised about the economic future of the region.

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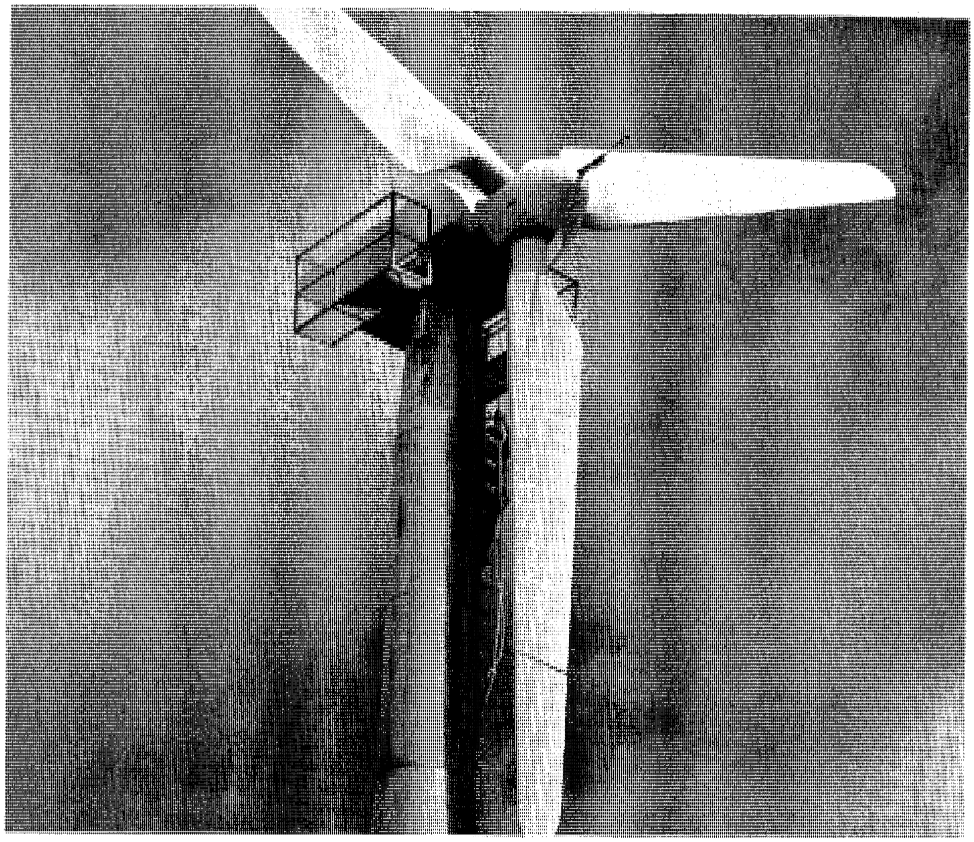
Minnesota's Wind Energy

by Robert J. Geisen



The power of the wind has long been used for pumping water, sailing ships, and powering mills. Wind energy played an important role in rural Minnesota before the Rural Electrification Act. Many farms and isolated residences produced their own electricity with wind turbines until grid connections to electric utilities were available.

The demand for wind turbines has supported wind industries in Minnesota. The most notable was the Jacobs Wind Electric Company. Between 1930 and 1960, thousands of three kilowatt (kW) Jacobs turbines were manufactured in Minneapolis and sold throughout the country. But by 1960, the combination of rural electrification and cheap fossil fuels had forced Jacobs and other manufacturers out of business. The energy crisis of the 1970s revived investment in wind energy and at present, there are three turbine manufacturers and one company that produces blades located in Minnesota. In addition, the state government has developed a Wind Resource Assessment Program (WRAP).* This program monitors wind speeds at thirty-one sites in order to evaluate Minnesota's wind resource.

This report uses the WRAP data base to determine what physical limitations exist for wind energy in Minnesota. In addition, a simple economic algorithm is developed to assess the viability of collecting wind energy for power in Minnesota.

The Nature of Wind

Wind energy is born of sunlight, for wind is a result of the differential heating of the earth's surface. The earth's atmosphere can be thought of as a heat engine driven by the sun in which wind transports heat, moisture, and other atmospheric properties. On a global scale, approximately 2 percent of incident solar radiation drives the winds.

When using wind as an energy source, accurate prediction of wind conditions is desirable but not possible. In simple terms, the intermittent characteristic of wind is due to the diurnal and seasonal heating and cool-

*The program was initiated and is operated by the Energy Division of the Minnesota Department of Public Service. It was developed in cooperation with electric utilities and power cooperatives.

ing of the atmosphere. Although winds are erratic, three generalizations may be made:

1. Winds near the earth's surface generally have greater velocities during the day than at night. This diurnal effect comes from the sun heating the air near the surface during the day but not at night.
2. In Minnesota, wind speeds are greatest in the spring and fall and least in July and August. Seasonal wind patterns are caused by large scale heat transference. Temperature differences cause the atmosphere to be in constant motion, creating weather fronts, which move through the state. Higher wind speeds usually accompany moving weather systems.
3. Wind speeds typically increase with height. The earth's surface presents a resistance to the flow of air so that a crude boundary layer is formed next to the earth's surface. It can range from a hundred feet to a few thousand feet in altitude.

Although these generalizations may not hold for every day or every season, they have been verified over long periods of time.

Measuring Wind Energy

Wind is air in motion; therefore, wind has kinetic energy. Physical limitations preclude capturing the wind's entire energy. If all energy were extracted from the wind, the wind speed behind a turbine would be zero, which is impossible. Energy-depleted air, which has passed through a turbine, must be moved so that more air can flow through. Betz determined that, theoretically, the maximum amount of energy an ideal wind turbine can extract is 59.3 percent of the wind energy.* The maximum amount of energy that can be extracted for human use is called exergy. This report defines wind exergy in terms of the Betz number.

Wind energy and exergy are directly proportional to the air's density and the area swept by the wind turbine blades. The energy of the wind increases dramatically as wind speeds increase. The equation

$$E/A = \tfrac{1}{2}\,\rho\, t v^3/1000$$

shows this relationship, where E/A stands for the wind energy in a unit area (kWh/m^2), ρ for the density of the air (kg/m^3), t for the time (h), and v for the upstream velocity of the wind (m/s). Ideally, calculation of wind energy is based on measured wind frequency distributions. Unfortunately, the WRAP program reports monthly average wind speeds instead of wind speed frequency distributions. The Rayleigh wind speed distribution function was used, therefore, to provide an approximation of the actual wind speed frequency distribution based on the WRAP average wind speeds.**

*A. Betz, *Introduction to the Theory of Flow Machines* (New York: Pergamon Press, 1966).

**Adapted from Rayleigh's work in statistics on probability density function.

To test the accuracy of the Rayleigh function, it was compared with an actual measured wind speed frequency distribution from the WRAP site at Alberta during September, 1987. The Rayleigh function closely followed the actual wind measurements and their corresponding energy values. Whether this would be true at all WRAP sites is not known, but the Rayleigh wind speed distribution function is the standardized method for approximating wind speed frequency distributions and was used in this study.

