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Redundant Farmsteads in Minnesota

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In 1935, the peak year, the United States had nearly seven million farms. By 1992 the number of farms had dropped to less than two million. If we may assume that each farm had a farmstead, in 1992 the United States might have had as many as five million farmsteads that were redundant to the needs of contemporary agriculture.

Roughly 125,000 of these redundant farmsteads were in Minnesota. What has happened to them? Some have been razed, some have simply been abandoned, and some have been recycled into rural nonfarm residences that can deceive the casual observer because some of the old farm buildings are still in use. We have only educated guesses about the relative importance of each category, however, so we set forth to learn more about the fate and the present use of the redundant farmsteads of Minnesota.

West on Highway 12

We began by exploring a rapidly suburbanizing area on the western edge of the Twin Cities. We identified each of the farmsteads and former farmsteads that we could see along a twelve-mile traverse of U.S. Highway 12 between Maple Plain and Montrose (Figure 1). Our task was greatly facilitated by the distinctive combination of barn and silo that was the hallmark of a traditional dairy farmstead. We identified a total of forty-three "farmsteads," about the number we would have expected in an area that had predominantly eighty- to one hundred-acre dairy farms in 1935.

At each place we asked the residents how much farming they were doing, and

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how they were using the old farm structures we could see from the highway. We confirmed that each of these forty-three places had once been a farmstead. In the summer of 1992 eight still served full-time farms, seven served part-time farms, five were used for nonfarm businesses, twenty-one were rural residences, and two were unoccupied. In other words, at least half of the current occupants of these former farmsteads were pouring money into them instead of making any money from them.

and alfalfa. Farming larger acreages requires more and larger machines, and the expensive new machines must be protected from the elements in enclosed metal sheds with workshops. A modern dairy farmstead has half a dozen major structures or more.

A dairy cow is a harsh taskmistress. She must be milked every twelve hours, no matter what, and the dairy farmer cannot be away from the farm more than eight to ten hours at a time. Beef production often is the first recourse of

farm jobs to supplement their farm income, or combine several of these strategies.

One of the full-time farmers along our traverse inherited enough land to enable him to shift from dairying to cash-crop farming, and he converted his dairy herd to a beef herd. Another rents land from owners who do not farm it, and feeds beef cattle and hogs as a sideline. A third has a full-time hog operation, and produces feed on a mixture of owned and rented land. Five of the seven part-time farmers have full-time off-farm jobs, but enjoy their beef herds, one has a herd of buffaloes, and the seventh is the widow of a dairy farmer who rents out her land.

No new buildings are necessary on a farm that downshifts from dairy to beef, and the barns on most of the beef farms are patched and weatherbeaten. "I needed a new barn," said George Schaut, "but it would have been a foolish investment. A buyer from the city would not be willing to pay anything for a barn, no matter how good it was, and the investment simply would not have held its value. This area is full of barns that are just sitting there empty."

Two full-time farms and one part-time farm are highly specialized. The new owner of one former dairy farmstead tore down the old barn and silo, built a greenhouse, modernized the farmhouse into a rental property, and rents out the land. Al Sterner and Jean Peterson raise vegetables on her father's former dairy farm. Al had held various unfulfilling jobs, and they got the idea

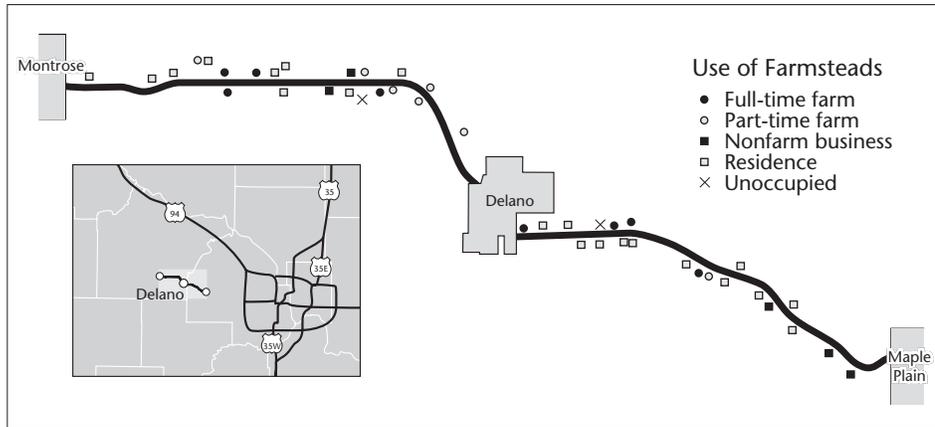


Figure 1. Use of Farmsteads along U.S. 12 between Maple Plain and Montrose

Saturday was by far the best day for our interviews, because in many families both spouses had to hold jobs to support their rural lifestyle, and at many places no one was at home during the working day. One awed nonfarm resident said, "These farmers work all day in town and then they come home and work all night and all weekend on their farms. You often see the lights on their tractors out in the fields way past midnight."

The Working Farms

Only three of the forty-three farmsteads along our traverse still served dairy farms. The dairy barn and silo remain the heart of each farmstead, but they are dwarfed by a whole new suite of structures. The average milking herd increased from twelve to sixteen cows in 1950 to forty-five to fifty in 1992, and farmers have had to remodel and extend their barns to hold them.

They must farm more land to produce more feed, and they have had to put up new silos, new grain bins, and new metal hay sheds to store their increased harvests of corn, soybeans,

a dairy farmer who, for whatever reason, decides to stop milking cows. Beef cattle demand far less attention, but they also produce far less income, perhaps no more than one-half to one-third as much as dairy cows. Dairy farmers who downshift to beef must enlarge their herds, increase their acreage, find off-



On working dairy farms, a whole new suite of structures have been added to the original barn and silo to accommodate the increased size of the dairy herd.

cover photo:

There are roughly 125,000 redundant farmsteads in Minnesota.



Dan Tapio, a cabinet maker, raises buffalo on the half of a farm that he inherited. He sells buffalo meat, fur, and manure.

of turning the farm into a truck farm when a budget cut cost Jean her teaching job. They have a brightly painted roadside stand for direct sales, and they also sell through local grocery stores and the local farmers' market.

Dan Tapio is a cabinetmaker who inherited a farmstead and twenty-four acres, not nearly enough land for a dairy farm, but he wanted to use it in an ecologically responsible way rather than subdividing it into residential lots. He considered elk, reindeer, and ostriches before he finally settled on buffaloes. "A lot of this land around here is in small parcels that are rented out," he said. "They only produce coarse hay, which is not dairy quality, but it is fine for buffaloes."

He bought twenty-five buffalo calves, raised them to cows, then bought a bull, and is raising his own calves. He sells some calves to other breeders, and feeds out the rest for market. "The meat is low in cholesterol," he said, "I collect the fur and sell it for forty dollars a pound, and I bag the manure for sale to gardeners, who pay a premium price for it." He told us that he keeps the animals where they belong by feeding them

well, but he has also built some impressive fences, with woven wire six feet high stapled to posts the size of telephone poles.

The Redundant Farmsteads

Five former farmsteads are used by nonfarm businesses that rent out the farmland, or have sold it (Figure 1). Two are tree services, one is the machinery depot for a construction company, and one is an automotive recycling center. The owner of the fifth has converted the old eighteen-cow dairy barn into an antique shop, and he would like to develop an amusement center with a miniature golf course and a go-cart track, but the local authorities have not looked with favor on some of his plans.

Twenty-one of the former farmsteads along our traverse had been recycled into rural nonfarm residences. Two of the residents were retired farmers who have sold their land, but the rest have moved out from the city and commute to work. Most of their jobs are in the western suburbs, and few commute more than ten miles. Why have city people moved out to former farmsteads? Each answer is unique, but nearly

everyone mentioned the attraction of the rural lifestyle and the opportunity of keeping animals, almost invariably horses, but often dogs as well.

Some people actively dislike cities, and many of those with whom we talked reminded us of the tradition of the pioneer settler who knew it was time to move on when he could see the smoke from another settler's cabin. We came to think of them as "elbowroomers," people who had grown up on the outer suburban fringe and who felt compelled to move farther out to escape the suburbs that were starting to crowd in on them. Julie Jacques said, "the area around us got all built up, and we wanted to move out to a place where we didn't have any close neighbors." The elbowroomers are the advance guard of the expanding metropolis.

Most of the farmsteads that have become available for the elbowroomers are the by-products of farm enlargement. A farmer who has bought a second farm does not need the farmstead, and usually is only too happy to rent it for a price that seems handsome to the farmer but low to the city person. Farmsteads on a major highway, despite

its fierce traffic, are especially attractive to commuters. We would expect to find more unoccupied former farmsteads on secondary roads and in less accessible areas, so in the summer of 1996 we surveyed all of the farmsteads and former farmsteads of eastern Cottonwood County.

Eastern Cottonwood County

We chose Cottonwood County as an example of a rural agricultural area in Minnesota that is well beyond the range of metropolitan influence. Windom, the county seat, had a population of 4,283 persons in 1990. The county is two and a half hours from the Twin Cities, and an hour and a half from Sioux Falls. No county residents commute regularly to either place, and few if any former residents of metropolitan areas have fled to the county.

The U. S. Census of Agriculture says that the number of farms in Cottonwood County dropped from 2,063 (slightly more than three per square mile) in 1950, the peak year, to 876 (almost exactly one and a half per square mile) in 1992 (Figure 2). We used aerial photographs taken in 1950, supplemented by topographic maps, to identify each of the 1950 farmsteads. Most were easy to find on the photographs, because the hallmark of a farmstead on the windswept prairies of southwestern Minnesota has been an "L"-shaped windbreak, and today the windbreak may be all that remains at the site where a farmstead once stood.

Our survey of the eastern half of Cottonwood County in the summer of 1996 found that most sections (a section is a square mile) had three or four farmsteads in 1950, and that one or two of these farmsteads were not occupied in 1996 (Figure 3). One-tenth of the 1950 farmsteads had completely disappeared, or had left no trace but the ubiquitous windbreak. The pattern of abandonment within each section was random, but at the county level it was remarkably uniform. There are no concentrations of abandoned farmsteads, and no areas lack their quota.

A Closer Look

The U.S. Census of Agriculture, which defines farms extremely permissively, says that Cottonwood County had only a farm and a half per section in 1992, so we must assume that one or two of the remaining occupied farmsteads in each section is in fact the residence of a nonfarm family. We selected Carson Township for intensive investigation of this assumption in the summer of 1997. We asked the present residents of each of the eighty-eight farmsteads and former farmsteads how much farming they were doing, and where they worked, if they had off-farm jobs (Figure 4).

As we had anticipated, only thirty-five of the ninety-two occupied farmsteads in Carson Township, or roughly one per section, were the homes of full-time farmers. This figure actually exaggerates the number of full-time

farms in the township, because six farms were partnerships (father and son, or two brothers) that required a residence for each partner. These auxiliary residences help to explain the apparent clustering of farmsteads in the north-eastern quadrant of the township (Figure 4).

Rural Farms Today

Many former farmsteads have become redundant because farmers have had to increase their scale of operations in order to stay in business. Since World War II the average size of farms in Cottonwood County (and in virtually every other county in the United States) has steadily increased (Figure 2).

"When I started farming," said Mike Adrian, who owns 500 acres and rents 500 more, "a thousand-acre farm was a really big deal, but today my farm is fairly typical." Cash-grain farms in southwestern Minnesota now average well over a thousand acres, so the contemporary cash-grain farm economy needs less than one farmstead for each two sections, and the others have become redundant.

Cash-grain farmers have enlarged their operations by renting land instead of buying it, because they cannot afford to have their capital tied up in land. "We don't own much land," said Brenda Magnus, "but we have a fortune invested in machinery." Only four or five farmers will bid on a piece of land that comes up for sale, but twenty or so will bid eagerly on any land that is available for rent.

A young farmer needs to rent more land when he takes over a 300- to 400-acre farm from his parents, but all of his neighbors also are looking for land to rent. The competition is fierce, and it is tough to find land to rent near home. Established farmers have an advantage, because they can afford to pay more to rent or buy contiguous land to consolidate their holdings, but younger farmers with less capital may have to travel up to fifteen miles to find fields they can rent.

Commuting is a concept that city folk rarely associate with farming, but farmers spend a lot of time on the road between their homes and fields that are up to fifteen miles away in different directions. They complain that they spend more time hauling machinery back and forth than they spend actually working in the fields. It is difficult to track down members of farm families for interviews, because one spouse usually

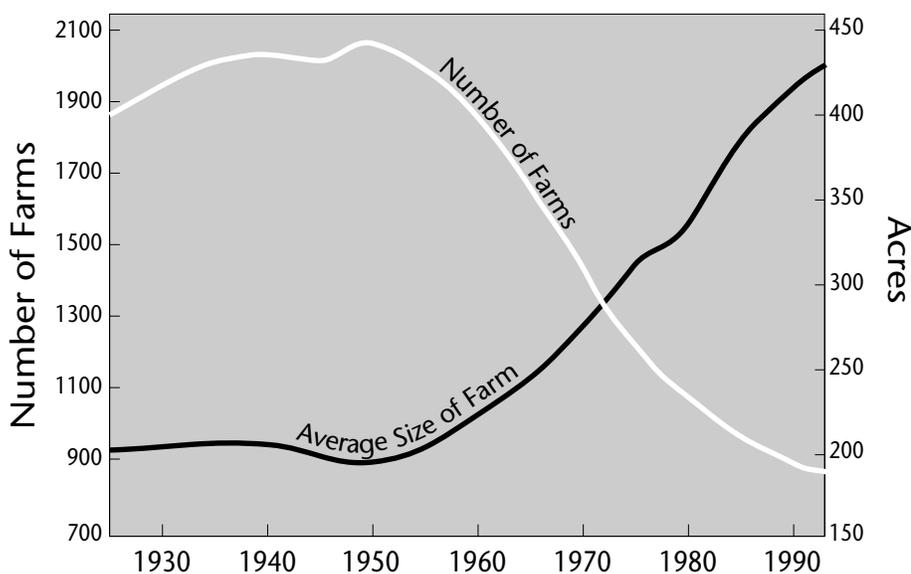


Figure 2. Number and Average Size of Farms in Cottonwood County, Minnesota, 1925-1992

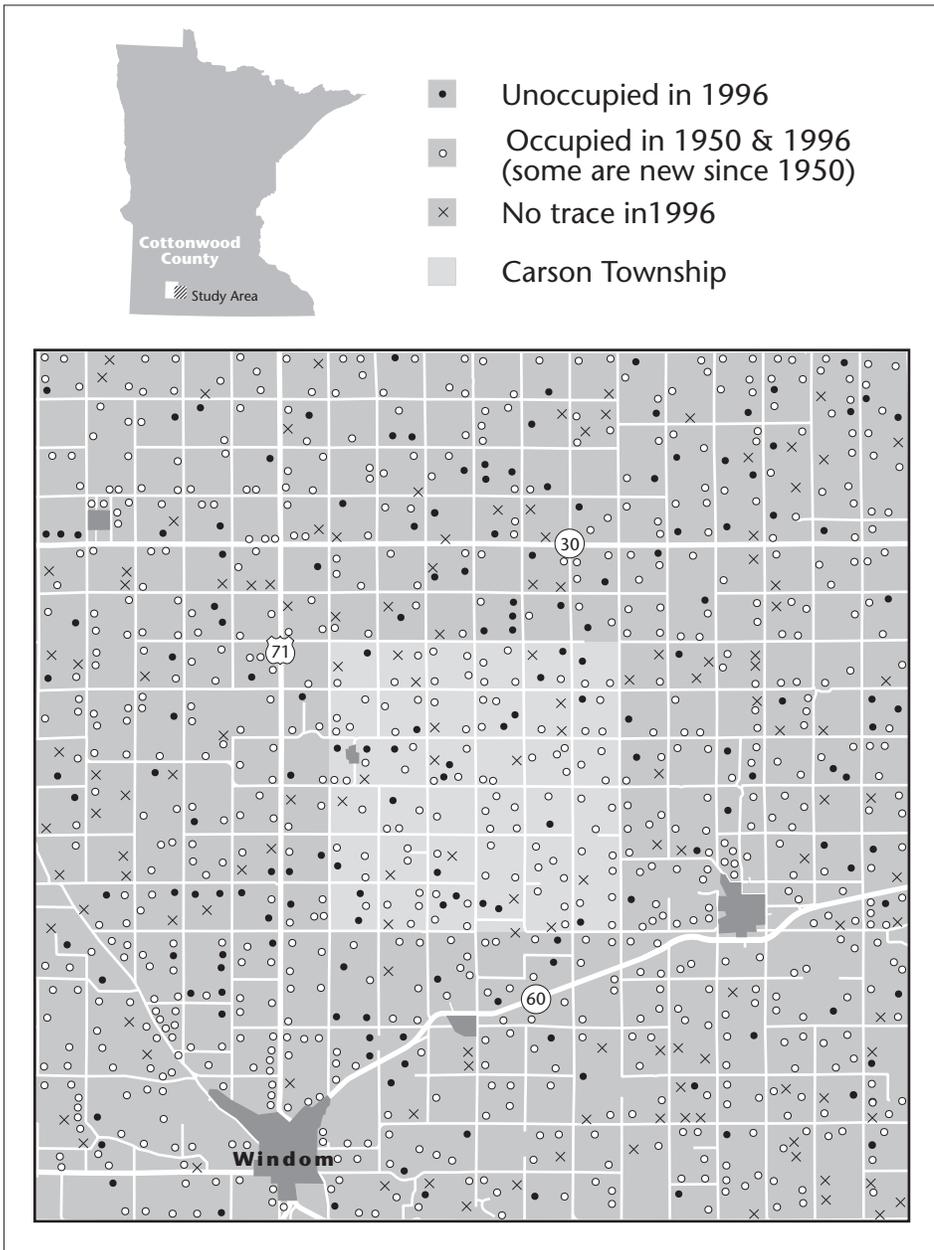


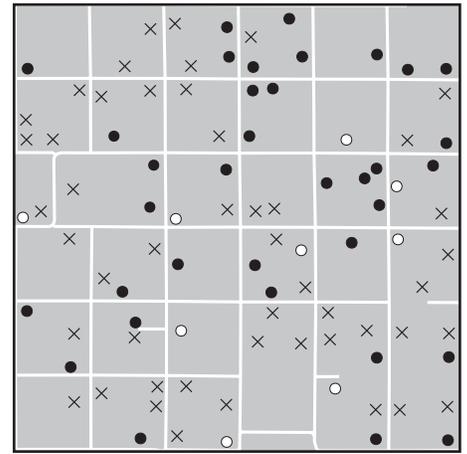
Figure 3. Farmsteads in Eastern Cottonwood County, 1950 and 1996

has an off-farm job, and the other is working in a field somewhere within a fifteen-mile radius.

Part-time farmers, who account for 11 percent of the occupied farmsteads of Carson Township, also are commuters. Most are “sundowners,” who have full-time jobs off-farm and do their farm work evenings and weekends. They are gradually easing out of farming, but still cannot quite bring themselves to quit completely. They have sold or rent most of the farm, but they have kept the farmstead and a few fields. Most sundowners are middle-aged or older, because it is virtually

impossible for a young person to start farming part-time and then build up to a full-time farm operation.