Minnesota Wind Conditions

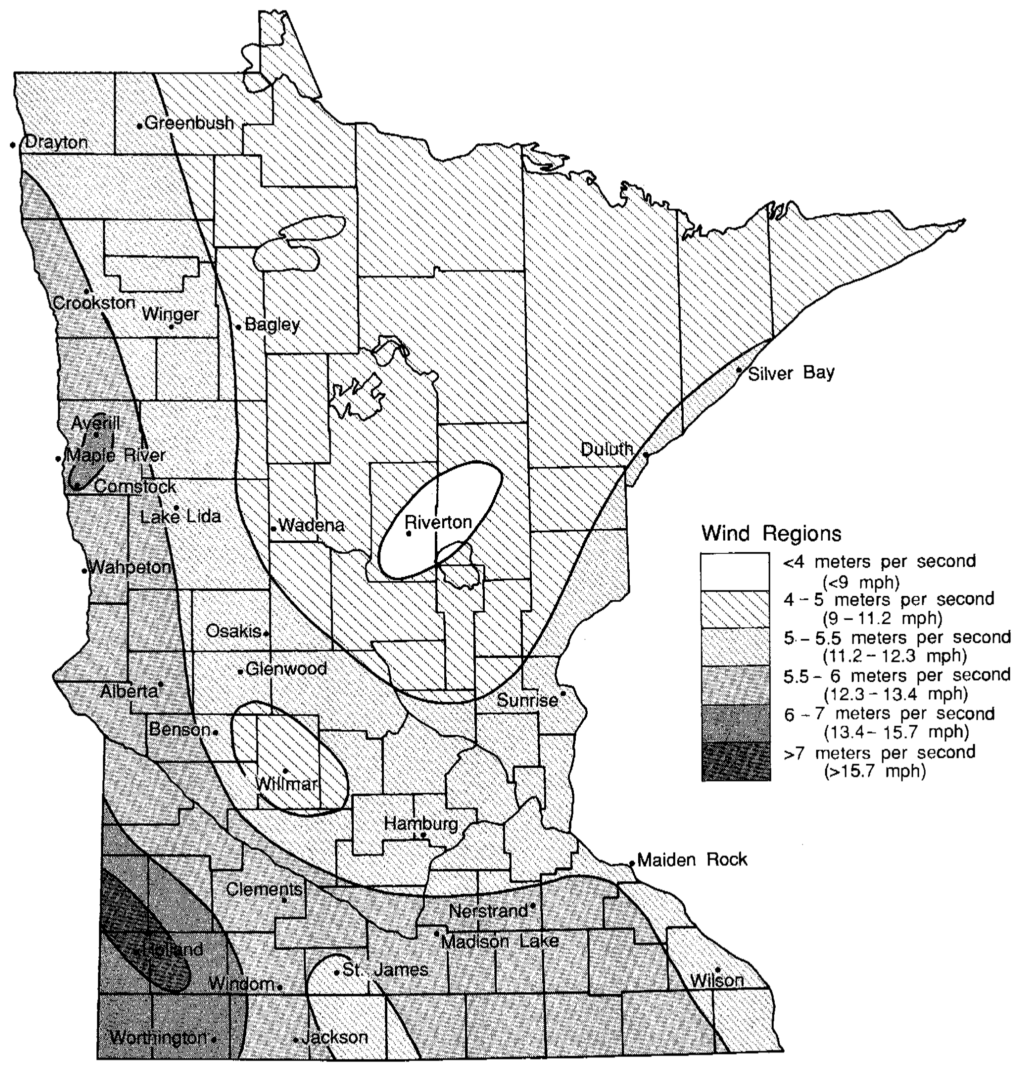
In addition to knowing how to calculate wind energy and exergy, it is important to know how wind conditions vary throughout the state. WRAP was designed to provide an accurate evaluation of wind power within the state that could be used to select and site wind turbines. Participants of WRAP have collectively placed anemometers at thirty-one sites within or bordering on the state. Each anemometer station measures and records wind speeds at a height of 30 meters off the ground.

Using the data from these stations along with topographic maps, WRAP has created a map of wind regions within the state (Figure 1). Each region represents a range in annual average wind speeds. It is apparent that the western border and, particularly the southwest corner of the state, experience superior wind conditions. The advantage in the southwest corner of the state comes from the Buffalo Ridge, which runs through that area.

Limits of Minnesota's Wind Energy

WRAP data and the map of wind regions were used in this study to evaluate the physical limits of Minnesota's wind energy. The analysis involved three phases: 1) assessing regional wind energy, 2) estimating the possible limits of wind turbine density for each region, and 3) calculating the maximum wind energy which could be converted into electricity within each region on an annual basis.

Figure 1. Minnesota Wind Regions



Source: Wind Resource Assessment Program (WRAP), Energy Division of the Minnesota Department of Public Services.

The annual cumulative wind energy at each WRAP site was estimated by using the monthly average wind speeds provided by WRAP in an equation based on the Rayleigh wind speed distribution function. Estimates for each month were summed to give an annual wind energy estimate.

The wind energy in each of the state's six wind regions was then calculated by averaging the annual cumulative wind energies for all the sites in each region. In two cases (Regions 1 and 6) there is only one WRAP site in the region. The cumulative energy estimates calculated in this way (Table 1) are obviously crude. Wind energy at specific points within a region may significantly deviate from the regional value because of the terrain and nearby obstructions. Before installing a wind turbine at any site, measurement of wind conditions at that location is highly recommended. The values for annual cumulative wind energy represent these regions in a general manner which is appropriate for estimating regional wind energy in gross terms.

To calculate how much of the annual cumulative wind energy in the state is accessible for wind power, the swept area of each region and the spacing of wind turbines must be factored in. Swept area is the vertical area centered at 30 meter heights. It can be calculated based on land area and the spacing factor (SF) used in placing wind turbines. The spacing factor is defined here as the number of rotor (or blade) diameters distance between wind turbines. As such, it does not dictate the layout of an array of wind turbines, but rather measures the land area per turbine used in the array.

A conservative spacing factor of 10 (SF = 10) was used in this study. The areas of each wind region were measured and the total swept areas for each of Minnesota's wind regions were calculated according to this equation:

$$\text{Swept Area} = (\pi/4) \bullet \text{Land Area} / SF^2$$

Combining the swept area with the annual cumulative wind energy and exergy values results in an estimate of the energy that is accessible from wind power in each of Minnesota's wind regions (Table 2). The estimated wind exergy of a region is the theoretic limit of wind energy that could be extracted in useful form.

The theoretic limits of wind energy are enormous. The net electric generation in Minnesota during 1987 was 34,325 million kWh. Region 6, with 654,000 acres of land, has enough wind at 30 meter heights to theoretically produce an estimated 52,400 million kWh of electricity.