A few part-time farmers feed hogs on contract, which gives them a steady income. The contracting company supplies the hogs and feed, and the farmer is responsible for the buildings, utilities, labor, and manure disposal, which necessitates a certain amount of land. Bud Fast, for example, works full-time as a bus driver, and farms less than 100 acres, but he contract-feeds two lots of 600 hogs each year for a company that produces 66,000 a year.



- Full-time farmer
- Part-time farmer
- × Nonfarmer resident

Figure 4. Residents of Farmsteads in Carson Township, Cottonwood County, 1997

Redundant and Rural

Virtually all of the nonfarm rural residents of Carson Township commuted to off-farm jobs. They are former farmers who have continued to live on the farmsteads when they quit farming and got jobs elsewhere. They have not chosen their place of residence, but have simply continued to live where they have always lived.

Only four of the eighty-eight families have moved from town out to a farmstead, and their choice was based on how much they liked the place, not on ease of access, water supply, or other considerations that might have seemed



Farmers spend a lot of time on the road, with fields that can be up to fifteen miles away in different directions.



Some part-time farmers feed hogs on contract.

significant. Nonfarm farmsteads may be hard to distinguish from working farmsteads, because they still have grain bins and machine sheds that they rent to neighbors.

Most of the farmsteads that are no longer occupied have sad histories similar to each other. The farmer retires and moves to town, or his widow moves to town when he dies, because living out in the country is too difficult. They have been living in the house for many years, and they have made do with outdated decorating and seriously inadequate electrical, heating, plumbing, and septic systems. After years of deferred maintenance these systems simply are not worth the cost of fixing up in hope of attracting a buyer.

Sometimes the house is rented, but the kinds of people who rent a cheap place out in the country are not likely to maintain it with tender loving care, and

it continues to deteriorate until it becomes uninhabitable and is abandoned. Loren Klassen rented his great-grandfather's farmstead to a series of old bachelor farmers "who lived like pigs and turned it into a hotel for old bachelor alcoholics" until it got so bad that he was forced to tear it down.

Variations in the Fate of Redundant Farmsteads

In conclusion, some of the houses on the recently vacated farmsteads in Cottonwood County seem to be in just as good shape as those on farmsteads closer to the Twin Cities that are still occupied. Elbowroomers, the pioneers of the expanding metropolis, have eagerly recycled every redundant farmstead near the Cities into a rural nonfarm residence, but many farmsteads in distant Cottonwood County have been abandoned because there is no demand for them.

In 1950 the average farm in Cottonwood County ran around 200 acres, and each section had three or four farmsteads. Today the average cash-grain farm runs to two sections or more, and the average section has two to four redundant farmsteads. Thirteen percent of the 1950 farmsteads had completely disappeared by 1997, and another sixteen percent were unoccupied.

Forty percent of the occupied farmsteads in Cottonwood County in 1997 still served full-time farms, one-tenth served part-time farms, and half were rural nonfarm residences. Few people have moved out from town to take up residence in the country, and the rural nonfarm residences are the homes of former farm families who simply continue to live where they have always lived. These places, too, probably will be abandoned when their current residents die or move to town.

■ John Fraser Hart is a professor of geography at the University of Minnesota, and Lisa Rainey was awarded a bachelor's degree in an individually designed interdepartmental major at the University in 1998. She wishes to acknowledge an Undergraduate Research Opportunities Program (UROP) grant and support from CURA for her 1997 summer research. They both appreciate the wordprocessing skills of Jodi Larson and the cartographic skills of Mark Lindberg and Erik Wienckowski. Parts of this paper have been reworked from John Fraser Hart, "Redundant and Recycled Farmsteads," *Focus* 44(4):11-17, with the permission of the American Geographical Society.

Characteristics of Poverty in Minnesota

by Dennis A. Ahlburg

Poverty and rising inequality have often been seen as the necessary price of increased economic efficiency. In this view, a certain amount of discomfort is expected while

the economy, as it appears to be doing now, adjusts to the rigors of a new international economic order, and once these adjustments are made economic benefits will be shared more widely.

Some economists, however, have begun to question this belief, while still others have long doubted that there will be an eventual "trickle down." A recent study of fifty-six countries, for example, concluded that rising inequality, which is often accompanied by increased poverty, may harm economic growth, causing either real or perceived social conflict and possibly leading to government policies that retard economic growth.¹

Over the 1980s, poverty grew in the United States. The number of poor people rose both in absolute numbers and as a percentage of the general population, from 13.0 to 13.5 percent, while the rates of poverty were quite unequal by race and ethnicity. This study focuses on the state of Minnesota, presenting what the data are for the state and discussing what they tell us about our citizens. How did Minnesota poverty change over the difficult period of the 1980s, and what factors affect the probability that a Minnesota household will be in poverty?

The Data

The data used to address these questions are taken from the Minnesota Public Use Micro Samples (PUMS) of the 1980 and 1990 U.S. Censuses, both of which are a 5 percent sample of the population. Since census data about income refer to the previous year, the data here refer to 1979 and 1989, and the unit of observation is the household, headed by an individual sixteen years of age or older now referred to by the Bureau of the Census as the "householder." The 1980 Minnesota PUMS contains data for 72,241 households and the 1990 PUMS for 83,871. Although the analysis is based only on data from this sample, in order to expand the data to reflect the situation in the entire state we have weighted the data based on a household's chance of being included in the sample. For example, if a household of a



White Minnesotans as a group have the lowest poverty rate—about one-fifth the rate of American Indians and about one-fourth the rate of African Americans.

¹ T. Persson and G. Tabellini, 1994. "Is Inequality Harmful for Growth?" *American Economic Review*, 84(3):600-621.

particular type has a one-in-ten chance of being included in the sample, it is multiplied by ten to form the state average. A household with a one-in-twenty chance of being included would be multiplied by five.

The definition of poverty used in this study is the federal definition established by the Office of Management and Budget, based upon the amount of money needed to purchase a least-cost nutritionally adequate food plan. Since families spend approximately one-third of their budget on food, the poverty level is roughly three times the value of the core food budget. The poverty line varies depending on a household's size, the presence of children under the age of eighteen, and the age of the householder. For example, in 1990 the poverty level for a family of four adults was \$12,790. For a family of four, two of whom were children, it was \$12,575. In our analysis, if the total income of a household in the sample was below the appropriate poverty threshold, then the family or individual was classified as "poor."

The Incidence of Poverty

Poverty increased in Minnesota as it did across the nation during the 1980s. In 1979 there were 356,370 Minnesotans (or 9.5 percent) living in poverty, while in 1989 there were 440,845 (or 10.2 percent), an increase in number of 24 percent. These percentages are clearly lower than those of the nation as a whole, but Minnesota shows a much

faster rate of increase, and a closer look at the people who are the Minnesota poor reveals much more.

Differences by Race. According to both censuses, the vast majority of those in poverty were White, since Whites make up the overwhelming bulk of the state's population (Table 1). However, White Minnesotans as a group have the lowest poverty rate—most recently about one-fifth the rate of American Indians and about one-fourth the rate of African Americans.

While poverty rates increased somewhat over the decade for White Minnesotans, they increased markedly for African American and American Indian Minnesotans. As a consequence, the gap between the poverty rate for Whites and that for other racial groups increased, and the percentage of the poor who were minorities rose from 8.9 percent to 12.1 percent, though they were less than 6 percent of the state's total population in 1990. Minorities are, thus, significantly over-represented among the poor.

Nationwide, there was an increase in poverty among American Indians over the 1980s from 27.5 percent to 30.9 percent. These rates are not only lower than Minnesota's for American Indians (32.2 percent in 1979 and a startling 45.9 percent in 1989), but they also show a much smaller increase over the decade. Among African Americans, poverty declined slightly across the nation (from 32.5 to 31.9 percent) while in Minnesota it surged from 24.2

percent to 36.2 percent. Poverty among Asians in Minnesota, at 27.3 percent in 1989, was more than double the nationwide rate for Asians. For Whites, however, the nationwide rates—rising from 10.2 percent to 10.7 percent over the decade—are higher figures than those for White Minnesotans and showed a very similar rate of increase. Thus, when compared to the nation as a whole, minority races in Minnesota are experiencing more poverty at a faster rate of growth, while their White counterparts are generally better off in Minnesota than across the country.

The Working Poor. Later we will see that employment is a critical factor in reducing a household's likelihood of being in poverty, but employment is not a guarantee of escape from poverty. The "working poor" are households in which the householder is employed, yet income still falls below the poverty threshold. In 1989, as in 1979, just over 40 percent of all poor persons in Minnesota were working poor. In the more recent census, employment was more common among poor Whites than among the poor of any other race, and consequently Whites in 1989 made up an even greater percentage of the working poor than of the poor in general.

Age of the Householder. In 1989, poverty was highest among young Minnesota householders, aged sixteen to twenty-five, where the rate was almost 28 percent. This was more than double the poverty rate of any other age group and an increase of over 10 percentage points from the previous census. But along with the rise in their poverty rate came a sharp decrease in the total number of these households, so much so that the number of young householders in poverty actually fell slightly, and in 1989 they comprised only 15 percent of all poor Minnesotans.

In both censuses, the greatest number and the largest percentage of people in poverty were householders aged twenty-six to thirty-five. The largest drop in poverty over the decade, more than 1 percentage point, was enjoyed by senior householders aged sixty-five or older.

Marital Status. Female householders in Minnesota are generally poorer than their male counterparts, and the poorest among them are unmarried women with children. Fully 34 percent of single-female householders were in poverty in 1989, 10 percentage points higher than a decade earlier.