Table 1. Annual Cumulative Wind Energy by Minnesota Wind Regions

Wind Region	Annual Average Wind Speeds [m/s]	Number of Sites	Wind Energy [kWh/m²-yr]	Wind Exergy [kWh/m²-yr]
1	0 - 4.0	1	255	150
2	4.0 - 5.0	4	1050	620
3	5.0 - 5.5	12	1650	980
4	5.5 - 6.0	7	1985	1175
5	6.0 - 7.0	3	2570	1520
6	> 7.0	1	4140	2515

m/s = meters per second (note that 2.24 mph = 1.00 m/s)
kWh/m^2-yr = kilowatt-hours per square meter per year

Table 2. Accessible Wind Energy by Minnesota Wind Regions*

Wind Region	Land Area [million hectares]	Swept Area [million m²]	Estimated Wind Energy [billion kWh/yr]	Estimated Wind Exergy [billion kWh/yr]
1	0.26	20.8	5.3	3.1
2	9.03	709.1	744.6	441.5
3	6.43	504.6	832.6	493.7
4	5.01	393.3	780.7	462.9
5	0.98	77.2	198.4	117.7
6	0.27	20.9	88.4	52.4
Totals	21.98	1725.8	2650.0	1571.4

* Spacing Factor = 10

Table 3. Performance of a 39.5 kW Wind Turbine at the Holland Site

Month	Average Wind Speed [m/s]	Monthly Cumulative Wind Energy [kWh/m²]	Monthly Cumulative Wind Exergy [kWh/m²]	Estimated Turbine Generation [kWh/month]
January	7.71	325.9	193.2	9,074
February	7.27	232.8	138.0	7,130
March	8.36	414.2	245.6	10,687
April	7.99	348.3	206.5	9,530
May	8.62	444.3	263.5	11,245
June	7.27	232.8	138.0	7,130
July	6.74	224.1	132.9	6,877
August	6.71	213.5	126.6	6,696
September	6.96	242.8	144.0	7,096
October	7.37	300.4	178.1	8,271
November	7.58	335.3	198.8	8,572
December	7.59	328.9	195.0	8,934
Annual Values	7.51	3643.2 [kWh/m²-yr]	2160.4 [kWh/m²-yr]	101,242 [kWh/yr]

Performance Analysis of a Wind Turbine

In the field, wind turbines do not attain theoretic limits predicted in converting wind energy into electricity. In order to assess realistic wind turbine performance, the operation of a 39.5 kW turbine was modelled using measured wind speed data and the manufacturer's performance curve for the wind machine which had a swept area of 84.3 square meters. Using the actual frequency distributions and the wind turbine power curve renders an accurate estimate of the electric energy generated in an average year assuming that the turbine is running all the time during the year.

Two WRAP sites were used in the analysis. The site at Holland was chosen because it is the best WRAP site in terms of wind energy. And the site at Sunrise because it is representative of a less-than-average site for the state. Wind speed data collected during three years (1986-1988) were combined to establish monthly frequency distributions of an average year at each site. Taken together, the results from the two sites show the range of energy outputs that might be expected from the use of wind turbines in Minnesota.

Tables 3 and 4 present the monthly and annual cumulative wind energy and exergy, as well as estimates of the electric generation of the turbine at the Holland and Sunrise sites. The model predicts that a wind turbine placed at the Holland site will generate over twice the output of one placed at the Sunrise site. The annual output for the 39.5 kW machine will be 101,242 kWh a year at the Holland site and 41,223 kWh a

Table 4. Performance of a 39.5 kW Wind Turbine at the Sunrise Site

Month	Average Wind Speed [m/s]	Monthly Cumulative Wind Energy [kWh/m^2]	Monthly Cumulative Wind Exergy [kWh/m^2]	Estimated Turbine Generation [kWh/month]
January	5.13	115.3	68.4	3,855
February	4.60	67.9	40.3	2,354
March	5.60	134.8	79.9	4,527
April	5.40	122.3	72.5	4,002
May	5.38	120.1	71.2	4,001
June	5.16	96.7	57.3	3,376
July	4.75	85.5	50.7	2,930
August	4.82	79.8	47.3	2,811
September	4.99	87.5	51.9	3,065
October	4.92	91.7	54.4	3,129
November	5.33	119.0	70.6	3,780
December	5.06	96.8	57.4	3,393
Annual Values	5.09	1217.4 [kWh/m^2-yr]	721.9 [kWh/m^2-yr]	41,223 [kWh/yr]

year at the Sunrise site. This is entirely due to the higher wind energy at the Holland site. Theoretically, the maximum amount of wind energy that the 39.5 kW turbine could convert to electricity would be 182,122 kWh/year at the Holland site and 60,856 kWh/year at the Sunrise site.*

One way of judging a wind turbine's performance is by its annual efficiency, defined as its predicted generation per year over the theoretic maximum that it could generate per year. For the 39.5 kW turbine, the annual efficiency is 55.6 percent at the Holland site and 67.7 percent at the Sunrise site. Although the turbine generates more electricity at the Holland site, it captures a greater percentage of the energy present at the Sunrise site.

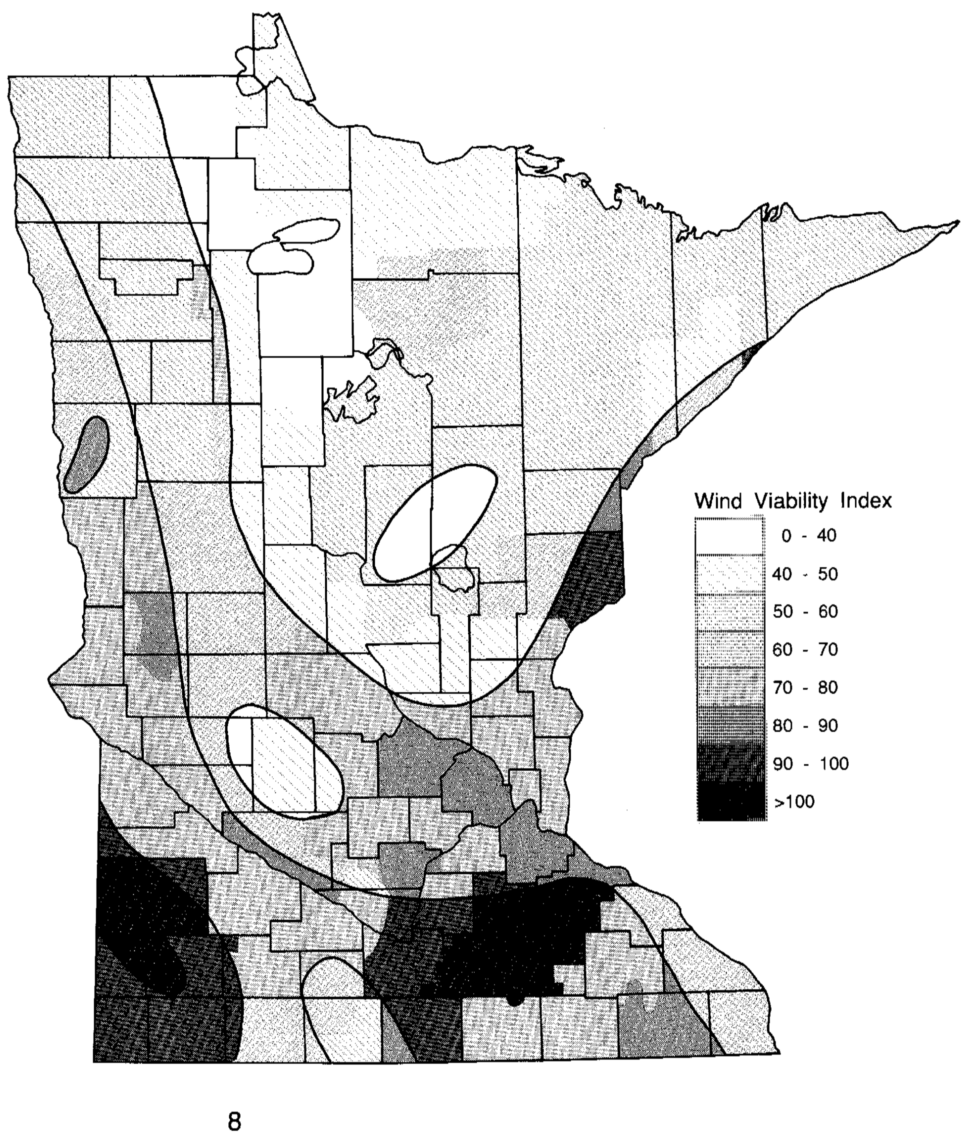
The actual output of a wind turbine is dependent on its performance curve and the wind conditions at the specific installation site. The Holland and Sunrise sites define the range of exergy values for Minnesota wind conditions. From this performance analysis one can conclude that the annual output of a single 39.5 kW turbine operating in Minnesota should fall within the range of 40,000 kWh per year (the value at the Sunrise site) and 100,000 kWh per year (the value at the Holland site), assuming that the turbine is operating all the time.

When the realistic performance of the 39.5 kW wind turbine is applied to the sixth wind region, we begin to get a picture of the amount of energy available to Minnesota through its winds. Realistic performance, we have demonstrated, is roughly half the theoretic limit. Table 2 gives us the theoretic limit for each of Minnesota's wind regions. For Region 6 it is 52.4 billion kWh per year or 52,400 million kWh per year. Half is roughly 25,000 million kWh of electricity that could be generated annually by this small region alone. This constitutes 61 percent of Minnesota's entire electric consumption in 1987 (40,704 million kWh).

*Calculated by multiplying the swept area (84.3 square meters) by the annual cumulative wind exergy for each site.

Since electricity is easily transported it seems clear that Minnesota could gain significantly by developing wind power.

Figure 2. Minnesota Wind Viability Regions
(Based on Wind Exergy and 1988 Electric Cooperative District Rates)

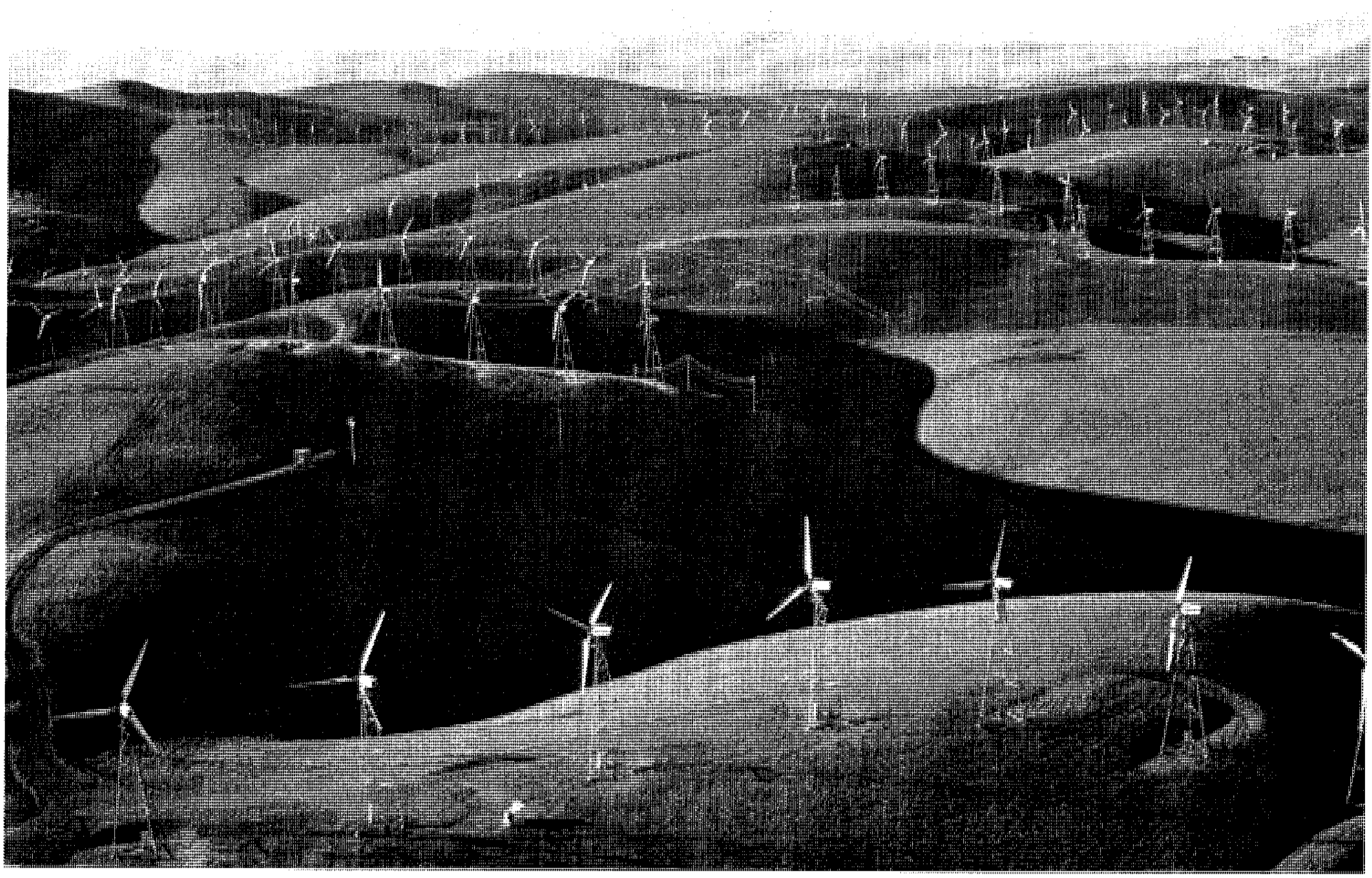


Economic Analysis

Economic factors are often cited as determining whether or not an energy system is valid. Economic analysis of energy systems is problematic in that the economic environment can drastically change in a relatively short time. Therefore, a rigorous economic analysis is not reported here; rather, a wind viability index is defined that may be used in judging the viability of harnessing the wind power in any of Minnesota's wind regions.

By itself, the price of the wind turbine is of little importance. Comparing the cost of the turbine, the electrical generation that can be expected during its lifetime, and the current price of electricity gives an economic basis for making investment decisions about wind power. To this end, a wind viability index (WVI) was created and defined as the product of the regional annual cumulative wind exergy and the local utility electric rate.

Areas served by Minnesota's electric cooperative districts were superimposed on the map of Minnesota wind regions (Figure 1) to produce a map showing the wind viability regions in Minnesota (Figure 2). The



In California, where government regulations encourage the development of renewable energy, wind parks like this one at Altamont Pass are run by independent companies that lease land and make money from wind energy. There are 17,000 wind turbines in California, producing enough energy to meet all the personal needs of residents in a community the size of San Francisco.