Table 1. Poverty in Minnesota by Race*

	White	African American	American Indian	Asian	Other	Total
1980						
Number of poor households	324,790	11,600	11,000	6,080	2,900	356,370
Rate of poverty (%)	8.5	24.2	32.2	25.5	26.3	9.5
Percent of all poor	91.1	3.3	3.1	1.7	0.8	100
1990						
Number of poor households	387,665	17,060	21,900	9,440	4,780	440,845
Rate of poverty (%)	9.0	36.2	45.9	27.3	31.7	10.2
Percent of all poor	87.9	3.9	5.0	2.1	1.1	100

* No data are presented for Hispanics because the Census Bureau defines Hispanics as an ethnic group, not a race. The "Other" category consists mostly of Hispanic people who reject this definition, but the majority report themselves as White.

Table 2.
Correlates of Poverty in Minnesota: 1990

Variable	Effect (%)
Householder employed	-10.4
Spouse employed	-5.9
Age of householder (each year)	-0.2
Occupation (relative to white collar)	
Service	+2.5
Farm	+4.5
Blue collar	-2.1
Education (each year)	-1.1
English proficiency	-2.0
Metropolitan	-4.3
Household structure (relative to a childless married couple)	
Married couple with children	+3.4
Single father	+7.2
Single mother	+13.3
Single male, no children	-- --ns
Single female, no children	-----ns
Non-family	+10.0
Household size (each person)	+1.3
Race (relative to White)	
African American	+6.6
American Indian	+7.4
Asian	+6.1
Other	+4.5

ns = not significant

They constituted almost 41 percent of all persons in poverty in the more recent census, yet were only 8 percent of all Minnesota households.

While the poverty rate for single mothers in Minnesota is still below the national rate (44 percent in 1989), the 10 percentage points increase over the 1980s was well above the national increase of 2 percentage points. This escalation may have been caused either by the economic positions of these Minnesota women worsening over the 1980s or by an influx of poor single mothers moving into Minnesota during the decade, but the first is the more likely explanation.

The Poverty Gap

The preceding analysis informs us of the extent of poverty in Minnesota, but it does not tell us about its depth. When poverty occurs, how severe is it? A useful

way of looking at poverty is to ask how much money it would take to eradicate it altogether in a given year. This amount of money expressed as a percentage of state income (the income received from all sources during the year by the residents of Minnesota) is referred to as the "poverty gap." In 1979 the poverty gap was 0.97, or almost 1 percent of state income. A decade later, the figure was down to 0.71.

In 1979, it would have taken \$684 million² to move every poor Minnesotan above the poverty line. In 1989, only \$585 million dollars would have been required. This decrease over the 1980s of almost \$100 million dollars, despite the rise in the number of poor persons by almost 85,000, suggests that the severity of the average person's poverty has lessened. Per person, it would have taken an average of \$1,920 in 1979

such as the shift from higher paying manufacturing jobs to lower paying service jobs evident both in Minnesota and across the nation. Demographically, poverty is strongly affected by events such as divorce, deaths in the family, and childbearing.

Based on the 1990 Census and a regression analysis of variables commonly associated with poverty, Table 2 reports the effect that each variable has on the probability that a Minnesota household will live in poverty. For example, each extra year of education that the householder has completed reduces the likelihood of poverty by 1.1 percentage points, while each extra family member increases it by 1.3 percentage points.

Employment proved to be one of the most influential variables. If a householder was employed, the probability



Blue collar workers are less likely to be poor than white collar workers.

to lift each one out of poverty, while in 1989 it would have taken \$1,327. This, along with state income rising by over \$12 billion in real terms, brought the poverty gap down significantly.

The Correlates of Poverty

Poverty is a function of both economic and demographic characteristics. Economically, it reflects a lack of the human capital needed to obtain a job with adequate pay—education, work experience, language skills, and the like—and possibly it also reflects a change in the nature of jobs available,

that the household was living in poverty was 10.4 percentage points lower than if the householder was not employed. If the spouse of the householder was also employed, the probability of poverty was an additional 5.9 percentage points lower.

Although we did not have data on years of work experience possessed by the householder, age is often used as a proxy for it, and each extra five years of age decreased the probability of poverty by 1 percentage point. If employed, the effect of the householder's occupation was measured as relative to a white collar occupation. Farm and service

² All dollar figures are given as 1989 dollars.

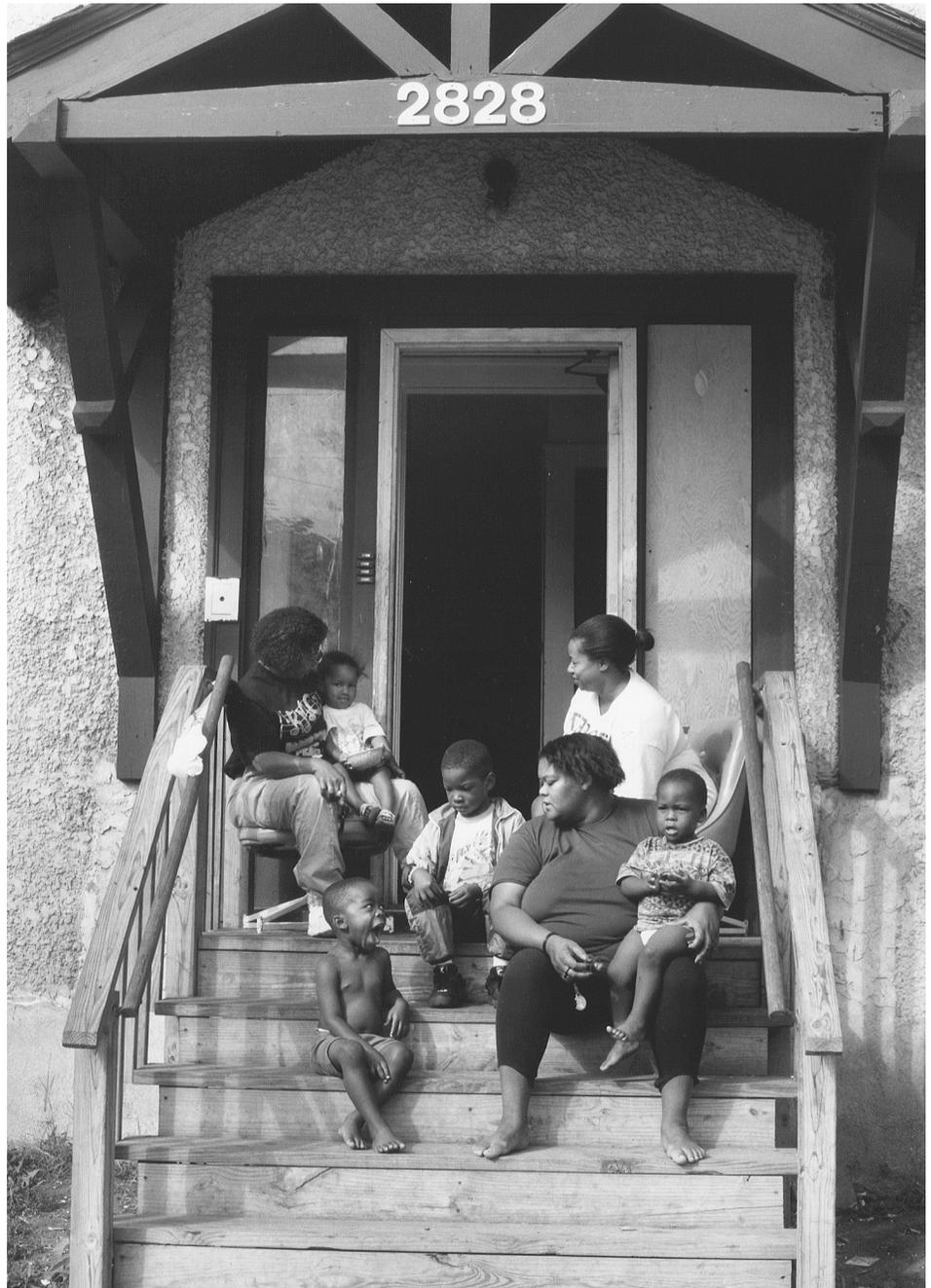
sector employment made a household more likely to be poor by 4.5 and 2.5 percentage points, respectively. Somewhat surprisingly, we found that blue collar households were 2.1 percentage points less likely than white collar households to be poor.

Significant differences in poverty were also found between metropolitan and non-metropolitan households in Minnesota, with the metro group defined as families residing in the five-county Twin Cities area. In 1989, a metro household was 4.3 percentage points less likely to be in poverty than a non-metro household with the same characteristics, suggesting that the probability of rural poverty is greater than the probability of urban poverty. This is a slight increase from the difference observed in 1979, which was 3.4 percentage points, and has recently been attributed to differences in earnings, not in the probability of finding a job.

The household structures associated with a high incidence of poverty were single mothers and nonfamily households (householders living alone or with only individuals unrelated by blood or marriage). These two groups, respectively, were about 13 and 10 percentage points more likely to be in poverty than other households, even after controlling for other factors. Single mothers are almost twice as likely to be in poverty as single fathers.

Also, couples with children are over 3 percentage points more likely to be poor than couples without children, even controlling for the age of the householder and other characteristics. This indicates that larger households are more likely to be in poverty than smaller ones. It is not clear, however, whether the structure of the family causes poverty or poverty causes the structure that the family takes.

The racial differences in poverty shown in Table 1 are also evident in the regression results, although they are much smaller than in the raw data. Much of the difference in poverty rates between White and minority Minnesotans is explained by other factors in Table 2, yet significant differences unattributable to these factors still persist. Controlling for all of the other characteristics in the table, African American households are 6.6, American Indians are 7.4, and Asians are 6.1 percentage points more likely to be living in poverty than similar White households. All three of these racial differences increased over the 1980s.



Women in Minnesota are more likely to be poor than men, and the poorest among them are single mothers.

Single Mothers

Of all the variables considered in Table 2, the strongest indicator of poverty was single motherhood. Households headed by single mothers attract considerable attention primarily because of concern about the impact of poverty on the children in these households, and such concerns are especially relevant to Minnesota. In outstate Minnesota, 46 percent of poor children live with single mothers, and in the Twin Cities fully 70 percent do.