WVI was calculated for each region using the average residential customer electric rate as the local utility rate and the wind exergy rates listed in Table 1.

This map is a useful aid in determining where wind turbines are economically viable. One indicator, the maximum dollar value of the power produced annually by any particular turbine, can be estimated by multiplying the WVI by the swept area of the rotor. At the Sunrise site, for example, where the WVI is 74.5, one 39.5 kW turbine will produce a maximum of $6,280.35 worth of electricity in a year. The performance analysis outlined above, however, predicts that in actuality the annual electric value would be $3,133.00. The same machine at the Holland site would produce a maximum of $13,395.25, with a performance analysis estimate of $6,398.50 annually.

In both cases, the performance analysis predicts that the annual value will be approximately half the maximum annual value estimated by the WVI numbers. This difference is due to three factors. First, the performance analysis is based on the turbine's performance curve. The performance curve of the 39.5 kW machine shows that no electricity is generated if wind speeds are below 2.7 meters per second (6 mph) and power is limited to 39.5 kW for wind speeds above 15.6 meters per second (35 mph). Second, the performance analysis is founded on the actual wind distributions during the years 1986 through 1988. The WVI incorporates the cumulative annual wind exergy, which was calculated using average monthly wind speeds in the Rayleigh function. Third, wind exergy represents the maximum amount of energy that could be extracted by an ideal wind turbine. In reality, turbines capture roughly 40 to 75 percent of the wind exergy.

Taking these factors into account, it appears that a closer approximation of the annual value of a wind turbine may be calculated by dividing the WVI in half and then multiplying by the turbine's swept area. To obtain the value of the turbine over its entire lifetime, the yearly value is then multiplied by the machine's estimated lifetime. This assumes an unchanging utility rate, which is unlikely, so the lifetime value of a turbine calculated in this way may be viewed as a minimum value.

Another economic indicator is the ratio of the dollar investment to the amount of electricity generated over a wind turbine's lifetime (assumed here to be 25 years). If the utility rate is assumed constant over the turbine's lifetime, the ratio may be quickly calculated using the WVI. To apply the economic ratio to the 39.5 kW wind turbine, quotes on the 1989 prices for the turbine and its installation were obtained (Table 5). The total initial cost of a single turbine was used as the investment value here. This gave an economic ratio that ranged from

Table 5. Start-up Costs for Buying and Installing a 39.5 kW Wind Turbine, 1989

	One Turbine	One Turbine in a Bulk Order for One Hundred Turbines
Blades	$ 5,400	$3,750
Brake system	2,400	1,790
Electrical systems	4,370	3,875
Concrete footing	945	775
Tower (100 ft)	10,000	5,500
Top frame	2.400	2,100
Gear box	5,200	2,480
Generator	900	850
Labor	9,500	9,500
Totals	$41.115	$30,620

0.35 to 4.45 for operation in different areas of Minnesota. Other costs can be incorporated into the investment value; for example, land leases and maintenance. When they are added, the economic ratio goes down.

An economic ratio of 1.0 defines the break even point. For the 39.5 kW turbine any wind viability region with a value of 40 or more (Figure 2) will give an economic ratio of 1.0. It is clear then, that almost any place in Minnesota will be able to at least break even on an initial investment in this size turbine. Along the Buffalo Ridge in southwestern Minnesota (where the WVI ranges from 95 to 174) investment in wind turbines would definitely be economically sound.

At present, Minnesota's economic climate discourages investment in wind energy systems. The tax incentives for development of alternative energy sources, created in the late 1970s following the energy crisis of that time, no longer exist. Further, Minnesota law makes it difficult for anyone but a utility company to develop wind energy. The current law states that "...a qualifying facility having less than 40 kilowatt capacity may elect that the compensation for net input by the qualifying facility into the utility system shall be at the average retail utility energy rate."* However, if a wind turbine has a capacity greater than 40 kW, the owner must negotiate the buy-back price with the utility, based on "avoided cost." At present, prices based on avoided cost (2-3 cents per/kWh) are lower than average retail utility energy rates (3.5-8.4 cents per/kWh). Minnesota law clearly leaves any significant investment in wind energy systems in the control of electric utilities.

Among the electric utilities operating in the state, only Northern States Power Company (NSP) has invested in wind turbines. NSP owns and operates a wind farm consisting of three 65 kW wind turbines located near Holland, Minnesota.

Although the NSP wind farm is admirable, Minnesota would do well to enact a comprehensive program to encourage utilities and non-utility parties in developing wind farms on a larger scale. Minnesota's indigenous energy resources are limited to peat, solar, wind, and hydropower. At present, neither wind nor direct solar energy are truly being developed. Large amounts of money flow out of the state to pay for the imported electricity, coal, petroleum, and natural gas. Investment in wind farms could reduce this flow of dollars, provide jobs, and possibly lend some stability to Minnesota's energy picture if another energy crisis occurs.

In addition to these economic concerns, the environment would benefit from wind farm development. A significant portion of the coal and nuclear fuel used to produce electricity could be replaced by wind energy systems. Reduction in coal consumption would translate into a reduction in acid rain and global warming that stems from Minnesota's exhausts. The safety and storage problems surrounding nuclear energy would end if nuclear energy could be displaced by renewable energy resources.

Minnesota has only just begun to examine and exploit wind as an energy source. The Wind Resource Assessment Program's six-year data base is only an initial step toward this end. Economic, political, and environmental concerns all suggest that Minnesota needs to encourage research aimed at large-scale wind farm operations. Wind energy development at a rational and realistic growth rate is critical if sensible wind strategy is to become part of Minnesota's energy policy.

*Minnesota statutes: Public Utilities 216B.164 Subdivision C.

Robert Geisen is completing his Ph.D. in mechanical engineering at the University of Minnesota. For his thesis, he is preparing an analysis of renewable energy systems in Minnesota. He compares the current energy use of each system with its potential and with current energy consumption in the state. His analysis of hydropower appeared in the December 1989 *CURA Reporter*. This paper presents his analysis of wind power. His work on wind power was funded by CURA. Geisen is currently working as manager of a research and development group at NorLake, Inc. in Hudson, Wisconsin.

Who is Organizing the Twin Cities?

by Frederick W. Smith and Jack Whitehurst

Neighborhood organizations face a tide of rising expectations. From their members and residents there is growing pressure to act on youth gangs, crack houses, and child care in addition to long-standing concern about zoning, traffic, housing rehabilitation, and new construction. And from other organizations and authorities, both public and private, there are increasing requests for neighborhood citizen participation in efforts about crime, recycling, education, social services, employment counseling and referral, and planning for community development.

In many neighborhoods, these rising expectations have transformed the position of "neighborhood organizer" from one held by a part-time volunteer to an ever-more demanding full-time job. Yet, curiously, the position has received little attention. There is no cumulative information on who is currently staffing neighborhood organizations much less any analysis of what kind of preparation is most useful for becoming a neighborhood organizer. What are current salary and benefit levels? What are the needs of current organizers for additional training and education? What expectations are there about the future of the occupation?

The CURA Study

In September of 1989 we surveyed neighborhood organizers in the Twin Cities to provide: 1) a numerical portrait of these organizers, 2) initial data on how to increase training opportunities and job satisfaction of current organizers, and, 3) background and information on ways to attract and prepare new people for work in community organizing.