What factors affect which single-mother households are poor and which

are not? Single-mother households may be poor because they lack factors that reduce the likelihood of poverty, such as a job or education, or because they suffer a greater penalty for their characteristics than do other household types. In other words, they may differ either in the presence of the variables in Table 2 or in the size of the effect of these variables. Table 3 contrasts these characteristics and their effects between the sample of all households and single-mother households.

In searching Table 3 for explanations of poverty, we find that single mothers

do not seem to be poor because they lack employment or education when compared to other Minnesota households. Nor are there significant differences in language skills or location, although single mothers are more likely to live in the Twin Cities metro area. Where they differ most notably is in the size of their household, their race, and their age. Single-mother families tend to be larger, the mothers tend to be younger, and they are much more likely to be minorities.

The factors that determine whether a single-mother household is poor are similar to those that distinguish poor from non-poor households elsewhere, but the impact of these factors on single mothers is much greater. An extra year of education here reduces the risk of poverty by 3.3 percentage points, three times the impact for all households. The impact of employment is also very large: an unemployed single mother is 47 percentage points more likely to be poor than an employed one, while for all households unemployment increases the chance of poverty by only about 10 percent.

Young single mothers run a higher risk of poverty than older ones. A household headed by an eighteen-year-old single mother is 16 percentage points more likely to be poor than one headed by a twenty-eight-year-old. This impact is eight times larger than in the general population. Being African American or American Indian also increases the risk of poverty for single mothers significantly more than it does in other households.

Conclusions

Over the 1980s, the incidence of poverty in Minnesota increased. This study has shown that about one in ten Minnesotans live in poverty, a better record than for the nation as a whole, but this overall average hides very significant differences among racial groups in Minnesota. Poverty rates among nonwhites are from three to five times those of White Minnesotans according to the 1990 census, and the differences increased for African Americans and American Indians over the 1980s. These disparities largely reflect differences in education, employment, and household structure, to name a few, but sizable differences by race remain unexplained by such factors and quite possibly are the result of racial discrimination.

Though not always easily achieved,

Table 3.
Characteristics of All Households and Single-Mother Households in Minnesota

	All households		Single-mother households	
		Effect on poverty (%)		Effect on poverty (%)
Employed	68.0%	-10.4	65.7%	-47.0
Age	49.1 years	-0.2 per year	35.9 years	-1.6 per year
Education	12.6 years	-1.1 per year	12.6 years	-3.3 per year
English proficiency	99.5%	-2.0	98.9%	ns
Metropolitan	35.0%	-4.3	45.0%	-14.8
Household size person	2.7 persons	+1.3 per person	3.2 persons	+5.1 per
Race				
African American	1.9%	+6.6	4.6%	+12.4
American Indian	0.6%	+7.4	2.1%	+20.7
Asian	1.0%	+6.1	0.9%	ns

ns = not significant

the keys to avoiding poverty are clear: work and productive attributes—such as education and English language proficiency—which increase the chances of employment and increase earnings.

Employment alone, however, is not necessarily a cure for poverty because nearly half of Minnesota's poor are working. Certain household forms are clearly associated with a higher probability of being poor, particularly single mothers and, to a lesser extent, single fathers. It is not possible to state conclusively whether these forms of household are a cause or a consequence of poverty.

Among single-mother households, the same factors were associated with an increased risk of poverty as among all households, but their effect was greater. In particular, employment and education are very important—indeed much more so than in the population at large. Being a single mother and heading a household does not necessarily imply that a household will live in poverty, but if the single mother is young, from a minority race, and has little education or no job, then the household she heads is very likely to be poor.

Finally, we have found that it would take about seven-tenths of one percent of state income to move all Minnesotans out of poverty. This figure is significantly lower than it was a decade earlier, implying that although the number of Minnesota poor has increased, their poverty, on average, is less severe, and the task of eradicating it is not as great. Of course, any reallocation of money as would be necessary to erase the poverty

gap is unlikely to occur in the foreseeable future, and even a debate on the issue is highly unlikely in the current political environment. More importantly, such a reallocation would need to be made continually until the underlying causes of poverty were remedied, but hopefully the identification of poverty's correlates will bring us closer to isolating and addressing those causes.

This article presents a summary of the full publication *Characteristics of Poverty: Incidence, Change, and Correlates* by Dennis Ahlburg (CURA 97-5). It is the fifth and final report in our series on *What the 1990 Census Says About Minnesota*. Though the data may seem old, now that the 1990s are approaching their end, they are the most current data available on poverty in Minnesota or in the United States. New data will not be available until 2002. Further, there is reason to believe that the trends discussed in this report have continued through the 1990s.

■ Dennis Ahlburg is a professor of human resources and industrial relations in the Industrial Relations Center, Carlson School of Management, and director of the Center for Population Analysis and Policy, Humphrey Institute of Public Affairs. His major areas of interest are population and labor economics. Ahlburg was aided in this study by Yong-Nam Song and Scott Leitz, graduate students who helped in the data analysis and in preparing the data set.

Project Awards

To help keep our readers up to date about CURA projects we feature a few capsule descriptions of new projects underway in each issue of the *CURA Reporter*. In this issue we present the winners of CURA's faculty competition for Interactive Research Grants in 1998-99. These grants are made possible with funds provided by CURA and the Vice President for Research at the University of Minnesota. They are designed to encourage University of Minnesota faculty to carry out research projects that involve significant issues of public policy for the state and that include interaction with community groups, agencies, or organizations in Minnesota. The results of the winning projects are published in the *CURA Reporter*.

Also presented here is the student project that won the Borchert Fellowship Award for 1998-99. This award is given each year to the best proposal from an advanced student in geography for study of an issue of importance to the citizens of Minnesota. The award, made jointly by CURA and the Department of Geography, honors John R. Borchert, Regents Professor Emeritus and the first director of CURA.

► **Hog Production.** Increases in hog production have become a hot topic in rural Minnesota. Minnesota could become the primary source of pork exports to Latin America and Asia, but economic benefits must be weighed against the problems of odor from large swine operations and potential groundwater contamination from swine feces. George Morse, a professor of applied economics, will study the impact of different sized swine operations in ten Minnesota counties using the Community Policy Analysis System (COMPAS) model.

► **Traffic Data for Transportation Policy.** Thousands of sensors have been installed on Twin Cities highways, supplying a continuous stream of data on traffic patterns and congestion to the state's Traffic Management Center. Shashi Shekhar, a professor of computer science, will explore how this new source of data can be used through data mining and visualization methods to

improve the quality of many transportation policy decisions as well as to communicate these decisions to the public.

► **Success in Moving from Welfare to Work.** Recent welfare reform is forcing large numbers of people on public assistance to enter the job market. Connie Wanberg, a professor in the Industrial Relations Center, is collaborating with the Minnesota Department of Human Services to assess the psychological factors that will help predict how intensely people search for jobs, how they find suitable jobs, move off welfare, and keep the jobs they find. A sample of 2,000 people will be followed over a five-year period.

► **Environmental Justice.** The disproportionate exposure of poor and minority communities to environmental hazards has been debated for the last decade. Three professors of geography—Helga Leitner, Eric Sheppard, and Robert McMaster—will use geographic information systems (GIS) to assess the environmental hazards faced by the various people living in the Phillips Neighborhood of Minneapolis. Mapping of environmental hazards will be juxtaposed with mapping of vulnerable and minority populations to assess the degree of exposure that each group faces. The project will work closely with the Green Institute and the Phillips Environment and Transportation Committee.

► **Encouraging Children to Learn.** How do families from different cultures encourage their children in school? Are there cultural differences that might be used to enhance learning? Sandra Christenson, a professor of educational psychology, will study African American, American Indian, Hispanic, Asian American, and Somali perspectives on a series of six factors believed to enhance children's learning and development. The project will use focus groups with parents to investigate how family involvement can empower minority children to be responsible and productive learners.

► **Grassland Bird Habitats.** Populations of non-game migratory songbirds have been declining in midwestern grasslands. Public programs such as the Conservation Reserve Program (CRP) and Reinvest in Minnesota (RIM) seek to enhance habitats for wildlife in Minnesota's agricultural areas. The importance to this effort of certain attributes of site has been studied, but the landscape situation itself—how habitat sites connect or do not connect with each other, how large and dense they are, and where they are situated—has not been studied and may prove to be even more important. Mary Ann Cunningham, the Borchert Fellow winner for 1998-99, is using a geographic information system (GIS) to analyze the variables of the landscape situation for fifty or more CRP parcels in a nine-county area near Mankato, Minnesota. Landcover data has already been digitized by the Department of Natural Resources. She is combining this information with on-site surveys of birds and vegetation during two nesting seasons to determine which situational variables attract birds. The results will be helpful in establishing policies for land conservation and ecosystem management.

Credits

Photos on pages 1,2,3,5, and 6 by John Fraser Hart.

Photos on pages 7, 9,10, and 17 by Robert Friedman.

Photo on page 13 by Neil Kveberg, courtesy of Minnesota Department of Transportation.

All figures prepared by the Cartography Laboratory, Department of Geography, University of Minnesota.

Design by West 44th Street Graphics.

Redefining the Metropolitan Region

by John S. Adams and Barbara J. VanDrasek



Definitions of the metropolitan area continue to change and, depending on the criteria used, can vary widely.

Flying into the Twin Cities in the early evening, fields, farms, and small towns gradually give way to urban fringe as the city lights and highway traffic intensify. But where exactly lies the boundary between urban and rural? There was a time when the city and the countryside were clearly distinguishable—when the outer ends of radial streetcar lines defined the edges of town—but that time is long past. Today we recognize the greater Twin Cities as a functional metropolitan region, an area that extends far beyond Minneapolis and St. Paul and even beyond their counties. Where does the region begin and end? It is not at all difficult to imagine residents of the same town

disagreeing over their own metropolitan status. But does it matter? And if so, why?