Written questionnaires were mailed to all neighborhood organizers that we could identify in the seven-county metropolitan area. We did not survey the staff of special constituency organizations (such as elderly, people of color, women, or handicapped) or special issue organizations (such as peace and justice, environment, employment, housing, and child care), even when the membership and work of these organizations was concentrated in a particular neighborhood. Nor did we include those persons whose job title was "neighborhood organizer," but who were not employed by a neighborhood organization.

Sixty surveys were sent and forty-five returned for a response rate of 75 percent. Though the sample is certainly representative, the small sample size means that observations and conclusions about small subsets of the sample should be viewed with caution. Drafts of the survey and write-up were discussed with neighborhood organizers and then modified; the authors are grateful for these thoughtful and very helpful responses.

Who Are the Organizers?

A collective portrait of community organizers in the Twin Cities, drawn from the data in this survey shows that:

- Three out of five (60 percent) organizers are women. In Minneapolis, the gender distribution is half and half, while in St. Paul 70 percent are women.

Using trained and experienced organizers, community groups are able to mobilize large numbers of people to act on issues that concern them. Here the Joint Ministry Project filled the gym to overflowing at Ascension School in their first public meeting last May. These citizens of north Minneapolis named crime, housing, and education as their action priorities.

- Over half (52 percent) are in their thirties, compared to a third of workers in the general workforce. Perhaps more important, only 22 percent are in their twenties, compared to 32 percent of the general labor force.
- Almost half (44 percent) are married, compared to 56 percent of the general population. And more than half (53 percent) have children.
- Four out of five (80 percent) have graduated from college, compared to 22 percent of the general population in 1980. More than a third (36 percent) have been enrolled in post-graduate work.
- Eighty-five percent are white, and 5 percent people of color. Ten percent chose not to answer this question.
- Nearly half (47 percent) work for organizations in St. Paul, while 40 percent work for Minneapolis organizations and 13 percent for other organizations.
- Two out of three (69 percent) have been working as organizers for five years or less and, of these, two-thirds are women. Those working as organizers for longer than five years are evenly divided between men and women.
- Since they began paid organizing, almost three-quarters (73 percent) have worked for only one or two organizations. Another 20 percent have worked for three or four organizations. Among full-time organizers, 60 percent in St. Paul and 11 percent in Minneapolis, have worked for only one organization. There tends to be much less turnover of organizing staff in St. Paul than in Minneapolis.

The Route to Organizing

When asked to indicate how they first became interested in organizing, the women overwhelmingly (71 percent) said, through "involvement in community issues." Only 14 percent chose "coursework in school" or "involvement in a school issue" as their response, though education levels are only slightly less for female than male organizers. Among the men, 40 percent said "involvement in community issues" got them interested in organizing, while 28 percent chose coursework or a school issue. Among all those surveyed, 7 percent chose "family background."

Why did they become organizers? "To promote social change" was the answer four times as often as "in response to a community issue" or "because a job was available," the next two most frequent responses.

The Job of Organizer

Organizers in this survey estimated what percentage of their time was spent on various activities. Table 1 presents these activities rank ordered according to the mean responses for each city.

St. Paul organizers spend more of their time on administration and management

Table 1. Activities of Community Organizers, by City (rank ordered from most to least amount of time spent)

Minneapolis	St. Paul
Issue develop.	Admin./management
Membership develop.	Issue develop.
Issue identificat'n	Issue identificat'n
Admin./management	Program develop.
Program develop.	Membership develop.
Securing grants	Securing grants
Grassroots fundra'g	Personal develop.
Personal develop.	Grassroots fundra'g



Leadership training in the basic principles of organizing was presented by Bill Scriven, a consultant with the Neighborhood

than their Minneapolis counterparts. Many of the St. Paul organizers are staff of the city's district councils. They are frequently responding to official communiqués from the city. St. Paul organizers also average more time on personal development than their Minneapolis counterparts. On the other hand, Minneapolis organizers spend more of their time on membership development than their St. Paul peers. Organizers frequently comment that municipal support for neighborhood organizations is much more political and changing in Minneapolis than St. Paul. As a consequence of this, an organization's base in the neighborhood may be more critical in Minneapolis.

Compared to Minneapolis, where there is a proposal process for funding target area neighborhood organizations, funding for district councils in St. Paul is based on a formula. Curiously, the amount of time spent fundraising (both grassroots funding and grant applications) is greater in St. Paul than in Minneapolis.

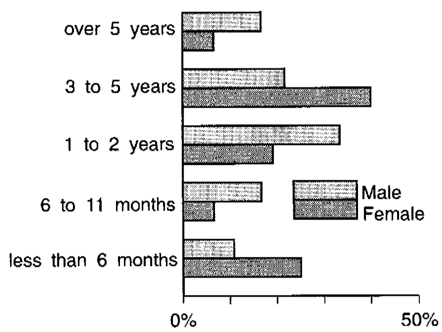
Two-thirds of neighborhood organizers in both cities work full-time. Part-time organizers tend to spend more of their available time on what might be termed organizational maintenance—fundraising, administrations, and member development. Full-time organizers, in contrast, spend more time on issues, programs, and personal development activities. Statistically at least, whether the organizer is full- or part-time appears to be more important in influencing what the organizer does than other variables such as which city, which gender, salary level, or experience.

Figure 1 compares the length of time male and female organizers have worked at their current job. For men, tenure seems to be rather evenly spread across a spectrum of years. For women, there are two job tenure clusters: one at less than six months and the other at three to five years. This suggests that women organizers tend to try the job and either move on within the first six months or stay for three years or more.

The Education of an Organizer

Those surveyed were asked to rank any of ten activities which might have helped prepare them for being an organizer prior to their paid organizing work. Table 2 summarizes their responses.

Figure 1. Tenure of Organizers at their Present Job, by Gender



The organizers most frequently chose reading and observation, workshops and conferences, volunteering for a neighborhood group, and work for a special interest group (in descending order) as activities that helped prepare them for their organizing jobs. In ranking these activities, however, they indicated that the most helpful were volunteering for a neighborhood group and being supervised by an experienced organizer. This last, though ranked high, was selected by only twelve persons, perhaps indicating a need for more opportunities in supervised organizing.

One in five organizers said the experience provided by the activities they ranked in Table 2 had given them "excellent" preparation to be an organizer. Another two in five (40 percent) thought this prior experience gave them "adequate" preparation. Nearly a third (31 percent) thought it had given them only "minimal" preparation.

When comparing responses according to gender, 40 percent of the women thought their preparation had been minimal, and 34 percent judged it as adequate. Among the men only 16 percent thought their preparation was minimal, while 61 percent found it adequate. Twenty-two percent of the women and 16 percent of the men felt their prior experience had given them excellent preparation for their work. Women tended to cluster at both ends of this self-assigned competency scale while men clustered in the middle.

After taking jobs as organizers, the men and women we surveyed continued to improve their organizing abilities through many of the same activities rated in Table 2. Table 3 summarizes how they ranked the helpfulness of these activities used as further education after they became organizers.