The practice of designating metropolitan regions has followed each decennial census of population and housing since 1950. The U.S. government officially designates the nation's major urban centers and their nearby commute sheds as "metropolitan areas" composed of whole counties or county aggregates. The criteria for delimiting metropolitan areas and the official names attached to them have changed every ten years. After the 1950 census, they were called Standard Metropolitan Areas (SMAs). Following the 1960 census they were termed Standard Metropolitan

Statistical Areas (SMSAs). Today they are labeled Metropolitan Statistical Areas (MSAs). Each change of terminology has flagged changes in the criteria used to define them.

As we approach Census 2000, the question arises once again, How shall metropolitan areas be designated? And this time an additional question has been raised by the Office of Management and Budget (OMB) and the Bureau of the Census, Shall the government continue to define metropolitan areas at all? Or shall the government get out of the business of doing so, leaving such matters up to the various departments of the federal government, and to various users of federal statistics such as

scholars, business groups, state agencies, and local metropolitan planning organizations?

Behind the scenes of what appears at first glance to be a rather arcane set of questions lies a series of significant scholarly, political, and economic debates. On the scholarly front, many geographers, sociologists, and other social scientists argue that any sharp distinction between “urban” and “rural” or between “metropolitan” and “non-metropolitan,” whatever value it may have had a century ago, is increasingly hard to defend in the 1990s, either as a theoretical or as a practical matter. Just about all Americans today live within easy access to the economic orbit of one or more full-service urban center. Because there are no sharp boundaries between the city and the countryside as there were a century ago, the argument goes, why persist in dividing the nation’s counties between those that lie within metro areas, and those located outside?

From a political standpoint, members of Congress constantly are badgered by local chambers of commerce, economic development agencies, major newspapers, and other constituents to put pressure on OMB and the Bureau of the Census to include their counties within a metropolitan area. Members of Congress, in turn, demand either that the criteria for delimiting metropolitan areas be defended or that they be modified so that Podunk County can be included, so that it may bask with pride in its metropolitan status.

Political debates also ensue concerning the naming of metropolitan areas. If a metro area has two or more central cities (Minneapolis and St. Paul, for example) there are rules about which name comes first in the official name. When metro areas grow, sprawl, and merge, some constituents argue for combining them so as to increase their ranking among the 300-plus metropolitan areas in the United States, while other interests argue for separate designations and maintenance of separate metro identities.

A local example of this occurred following the 1990 census when application of the official criteria led to the addition of Sherburne County (formerly in the St. Cloud MSA) to the Minneapolis-St. Paul MSA in 1992. The city of St. Cloud strenuously objected because part of the city lies in Sherburne County. This example highlights the ways that

local sentiments conflict with efforts to apply uniform criteria in defining metro areas for the nation. Similar squabbles continue across the country.

In the next year or so, final decisions will be made by OMB on whether to continue defining official metro areas and, if so, what criteria shall be used. If OMB ceases entirely its practice of defining metro areas, it will be left to other government agencies and business users to define settlement types in whatever form suits their particular program needs. John Adams is one of the geographers who has been asked to advise the bureau on these decisions.

What About the Twin Cities?

Examination of our own metropolitan region brings all the intricacies and dilemmas of the task of definition into full relief. From 1990 to 1997 alone, the five counties that with Hennepin and Ramsey comprise the Metropolitan Council’s jurisdictional area saw their populations rise an average of 27 percent. The twelve counties adjacent to this seven-county area grew an average of 13 percent in the same period.

The metropolitan economy, however, is not generating enough revenue to continue to pay for the additional infrastructure that is needed to serve expanding and leapfrogging settlement. Moreover, the income that is being earned is unevenly distributed across the many civil jurisdictions within the metropolitan area, so that

investment and development are likewise occurring unevenly and, some would say, inequitably.

Everyday decisions made within a local frame of reference by consumers, developers, employers, and local officials are having increasingly long-term and region-wide consequences. Thus we find conflicting land use patterns, congestion on major highways, abandonment of the inner-cities, and environmental damage. These consequences are putting a persistent strain on the financial health of many local governments and the quality of life of the residents they serve.

A Problem of Definition

Accurately delineating the metropolitan region is an important part of attempting to alleviate these problems and prevent further ones. At one time, the functional Twin Cities metropolitan region fit snugly within seven core counties, and the majority of city-based activity was confined within the borders of Minneapolis and St. Paul. The Metropolitan Council was created by legislative action in 1967 to be responsible for long-range planning and infrastructure development in Hennepin, Ramsey, and the adjacent five counties of Anoka, Washington, Dakota, Scott and Carver. At the time of the council’s creation, this area contained all of the functionally integrated urbanized and suburban areas in the Twin Cities, plus vast agricultural areas that then seemed ample

2a. Minneapolis - St. Paul Metropolitan Statistical Area (U.S. Bureau of the Census)



2b. Economic Research Service Commuting Zones and Labor Market Areas (Economic Research Service, U.S. Department of Agriculture)

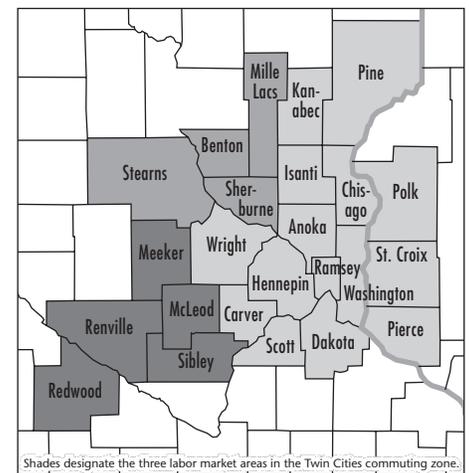


Figure 2. Selected Functional Regions of the Greater Twin Cities Area

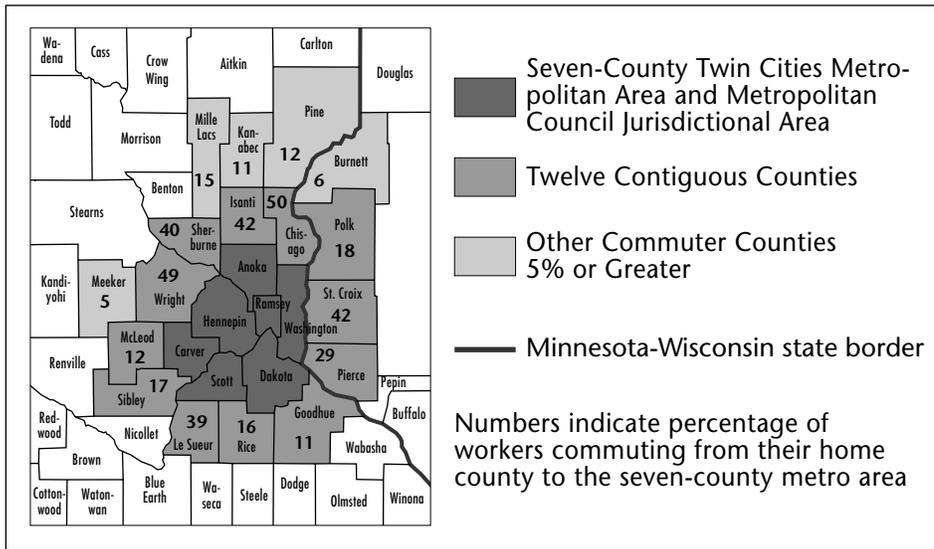


Figure 1. Daily Work Trips into the Twin Cities Metropolitan Area, 1990

to accommodate future growth.

But the expansion of urbanization has far surpassed expectations. Today, although the cities remain economic hubs, households largely select their residence and its location for one set of reasons and select their jobs for another, and then expect the transportation system to be there to link the results of their choices. The 1990 U.S. Census recorded seventeen Minnesota and Wisconsin counties that sent at least 5 percent of their daily commuters into the seven-county metropolitan area (Figure 1). Rural land has been converted to residential use at a furious pace, and

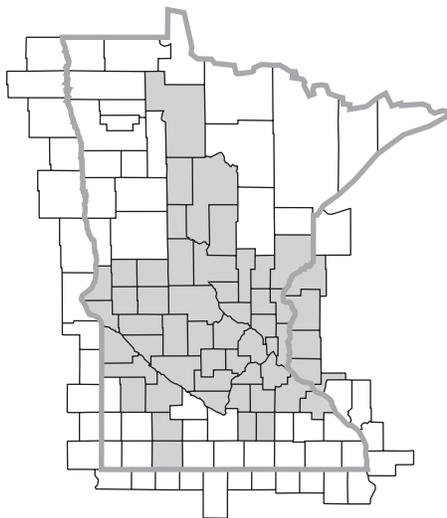
the rate of projected growth is expected to climb even higher. A study sponsored by the Builders Association of the Twin Cities in 1996 concluded that existing urban land supply is both inefficiently distributed and inadequate to handle the projected population growth over the next two decades, and that the Metropolitan Urban Services Area, despite efforts to expand its network of utilities into developing areas, cannot match the pace of growth.

Not surprisingly, the seven-county region established for Metropolitan Council coordination has not proven to be definitive by any means. Each

2c. Twin Cities Area Toll-Free Calling Zone (U.S. West Communications, Inc.)



2d. Nielsen Designated Market Area, Twin Cities Television Broadcast Market (Broadcasting Yearbook, 1996)



attempt to map the Twin Cities area using different criteria—housing distribution, commercial land use, or job commutes, for example—yields a different configuration. The Minneapolis-St. Paul Metropolitan Statistical Area used by the Bureau of the Census encompasses thirteen counties and stretches into Wisconsin (Figure 2a). The Economic Research Service of the U.S. Department of Agriculture defines a twenty-four-county labor market area (Figure 2b). The Twin Cities area toll-free telephone calling zone is yet a different area (Figure 2c) and the Twin Cities retail market area delineated by Nielsen for television advertising covers more than half the state (Figure 2d).