Reading and observation, and workshops and/or conferences, are the activities most frequently marked as helpful by the organizers, followed by supervision by an experienced organizer. This last activity, however, is by far the most valued, with a mean rank of .92 out of a possible 1.00. However, as noted earlier, this experience was available to only some of the organizers, in this case slightly more than half (53.3 percent).

Table 2. Activities That Helped Prepare Organizers Prior to Beginning Their Work

Activity	Number Selecting This Item	Percent of all Respondents	Mean Weighted Response*
Volunteering for neighborhood group	22	48.9	.90
Supervision by an experienced organizer	12	26.7	.87
Internship for school	9	20.0	.80
Work for a special interest group	21	46.7	.79
Work as a canvasser	7	15.6	.78
Coursework in school	17	37.8	.77
Participation in a union	6	13.3	.76
My own reading and observation	27	60.0	.76
Involvement in political campaigns	16	35.6	.75
Workshops and/or conferences	23	51.1	.75

* Ranked responses were assigned the following values: 1 = 1, 2 = .9, 3 = .8, 4 = .7 and so on to 10 = .1. Totals for each item were divided by the number of respondents selecting that item.



Resource Center, at a recent meeting of the Organizers Roundtable.

Eighty percent of the organizers also indicated they would like additional training, supervision, or instruction in one or more of the activities listed in Table 3. The areas that most people wanted help with were (in descending order): securing grants, membership development, program development, and administration and management.

Salary, Benefits, and Satisfaction

Among full-time organizers, salaries range from less than $10,000 to above $35,000. In Minneapolis, over 50 percent of the full-time organizers are paid less than $20,000, while in St. Paul only 27 percent are paid below this level. The survey asked for salary information only by certain ranges, so average figures here are approximations. For all organizers, the average salary is $20,665. The average is $22,685 in St. Paul and $19,722 in Minneapolis.* There was a strong statistical correlation between organizers' current salary levels and the number of years they had worked as an organizer. And, there was a weaker but still significant correlation between their salary level and the length of time on their current job. No evidence of gender bias was found in salary levels.

*CURA also surveyed the St. Paul organizers eighteen months ago. Their current average salary ($22,685) represents a 23 percent increase since the previous survey.

Table 4 summarizes the benefits received by full-time organizers in both cities. Consistent with higher salary levels, benefits for organizers were also higher in St. Paul than Minneapolis. Given the number of organizers who are married and therefore covered by their spouses' health insurance, the relatively low (67 percent) figure for health insurance is not as critical as the even lower figure for pension and life insurance coverage. The numbers point to ways in which working conditions could be improved for organizers.

Table 3. Activities That Helped Train Organizers After Beginning Their Work

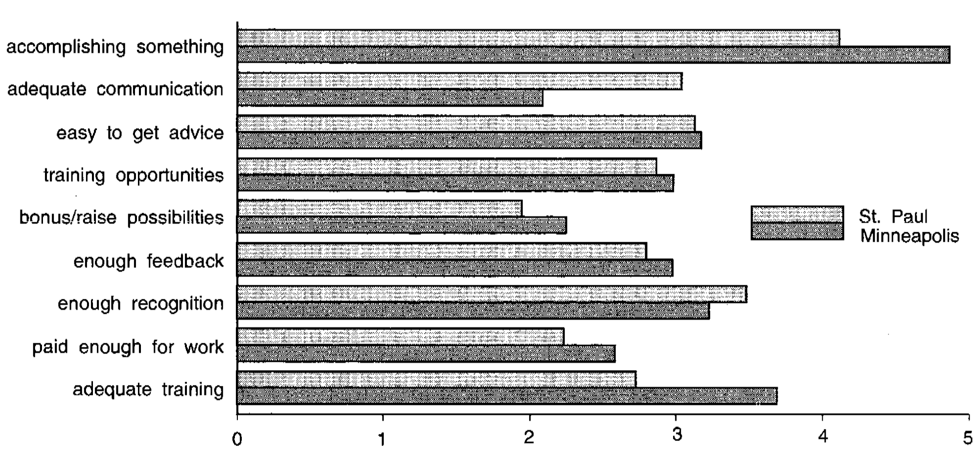
Activity	Number Selecting This Item	Percent of all Respondents	Mean Weighted Response*
Supervision by an experienced organizer	24	53.3	.92
Workshops and/or conferences	27	60.0	.85
Involvement in political campaigns	11	24.4	.83
Courses by a trainer or training center	17	37.8	.83
Work for a special interest group	11	24.4	.82
Volunteering for neighborhood group	18	40.0	.82
My own reading and observation	33	73.3	.82
Coursework in school	5	11.1	.76
Work as a canvasser	4	8.9	.75
Participation in a union	0	0.0	.00

* Ranked responses were assigned the following values: 1 = 1, 2 = .9, 3 = .8, 4 = .7 and so on to 10 = .1. Totals for each item were divided by the number of respondents selecting that item.

Table 4. Benefits Received by Full-Time Organizers in the Twin Cities

Benefit	Percent Who Receive it	Average Level of Benefit
Compensatory time off	53	n/a*
Pension	17	n/a*
Health insurance	67	n/a*
Paid vacation	97	12 days/yr.
Sick leave	90	11 days/yr.
Local travel reimbursed	93	20 cents/ mi.
Life insurance	10	n/a*

* n/a = not available



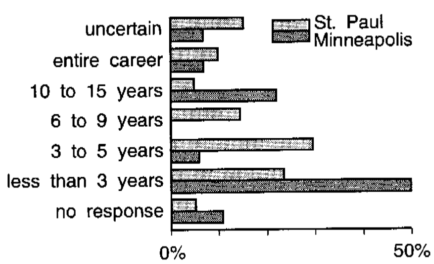
When asked if they believed they were "accomplishing something worthwhile" as an organizer, 90 percent answered "yes." Those who were "not sure" or who answered "no, not really" were evenly divided between full-time and part-time organizers, and between those who had worked longer than three years and those who had worked less than six months.

Figure 2 compares the attitudes of full-time organizers in each city on a variety of more specific job satisfaction issues. Though the variations are relatively small, organizers in St. Paul think there is better communication and that they are more likely to receive adequate recognition for their work. This may reflect the effect of the district council system and the fact that organizers in St. Paul get together regularly at meetings, convened both by the city and by their own association, the Association of Professional Community Organizers. St. Paul organizers, on the other hand, are slightly less satisfied than their Minneapolis peers about their preparation for the job and their sense of accomplishment. Although St. Paul organizers are paid, on average, approximately 15 percent more than Minneapolis organizers, they tend to be less satisfied with the salary they receive.

What's Ahead for Organizers?

One-third of the people we surveyed see themselves remaining organizers for less than three years. Ten percent want to make organizing their life-long career. Figure 3 shows some variation in the length of time organizers in Minneapolis and St. Paul would like to remain in this work. On average, St. Paul organizers want to remain longer than Minneapolis organizers. This is consistent with their reporting higher salary and benefit levels, better communication, and more adequate recognition for their work. It seems inconsistent, however, with their reporting a lower sense of accomplishment.