Approaches to defining the metropolitan area have used either structure or interaction as their basis, or a combination of both. But, at the end of the twentieth century, integration within a community connotes meanings that go well beyond traditional economic ones. The area within which people interact every day would cover at least two dozen counties. The daily flow of commodities and information would cover an area nearly impossible to measure. And outside of our work-related lives, our shopping trips, weekend recreational travel, media sources, and so on would create a map of infinite complexity.

Economic Impacts

To the casual observer, this confusion surrounding metropolitan boundaries may appear of only academic importance, but it is hitting our communities directly in their pocketbooks. Inclusion in the metropolitan area makes a significant financial difference for both municipal governments and individual citizens, and a great deal of this difference stems from OMB's Metropolitan Statistical Areas (MSAs) and the Bureau of Labor Statistics' use of them as regional boundaries for estimating the cost of living. The cost of living within a metropolitan area is invariably higher than elsewhere, and its estimation determines a wide variety of public and private payments. Employers in both the public and private sectors take cost of living indices into account when determining salaries, and therefore metropolitan workers tend to earn better pay. Labor unions use a high cost of living to negotiate for higher pay and benefits for their workers. Welfare benefits and housing assistance allowances

also are tied to these indices and thus are higher inside MSAs than outside, as are Medicare payment schedules for reimbursing health care facilities for hospital and medical care. And these are only a few examples.

The Minneapolis-St. Paul Standard Metropolitan Area (as it was then called) originally was defined in 1950 as four counties (Hennepin, Ramsey, Anoka, and Dakota), and since has been expanded five times to its current total of thirteen counties (Figure 3). Unsurprisingly, many neighboring county officials, anticipating an economic benefit, have sought to expand it to their own jurisdictions. In addition to cost of living issues, local chambers of commerce and civic boosters of outlying communities often use their metropolitan status to attract businesses and residents, and the status alone can translate into investment.

But the federally-designated MSA doesn't resolve all the metropolitan boundary issues, because one of the biggest revenue impacts for municipal governments is made by Minnesota's Fiscal Disparities Law of 1971, which applies only to the seven core counties. Designed to reduce the differences in tax base throughout the Twin Cities area, the law allows all communities under the law's jurisdiction to share a portion of the tax revenue from commercial-industrial growth (after 1971) anywhere in the seven counties. In practice, this means roughly that cities in the five counties neighboring the central cities get to tax the high commercial activity of Hennepin and Ramsey Counties, which they undoubtedly contribute to, without having to persuade urban businesses to relocate.

The problem arises from the fact that the metropolitan economy actually has spread well beyond these seven counties. Wright County, for instance, which sends nearly half of its resident workforce into the Twin Cities metro area every day, may legitimately wonder why it is excluded from the tax sharing agreement while its neighbor, Carver County, is not. One of the purposes of the Fiscal Disparities Law was to reduce interjurisdictional competition for taxable development and thereby promote economic cooperation, recognizing that the entire Twin Cities area draws from the same pool of resources. But one effect has been to shift the competition from the community level to the county level. Within its current boundary, much of the metro area's

economic activity is occurring beyond the reach of the Fiscal Disparities Law, and many communities are not benefiting from it. Thus, much of the law's purpose is thwarted.

At the state and regional level, an inaccurately defined metropolitan area hampers effective infrastructure and land use planning. We learned, shortly after World War II, that when each suburb went its way independently—developing land, constructing roads, and building water and sewage systems without regard to the aggregate effects of their individual actions—problems such as traffic congestion and ground water contamination resulted. In the 1960s, we responded with a coordinated approach to regional planning that assigned responsibility for large infrastructure systems to the Minnesota Department of Transportation (MnDOT) and the Metropolitan Council. But today development simply has outgrown the seven-county jurisdiction of the Metropolitan Council. Thus, MnDOT must by federal law coordinate

its transportation planning with the land use planning of a metropolitan government whose jurisdiction is significantly *underbounded*. As a result, transportation plans often are inefficient because many affected areas that are officially non-metropolitan are unrepresented.

Finally, on the political front, many debates in the Minnesota legislature (such as University of Minnesota grant selection) divide along current metro and non-metro lines, with the seven metro counties often lining up against the other eighty. But the debates often are misaligned when so many counties within the functional Twin Cities region are not politically allied with the seven core counties, although their fates are intertwined. And so it becomes clear that a better definition of the urban region can lay a stronger foundation for reapportionment in 2002, when Minnesota will probably lose one U.S. congressional seat and the metropolitan counties probably will gain seats in the state legislature.

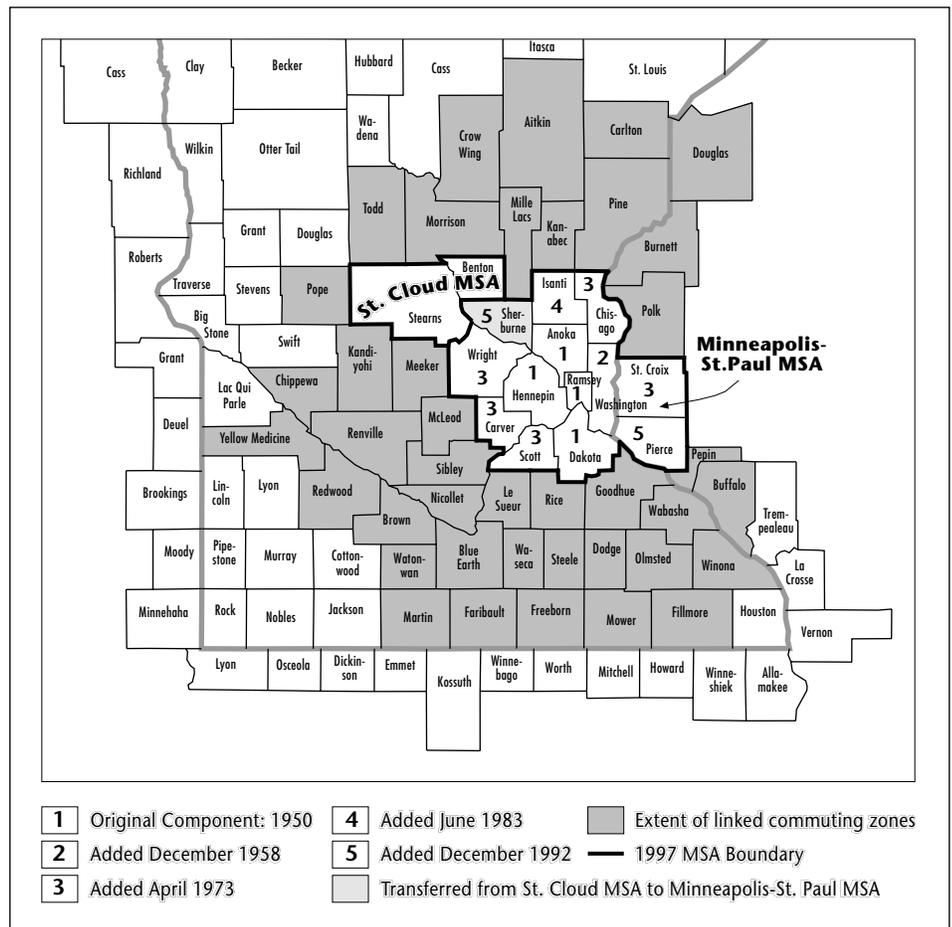


Figure 3. Expansion of the Minneapolis–St. Paul Metropolitan Statistical Area



Today's farmland may very well be tomorrow's suburb. Density of population is one of the least ambiguous measures for metropolitan status and the one that we propose using.

A Matter of Density

Traditional definitions of metropolitan areas imply abrupt boundaries between city and countryside, and fail to reflect the zones of gradual transition to lower densities between these areas. Excessively numerous or complicated measures surely will prove unusable in policy and practice, while finding one absolute and uncontentious definition of the metropolitan area based on the old criteria seems impossible. Perhaps it is time to simplify our methods.

We propose using population density as a criterion for metropolitan status. It is easily calculated as residential population divided by land area and is one of the least ambiguous measures available. Places with dense residential populations are important economically as well as demographically, not only for their local money flow, reflecting the movement of goods and services, but also in terms of their land value, invested capital, accumulated savings, and available infrastructure. All of these values diminish as population density diminishes.

There is limited value, however, in measuring an individual settlement, or even a single metro area, independently by population density. High or low density takes on its significance only in

relation to other places across the country with which it is compared. Our interest in a county's nationwide influence leads us to suggest a method that relies on a *relative* population index, calculated from both state and national scales. Nationally, every U.S. county or its equivalent (parish, division, borough, or independent city, including the District of Columbia) has a residential population density that may be ranked from highest to lowest across the country. Based on this value, each one receives a specific percentile ranking. The nation's highest density value—Manhattan, with 52,432 persons per square mile—has a U.S. percentile rank of 100; the lowest—a district in north-eastern Alaska—has a rank of zero.

We can do the same for Minnesota counties. Of the state's eighty-seven density values, the highest is Ramsey County, with 3,120 persons per square mile. Since eighty-six of the state's counties (or 98.85 percent, rounded to 99) are lower in density, that gives Ramsey County a *state* percentile rank of 99, and, with 99 percent of the entire nation's density values being lower, a *national* rank of 99 also. In order for the definition to be useful for both state and national policymaking and planning, we then calculate a *total* density score

for each Minnesota county (and each county contiguous to the Minnesota border) as the product of its national and state percentiles. For example, Ramsey County's national percentile rank (in decimal form) of .99 multiplied by its state rank of .99 gives us a total density score of .98. The national component of this analysis is especially important because a common standard of comparison often is required for national data gathering and publication, and the national component also makes Minnesota's counties more suitable for a wide variety of statistical analyses at the federal level.