Figure 3. Number of Years Organizers Would Like to Remain in their Work, by City



When asked if they would like to be working as organizers in five years, over half (57 percent) of the organizers in Minneapolis answered "no." In St. Paul, 20 percent were uncertain, 38 percent said "no," and 42 percent said "yes." Gender, salary level, and the length of time they'd worked as organizers did not seem to influence one way or the other the response to this question. Of those who do not want to continue organizing, 42 percent see their current work fitting into what they would like to do next, while 38 percent are uncertain whether or not it will fit in.

The survey asked a number of questions about how the job of neighborhood organizer might change in the next five years. Organizers in both cities see fundraising taking more of their time five years from now. St. Paul organizers also see themselves spending more time than their Minneapolis counterparts on administration and management and on personal development. On the other hand, Minneapolis organizers believe they will spend slightly more time on issue identification and issue development.

The organizers were asked to rank the skills or tasks that they felt they should place more emphasis on in the next five years. Table 5 summarizes their responses.

Developing leaders and coalition building are, by far, the most frequent responses, and they are among the most highly ranked. There is less agreement on the future importance of any other factors.

Organizers were asked to describe what they believe "will have the greatest impact on the day-to-day work of community organizers during the next five years." Because this was an open-ended question, responses were grouped into five broad themes: funding, staff turnover, local dynamics (such as local politics and local economic factors), broader dynamics (such as national politics and broad socio-economic factors), and staff development. Again, funding was by far the most frequently chosen theme. Also, differences between St. Paul and Minneapolis organizers were more marked here than in other questions. Those from St. Paul tended to emphasize, in addition to funding, the internal themes of staff turnover and development; while those from Minneapolis emphasized the external (both local and broader) dynamics.

When asked to indicate what will be "the biggest challenge that organizers must address over the next five years," Minneapolis organizers again emphasized dynamics external to the organization, while St. Paul organizers spoke more of staff and organizational development.

In St. Paul, it would seem, while organizers are certainly concerned about future funding, they see the "rules of the game" with the city as fundamentally set and, by and large, secure. The real challenges lie in the developing and changing relationships with the various constituencies represented in the neighborhoods, as well as the increasing demands of the job which this entails. Staff recognize that the more their organization develops and the more demands are placed on staff by the board, committees, and other groups of the organization, the more difficulty they'll have responding to the various requests of the city.

In Minneapolis, on the other hand, while organizers are also concerned about future support, relations with the city and other larger authorities are much more various and changing than in St. Paul. Feeling relatively secure about their neighborhood bases compared to their St. Paul peers, there is more attention to city hall and public agencies so as to keep abreast of what plans are in the works and what may happen next.

Finally, in another open-ended question, organizers were asked to describe briefly "where and how you hope to make your most significant contribution as an organizer over the next five years." Networking and staff development tended to be emphasized by St. Paul organizers, while organization building was favored slightly by Minneapolis organizers, who also indicated a relatively large degree of uncertainty.

Concluding Observations

The portrait of Twin Cities organizers that emerged from this survey is far different from the old stereotype of the "outside agitator" who is young, single, and radical. It is also clear that organizers have attained neither the status nor rewards of most professionals. Certainly the vast majority of organizers do not see their work as a career. Moreover, a family of four living on the average organizer's salary would be classified as low income. One out of three such families would not have health insurance, and virtually none would have a pension plan beyond Social Security.

- **Increasing the Effectiveness and Job Satisfaction of Current Organizers**

Neighborhood boards, foundations, and city agencies might well consider that organizing would be more attractive as a job and

—continued on page 16

Table 5. Skills or Tasks that Organizers Should Emphasize in the Next Five Years

Activity	Number Selecting This Item	Percent of all Respondents	Mean Weighted Response*
Grantwriting	9	20.0	.81
Negotiation skills	8	17.8	.81
Community analysis	18	40.0	.81
Developing leaders	36	80.0	.81
Issue identification	12	26.7	.81
Coalition building	31	68.9	.80
Role of the organizer	14	31.1	.80
Strategic planning	22	48.9	.79
Power structure analysis	15	33.3	.79
Doorknocking	10	22.2	.77
Grassroots fundraising	17	37.8	.75
Campaigns	9	20.0	.71
Tactical research	8	17.8	.68

* Ranked responses were assigned the following values: 1 = 1, 2 = .9, 3 = .8, 4 = .7 and so on to 10 = .1. Totals for each item were divided by the number of respondents selecting that item.

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perhaps even as a career if the level of salary and benefits were increased. In St. Paul, where salaries and benefits are higher on average, staff turnover is lower than in Minneapolis. In neither city, however, is the current average salary adequate to lift an organizer's family above a "low income" status.

The survey results seem to recommend that workshops, conferences, and courses would be welcomed by organizers in both cities. In addition, there is the possibility that exchanges between Minneapolis and St. Paul organizers around their complementary strengths and interests might be mutually helpful. Certain topics address the interests of organizers in both cities: leadership development, coalition building, and strategic planning, for example.

- **Attracting and Preparing New People for the Work of Neighborhood Organizing**

Four out of five organizers in the Twin Cities are thirty or older. Half of the Minneapolis organizers see themselves remaining organizers for less than three years. Job tenure may increase if salary and benefits rise, but there is still the obvious need for attracting new people to the job of organizing.

Judging from the current distribution of age cohorts among organizers, as well as the activities they report as having helped prepare them for the job, new organizers will come from a variety of sources. Schools, neighborhood groups, special interest groups, and political parties seem to be sources for most and unions for a few.

Some activities are more helpful than others and volunteer work for a neighborhood group was rated as one of the most helpful by these organizers. Learning by experience, and moving from volunteer to paid staff—though not necessarily within the same organization—is a common route into organizing. Systematically identifying employment opportunities and helping to match them with interested applicants would probably help expand what is already occurring.

More structured learning opportunities also stood out in this survey, particularly being supervised by an experienced organizer and school internships. Though equally valued, these were far less available than volunteering for a neighborhood group. Creating more supervised internships and apprenticeships would help enrich the informal mentoring that is already occurring. Internships or apprenticeships in organizing, whether with neighborhood groups or other community-based organizations, could provide valued learning for organizers across a whole spectrum of advocacy groups. They would also provide these organizations with supervised, but less expensive, staff support.

Given the tide of rising expectations, there is little doubt that demands on neighborhood organizations will continue to expand in number and sophistication. What is less clear is what the response of the organizations will be to these demands. This response will be shaped, in large measure, by the staff of these organizations. An adequate supply of well-trained organizers is a little noticed but clear necessity if neighborhood organizations are to meet the increasing demands of the future.

Fred Smith, CURA's coordinator of community development programs, has worked with neighborhood organizations in Minneapolis and St. Paul for more than twenty years. Jack Whitehurst is a graduate student in the Humphrey Institute at the University of Minnesota and worked as a research assistant with CURA for two years. He has recently joined the staff of the Minneapolis Revitalization Program.

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CURA reporter

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The Center for Urban and Regional Affairs was established to help make the University of Minnesota more responsive to the needs of the larger community and to increase the constructive interaction between faculty and students, on the one hand, and those dealing directly with major public problems, on the other hand.

The **CURA Reporter** is published five times during the year to provide information about what CURA projects are doing.

Thomas M. Scott, director; Thomas L. Anding, associate director; William J. Craig, assistant director; Judith H. Weir, editor.

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