Counties can be grouped by these total density scores into classes, such as those with a score of 0 to .19, those with a score of .20 to .39, and so on. Counties falling into the same density class would be judged similar for analytical and planning purposes. Density regions can subsequently be formed and mapped, as in Figure 4, indicating settlement areas of different types. This approach illustrates vividly how relative importance may vary from place to place, and also provides more evidence for the conclusion that what separates the urban from the rural is not sharp boundaries but a continuum of density levels.

Residential population density also

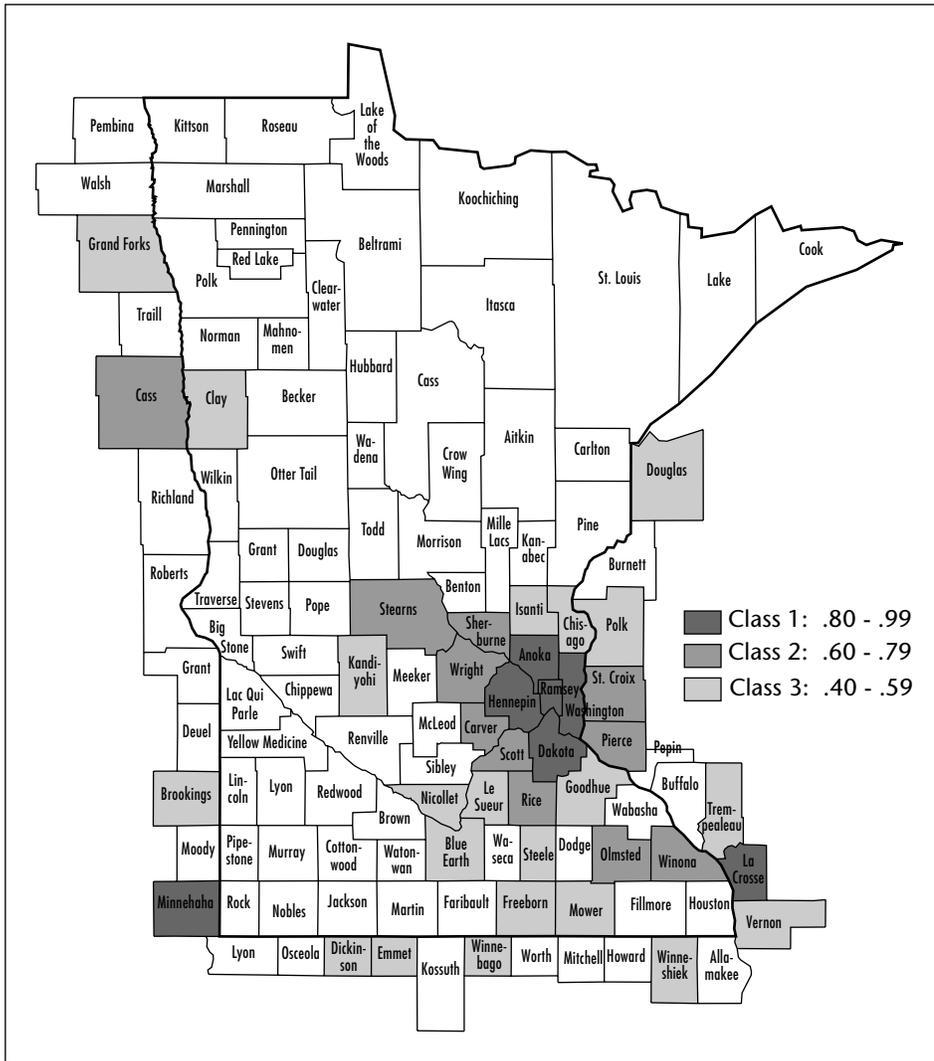


Figure 4. Minnesota and Contiguous Counties with Total Density Scores in Classes 1, 2, and 3

Calculated by multiplying state density-rank percentile by national density-rank percentile. For example, Ramsey County ranks first in population density among Minnesota's eighty-seven counties (99th percentile), and 99th among the nation's 3,141 counties (also 99th percentile). Thus, Ramsey County's Total Density Score is $.99 \times .99 = .98$ placing it in Class 1 in the region.

can be used to represent place-to-place linkage because in general it corresponds well with the intensity of activity. The majority of households has a common set of daily and weekly trips, yet our linkage patterns have become less and less likely to center on the area's core cities. High-density counties also typically link themselves to others within reasonable travelling distance through work and non-work commuting, shopping, intra-urban migration, and so forth. Thus, instead of drawing sharp boundaries around a geographically contiguous set of counties in order to define a metro area, why not treat groups of adjacent nearby counties with similar total density scores as members of a single statistical class?

State boundaries may be crossed in the process. Such a simplified approach fully acknowledges that flows and linkages exist, but it avoids both the difficulty of trying to measure the levels of flow directly and the necessity of using these dynamic levels to define statistical areas.

A Better Outcome

Under this configuration, the idea of regional governance makes more sense because the regions are defined not simply by geography or politics but by actual similarity, and whatever institutions of regional government we choose will serve much more cohesive jurisdictions. These better-defined regions would then create policies with more uniform input from their populace and

less disruption to surrounding areas. The various regions also would be in a better position to create alliances and coordinate policies among themselves.

The cost of living might be more accurately estimated if metropolitan areas were defined by population density classes, and as a result the difference in cost of living between a metro region and its neighbors would be much less severe. Communities and individuals then would not take such an abrupt financial loss in cost of living estimates if they were excluded from a metropolitan area. Also, tax sharing plans such as the Fiscal Disparities Law could more equitably redistribute tax revenue among those areas that substantially contribute to an urban economy, perhaps even sharing revenue by degrees with neighboring regions of different density classes, without arbitrarily cutting off deserving counties.

Without an end in sight for the growth of the Twin Cities area, the need for efficient land use and improved transportation systems will only continue. Changes in population density create the need for infrastructure development in the first place, and their accurate assessment early in the planning stages will prevent costly and long-term inefficiencies. Adopting a new measurement system that considers both the settlement of an area and its relationship to population patterns elsewhere will allow us to adequately accommodate Minnesota's settlement in the coming decades, and to plan accordingly.

■ John S. Adams is a professor of geography, planning, and public affairs at the University of Minnesota, where his teaching and research focus American cities and on the former Soviet Union. Barbara J. VanDrasek is a doctoral candidate in geography at the University. Her primary interest is in urban geography, particularly in globalization's impacts on urban economies and in intra-metropolitan regional dynamics. She currently is involved in research on the relationships among transportation, metropolitan growth, and inner city disinvestment.

New CURA Publications

Redrawing the Family Circle: Concurrent Planning—Permanency for Young Children in High Risk Situations. Edited by Esther Wattenberg. 1998. CURA and the Center for Advanced Studies in Child Welfare. CURA 98-1. 28 pp. Free.

Federal law now requires that a concurrent planning process begins when a young child is placed in foster care, and that after six months a “permanency decision” must be made. This means that plans for permanent adoptive homes are prepared at the same time that services are made available to try and reunite children with their birth families. The idea is to curtail long delays in adoption if it turns out to be needed and to establish a permanent home for each child as soon as possible. Sequential planning, where adoption plans are developed only after attempts at reunification have failed, has been the standard practice until now. This publication presents the highlights of a symposium held at the University of Minnesota in December 1997 which considered the issues involved in concurrent planning and especially how it can be incorporated into the Minnesota welfare system.

CURA: Center for Urban and Regional Affairs, University of Minnesota. 1998. Eight-page brochure. Free.

Are you still wondering what CURA is all about? A new brochure gives a quick overview of CURA's role as a place where new ideas can grow, how CURA sponsors research for social change, how you can connect with CURA's many programs that link the community with the University, and how you can access CURA's research results.

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Latino Research

A large Latino community has established itself in south Minneapolis. HACER (Hispanic Advocacy for Community Empowerment through Research) interviewed thirty-four individuals who are knowledgeable about the new community, held focus groups with forty-six residents of the community, and examined other published research about the size and nature of this thriving Latino community. Their results have now been published in a bilingual report: *Realidades Latinas: Una Comunidad Vibrante Emerge en el Sur de Minneapolis* or *Latino Realities: A Vibrant Community Emerges in South Minneapolis*.

The report combines many photographs with quotes from the interviews to give a flavor of the new community in Minneapolis. HACER estimates that there were between 31,600 and 37,920 Latinos living in Minneapolis in 1997. The report details where they live, why they came to Minneapolis, what has helped them and made life difficult for them, what their strengths and contributions are to the community, what they need, and how they see that things could be improved. Copies are available free-of-charge from HACER, 330 HHH Center, 301 19th Avenue S., Minneapolis, MN 55455 or by phone at 612/625-2086.

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- Characteristics of Poverty: Incidence, Change, and Correlates.* Dennis A. Ahlburg. Fifth in the series *What the 1990 Census Says About Minnesota.* 1997. CURA 97-5. 25 pp. Free.

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CURA REPORTER

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- students strengthen their education through practical experience,
- government agencies and community organizations get the assistance they request,
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- Minnesota's Housing: Shaping the Community in the 1990s.* John S. Adams, Barbara VanDrasek, and Elvin K. Wyly. Fourth in the series *What the 1990 Census Says About Minnesota.* 1996. CURA 96-2. 134 pp. Free.
- The Path of Urban Decline: The Twin Cities and Ten Other U.S. Metropolitan Areas.* John S. Adams, Barbara J. VanDrasek, and Laura J. Lambert. Second in the series *What the 1990 Census Says About Minnesota.* 1995. CURA 95-4. 129 pp. Free.

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